

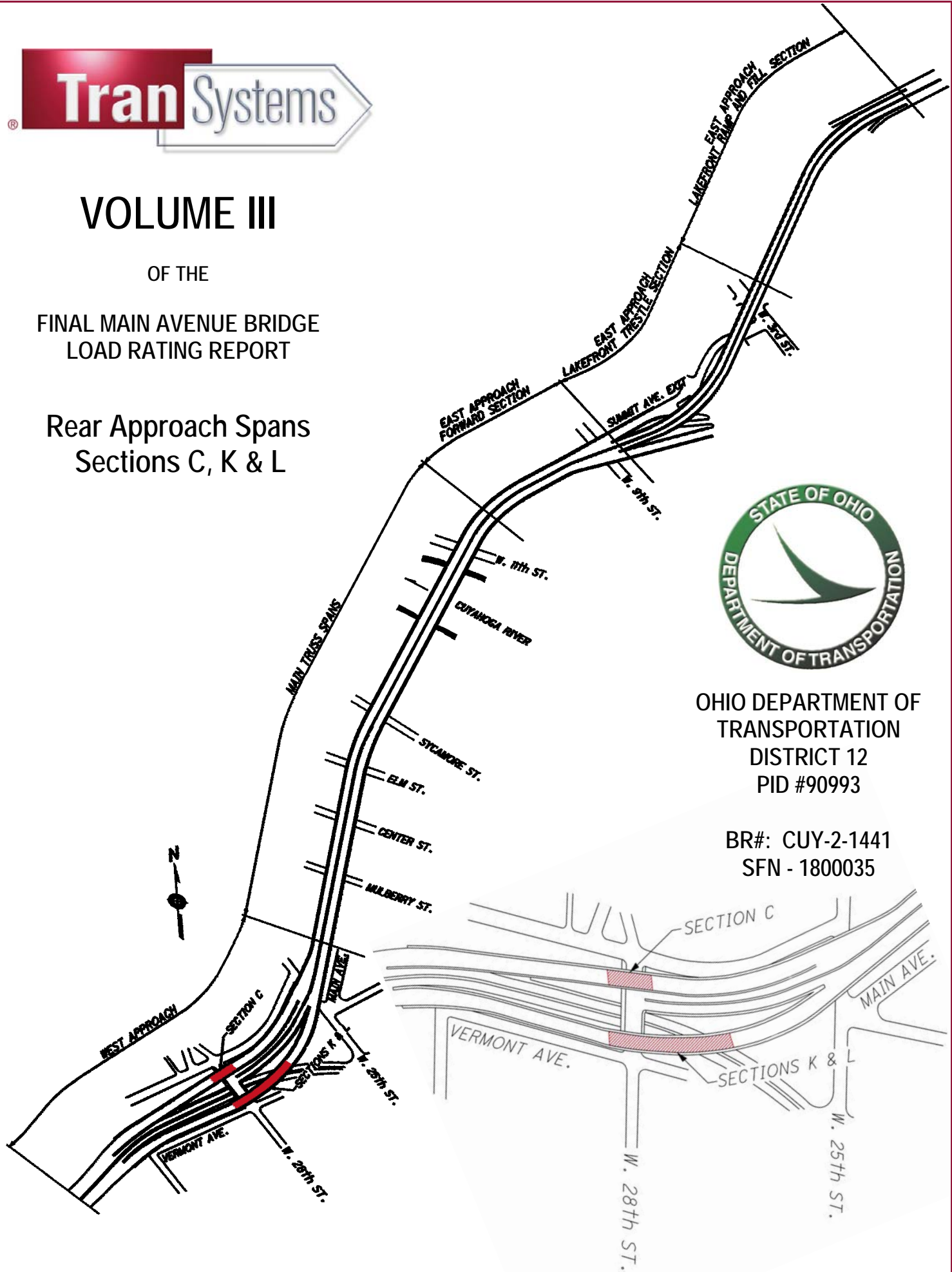


VOLUME III

OF THE

FINAL MAIN AVENUE BRIDGE LOAD RATING REPORT

Rear Approach Spans Sections C, K & L



OHIO DEPARTMENT OF
TRANSPORTATION
DISTRICT 12
PID #90993

BR#: CUY-2-1441
SFN - 1800035

Volume III - Section Description

The CUY-2-1441 (Main Avenue) Bridge carries four to six lanes of State Route 2 traffic for 6580 feet through downtown Cleveland, over numerous local streets, RTA railroad tracks, Norfolk Southern/CSX railroad tracks and the Cuyahoga River. The bridge was fabricated and erected from 1938 to 1940. The West Approach, Main Truss Spans, and East Approach – Forward sections were opened to traffic on October 6, 1939; and the Lakefront Trestle and Lakefront Ramp were opened to traffic in 1940. The bridge was closed for a major rehabilitation project from April 13, 1991 to October 6, 1992. Work included replacing and widening of the deck, updating safety features, improving the drainage system, installing new floor system members, and strengthening or replacing deteriorated sections. The Main Avenue Bridge consists of five distinct sections (West Approach, Main Truss Spans, East Approach – Forward Section, East Approach – Lakefront Trestle, East Approach – Lakefront Ramp Section) of varying structure types within each section.

The West Approach section consists of similar eastbound and westbound structures, each carrying three lanes of traffic from West 29th Street to 250' east of West 25th Street. These structures merge into one structure near West 25th Street. Sections K, L, and C make up part of the West Approach. These sections consist of steel stringers supported on steel floorbeams which frame into steel girders and steel columns.

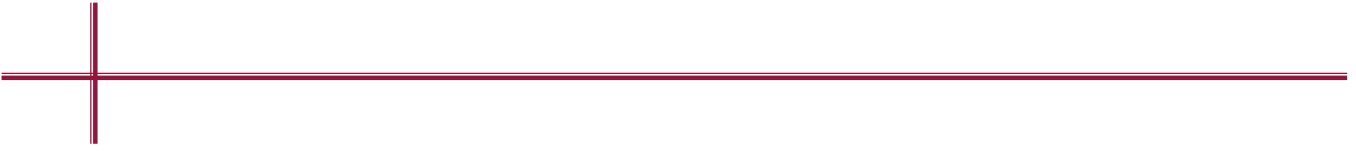
Sections C and K contain two stringer units, one 2-span continuous and one 3-span continuous. There are 8 steel stringers in each unit; the fascias are plate girders and the interior stringers are rolled beams. The stringer spans are between 21'-0" and 28'-0". The floorbeams are rolled steel beams. There are two steel plate girders in each section which each have three spans. The end spans are between 24'-0" and 28'-0", while the center spans are approximately 70'-0". The columns are rolled steel beams.

Section L contains four stringer units; three units are 3-span continuous and the fourth is 2-span continuous. Each section contains 8 steel stringers with spans around 20'-0". The fascia stringers are plate girders and the interior stringers are rolled beams. The floorbeams are rolled steel beams. There are two girders; the north girder is three spans, while the south girder is 4 spans. The north girder spans are approximately 95'-0" (built-up), 85'-0" (built-up), and 46'-0" (rolled beam). The south girder spans has two spans around 40'-0" (rolled beam), one at 84'-0" (built-up), and one at 67'-0" (built-up).



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BRIDGE LOAD RATING SUMMARY REPORT

CUY-2-1441

SECTION C

SFN	BRIDGE NUMBER	DISTRICT
1800035	CUY-2-1441	12
ORIGINAL CONSTRUCTION YEAR	REHABILITATION YEAR	OVERALL STRUCTURE LENGTH (FT)
1938 - 1940	1991 - 1992	6580
FEATURE INTERSECTED:	NUMEROUS LOCAL STREETS, RTA RAILROAD TRACKS AND THE CUYAHOGA RIVER	
SPECIAL ASSUMPTIONS & COMMENTS		
RATING & ANALYSIS OPTION:		
LOAD RATING PURPOSE:	LOAD RATING FOR FUTURE REHABILITATION RECOMMENDATIONS	
RATING SOFTWARE:	STAAD, MDX	
BASIS OF ANALYSIS:	EXISTING PLANS AND FIELD MEASUREMENTS	
METHOD OF ANALYSIS:	LOAD FACTOR	
DESIGN LOADING (ORIGINAL):	H20-33	
STRUCTURE RATING SUMMARY		
LOADING & RATING TYPE	RATING FACTOR - RF (ROUNDED TO 2 DECIMAL POINTS)	RATING LOAD
INVENTORY CURRENT DESIGN	0.73	HS14.6
OPERATING CURRENT DESIGN	1.22	
OHIO LEGAL - 2F1	2.04	OHIO LEGAL LOADS OVERALL MINIMUM RATING FACTOR
OHIO LEGAL - 3F1	1.43	1.35
OHIO LEGAL - 4F1	1.35	OHIO LEGAL LOADS OVERALL CONTROLLING TRUCK
OHIO LEGAL - 5C1	1.47	4F1
RATED BY, PE#	REVIEWED BY, PE#	REPORT DATE
Carolyn Guion, PE	Don Cartwright, EI	3/5/2012
AGENCY/FIRM	PHONE NUMBER	EMAIL
TranSystems	216-861-1780	ctguion@transystems.com

SFN: 1800035 BRIDGE NO.: CUY-2-1441

SUMMARY SHEET

West Approach - Section C

CUY-2-1441 Load Rating Analysis
Main Ave Bridge

Calculated: DMP 3/5/2012
 Checked: CTG 3/5/2012

As-Built Controlling Rating Factor Summary								
Item	Location/Member	HS20 Inventory	HS20 Operating	2F1 Operating	3F1 Operating	4F1 Operating	5C1 Operating	Fatigue**
Deck	Deck	1.18	1.97	3.16	3.71	4.51	3.71	N/A
Stringers	Unit 2 Stringer S4-2	0.78	1.30	2.04	1.43	1.40	1.47	411 Years
	Unit 2 Stringer S5-2	0.73	1.22	2.09	1.45	1.35	1.49	321 Years
Floorbeam	Floorbeam 2	0.74	1.23	2.56	1.70	1.48	1.74	-6 Years
Girder	North Girder	0.85	1.42	2.94	1.96	1.71	1.96	-
Column	North Column C5	1.08	1.79	3.17	2.26	2.14	2.32	-

As-Inspected Controlling Rating Factor Summary*								
Item	Location/Member	HS20 Inventory	HS20 Operating	2F1 Operating	3F1 Operating	4F1 Operating	5C1 Operating	Fatigue**
Deck	Deck	1.18	1.97	3.16	3.71	4.51	3.71	N/A
Stringers	Unit 2 Stringer S4-2	0.78	1.30	2.04	1.43	1.40	1.47	411 Years
	Unit 2 Stringer S5-2	0.73	1.22	2.09	1.45	1.35	1.49	321 Years
Floorbeam	Floorbeam 5	0.74	1.23	2.56	1.70	1.48	1.74	-6 Years
Girder	North Girder	0.85	1.42	2.94	1.96	1.71	1.96	-
Column	North Column K5	1.08	1.79	3.17	2.26	2.14	2.32	-

*No significant section loss was noted that affected the rating

**Remaining Fatigue Life for Girders and Column were not calculated because they deemed not to govern

Overall Summary			
Case	Rating Factor	Tonnage	HS equivalent or Ohio Legal Load %
HS20 Inventory	0.73	26.28	HS14.6
HS20 Operating	1.22	43.92	HS24.4
2F1	2.04	30.60	135%
3F1	1.43	32.89	
4F1	1.35	36.45	
5C1	1.47	58.80	
Fatigue	-6 years remaining		



DECK RATING



DECK - WEST APPROACH - SECTION C

→ DECK RATING FOR SECTION C WILL BE VERY SIMILAR TO SECTION K

- IDENTICAL PRIMARY REINFORCING BARS / SPACING
#6 @ 8" TOP, #5 @ 8" BOTTOM
- BEAM SPACING = 6'-1" (SECTION K SPACING = 6'-1 1/2")
- W16x77 STRINGERS GOVERN ⇒ $b_f = 10.3"$
 \therefore EFFECTIVE SPAN LENGTH = $6.083' - \frac{1}{2} \times \frac{10.3"}{12} = 5.65'$
 (COMPARE TO SECTION K LENGTH OF 5.81')

BECAUSE REINFORCING IS IDENTICAL TO SECTION K WITH A SLIGHTLY SMALLER EFFECTIVE SPAN LENGTH, SAY SECTION K RATING GOVERNS FOR SECTION C.

RATING FACTORS

	<u>HS 20</u>	<u>2F1</u>	<u>3F1</u>	<u>4F1</u>	<u>SC1</u>
INV	1.18	—	—	—	—
OPER	1.97	3.16	3.71	4.51	3.71



STRINGER RATINGS



SECTION C (WEST APPROACH)

UNIT 1 - MDX INPUT

- SEE MICROSTATION FILE (SECTION C_FRAMING.DGN) FOR GEOMETRY
- MODEL FASCIA STRINGERS AS HINGED AT INTERMEDIATE FB'S (SOME DISTANCE FROM SUPPORT), INTERIOR STRINGERS 2-SPAN CONTINUOUS
- MAT'L PROPERTIES: $f'_c = 4.5 \text{ ksi}$ per Rehab plans G7/93
 $\gamma_c = 113 \text{ ksi}$ G9/93

Structural Steel A36

G7/93

AASHTO 8.7.1 $E_c = (113 \text{ pci})^{1.5} (33) (\sqrt{4500 \text{ psi}}) = 2.659 \times 10^6 \rightarrow n = 10.9$

STRINGER SECTION PROPERTIES

- INTERIOR STRINGERS:
 - ⑦ S1-1 = W16x89 *
 - (ROLLED SECTIONS) ⑥ S2-1 = W16x89 *
 - * INDICATES STRINGER W/ COPE AT SUPPORT POINTS TO BE MODELED AS RE GIRDER. ⑤ S3-1 = W16x89 *
 - ④ S4-1 = W16x77 *
 - ③ S5-1 = W16x77 *
 - ② S6-1 = W14x61
- FASCIA STRINGERS:
 - ⑧ F1-1 = 3/4" x 8" FE'S, 3/8" x 28" WEB
 - ① F2-1 = 3/4" x 8" FE'S, 3/8" x 36 1/2" WEB

→ GIRDERS TO BE NUMBERED SOUTH TO NORTH ① → ⑧

- END DIAPHRAGMS FOR INTERIOR STRINGERS HAVE 7" x 1/2" FULL DEPTH CONN RE'S.
- FASCIA BRG STIFFENERS SIMILAR TO SECTION K: 4" x 1" BRG STIFFENERS
1" CORNER CLIP

BRACING

GROUP 1: Type D1 (intermediate) C10x30 w/ 1/2" x 7" conn. RE
 Conn. distance = $2\frac{3}{4}" + 3\frac{1}{2}" = 4\frac{1}{4}"$ per shop drawing

GROUP 2: TYPE D2 (end) MC10x41.1 w/ 1/2" x 7" conn. RE
 Conn distance = $4\frac{1}{4}"$

varies 7 1/4" - 7 1/2" in shop drawings

DISTANCE TO DIAPHRAGM CONN RE'S

→ SEE EXCEL SHEET

NON-COMPOSITE DEAD LOAD

- WEARING SURFACE → MDX will account for .113 kcf, but WS is .150 kcf, so add .037 kcf

FASCIAS : $.037 \text{ kcf} \times \frac{1}{2}(4.875') \times \frac{1.25''}{12} = .0094 \text{ k/ft}$

G2, G7 : $.037 \text{ kcf} \times \frac{1}{2}(4.875' + 6.0') \times \frac{1.25''}{12} = .021 \text{ k/ft}$

G3-G6 : $.037 \text{ kcf} \times (6.083') \times \frac{1.25''}{12} = .024 \text{ k/ft}$

- BARRIERS : $A = 3.92 \text{ SF} \Rightarrow \text{WEIGHT} = 0.11 \text{ k/ft} / \text{GIRDER}$
(SEE SECTION K CALCS)

- ADD 5% FOR MISCELLANEOUS

∴ $G1 = G8 = 0.125 \text{ k/ft}$

$G2 = G7 = 0.138 \text{ k/ft}$

$G3 = G4 = G5 = G6 = 0.141 \text{ k/ft}$

STEEL WEIGHT : ASSUME 5% OF STRINGERS = $0.05 \times 89 = .0445 \text{ k/ft}$

→ ROUND UP TO 0.1 k/ft

HAUNCHES : 6" WIDER THAN TOP FL, $h = 1" + t_f$ (112/99I)

COPED STRINGERS

		<u>bf</u>	<u>tf</u>	<u>h</u>	<u>tw</u>	<u>dw</u>	<u>Cope at:</u>		
							<u>FB1</u>	<u>FB2</u>	<u>FB3</u>
G3	W16x77	10.3"	.760"	16.5"	.455"	14.98"	—	3.18"	1.99"
G4	W16x77	"	"	"	"	"	—	4.05"	3.18"
G5	W16x89	10.4"	.875"	16.8"	.525"	15.05"	—	5.18"	4.49"
G6	W16x89	"	"	"	"	"	—	6.05"	5.68"
G7	W16x89	"	"	"	"	"	—	6.99"	6.74"



Made By DWC
 Checked By CTG

Date 2/24/2012
 Date 2/27/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Section C Stringers

Distances between diaphragm connection plates along girders (for use with MDX model)

UNIT 1

Girder No.	Left Brg to Loc 1		Loc 1 to Loc 2		Loc 2 to Loc 3	
	Microstation (feet)	MDX Input (inches)	Microstation (feet)	MDX Input (inches)	Microstation (feet)	MDX Input (inches)
1	11.84547	= 142.146	24.529	= 294.348		
2		= 1.000	12.14897	= 145.788	24.5287	= 294.344
3		= 1.000	12.52247	= 150.270	24.5285	= 294.342
4		= 1.000	12.90117	= 154.814	24.5282	= 294.338
5		= 1.000	13.27987	= 159.358	24.5279	= 294.335
6		= 1.000	13.65857	= 163.903	24.5276	= 294.331
7		= 1.000	14.03207	= 168.385	24.5273	= 294.328
8	14.33557	= 172.027	24.527	= 294.324		

UNIT 2

Girder No.	Left Brg to Loc 1		Loc 1 to Loc 2		Loc 2 to Loc 3		Loc 3 to Loc 4	
	Microstation (feet)	MDX Input (inches)	Microstation (feet)	MDX Input (inches)	Microstation (feet)	MDX Input (inches)	Microstation (feet)	MDX Input (inches)
1		= 150.000	22.6706	= 272.047	24.6116	= 295.339		
2	12.5	= 150.000	22.9744	= 275.693	24.6119	= 295.343	14.05419	= 168.650
3	12.5	= 150.000	23.3482	= 280.178	24.6122	= 295.346	13.68068	= 164.168
4	12.5	= 150.000	23.7272	= 284.726	24.6125	= 295.350	13.30197	= 159.624
5	12.5	= 150.000	24.1062	= 289.274	24.6128	= 295.354	12.92327	= 155.079
6	12.5	= 150.000	24.4852	= 293.822	24.6131	= 295.357	12.54456	= 150.535
7	12.5	= 150.000	24.859	= 298.308	24.6134	= 295.361	12.17104	= 146.053
8	12.5	= 150.000	25.1628	= 301.954	24.6136	= 295.363		

SECTION C UNIT 1
Girder System : Input File : Layout/Slab/Loading Definition
Wed Jun 20 08:48:08 2012

ID: SECTION C UNIT 1

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
FLOAT LANES
HS20 LOADING
LFD METHOD
NO BRACING ALONG PIERS
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

BR-1 11.9288 24.529
BSK-1 86.4378 86.4406
CURB 0.
DELMEM 27 29 29 31 31 33 33 35 35 37 37 39 39 40
FPC 4.5
GDSPC 4.875 6. 6.0833 6.0833 6.0833 6. 4.875
HNG-3 25.21
HNG-4 25.97
HNG-5 26.73
HNG-6 27.48
HNG-7 28.23
LANES 12. 12. 12.
ROADWP 40.
SKEW-1 90. 82.9028 90.
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SPN-1 23.8576 25.2004
WAC-1 0.125
WAC-2 0.138
WAC-3 0.141
WAC-4 0.141
WAC-5 0.141
WAC-6 0.141
WAC-7 0.138
WAC-8 0.125
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001

GO

SECTION C UNIT 1
Girder 1 : Input File : Definition
Wed Jun 20 08:48:48 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 11.9288 24.529
ESLABW 48.2496
FILLET 1.
FPC 4.5
HAUNCW 14.
IGIRD 1
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.
SPLWD 36.0625
SPLWT 0.375
SPN 23.8576 25.2004
SS 1.
STFGAP 0.
SUPBST 1.
SUPBSW 4.
TSLABW 48.2496
TSSP 143.146 294.348
WCONC 113.

GO

SECTION C UNIT 1
Girder 2 : Input File : Definition
Wed Jun 20 08:48:58 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W14X61

DATA

BR 12.2323 24.5288
ESLABW 65.25
FILLET 1.
FPC 4.5
HAUNCW 16.
IGIRD 2
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.
SPN 24.4646 24.5934
STFGAP 0.
TSLABW 65.25
TSSP 1. 145.78 294.344
WCONC 113.

GO

SECTION C UNIT 1
Girder 3 : Input File : Definition
Wed Jun 20 08:49:08 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 3.18 1.99
BR 12.6058 24.5285
ESLABW 72.4998
FILLET 1.
FPC 4.5
HAUNCW 16.3
HINGE 25.21
IGIRD 3
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.
SPLWD 14.98
SPLWT 0.455
SPN 25.2116 23.8464
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.4998
TSSP 1. 150.27 294.342
WCONC 113.

GO

SECTION C UNIT 1
Girder 4 : Input File : Definition
Wed Jun 20 08:49:16 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 4.05 3.18
BR 12.9845 24.5282
ESLABW 72.9996
FILLET 1.
FPC 4.5
HAUNCW 16.3
HINGE 25.97
IGIRD 4
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.
SPLWD 14.98
SPLWT 0.455
SPN 25.969 23.089
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.9996
TSSP 1. 154.814 294.338
WCONC 113.

GO

SECTION C UNIT 1
Girder 5 : Input File : Definition
Wed Jun 20 08:49:22 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 5.18 4.49
BR 13.3632 24.5279
ESLABW 72.9996
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 26.73
IGIRD 5
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.
SPLWD 15.05
SPLWT 0.525
SPN 26.7264 22.3316
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.9996
TSSP 1. 159.358 294.335
WCONC 113.

GO

SECTION C UNIT 1
Girder 6 : Input File : Definition
Wed Jun 20 08:49:28 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 6.05 5.68
BR 13.7419 24.5276
ESLABW 72.4998
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 27.48
IGIRD 6
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.
SPLWD 15.05
SPLWT 0.525
SPN 27.4839 21.5741
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.4998
TSSP 1. 163.903 294.331
WCONC 113.

GO

SECTION C UNIT 1
Girder 7 : Input File : Definition
Wed Jun 20 08:49:34 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 6.99 6.74
BR 14.1154 24.5273
ESLABW 65.25
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 28.23
IGIRD 7
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.
SPLWD 15.05
SPLWT 0.525
SPN 28.2309 20.8271
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 65.25
TSSP 1. 168.385 294.328
WCONC 113.

GO

SECTION C UNIT 1
Girder 8 : Input File : Definition
Wed Jun 20 08:49:39 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 14.4189 24.527
ESLABW 48.2496
FILLET 1.
FPC 4.5
HAUNCW 14.
IGIRD 8
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.
SPLWD 28.
SPLWT 0.375
SPN 28.8379 20.2201
SS 1.
STFGAP 0.
SUPBST 1.
SUPBSW 4.
TSLABW 48.2496
TSSP 173.027 294.324
WCONC 113.

GO

SECTION C UNIT 1
Bracing : Input File : Definition
Wed Jun 20 08:49:45 2012

ID: SECTION C UNIT 1

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

DIAPHRAGM MC10X41.1 FOR GROUP 2

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

TYPE D BRACING FOR GROUP 2

DATA

BRL-1 4.875 4.8844 4.8844

BRL-2 6. 6.0116 6.0116

BRL-3 6.0833 6.0951 6.0951

BRL-4 6.0833 6.0951 6.0951

BRL-5 6.0833 6.0951 6.0951

BRL-6 6. 6.0116 6.0116

BRL-7 4.875 4.8844 4.8844

GCONNDST 4.25 4.25

GRP-1 2 1 1

GRP-2 2 1 1

GRP-3 2 1 1

GRP-4 2 1 1

GRP-5 2 1 1

GRP-6 2 1 1

GRP-7 2 1 1

GRPHT 0. 0.

GO

SECTION C UNIT 2 SIMPLE
Girder System : Input File : Layout/Slab/Loading Definition
Wed Jun 20 08:50:46 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

APPLY IMPACT AT AXLE LOCATION

ENGLISH INPUT

ENGLISH OUTPUT

FLOAT LANES

HS20 LOADING

LFD METHOD

NO BRACING ALONG PIERS

RATE MODE

RATING PROJECT

SELF WEIGHT FOR DEAD LOAD 1

DATA

BR-1 12.5 22.6706 24.6116

BSK-1 90. 86.4406 86.4378

CURB 0.

DELMEM 43 45 45 47 47 49 49 51 51 53 53 55 55 56

FPC 4.5

GDSPC 4.875 6. 6.0833 6.0833 6.0833 6. 4.875

HNG-2 25. 20.949

HNG-3 25. 21.696

HNG-4 25. 22.454

HNG-5 25. 23.212

HNG-6 25. 23.97

HNG-7 25. 24.718

LANES 12. 12. 12.

ROADWP 40.

SKEW-1 90. 90. 82.9028 90.

SLABEXT 1.5833 1.5833

SLABT 8.

SLABWEAR 1.25

SPN-1 25. 20.3413 28.882

WAC-1 0.125

WAC-2 0.138

WAC-3 0.141

WAC-4 0.141

WAC-5 0.141

WAC-6 0.141

WAC-7 0.138

WAC-8 0.125

WAS-1 0.01

WAS-2 0.01

WAS-3 0.01

WAS-4 0.01

WAS-5 0.01

WAS-6 0.01

WAS-7 0.01

WAS-8 0.01

WCONC 113.

WS-1 0.0001

WS-2 0.0001

WS-3 0.0001

WS-4 0.0001

WS-5 0.0001

WS-6 0.0001

WS-7 0.0001

WS-8 0.0001

GO

SECTION C UNIT 2 SIMPLE
Girder 1 : Input File : Definition
Wed Jun 20 08:50:55 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 12.5 22.6706 24.6116
ESLABW 48.2496
FILLET 1.
FPC 4.5
HAUNCW 14.
IGIRD 1
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.
SPLWD 36.0625
SPLWT 0.375
SPN 25. 20.3413 28.882
SS 1.
STFGAP 0.
SUPBST 1.
SUPBSW 4.
TSLABW 48.2496
TSSP 150. 272.047 295.339
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Girder 2 : Input File : Definition
Wed Jun 20 08:51:03 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 1.87 1.62 1.3 0.
BR 12.5 22.9738 24.6118
ESLABW 65.25
FILLET 1.
FPC 4.5
HAUNCW 16.3
HINGE 25. 20.949
IGIRD 2
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.
SPLWD 14.98
SPLWT 0.455
SPN 25. 20.9483 28.275
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 65.25
TSSP 150. 275.693 295.343 168.6503
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Girder 3 : Input File : Definition
Wed Jun 20 08:51:09 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 1.99 2.87 2.62 0.
BR 12.5 23.3471 24.6121
ESLABW 72.4998
FILLET 1.
FPC 4.5
HAUNCW 16.3
HINGE 25. 21.696
IGIRD 3
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.
SPLWD 14.98
SPLWT 0.455
SPN 25. 21.6953 27.528
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.4998
TSSP 150. 280.178 295.346 164.1681
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Girder 4 : Input File : Definition
Wed Jun 20 08:51:14 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 3.18 4.18 4.05 0.
BR 12.5 23.7255 24.6124
ESLABW 72.9996
FILLET 1.
FPC 4.5
HAUNCW 16.3
HINGE 25. 22.454
IGIRD 4
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.
SPLWD 14.98
SPLWT 0.455
SPN 25. 22.4527 26.7706
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.9996
TSSP 150. 284.726 295.35 159.6236
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Girder 5 : Input File : Definition
Wed Jun 20 08:51:20 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 4.49 5.68 5.68 0.
BR 12.5 24.1039 24.6127
ESLABW 72.9996
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 25. 23.212
IGIRD 5
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.
SPLWD 15.05
SPLWT 0.525
SPN 25. 23.2101 26.0131
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.9996
TSSP 150. 289.274 295.354 155.0792
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Girder 6 : Input File : Definition
Wed Jun 20 08:51:26 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 5.68 6.99 6.99 0.
BR 12.5 24.4823 24.613
ESLABW 72.4998
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 25. 23.97
IGIRD 6
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.
SPLWD 15.05
SPLWT 0.525
SPN 25. 23.9676 25.2557
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 72.4998
TSSP 150. 293.822 295.357 150.5347
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Girder 7 : Input File : Definition
Wed Jun 20 08:51:32 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 6.74 8.18 8.43 0.
BR 12.5 24.8555 24.6133
ESLABW 65.25
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 25. 24.718
IGIRD 7
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.
SPLWD 15.05
SPLWT 0.525
SPN 25. 24.7146 24.5087
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 65.25
TSSP 150. 298.308 295.361 146.0525
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Girder 8 : Input File : Definition
Wed Jun 20 08:51:37 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 12.5 25.1587 24.6136
ESLABW 48.2496
FILLET 1.
FPC 4.5
HAUNCW 14.
IGIRD 8
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.
SPLWD 28.
SPLWT 0.375
SPN 25. 25.3216 23.9017
SS 1.
STFGAP 0.
SUPBST 1.
SUPBSW 4.
TSLABW 48.2496
TSSP 150. 301.954 295.363
WCONC 113.

GO

SECTION C UNIT 2 SIMPLE
Bracing : Input File : Definition
Wed Jun 20 08:51:42 2012

ID: SECTION C UNIT 2 SIMPLE

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

DIAPHRAGM MC10X41.1 FOR GROUP 2

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

TYPE D BRACING FOR GROUP 2

DATA

BRL-1 4.875 4.875 4.8844 4.8845

BRL-2 6. 6. 6.0116 6.0116

BRL-3 6.0833 6.0833 6.0951 6.0951

BRL-4 6.0833 6.0833 6.0951 6.0951

BRL-5 6.0833 6.0833 6.0951 6.0951

BRL-6 6. 6. 6.0116 6.0116

BRL-7 4.875 4.875 4.8844 4.8845

GCONNDST 4.25 4.25

GRP-1 1 1 1 2

GRP-2 1 1 1 2

GRP-3 1 1 1 2

GRP-4 1 1 1 2

GRP-5 1 1 1 2

GRP-6 1 1 1 2

GRP-7 1 1 1 2

GRPHT 0. 0.

GO

SECTION C



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

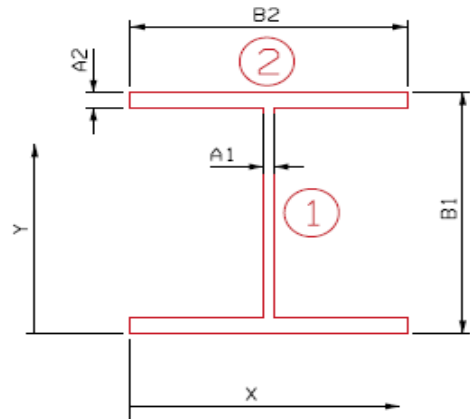
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.3750$ in
 $A_2 = t_f = 0.7500$ in
 $B_1 = d = 29.5000$ in
 $B_2 = b_f = 8.0000$ in

- * Girder 8 in MDX
- * Perform compact section check and use plastic section modulus if satisfied because fascias in Section C are not curved



**North Fascia Stringer
SECTION C**

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		10.5000	14.7500	154.8750	686.0000	0.0000	0.0000	686.0000
2	Top Flange		6.0000	29.1250	174.7500	0.2813	14.3750	1239.8438	1240.1250
	Bottom Flange		6.0000	0.3750	2.2500	0.2813	14.3750	1239.8438	1240.1250
Total			22.50		331.88	686.56		2479.69	3166.25
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	14.7500	in	$S_{top} = 214.66$	in ³	y-bar =	14.7500	in	$S_{top} = 214.66$	in ³		
$I_x =$	3166.25	in ⁴	$S_{bott.} = 214.66$	in ³	$I_x =$	3166.25	in ⁴	$S_{bott.} = 214.66$	in ³		
$c_{top} =$	14.7500	in	A =	22.5000	in ²	$c_{top} =$	14.7500	in	A =	22.5000	in ²
$c_{bottom} =$	14.7500	in	$r_x =$	11.8626	in	$c_{bottom} =$	14.7500	in	$r_x =$	11.8626	in
			Z =	246.00	in ³				Z =	246.00	in ³

SECTION C



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Stringer Rating Factors

Non-composite Capacities*		
	AB	AI
M	738.00 k-ft	738.00 k-ft
V	207.62 k	207.62 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

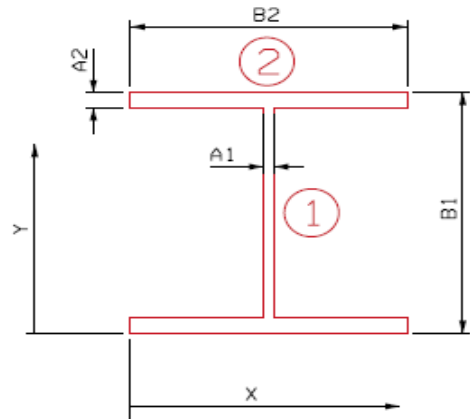
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.3750$ in
 $A_2 = t_f = 0.7500$ in
 $B_1 = d = 37.5625$ in
 $B_2 = b_f = 8.0000$ in

- * Girder 1 in MDX
- * Perform compact section check and use plastic section modulus if satisfied because fascias in Section C are not curved



**South Fascia Stringer
SECTION C**

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		13.5234	18.7813	253.9871	1465.6069	0.0000	0.0000	1465.6069
2	Top Flange		6.0000	37.1875	223.1250	0.2813	18.4063	2032.7402	2033.0215
	Bottom Flange		6.0000	0.3750	2.2500	0.2813	18.4063	2032.7402	2033.0215
Total			25.52		479.36	1466.17		4065.48	5531.65
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	18.7813	in	S _{top} = 294.53 in ³	y-bar =	18.7813	in	S _{top} = 294.53 in ³
I _x =	5531.65	in ⁴	S _{bott.} = 294.53 in ³	I _x =	5531.65	in ⁴	S _{bott.} = 294.53 in ³
c _{top} =	18.7813	in	A = 25.5234 in ²	c _{top} =	18.7813	in	A = 25.5234 in ²
c _{bottom} =	18.7813	in	r _x = 14.7217 in	c _{bottom} =	18.7813	in	r _x = 14.7217 in
			Z = 342.80 in ³				Z = 342.80 in ³

SECTION C



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Stringer Rating Factors

Non-composite Capacities*		
	AB	AI
M	1028.40 k-ft	1028.40 k-ft
V	190.83 k	190.83 k

*Compact Section

$F_y =$	36.00 ksi
---------	-----------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C

Coped Stringer End S1-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.5000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

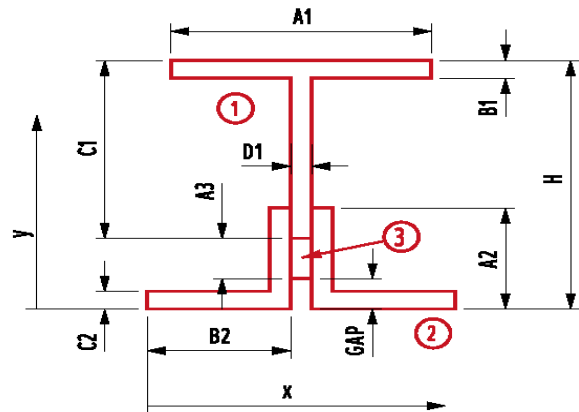
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 8.9375$ in
Gap = 0.4375 in



W16x89

Coped Stringer End S1-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	8.5000	77.3500	0.5806	3.9337	140.8102	141.3908
	Web		4.0031	4.2500	17.0133	19.3953	0.3163	0.4006	19.7960
2	Horizontal Legs		4.8750	0.3750	1.8281	0.2285	4.1913	85.6409	85.8694
	Vertical Legs		9.0000	3.0000	27.0000	27.0000	1.5663	22.0809	49.0809
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	4.1288	0.0000	0.0000
Total			26.98		123.19	47.20		248.93	296.14
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S1-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.5663	in	S _{top} =	67.75	in ³	y-bar =	4.5663	in	S _{top} =	67.75	in ³
I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³	I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³
C _{top} =	4.3712	in	A =	26.9781	in ²	C _{top} =	4.3712	in	A =	26.9781	in ²
C _{bottom} =	4.5663	in	r _x =	3.3131	in	C _{bottom} =	4.5663	in	r _x =	3.3131	in
			Z =	81.01	in ³				Z =	81.01	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.0031	4.2625	17.0633	0.0919	0.9375	3.5184	3.6103
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			26.98		114.99	86.83		61.28	148.11
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.48	in ³	x-bar =	5.2000	in	S _{right} =	28.48	in ³
I _y =	148.11	in ⁴	S _{left} =	28.48	in ³	I _y =	148.11	in ⁴	S _{left} =	28.48	in ³
C _{right} =	5.2000	in	A =	26.9781	in ²	C _{right} =	5.2000	in	A =	26.9781	in ²
C _{left} =	5.2000	in	r _y =	2.3431	in	C _{left} =	5.2000	in	r _y =	2.3431	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	243.03 k-ft	243.03 k-ft
V	248.02 k	248.02 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S1-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.7500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

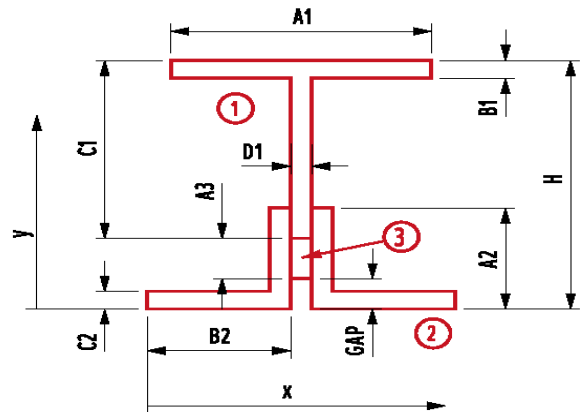
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 9.1875$ in
Gap = 0.4375 in



W16x89

Coped Stringer End S1-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	8.7500	79.6250	0.5806	3.6217	119.3644	119.9450
	Web		4.1344	4.3750	18.0879	21.3663	0.7533	2.3459	23.7122
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	4.8783	83.2911	83.3640
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	2.1283	27.1771	45.1771
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	4.6908	0.0000	0.0000
Total			22.73		116.59	40.02		232.18	272.20
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S1-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.1283	in	S _{top} =	67.06	in ³	y-bar =	5.1283	in	S _{top} =	67.06	in ³
I _x =	272.20	in ⁴	S _{bott.} =	53.08	in ³	I _x =	272.20	in ⁴	S _{bott.} =	53.08	in ³
C _{top} =	4.0592	in	A =	22.7344	in ²	C _{top} =	4.0592	in	A =	22.7344	in ²
C _{bottom} =	5.1283	in	r _x =	3.4602	in	C _{bottom} =	5.1283	in	r _x =	3.4602	in
			Z =	71.95	in ³				Z =	71.95	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.1344	4.2625	17.6228	0.0950	0.9375	3.6337	3.7287
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			22.73		96.91	85.81		43.65	129.47
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	24.90	in ³	x-bar =	5.2000	in	S _{right} =	24.90	in ³
I _y =	129.47	in ⁴	S _{left} =	24.90	in ³	I _y =	129.47	in ⁴	S _{left} =	24.90	in ³
C _{right} =	5.2000	in	A =	22.7344	in ²	C _{right} =	5.2000	in	A =	22.7344	in ²
C _{left} =	5.2000	in	r _y =	2.3864	in	C _{left} =	5.2000	in	r _y =	2.3864	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	215.85 k-ft	215.85 k-ft
V	201.17 k	201.17 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S2-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 9.2500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

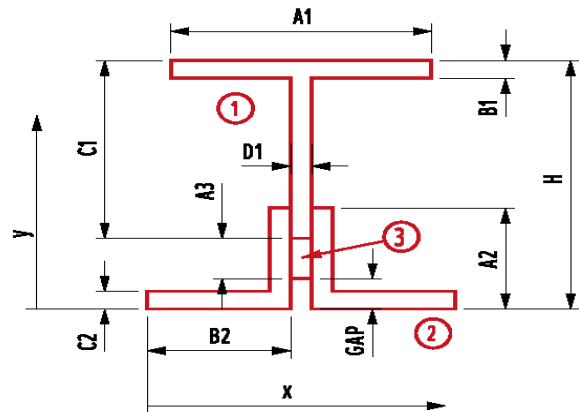
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 9.8750$ in
Gap = 0.6250 in



W16x89

Coped Stringer End S2-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	9.4375	85.8813	0.5806	4.4737	182.1249	182.7055
	Web		4.3969	4.8125	21.1600	25.7000	0.1513	0.1007	25.8007
2	Horizontal Legs		4.8750	0.3750	1.8281	0.2285	4.5888	102.6546	102.8832
	Vertical Legs		9.0000	3.0000	27.0000	27.0000	1.9638	34.7097	61.7097
3	Additional Plate		0.0000	0.6250	0.0000	0.0000	4.3388	0.0000	0.0000
Total			27.37		135.87	53.51		319.59	373.10
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S2-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.9638	in	S _{top} =	75.97	in ³	y-bar =	4.9638	in	S _{top} =	75.97	in ³
I _x =	373.10	in ⁴	S _{bott.} =	75.16	in ³	I _x =	373.10	in ⁴	S _{bott.} =	75.16	in ³
C _{top} =	4.9112	in	A =	27.3719	in ²	C _{top} =	4.9112	in	A =	27.3719	in ²
C _{bottom} =	4.9638	in	r _x =	3.6920	in	C _{bottom} =	4.9638	in	r _x =	3.6920	in
			Z =	91.17	in ³				Z =	91.17	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.3969	4.2625	18.7417	0.1010	0.9375	3.8644	3.9654
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			27.37		116.67	86.84		61.63	148.46
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.55	in ³	x-bar =	5.2000	in	S _{right} =	28.55	in ³
I _y =	148.46	in ⁴	S _{left} =	28.55	in ³	I _y =	148.46	in ⁴	S _{left} =	28.55	in ³
C _{right} =	5.2000	in	A =	27.3719	in ²	C _{right} =	5.2000	in	A =	27.3719	in ²
C _{left} =	5.2000	in	r _y =	2.3289	in	C _{left} =	5.2000	in	r _y =	2.3289	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	273.51 k-ft	273.51 k-ft
V	256.24 k	256.24 k

F_y =	36.00 ksi
------------------------	------------------

*Compact Section

SECTION C

Coped Stringer End S2-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 9.7500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

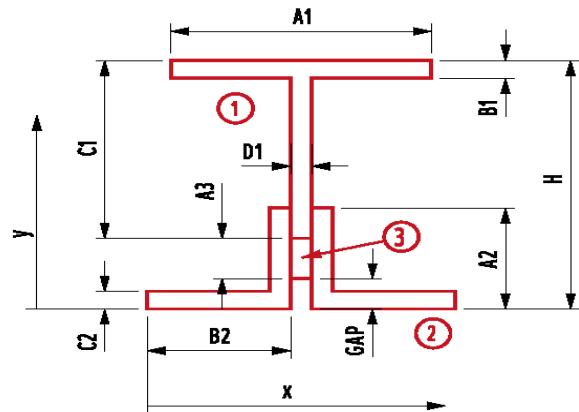
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 10.2500$ in
Gap = 0.5000 in



W16x89

Coped Stringer End S2-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	9.8125	89.2938	0.5806	4.1729	158.4564	159.0370
	Web		4.6594	4.9375	23.0057	30.5832	0.7021	2.2970	32.8803
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	5.3896	101.6686	101.7415
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	2.6396	41.8061	59.8061
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	5.1396	0.0000	0.0000
Total			23.26		131.17	49.24		304.23	353.46
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S2-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.6396	in	S _{top} =	76.67	in ³	y-bar =	5.6396	in	S _{top} =	76.67	in ³
I _x =	353.46	in ⁴	S _{bott.} =	62.68	in ³	I _x =	353.46	in ⁴	S _{bott.} =	62.68	in ³
C _{top} =	4.6104	in	A =	23.2594	in ²	C _{top} =	4.6104	in	A =	23.2594	in ²
C _{bottom} =	5.6396	in	r _x =	3.8983	in	C _{bottom} =	5.6396	in	r _x =	3.8983	in
			Z =	83.37	in ³				Z =	83.37	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.6594	4.2625	19.8606	0.1070	0.9375	4.0952	4.2022
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			23.26		99.14	85.83		44.11	129.94
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	24.99	in ³	x-bar =	5.2000	in	S _{right} =	24.99	in ³
I _y =	129.94	in ⁴	S _{left} =	24.99	in ³	I _y =	129.94	in ⁴	S _{left} =	24.99	in ³
C _{right} =	5.2000	in	A =	23.2594	in ²	C _{right} =	5.2000	in	A =	23.2594	in ²
C _{left} =	5.2000	in	r _y =	2.3636	in	C _{left} =	5.2000	in	r _y =	2.3636	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	250.11 k-ft	250.11 k-ft
V	212.13 k	212.13 k

F_y =	36.00 ksi
------------------------	------------------

*Compact Section

SECTION C

Coped Stringer End S3-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 10.2500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

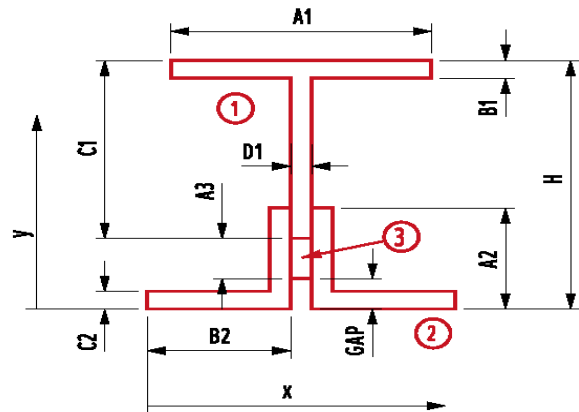
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 10.7500$ in
Gap = 0.5000 in



W16x89

Coped Stringer End S3-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	10.3125	93.8438	0.5806	4.9999	227.4936	228.0742
	Web		4.9219	5.1875	25.5322	36.0489	0.1251	0.0770	36.1259
2	Horizontal Legs		4.8750	0.3750	1.8281	0.2285	4.9376	118.8505	119.0791
	Vertical Legs		9.0000	3.0000	27.0000	27.0000	2.3126	48.1318	75.1318
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	4.8126	0.0000	0.0000
Total			27.90		148.20	63.86		394.55	458.41
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S3-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.3126	in	S _{top} =	84.31	in ³	y-bar =	5.3126	in	S _{top} =	84.31	in ³
I _x =	458.41	in ⁴	S _{bott.} =	86.29	in ³	I _x =	458.41	in ⁴	S _{bott.} =	86.29	in ³
C _{top} =	5.4374	in	A =	27.8969	in ²	C _{top} =	5.4374	in	A =	27.8969	in ²
C _{bottom} =	5.3126	in	r _x =	4.0537	in	C _{bottom} =	5.3126	in	r _x =	4.0537	in
			Z =	101.64	in ³				Z =	101.64	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.9219	4.2625	20.9795	0.1130	0.9375	4.3259	4.4389
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			27.90		118.91	86.85		62.09	148.94
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.64	in ³	x-bar =	5.2000	in	S _{right} =	28.64	in ³
I _y =	148.94	in ⁴	S _{left} =	28.64	in ³	I _y =	148.94	in ⁴	S _{left} =	28.64	in ³
C _{right} =	5.2000	in	A =	27.8969	in ²	C _{right} =	5.2000	in	A =	27.8969	in ²
C _{left} =	5.2000	in	r _y =	2.3106	in	C _{left} =	5.2000	in	r _y =	2.3106	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	304.92 k-ft	304.92 k-ft
V	267.20 k	267.20 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S3-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 11.0000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

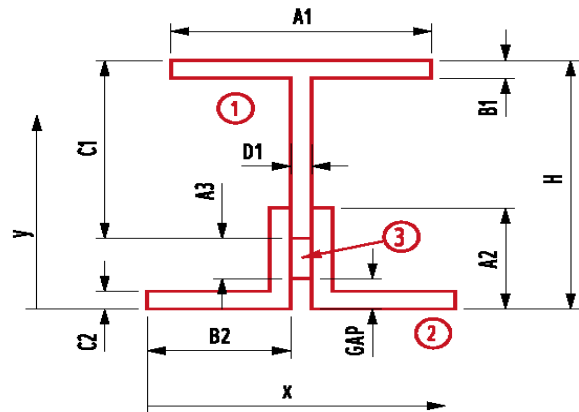
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 11.4375$ in
Gap = 0.4375 in



W16x89

Coped Stringer End S3-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	9.1000	11.0000	100.1000	0.5806	4.8028	209.9049	210.4855
	Web	5.3156	5.5000	29.2359	45.4112	0.6972	2.5842	47.9954
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	5.9472	123.7939	123.8669
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	3.1972	61.3342	79.3342
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	5.7597	0.0000	0.0000
Total		23.92		148.21	64.06		397.62	461.68
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S3-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.1972	in	S _{top} =	88.10	in ³	y-bar =	6.1972	in	S _{top} =	88.10	in ³
I _x =	461.68	in ⁴	S _{bott.} =	74.50	in ³	I _x =	461.68	in ⁴	S _{bott.} =	74.50	in ³
C _{top} =	5.2403	in	A =	23.9156	in ²	C _{top} =	5.2403	in	A =	23.9156	in ²
C _{bottom} =	6.1972	in	r _x =	4.3937	in	C _{bottom} =	6.1972	in	r _x =	4.3937	in
			Z =	97.07	in ³				Z =	97.07	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		5.3156	4.2625	22.6579	0.1221	0.9375	4.6719	4.7940
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			23.92		101.94	85.84		44.69	130.53
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	25.10	in ³	x-bar =	5.2000	in	S _{right} =	25.10	in ³
I _y =	130.53	in ⁴	S _{left} =	25.10	in ³	I _y =	130.53	in ⁴	S _{left} =	25.10	in ³
C _{right} =	5.2000	in	A =	23.9156	in ²	C _{right} =	5.2000	in	A =	23.9156	in ²
C _{left} =	5.2000	in	r _y =	2.3362	in	C _{left} =	5.2000	in	r _y =	2.3362	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	291.21 k-ft	291.21 k-ft
V	225.83 k	225.83 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S4-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 11.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

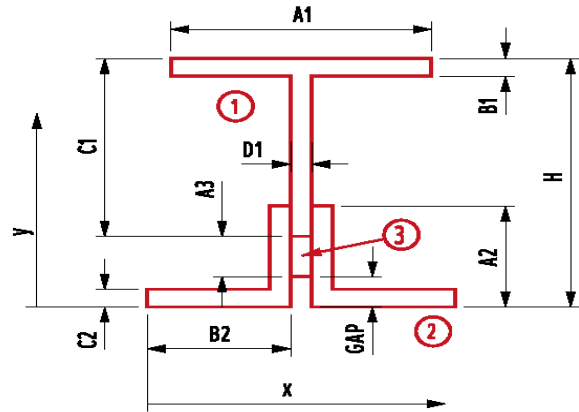
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 11.6875$ in
Gap = 0.4375 in



W16x77

Coped Stringer End S4-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	11.3075	88.5151	0.3768	5.5732	243.1446	243.5213
	Web		4.7730	5.6825	27.1223	43.7680	0.0518	0.0128	43.7808
2	Horizontal Legs		4.2188	0.3125	1.3184	0.1373	5.4218	124.0127	124.1500
	Vertical Legs		7.5000	3.0000	22.5000	22.5000	2.7343	56.0718	78.5718
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	5.2968	0.0000	0.0000
Total			24.32		139.46	66.78		423.24	490.02
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S4-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.7343	in	S _{top} =	82.31	in ³	y-bar =	5.7343	in	S _{top} =	82.31	in ³
I _x =	490.02	in ⁴	S _{bott.} =	85.46	in ³	I _x =	490.02	in ⁴	S _{bott.} =	85.46	in ³
C _{top} =	5.9532	in	A =	24.3197	in ²	C _{top} =	5.9532	in	A =	24.3197	in ²
C _{bottom} =	5.7343	in	r _x =	4.4888	in	C _{bottom} =	5.7343	in	r _x =	4.4888	in
			Z =	98.04	in ³				Z =	98.04	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.7730	4.2275	20.1776	0.0823	0.9225	4.0618	4.1442
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			24.32		102.81	73.54		50.10	123.64
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	24.01	in ³	x-bar =	5.1500	in	S _{right} =	24.01	in ³
I _y =	123.64	in ⁴	S _{left} =	24.01	in ³	I _y =	123.64	in ⁴	S _{left} =	24.01	in ³
C _{right} =	5.1500	in	A =	24.3197	in ²	C _{right} =	5.1500	in	A =	24.3197	in ²
C _{left} =	5.1500	in	r _y =	2.2547	in	C _{left} =	5.1500	in	r _y =	2.2547	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	294.12 k-ft	294.12 k-ft
V	239.95 k	239.95 k

F_y =	36.00 ksi
------------------------	------------------

*Compact Section

SECTION C

Coped Stringer End S4-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 12.0000$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

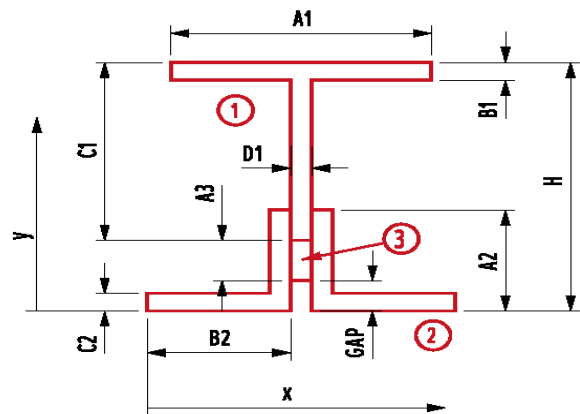
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 12.5625$ in
Gap = 0.5625 in



W16x77

Coped Stringer End S4-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	12.1825	95.3646	0.3768	5.6832	252.8365	253.2132
	Web		5.1142	6.1825	31.6185	53.8430	0.3168	0.5132	54.3562
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	6.2493	136.6873	136.7602
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	3.4993	73.4698	91.4698
3	Additional Plate		0.0000	0.5625	0.0000	0.0000	5.9368	0.0000	0.0000
Total			22.44		145.86	72.29		463.51	535.80
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S4-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.4993	in	S _{top} =	88.37	in ³	y-bar =	6.4993	in	S _{top} =	88.37	in ³
I _x =	535.80	in ⁴	S _{bott.} =	82.44	in ³	I _x =	535.80	in ⁴	S _{bott.} =	82.44	in ³
C _{top} =	6.0632	in	A =	22.4422	in ²	C _{top} =	6.0632	in	A =	22.4422	in ²
C _{bottom} =	6.4993	in	r _x =	4.8862	in	C _{bottom} =	6.4993	in	r _x =	4.8862	in
			Z =	100.52	in ³				Z =	100.52	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.1142	4.2275	21.6203	0.0882	0.9225	4.3522	4.4404
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			22.44		94.87	72.99		41.95	114.94
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.32	in ³	x-bar =	5.1500	in	S _{right} =	22.32	in ³
I _y =	114.94	in ⁴	S _{left} =	22.32	in ³	I _y =	114.94	in ⁴	S _{left} =	22.32	in ³
C _{right} =	5.1500	in	A =	22.4422	in ²	C _{right} =	5.1500	in	A =	22.4422	in ²
C _{left} =	5.1500	in	r _y =	2.2631	in	C _{left} =	5.1500	in	r _y =	2.2631	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	301.56 k-ft	301.56 k-ft
V	221.62 k	221.62 k

F_y = 36.00 ksi

*Compact Section

SECTION C

Coped Stringer End S5-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 12.0000$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

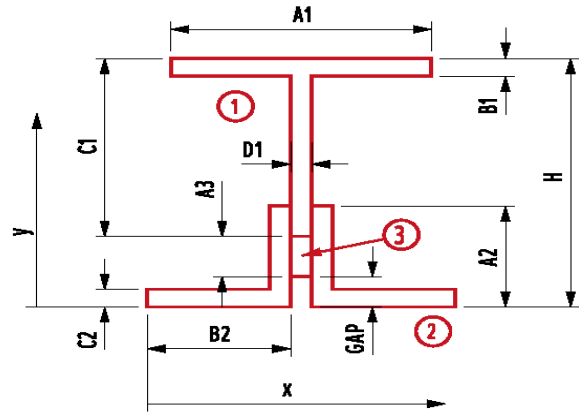
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 12.5625$ in
Gap = 0.5625 in



W16x77

Coped Stringer End S5-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	12.1825	95.3646	0.3768	6.0675	288.1851	288.5619
	Web		5.1142	6.1825	31.6185	53.8430	0.0675	0.0233	53.8663
2	Horizontal Legs		4.2188	0.3125	1.3184	0.1373	5.8025	142.0407	142.1781
	Vertical Legs		7.5000	3.0000	22.5000	22.5000	3.1150	72.7738	95.2738
3	Additional Plate		0.0000	0.5625	0.0000	0.0000	5.5525	0.0000	0.0000
Total			24.66		150.80	76.86		503.02	579.88
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S5-1 @ FB2



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.1150	in	S _{top} =	89.94	in ³	y-bar =	6.1150	in	S _{top} =	89.94	in ³
I _x =	579.88	in ⁴	S _{bott.} =	94.83	in ³	I _x =	579.88	in ⁴	S _{bott.} =	94.83	in ³
C _{top} =	6.4475	in	A =	24.6610	in ²	C _{top} =	6.4475	in	A =	24.6610	in ²
C _{bottom} =	6.1150	in	r _x =	4.8491	in	C _{bottom} =	6.1150	in	r _x =	4.8491	in
			Z =	107.24	in ³				Z =	107.24	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.1142	4.2275	21.6203	0.0882	0.9225	4.3522	4.4404
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			24.66		104.25	73.54		50.39	123.93
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	24.06	in ³	x-bar =	5.1500	in	S _{right} =	24.06	in ³
I _y =	123.93	in ⁴	S _{left} =	24.06	in ³	I _y =	123.93	in ⁴	S _{left} =	24.06	in ³
C _{right} =	5.1500	in	A =	24.6610	in ²	C _{right} =	5.1500	in	A =	24.6610	in ²
C _{left} =	5.1500	in	r _y =	2.2418	in	C _{left} =	5.1500	in	r _y =	2.2418	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	321.72 k-ft	321.72 k-ft
V	247.07 k	247.07 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S5-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 13.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

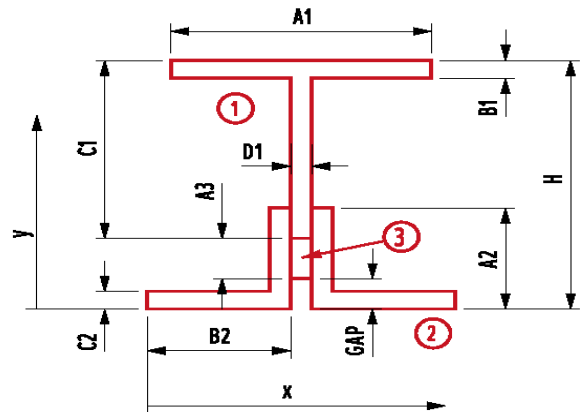
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 13.7500$ in
Gap = 0.5000 in



W16x77

Coped Stringer End S5-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	13.3700	104.6604	0.3768	6.3357	314.2205	314.5973
	Web		5.6830	6.7450	38.3315	73.8784	0.2893	0.4758	74.3542
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	6.7843	161.0955	161.1684
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	4.0343	97.6554	115.6554
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	6.5343	0.0000	0.0000
Total			23.01		161.87	92.33		573.45	665.78
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S5-1 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	7.0343	in	S _{top} =	99.14	in ³	y-bar =	7.0343	in	S _{top} =	99.14	in ³
I _x =	665.78	in ⁴	S _{bott.} =	94.65	in ³	I _x =	665.78	in ⁴	S _{bott.} =	94.65	in ³
C _{top} =	6.7157	in	A =	23.0110	in ²	C _{top} =	6.7157	in	A =	23.0110	in ²
C _{bottom} =	7.0343	in	r _x =	5.3789	in	C _{bottom} =	7.0343	in	r _x =	5.3789	in
			Z =	113.65	in ³				Z =	113.65	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.6830	4.2275	24.0247	0.0980	0.9225	4.8362	4.9343
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.01		97.28	73.00		42.43	115.44
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.41	in ³	x-bar =	5.1500	in	S _{right} =	22.41	in ³
I _y =	115.44	in ⁴	S _{left} =	22.41	in ³	I _y =	115.44	in ⁴	S _{left} =	22.41	in ³
C _{right} =	5.1500	in	A =	23.0110	in ²	C _{right} =	5.1500	in	A =	23.0110	in ²
C _{left} =	5.1500	in	r _y =	2.2398	in	C _{left} =	5.1500	in	r _y =	2.2398	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	340.95 k-ft	340.95 k-ft
V	233.50 k	233.50 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S1-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.7500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

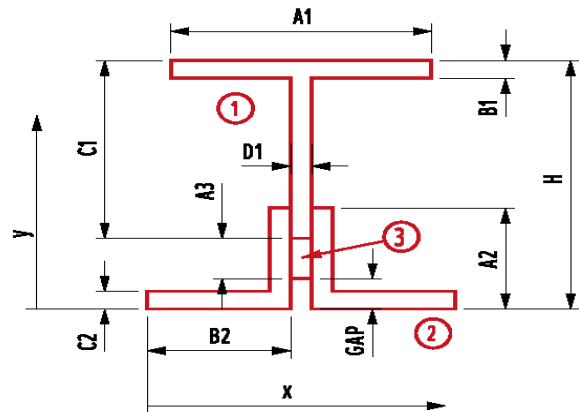
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 9.1875$ in
Gap = 0.4375 in



W16x89

Coped Stringer End S1-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	8.7500	79.6250	0.5806	3.6217	119.3644	119.9450
	Web		4.1344	4.3750	18.0879	21.3663	0.7533	2.3459	23.7122
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	4.8783	83.2911	83.3640
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	2.1283	27.1771	45.1771
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	4.6908	0.0000	0.0000
Total			22.73		116.59	40.02		232.18	272.20
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S1-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.1283	in	S _{top} =	67.06	in ³	y-bar =	5.1283	in	S _{top} =	67.06	in ³
I _x =	272.20	in ⁴	S _{bott.} =	53.08	in ³	I _x =	272.20	in ⁴	S _{bott.} =	53.08	in ³
C _{top} =	4.0592	in	A =	22.7344	in ²	C _{top} =	4.0592	in	A =	22.7344	in ²
C _{bottom} =	5.1283	in	r _x =	3.4602	in	C _{bottom} =	5.1283	in	r _x =	3.4602	in
			Z =	71.95	in ³				Z =	71.95	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.1344	4.2625	17.6228	0.0950	0.9375	3.6337	3.7287
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			22.73		96.91	85.81		43.65	129.47
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	24.90	in ³	x-bar =	5.2000	in	S _{right} =	24.90	in ³
I _y =	129.47	in ⁴	S _{left} =	24.90	in ³	I _y =	129.47	in ⁴	S _{left} =	24.90	in ³
C _{right} =	5.2000	in	A =	22.7344	in ²	C _{right} =	5.2000	in	A =	22.7344	in ²
C _{left} =	5.2000	in	r _y =	2.3864	in	C _{left} =	5.2000	in	r _y =	2.3864	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	215.85 k-ft	215.85 k-ft
V	201.17 k	201.17 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S1-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 7.2500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

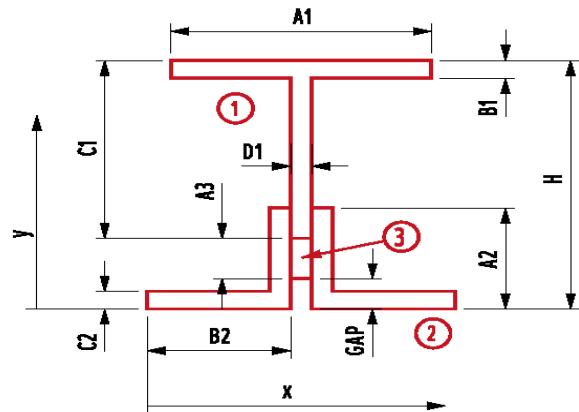
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 7.7500$ in
 $Gap = 0.5000$ in



Coped Stringer End S1-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	9.1000	7.3125	66.5438	0.5806	3.2203	94.3720	94.9526
	Web	3.3469	3.6875	12.3416	11.3349	0.4047	0.5481	11.8830
2	Horizontal Legs	4.8750	0.3750	1.8281	0.2285	3.7172	67.3594	67.5880
	Vertical Legs	9.0000	3.0000	27.0000	27.0000	1.0922	10.7354	37.7354
3	Additional Plate	0.0000	0.5000	0.0000	0.0000	3.5922	0.0000	0.0000
Total		26.32		107.71	39.14		173.01	212.16
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S1-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.0922	in	S _{top} =	58.00	in ³	y-bar =	4.0922	in	S _{top} =	58.00	in ³
I _x =	212.16	in ⁴	S _{bott.} =	51.85	in ³	I _x =	212.16	in ⁴	S _{bott.} =	51.85	in ³
C _{top} =	3.6578	in	A =	26.3219	in ²	C _{top} =	3.6578	in	A =	26.3219	in ²
C _{bottom} =	4.0922	in	r _x =	2.8390	in	C _{bottom} =	4.0922	in	r _x =	2.8390	in
			Z =	68.10	in ³				Z =	68.10	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		3.3469	4.2625	14.2661	0.0769	0.9375	2.9416	3.0185
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			26.32		112.20	86.81		60.70	147.52
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.37	in ³	x-bar =	5.2000	in	S _{right} =	28.37	in ³
I _y =	147.52	in ⁴	S _{left} =	28.37	in ³	I _y =	147.52	in ⁴	S _{left} =	28.37	in ³
C _{right} =	5.2000	in	A =	26.3219	in ²	C _{right} =	5.2000	in	A =	26.3219	in ²
C _{left} =	5.2000	in	r _y =	2.3673	in	C _{left} =	5.2000	in	r _y =	2.3673	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	204.30 k-ft	204.30 k-ft
V	234.31 k	234.31 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S1-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 7.0000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

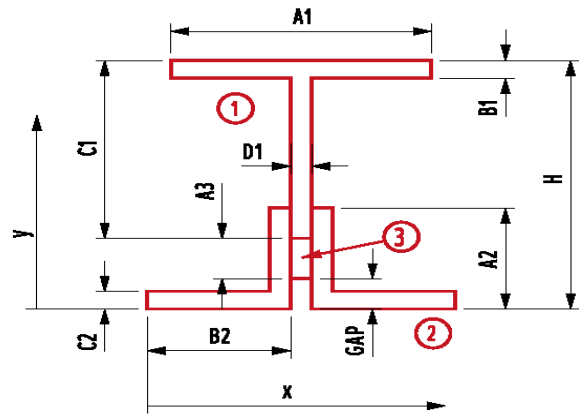
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 7.5000$ in
 $Gap = 0.5000$ in



Coped Stringer End S1-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	7.0625	64.2688	0.5806	3.0705	85.7955	86.3761
	Web		3.2156	3.5625	11.4557	10.0530	0.4295	0.5931	10.6462
2	Horizontal Legs		4.8750	0.3750	1.8281	0.2285	3.6170	63.7775	64.0060
	Vertical Legs		9.0000	3.0000	27.0000	27.0000	0.9920	8.8563	35.8563
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	3.4920	0.0000	0.0000
Total			26.19		104.55	37.86		159.02	196.88
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S1-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	3.9920	in	S _{top} =	56.12	in ³	y-bar =	3.9920	in	S _{top} =	56.12	in ³
I _x =	196.88	in ⁴	S _{bott.} =	49.32	in ³	I _x =	196.88	in ⁴	S _{bott.} =	49.32	in ³
C _{top} =	3.5080	in	A =	26.1906	in ²	C _{top} =	3.5080	in	A =	26.1906	in ²
C _{bottom} =	3.9920	in	r _x =	2.7418	in	C _{bottom} =	3.9920	in	r _x =	2.7418	in
			Z =	65.49	in ³				Z =	65.49	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		3.2156	4.2625	13.7066	0.0739	0.9375	2.8262	2.9001
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			26.19		111.64	86.81		60.59	147.40
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.35	in ³	x-bar =	5.2000	in	S _{right} =	28.35	in ³
I _y =	147.40	in ⁴	S _{left} =	28.35	in ³	I _y =	147.40	in ⁴	S _{left} =	28.35	in ³
C _{right} =	5.2000	in	A =	26.1906	in ²	C _{right} =	5.2000	in	A =	26.1906	in ²
C _{left} =	5.2000	in	r _y =	2.3723	in	C _{left} =	5.2000	in	r _y =	2.3723	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	196.47 k-ft	196.47 k-ft
V	231.57 k	231.57 k

F_y = 36.00 ksi

*Compact Section

SECTION C

Coped Stringer End S2-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 9.7500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

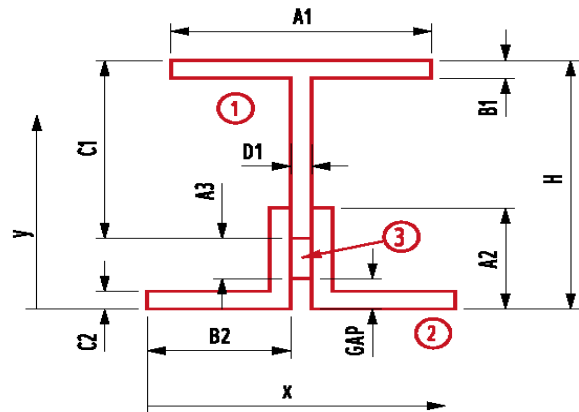
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 10.2500$ in
Gap = 0.5000 in



W16x89

Coped Stringer End S2-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	9.8125	89.2938	0.5806	4.1729	158.4564	159.0370
	Web		4.6594	4.9375	23.0057	30.5832	0.7021	2.2970	32.8803
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	5.3896	101.6686	101.7415
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	2.6396	41.8061	59.8061
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	5.1396	0.0000	0.0000
Total			23.26		131.17	49.24		304.23	353.46
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S2-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.6396	in	S _{top} =	76.67	in ³	y-bar =	5.6396	in	S _{top} =	76.67	in ³
I _x =	353.46	in ⁴	S _{bott.} =	62.68	in ³	I _x =	353.46	in ⁴	S _{bott.} =	62.68	in ³
C _{top} =	4.6104	in	A =	23.2594	in ²	C _{top} =	4.6104	in	A =	23.2594	in ²
C _{bottom} =	5.6396	in	r _x =	3.8983	in	C _{bottom} =	5.6396	in	r _x =	3.8983	in
			Z =	83.37	in ³				Z =	83.37	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.6594	4.2625	19.8606	0.1070	0.9375	4.0952	4.2022
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			23.26		99.14	85.83		44.11	129.94
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	24.99	in ³	x-bar =	5.2000	in	S _{right} =	24.99	in ³
I _y =	129.94	in ⁴	S _{left} =	24.99	in ³	I _y =	129.94	in ⁴	S _{left} =	24.99	in ³
C _{right} =	5.2000	in	A =	23.2594	in ²	C _{right} =	5.2000	in	A =	23.2594	in ²
C _{left} =	5.2000	in	r _y =	2.3636	in	C _{left} =	5.2000	in	r _y =	2.3636	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	250.11 k-ft	250.11 k-ft
V	212.13 k	212.13 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S2-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.5000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

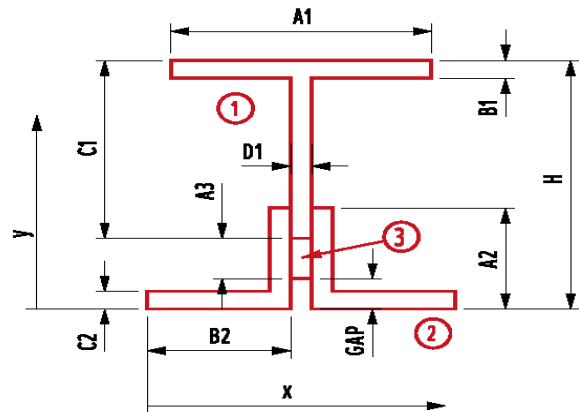
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 8.9375$ in
Gap = 0.4375 in



Coped Stringer End S2-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	8.5000	77.3500	0.5806	3.9337	140.8102	141.3908
	Web		4.0031	4.2500	17.0133	19.3953	0.3163	0.4006	19.7960
2	Horizontal Legs		4.8750	0.3750	1.8281	0.2285	4.1913	85.6409	85.8694
	Vertical Legs		9.0000	3.0000	27.0000	27.0000	1.5663	22.0809	49.0809
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	4.1288	0.0000	0.0000
Total			26.98		123.19	47.20		248.93	296.14
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S2-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.5663	in	S _{top} =	67.75	in ³	y-bar =	4.5663	in	S _{top} =	67.75	in ³
I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³	I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³
C _{top} =	4.3712	in	A =	26.9781	in ²	C _{top} =	4.3712	in	A =	26.9781	in ²
C _{bottom} =	4.5663	in	r _x =	3.3131	in	C _{bottom} =	4.5663	in	r _x =	3.3131	in
			Z =	81.01	in ³				Z =	81.01	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.0031	4.2625	17.0633	0.0919	0.9375	3.5184	3.6103
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			26.98		114.99	86.83		61.28	148.11
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.48	in ³	x-bar =	5.2000	in	S _{right} =	28.48	in ³
I _y =	148.11	in ⁴	S _{left} =	28.48	in ³	I _y =	148.11	in ⁴	S _{left} =	28.48	in ³
C _{right} =	5.2000	in	A =	26.9781	in ²	C _{right} =	5.2000	in	A =	26.9781	in ²
C _{left} =	5.2000	in	r _y =	2.3431	in	C _{left} =	5.2000	in	r _y =	2.3431	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	243.03 k-ft	243.03 k-ft
V	248.02 k	248.02 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S2-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.5000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

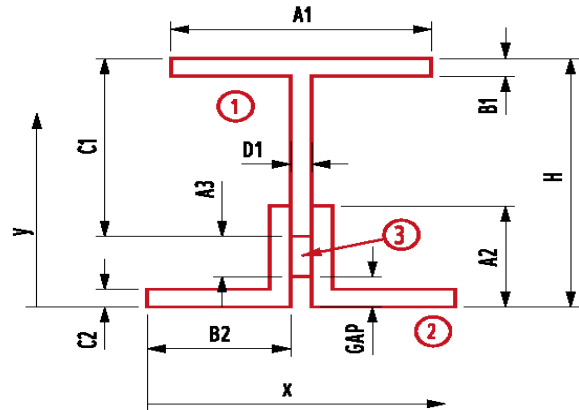
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 8.9375$ in
Gap = 0.4375 in



Coped Stringer End S2-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	9.1000	8.5000	77.3500	0.5806	3.9337	140.8102	141.3908
	Web	4.0031	4.2500	17.0133	19.3953	0.3163	0.4006	19.7960
2	Horizontal Legs	4.8750	0.3750	1.8281	0.2285	4.1913	85.6409	85.8694
	Vertical Legs	9.0000	3.0000	27.0000	27.0000	1.5663	22.0809	49.0809
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	4.1288	0.0000	0.0000
Total		26.98		123.19	47.20		248.93	296.14
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total				0.00	0.00	0.00	0.00	0.00

SECTION C

Coped Stringer End S2-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.5663	in	S _{top} =	67.75	in ³	y-bar =	4.5663	in	S _{top} =	67.75	in ³
I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³	I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³
C _{top} =	4.3712	in	A =	26.9781	in ²	C _{top} =	4.3712	in	A =	26.9781	in ²
C _{bottom} =	4.5663	in	r _x =	3.3131	in	C _{bottom} =	4.5663	in	r _x =	3.3131	in
			Z =	81.01	in ³				Z =	81.01	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.0031	4.2625	17.0633	0.0919	0.9375	3.5184	3.6103
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			26.98		114.99	86.83		61.28	148.11
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.48	in ³	x-bar =	5.2000	in	S _{right} =	28.48	in ³
I _y =	148.11	in ⁴	S _{left} =	28.48	in ³	I _y =	148.11	in ⁴	S _{left} =	28.48	in ³
C _{right} =	5.2000	in	A =	26.9781	in ²	C _{right} =	5.2000	in	A =	26.9781	in ²
C _{left} =	5.2000	in	r _y =	2.3431	in	C _{left} =	5.2000	in	r _y =	2.3431	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	243.03 k-ft	243.03 k-ft
V	248.02 k	248.02 k

F_y =	36.00 ksi
------------------------	------------------

*Compact Section

SECTION C

Coped Stringer End S3-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 11.0000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

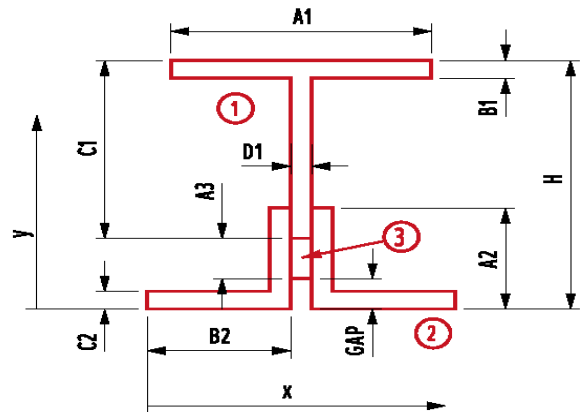
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 11.4375$ in
Gap = 0.4375 in



W16x89

Coped Stringer End S3-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	11.0000	100.1000	0.5806	4.8028	209.9049	210.4855
	Web		5.3156	5.5000	29.2359	45.4112	0.6972	2.5842	47.9954
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	5.9472	123.7939	123.8669
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	3.1972	61.3342	79.3342
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	5.7597	0.0000	0.0000
Total			23.92		148.21	64.06		397.62	461.68
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S3-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.1972	in	S _{top} =	88.10	in ³	y-bar =	6.1972	in	S _{top} =	88.10	in ³
I _x =	461.68	in ⁴	S _{bott.} =	74.50	in ³	I _x =	461.68	in ⁴	S _{bott.} =	74.50	in ³
C _{top} =	5.2403	in	A =	23.9156	in ²	C _{top} =	5.2403	in	A =	23.9156	in ²
C _{bottom} =	6.1972	in	r _x =	4.3937	in	C _{bottom} =	6.1972	in	r _x =	4.3937	in
			Z =	97.07	in ³				Z =	97.07	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		5.3156	4.2625	22.6579	0.1221	0.9375	4.6719	4.7940
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			23.92		101.94	85.84		44.69	130.53
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	25.10	in ³	x-bar =	5.2000	in	S _{right} =	25.10	in ³
I _y =	130.53	in ⁴	S _{left} =	25.10	in ³	I _y =	130.53	in ⁴	S _{left} =	25.10	in ³
C _{right} =	5.2000	in	A =	23.9156	in ²	C _{right} =	5.2000	in	A =	23.9156	in ²
C _{left} =	5.2000	in	r _y =	2.3362	in	C _{left} =	5.2000	in	r _y =	2.3362	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	291.21 k-ft	291.21 k-ft
V	225.83 k	225.83 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S3-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 9.7500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

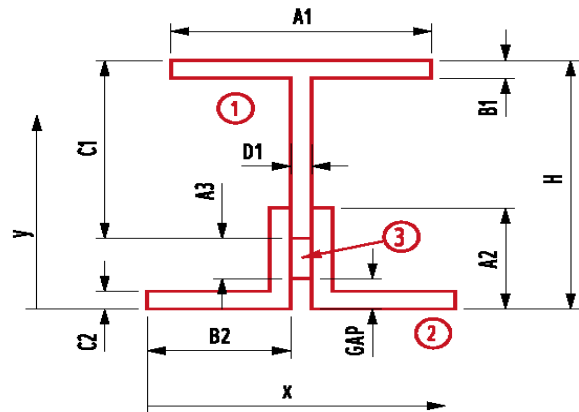
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 10.2500$ in
Gap = 0.5000 in



Coped Stringer End S3-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	9.8125	89.2938	0.5806	4.4700	181.8233	182.4039
	Web		4.6594	4.9375	23.0057	30.5832	0.4050	0.7644	31.3476
2	Horizontal Legs		4.2188	0.3125	1.3184	0.1373	5.0300	106.7397	106.8770
	Vertical Legs		7.5000	3.0000	22.5000	22.5000	2.3425	41.1560	63.6560
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	4.8425	0.0000	0.0000
Total			25.48		136.12	53.80		330.48	384.28
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S3-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.3425	in	S _{top} =	78.31	in ³	y-bar =	5.3425	in	S _{top} =	78.31	in ³
I _x =	384.28	in ⁴	S _{bott.} =	71.93	in ³	I _x =	384.28	in ⁴	S _{bott.} =	71.93	in ³
C _{top} =	4.9075	in	A =	25.4781	in ²	C _{top} =	4.9075	in	A =	25.4781	in ²
C _{bottom} =	5.3425	in	r _x =	3.8837	in	C _{bottom} =	5.3425	in	r _x =	3.8837	in
			Z =	90.15	in ³				Z =	90.15	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.6594	4.2625	19.8606	0.1070	0.9375	4.0952	4.2022
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.5125	26.0247	28.0270
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.5125	8.5787	8.7008
2 (Right)	Horizontal Leg		2.1094	6.8375	14.4229	2.0023	1.6375	5.6561	7.6583
	Vertical Leg		3.7500	4.8375	18.1406	0.1221	0.3625	0.4928	0.6148
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			25.48		108.60	86.38		52.85	139.22
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	26.77	in ³	x-bar =	5.2000	in	S _{right} =	26.77	in ³
I _y =	139.22	in ⁴	S _{left} =	26.77	in ³	I _y =	139.22	in ⁴	S _{left} =	26.77	in ³
C _{right} =	5.2000	in	A =	25.4781	in ²	C _{right} =	5.2000	in	A =	25.4781	in ²
C _{left} =	5.2000	in	r _y =	2.3376	in	C _{left} =	5.2000	in	r _y =	2.3376	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	270.45 k-ft	270.45 k-ft
V	237.58 k	237.58 k

F_y = 36.00 ksi

*Compact Section

SECTION C

Coped Stringer End S3-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 9.7500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

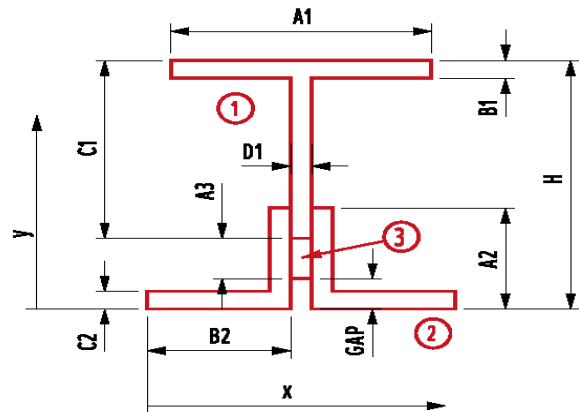
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 10.2500$ in
Gap = 0.5000 in



Coped Stringer End S3-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	9.1000	9.8125	89.2938	0.5806	4.4700	181.8233	182.4039
	Web	4.6594	4.9375	23.0057	30.5832	0.4050	0.7644	31.3476
2	Horizontal Legs	4.2188	0.3125	1.3184	0.1373	5.0300	106.7397	106.8770
	Vertical Legs	7.5000	3.0000	22.5000	22.5000	2.3425	41.1560	63.6560
3	Additional Plate	0.0000	0.5000	0.0000	0.0000	4.8425	0.0000	0.0000
Total		25.48		136.12	53.80		330.48	384.28
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total				0.00	0.00	0.00	0.00	0.00

SECTION C

Coped Stringer End S3-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.3425	in	S _{top} =	78.31	in ³	y-bar =	5.3425	in	S _{top} =	78.31	in ³
I _x =	384.28	in ⁴	S _{bott.} =	71.93	in ³	I _x =	384.28	in ⁴	S _{bott.} =	71.93	in ³
C _{top} =	4.9075	in	A =	25.4781	in ²	C _{top} =	4.9075	in	A =	25.4781	in ²
C _{bottom} =	5.3425	in	r _x =	3.8837	in	C _{bottom} =	5.3425	in	r _x =	3.8837	in
			Z =	90.15	in ³				Z =	90.15	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.6594	4.2625	19.8606	0.1070	0.9375	4.0952	4.2022
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.5125	26.0247	28.0270
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.5125	8.5787	8.7008
2 (Right)	Horizontal Leg		2.1094	6.8375	14.4229	2.0023	1.6375	5.6561	7.6583
	Vertical Leg		3.7500	4.8375	18.1406	0.1221	0.3625	0.4928	0.6148
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			25.48		108.60	86.38		52.85	139.22
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	26.77	in ³	x-bar =	5.2000	in	S _{right} =	26.77	in ³
I _y =	139.22	in ⁴	S _{left} =	26.77	in ³	I _y =	139.22	in ⁴	S _{left} =	26.77	in ³
C _{right} =	5.2000	in	A =	25.4781	in ²	C _{right} =	5.2000	in	A =	25.4781	in ²
C _{left} =	5.2000	in	r _y =	2.3376	in	C _{left} =	5.2000	in	r _y =	2.3376	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	270.45 k-ft	270.45 k-ft
V	237.58 k	237.58 k

*Compact Section

F_y =	36.00 ksi
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SECTION C

Coped Stringer End S4-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 12.0000$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

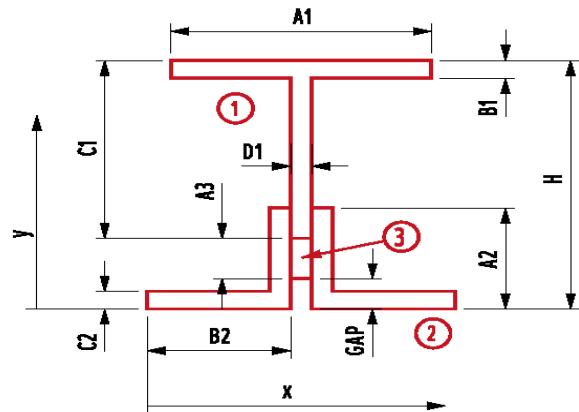
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 12.5625$ in
Gap = 0.5625 in



W16x77

Coped Stringer End S4-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	12.1825	95.3646	0.3768	5.6832	252.8365	253.2132
	Web		5.1142	6.1825	31.6185	53.8430	0.3168	0.5132	54.3562
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	6.2493	136.6873	136.7602
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	3.4993	73.4698	91.4698
3	Additional Plate		0.0000	0.5625	0.0000	0.0000	5.9368	0.0000	0.0000
Total			22.44		145.86	72.29		463.51	535.80
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S4-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.4993	in	S _{top} =	88.37	in ³	y-bar =	6.4993	in	S _{top} =	88.37	in ³
I _x =	535.80	in ⁴	S _{bott.} =	82.44	in ³	I _x =	535.80	in ⁴	S _{bott.} =	82.44	in ³
C _{top} =	6.0632	in	A =	22.4422	in ²	C _{top} =	6.0632	in	A =	22.4422	in ²
C _{bottom} =	6.4993	in	r _x =	4.8862	in	C _{bottom} =	6.4993	in	r _x =	4.8862	in
			Z =	100.52	in ³				Z =	100.52	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.1142	4.2275	21.6203	0.0882	0.9225	4.3522	4.4404
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			22.44		94.87	72.99		41.95	114.94
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.32	in ³	x-bar =	5.1500	in	S _{right} =	22.32	in ³
I _y =	114.94	in ⁴	S _{left} =	22.32	in ³	I _y =	114.94	in ⁴	S _{left} =	22.32	in ³
C _{right} =	5.1500	in	A =	22.4422	in ²	C _{right} =	5.1500	in	A =	22.4422	in ²
C _{left} =	5.1500	in	r _y =	2.2631	in	C _{left} =	5.1500	in	r _y =	2.2631	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	301.56 k-ft	301.56 k-ft
V	221.62 k	221.62 k

F_y = 36.00 ksi

*Compact Section

SECTION C

Coped Stringer End S4-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 11.0000$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

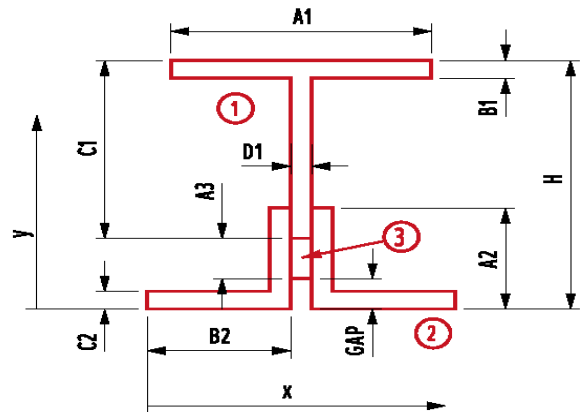
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 11.5625$ in
Gap = 0.5625 in



Coped Stringer End S4-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	11.1825	87.5366	0.3768	5.4884	235.8000	236.1768
	Web	4.6592	5.6825	26.4759	40.7127	0.0116	0.0006	40.7133
2	Horizontal Legs	4.2188	0.3125	1.3184	0.1373	5.3816	122.1814	122.3187
	Vertical Legs	7.5000	3.0000	22.5000	22.5000	2.6941	54.4359	76.9359
3	Additional Plate	0.0000	0.5625	0.0000	0.0000	5.1316	0.0000	0.0000
Total		24.21		137.83	63.73		412.42	476.14
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S4-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.6941	in	S _{top} =	81.14	in ³	y-bar =	5.6941	in	S _{top} =	81.14	in ³
I _x =	476.14	in ⁴	S _{bott.} =	83.62	in ³	I _x =	476.14	in ⁴	S _{bott.} =	83.62	in ³
C _{top} =	5.8684	in	A =	24.2060	in ²	C _{top} =	5.8684	in	A =	24.2060	in ²
C _{bottom} =	5.6941	in	r _x =	4.4352	in	C _{bottom} =	5.6941	in	r _x =	4.4352	in
			Z =	96.47	in ³				Z =	96.47	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.6592	4.2275	19.6968	0.0804	0.9225	3.9650	4.0454
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			24.21		102.33	73.54		50.00	123.54
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	23.99	in ³	x-bar =	5.1500	in	S _{right} =	23.99	in ³
I _y =	123.54	in ⁴	S _{left} =	23.99	in ³	I _y =	123.54	in ⁴	S _{left} =	23.99	in ³
C _{right} =	5.1500	in	A =	24.2060	in ²	C _{right} =	5.1500	in	A =	24.2060	in ²
C _{left} =	5.1500	in	r _y =	2.2591	in	C _{left} =	5.1500	in	r _y =	2.2591	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	289.41 k-ft	289.41 k-ft
V	237.57 k	237.57 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S4-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 11.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

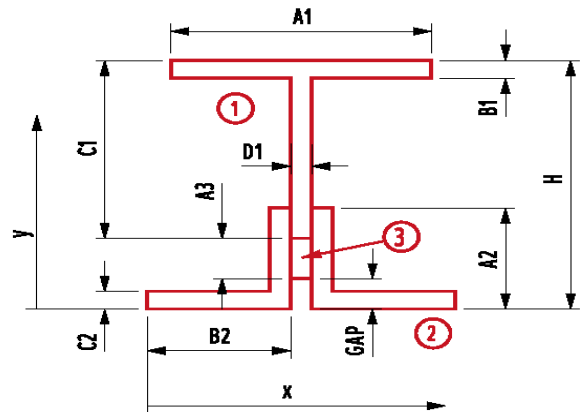
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 11.6875$ in
Gap = 0.4375 in



Coped Stringer End S4-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	11.3075	88.5151	0.3768	5.5732	243.1446	243.5213
	Web		4.7730	5.6825	27.1223	43.7680	0.0518	0.0128	43.7808
2	Horizontal Legs		4.2188	0.3125	1.3184	0.1373	5.4218	124.0127	124.1500
	Vertical Legs		7.5000	3.0000	22.5000	22.5000	2.7343	56.0718	78.5718
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	5.2968	0.0000	0.0000
Total			24.32		139.46	66.78		423.24	490.02
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S4-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.7343	in	S _{top} =	82.31	in ³	y-bar =	5.7343	in	S _{top} =	82.31	in ³
I _x =	490.02	in ⁴	S _{bott.} =	85.46	in ³	I _x =	490.02	in ⁴	S _{bott.} =	85.46	in ³
C _{top} =	5.9532	in	A =	24.3197	in ²	C _{top} =	5.9532	in	A =	24.3197	in ²
C _{bottom} =	5.7343	in	r _x =	4.4888	in	C _{bottom} =	5.7343	in	r _x =	4.4888	in
			Z =	98.04	in ³				Z =	98.04	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.7730	4.2275	20.1776	0.0823	0.9225	4.0618	4.1442
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			24.32		102.81	73.54		50.10	123.64
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	24.01	in ³	x-bar =	5.1500	in	S _{right} =	24.01	in ³
I _y =	123.64	in ⁴	S _{left} =	24.01	in ³	I _y =	123.64	in ⁴	S _{left} =	24.01	in ³
C _{right} =	5.1500	in	A =	24.3197	in ²	C _{right} =	5.1500	in	A =	24.3197	in ²
C _{left} =	5.1500	in	r _y =	2.2547	in	C _{left} =	5.1500	in	r _y =	2.2547	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	294.12 k-ft	294.12 k-ft
V	239.95 k	239.95 k

F_y = 36.00 ksi

*Compact Section

SECTION C

Coped Stringer End S5-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 13.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

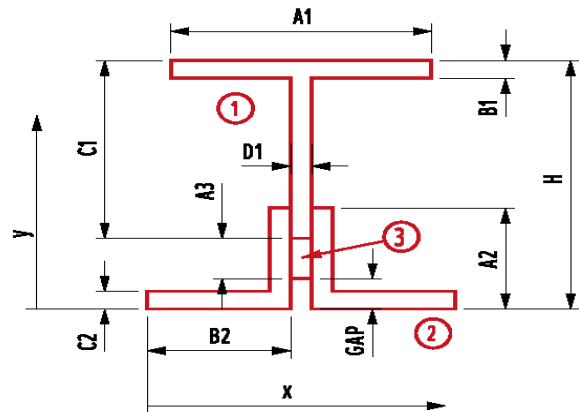
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 13.7500$ in
Gap = 0.5000 in



W16x77

Coped Stringer End S5-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	13.3700	104.6604	0.3768	6.3357	314.2205	314.5973
	Web	5.6830	6.7450	38.3315	73.8784	0.2893	0.4758	74.3542
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	6.7843	161.0955	161.1684
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	4.0343	97.6554	115.6554
3	Additional Plate	0.0000	0.5000	0.0000	0.0000	6.5343	0.0000	0.0000
Total		23.01		161.87	92.33		573.45	665.78
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S5-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	7.0343	in	S _{top} =	99.14	in ³	y-bar =	7.0343	in	S _{top} =	99.14	in ³
I _x =	665.78	in ⁴	S _{bott.} =	94.65	in ³	I _x =	665.78	in ⁴	S _{bott.} =	94.65	in ³
C _{top} =	6.7157	in	A =	23.0110	in ²	C _{top} =	6.7157	in	A =	23.0110	in ²
C _{bottom} =	7.0343	in	r _x =	5.3789	in	C _{bottom} =	7.0343	in	r _x =	5.3789	in
			Z =	113.65	in ³				Z =	113.65	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.6830	4.2275	24.0247	0.0980	0.9225	4.8362	4.9343
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.01		97.28	73.00		42.43	115.44
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.41	in ³	x-bar =	5.1500	in	S _{right} =	22.41	in ³
I _y =	115.44	in ⁴	S _{left} =	22.41	in ³	I _y =	115.44	in ⁴	S _{left} =	22.41	in ³
C _{right} =	5.1500	in	A =	23.0110	in ²	C _{right} =	5.1500	in	A =	23.0110	in ²
C _{left} =	5.1500	in	r _y =	2.2398	in	C _{left} =	5.1500	in	r _y =	2.2398	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	340.95 k-ft	340.95 k-ft
V	233.50 k	233.50 k

F_y =	36.00 ksi
------------------------	------------------

*Compact Section

SECTION C

Coped Stringer End S5-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 12.3750$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

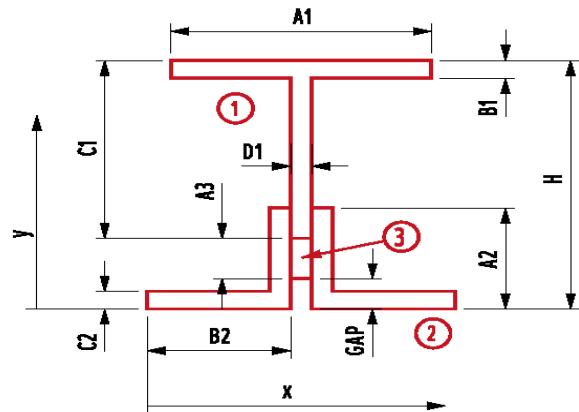
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 12.8750$ in
Gap = 0.5000 in



Coped Stringer End S5-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	12.4950	97.8109	0.3768	5.8607	268.8761	269.2529
	Web		5.2848	6.3075	33.3340	59.4139	0.3268	0.5644	59.9782
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	6.3843	142.6568	142.7297
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	3.6343	79.2481	97.2481
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	6.1343	0.0000	0.0000
Total			22.61		150.02	77.86		491.35	569.21
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S5-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.6343	in	S _{top} =	91.21	in ³	y-bar =	6.6343	in	S _{top} =	91.21	in ³
I _x =	569.21	in ⁴	S _{bott.} =	85.80	in ³	I _x =	569.21	in ⁴	S _{bott.} =	85.80	in ³
C _{top} =	6.2407	in	A =	22.6128	in ²	C _{top} =	6.2407	in	A =	22.6128	in ²
C _{bottom} =	6.6343	in	r _x =	5.0172	in	C _{bottom} =	6.6343	in	r _x =	5.0172	in
			Z =	104.02	in ³				Z =	104.02	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.2848	4.2275	22.3416	0.0912	0.9225	4.4974	4.5886
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			22.61		95.60	73.00		42.09	115.09
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.35	in ³	x-bar =	5.1500	in	S _{right} =	22.35	in ³
I _y =	115.09	in ⁴	S _{left} =	22.35	in ³	I _y =	115.09	in ⁴	S _{left} =	22.35	in ³
C _{right} =	5.1500	in	A =	22.6128	in ²	C _{right} =	5.1500	in	A =	22.6128	in ²
C _{left} =	5.1500	in	r _y =	2.2560	in	C _{left} =	5.1500	in	r _y =	2.2560	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	312.06 k-ft	312.06 k-ft
V	225.19 k	225.19 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S5-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 12.6250$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

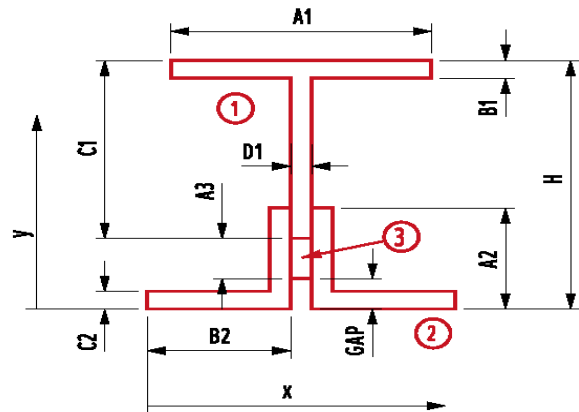
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 13.1250$ in
Gap = 0.5000 in



Coped Stringer End S5-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	12.7450	99.7679	0.3768	5.9965	281.4839	281.8606
	Web	5.3986	6.4325	34.7263	63.3335	0.3160	0.5389	63.8724
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	6.4985	147.8046	147.8775
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	3.7485	84.3053	102.3053
3	Additional Plate	0.0000	0.5000	0.0000	0.0000	6.2485	0.0000	0.0000
Total		22.73		153.37	81.78		514.13	595.92
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S5-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.7485	in	S _{top} =	93.45	in ³	y-bar =	6.7485	in	S _{top} =	93.45	in ³
I _x =	595.92	in ⁴	S _{bott.} =	88.30	in ³	I _x =	595.92	in ⁴	S _{bott.} =	88.30	in ³
C _{top} =	6.3765	in	A =	22.7266	in ²	C _{top} =	6.3765	in	A =	22.7266	in ²
C _{bottom} =	6.7485	in	r _x =	5.1207	in	C _{bottom} =	6.7485	in	r _x =	5.1207	in
			Z =	106.74	in ³				Z =	106.74	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.3986	4.2275	22.8225	0.0931	0.9225	4.5942	4.6874
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			22.73		96.08	73.00		42.19	115.19
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.37	in ³	x-bar =	5.1500	in	S _{right} =	22.37	in ³
I _y =	115.19	in ⁴	S _{left} =	22.37	in ³	I _y =	115.19	in ⁴	S _{left} =	22.37	in ³
C _{right} =	5.1500	in	A =	22.7266	in ²	C _{right} =	5.1500	in	A =	22.7266	in ²
C _{left} =	5.1500	in	r _y =	2.2513	in	C _{left} =	5.1500	in	r _y =	2.2513	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	320.22 k-ft	320.22 k-ft
V	227.56 k	227.56 k

F_y =	36.00 ksi
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*Compact Section

SECTION C

Coped Stringer End S6-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 13.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

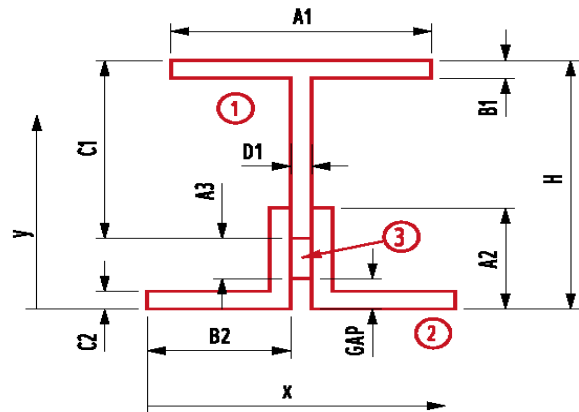
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 13.8750$ in
Gap = 0.6250 in



W16x77

Coped Stringer End S6-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	13.4950	105.6389	0.3768	6.3873	319.3602	319.7369
	Web		5.6830	6.8700	39.0419	73.8784	0.2377	0.3212	74.1996
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	6.8577	164.5998	164.6728
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	4.1077	101.2409	119.2409
3	Additional Plate		0.0000	0.6250	0.0000	0.0000	6.4827	0.0000	0.0000
Total			23.01		163.56	92.33		585.52	677.85
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S6-2 @ FB3



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	7.1077 in	S _{top} =	100.17 in ³	y-bar =	7.1077 in	S _{top} =	100.17 in ³
I _x =	677.85 in ⁴	S _{bott.} =	95.37 in ³	I _x =	677.85 in ⁴	S _{bott.} =	95.37 in ³
C _{top} =	6.7673 in	A =	23.0110 in ²	C _{top} =	6.7673 in	A =	23.0110 in ²
C _{bottom} =	7.1077 in	r _x =	5.4275 in	C _{bottom} =	7.1077 in	r _x =	5.4275 in
		Z =	114.75 in ³			Z =	114.75 in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.6830	4.2275	24.0247	0.0980	0.9225	4.8362	4.9343
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.01		97.28	73.00		42.43	115.44
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	5.1500 in	S _{right} =	22.41 in ³	x-bar =	5.1500 in	S _{right} =	22.41 in ³
I _y =	115.44 in ⁴	S _{left} =	22.41 in ³	I _y =	115.44 in ⁴	S _{left} =	22.41 in ³
C _{right} =	5.1500 in	A =	23.0110 in ²	C _{right} =	5.1500 in	A =	23.0110 in ²
C _{left} =	5.1500 in	r _y =	2.2398 in	C _{left} =	5.1500 in	r _y =	2.2398 in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	344.25 k-ft	344.25 k-ft
V	233.50 k	233.50 k

F_y = 36.00 ksi

*Compact Section

SECTION C

Coped Stringer End S6-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 13.5000$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

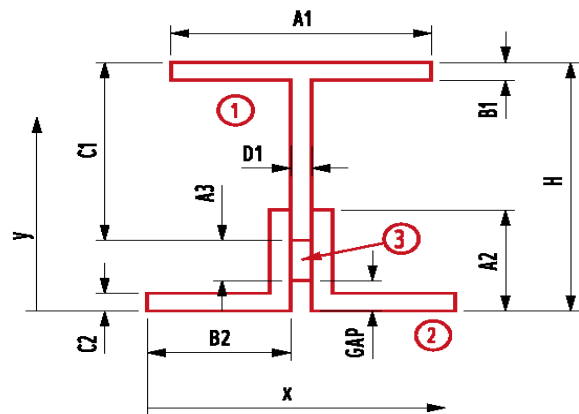
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 14.1250$ in
Gap = 0.6250 in



Coped Stringer End S6-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	13.7450	107.5959	0.3768	6.5225	333.0239	333.4007
	Web	5.7967	6.9950	40.5479	78.4040	0.2275	0.3001	78.7041
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	6.9725	170.1565	170.2294
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	4.2225	106.9784	124.9784
3	Additional Plate	0.0000	0.6250	0.0000	0.0000	6.5975	0.0000	0.0000
Total		23.12		167.02	96.85		610.46	707.31
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S6-2 @ FB4



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	7.2225 in	S _{top} =	102.47 in ³	y-bar =	7.2225 in	S _{top} =	102.47 in ³
I _x =	707.31 in ⁴	S _{bott.} =	97.93 in ³	I _x =	707.31 in ⁴	S _{bott.} =	97.93 in ³
C _{top} =	6.9025 in	A =	23.1247 in ²	C _{top} =	6.9025 in	A =	23.1247 in ²
C _{bottom} =	7.2225 in	r _x =	5.5305 in	C _{bottom} =	7.2225 in	r _x =	5.5305 in
		Z =	117.56 in ³			Z =	117.56 in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.7967	4.2275	24.5055	0.1000	0.9225	4.9330	5.0330
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.12		97.76	73.00		42.53	115.53
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	5.1500 in	S _{right} =	22.43 in ³	x-bar =	5.1500 in	S _{right} =	22.43 in ³
I _y =	115.53 in ⁴	S _{left} =	22.43 in ³	I _y =	115.53 in ⁴	S _{left} =	22.43 in ³
C _{right} =	5.1500 in	A =	23.1247 in ²	C _{right} =	5.1500 in	A =	23.1247 in ²
C _{left} =	5.1500 in	r _y =	2.2352 in	C _{left} =	5.1500 in	r _y =	2.2352 in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	352.68 k-ft	352.68 k-ft
V	235.88 k	235.88 k

F_y =	36.00 ksi
------------------------	------------------

*Compact Section

SECTION C

Coped Stringer End S6-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 14.0000$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

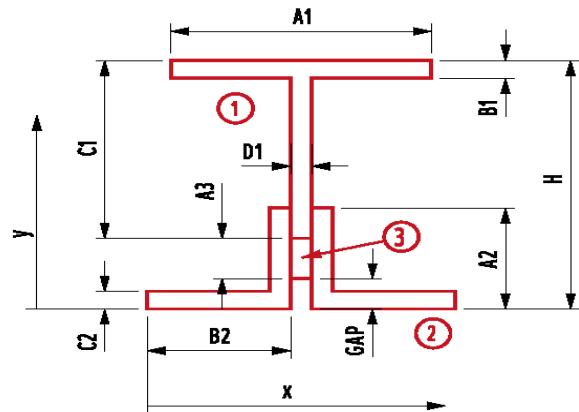
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 14.4375$ in
Gap = 0.4375 in



Coped Stringer End S6-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	14.0575	110.0421	0.3768	6.7163	353.1120	353.4888
	Web		6.0242	7.0575	42.5158	88.0023	0.2837	0.4848	88.4871
2	Horizontal Legs		3.5000	0.2500	0.8750	0.0729	7.0912	175.9973	176.0703
	Vertical Legs		6.0000	3.0000	18.0000	18.0000	4.3412	113.0755	131.0755
3	Additional Plate		0.0000	0.4375	0.0000	0.0000	6.9037	0.0000	0.0000
Total			23.35		171.43	106.45		642.67	749.12
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

SECTION C

Coped Stringer End S6-2 @ FB5



Made By NRF
Checked By SFH

Date 2/23/2012
Date 2/23/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	7.3412 in	S _{top} =	105.56 in ³	y-bar =	7.3412 in	S _{top} =	105.56 in ³
I _x =	749.12 in ⁴	S _{bott.} =	102.04 in ³	I _x =	749.12 in ⁴	S _{bott.} =	102.04 in ³
C _{top} =	7.0963 in	A =	23.3522 in ²	C _{top} =	7.0963 in	A =	23.3522 in ²
C _{bottom} =	7.3412 in	r _x =	5.6639 in	C _{bottom} =	7.3412 in	r _x =	5.6639 in
		Z =	121.56 in ³			Z =	121.56 in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		6.0242	4.2275	25.4673	0.1039	0.9225	5.1266	5.2306
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.35		98.72	73.01		42.72	115.73
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	5.1500 in	S _{right} =	22.47 in ³	x-bar =	5.1500 in	S _{right} =	22.47 in ³
I _y =	115.73 in ⁴	S _{left} =	22.47 in ³	I _y =	115.73 in ⁴	S _{left} =	22.47 in ³
C _{right} =	5.1500 in	A =	23.3522 in ²	C _{right} =	5.1500 in	A =	23.3522 in ²
C _{left} =	5.1500 in	r _y =	2.2262 in	C _{left} =	5.1500 in	r _y =	2.2262 in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	364.68 k-ft	364.68 k-ft
V	240.63 k	240.63 k

F_y = 36.00 ksi

*Compact Section



Made By DWC
Checked By CTG

Date 6/20/2012
Date 6/20/2012

Job No. P402110046

Calculations For **CUY-2-1441**

Revisions to Stringer Analysis

- ◆ Isolated continuous stringers have copes over intermediate supports. Because the stringers are not full depth in these locations, the full negative moment cannot develop.
- ◆ Per discussion with ODOT May 29, 2012, any continuous stringer that is coped over intermediate supports should be re-analyzed as simply supported.
- ◆ Because of the large volume of stringers that fit this condition, the results of the original analysis were evaluated in order to determine which stringers could potentially govern the stringer ratings. Calculations were performed for select stringers in order to determine governing load ratings for each section.
- ◆ Calculations for the revised stringers are included on the following page(s). Any data in the original rating calculations that has now been superceded remains in the volume for informational purposes, but has been crossed out.



Made By CTG
Checked By DWC

Date 5/30/2012
Date 5/30/2012

Job No. P402110046

Calculations For **CUY-2-1441**

Section C Stringers

- ◆ Changing from continuous to simple span will increase moment, Shear will increase at end supports, but decrease at interior supports
- ◆ The stringers in Section C will be controlled by moment, not shear

- ◆ S1 through S5 are coped at FB's 2, 3, 4, and 5
- ◆ S6 is coped at FB's 3, 4, and 5
- ◆ S1 to S3 are W16x89
- ◆ S4 to S6 are W16x77 (has a 17% lower moment capacity than W16x89)
- ◆ S6-1 rating factors will not change as it is continuous and not coped

- ◆ The stringers have the same interior transverse spacing
- ◆ A W16x77 has a 17% lower moment capacity than W16x89, the current live loads are similar (<10% difference)
- ◆ Therefore S4 or S5 in Unit 2 will control and should be compared to S6-1
- ◆ Input hinges near supports in MDX models to simulate simple spans

Revised Forces

Unit 1 - HS20

Stringer	MDX Girder	Positive Moment		Capacity (k-ft)	Rating Factor	
		DL (k-ft)	LL+I (k-ft)		Inventory	Operating
		S5-1	3			
S4-1	4	55.39	174.85	446.2	0.99	1.65
S3-1	5	65.34	198.51	523.9	1.02	1.7
S2-1	6	58.79	188.44	523.9	1.09	1.82
S1-1	7	35.98	105.09	523.9	2.09	3.48

Unit 2 - HS20

Stringer	MDX Girder	Positive Moment		Capacity (k-ft)	Rating Factor	
		DL (k-ft)	LL+I (k-ft)		Inventory	Operating
		S6-2	2			
S5-2	3	71.22	222.11	446.2	0.73	1.22
S4-2	4	69.71	210.83	446.2	0.78	1.3
S3-2	5	71.37	213.67	523.9	0.93	1.55
S2-2	6	61.28	197.77	523.9	1.04	1.73
S1-2	7	39.4	113.51	523.9	1.92	3.2

Therefore, determine rating factors for S4-1, S3-2, S4-2, and S5-2



Made By CTG
Checked By DWC

Date 5/30/2012
Date 5/30/2012

Job No. P402110046

Calculations For **CUY-2-1441**

Section C Stringers

Stringer 4-1 (MDX Girder 4)

Load Case	Positive Moment		Capacity (k-ft)	Rating Factor	
	DL (k-ft)	LL+I (k-ft)		Inventory	Operating
HS20	55.39	174.85	446.2	0.99	1.65
2F1	55.39	115.73	446.2	---	2.49
3F1	55.39	160.74	446.2	---	1.79
4F1	55.39	162.19	446.2	---	1.77
5C1	55.39	154.27	446.2	---	1.87

Stringer 3-2 (MDX Girder 5)

Load Case	Positive Moment		Capacity (k-ft)	Rating Factor	
	DL (k-ft)	LL+I (k-ft)		Inventory	Operating
HS20	71.37	213.67	523.9	0.93	1.55
2F1	71.37	136.21	523.9	---	2.43
3F1	71.37	191.39	523.9	---	1.73
4F1	71.37	196.64	523.9	---	1.69
5C1	71.37	186.09	523.9	---	1.78

Stringer 4-2 (MDX Girder 4)

Load Case	Positive Moment		Capacity (k-ft)	Rating Factor	
	DL (k-ft)	LL+I (k-ft)		Inventory	Operating
HS20	69.71	210.83	446.2	0.78	1.30
2F1	69.71	134.13	446.2	---	2.04
3F1	69.71	190.65	446.2	---	1.43
4F1	69.71	194.69	446.2	---	1.40
5C1	69.71	185.54	446.2	---	1.47

highlighted cells are governing for that load case

Stringer 5-2 (MDX Girder 3)

Load Case	Positive Moment		Capacity (k-ft)	Rating Factor	
	DL (k-ft)	LL+I (k-ft)		Inventory	Operating
HS20	71.22	222.11	446.2	0.73	1.22
2F1	71.22	129.99	446.2	---	2.09
3F1	71.22	188.12	446.2	---	1.45
4F1	71.22	201.83	446.2	---	1.35
5C1	71.22	182.78	446.2	---	1.49

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V						
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44											
Stringer F1-1											
0	0.00	0.10	0.03	6.69	19.52	738.00	3400.92	5669.34	207.60	4.70	7.83
0.75	4.46	12.51	1.47	6.29	18.85	738.00	26.97	44.96	207.60	4.88	8.13
2.88	17.14	47.76	5.56	5.17	16.94	738.00	6.91	11.51	207.60	5.46	9.11
5.77	29.88	81.13	11.14	3.66	14.42	738.00	3.97	6.62	207.60	6.48	10.81
8.65	38.25	98.34	16.71	2.14	11.52	738.00	3.23	5.38	207.60	8.19	13.66
11.54	42.25	105.90	22.29	0.63	10.01	738.00	2.97	4.96	207.60	9.52	15.87
14.42	41.88	99.43	27.87	2.57	11.39	738.00	3.17	5.28	207.60	8.26	13.78
17.3	32.30	90.14	25.94	4.08	14.81	738.00	3.56	5.93	207.60	6.29	10.49
20.19	18.34	68.71	24.02	5.60	16.79	738.00	4.79	7.98	207.60	5.50	9.17
23.07	0.00	31.11	22.09	7.11	20.25	738.00	10.93	18.22	207.60	4.51	7.52
25.95	-22.68	17.43	44.15	8.63	17.41	738.00	7.40	12.33	207.60	5.20	8.67
28.09	-42.72	8.04	69.55	9.75	21.70	738.00	4.52	7.54	207.60	4.14	6.90
28.84	-49.75	4.75	78.45	10.14	23.20	738.00	3.96	6.59	207.60	3.86	6.44
29.59	-44.02	10.09	74.36	9.01	21.23	738.00	4.22	7.03	207.60	4.25	7.09
30.86	-34.32	19.12	67.43	7.10	17.90	738.00	4.74	7.90	207.60	5.11	8.51
32.88	-21.04	38.03	62.88	6.04	15.38	738.00	5.21	8.68	207.60	5.99	9.98
34.9	-9.91	49.85	58.50	4.97	13.34	738.00	5.71	9.52	207.60	6.95	11.58
36.93	-0.92	57.35	54.12	3.91	13.63	738.00	5.92	9.87	207.60	6.85	11.41
38.95	5.93	69.89	49.71	2.07	8.86	738.00	4.82	8.03	207.60	10.66	17.77
40.97	9.04	66.16	39.77	1.01	9.36	738.00	5.06	8.43	207.60	10.16	16.93
42.99	10.00	59.81	29.82	0.06	9.57	738.00	5.59	9.31	207.60	9.99	16.66
45.01	8.82	50.19	19.88	1.12	12.82	738.00	6.67	11.12	207.60	7.41	12.35
47.04	5.48	29.82	9.93	2.18	15.17	738.00	11.29	18.83	207.60	6.22	10.37
48.31	2.03	11.07	3.69	2.85	16.37	738.00	30.61	51.02	207.60	5.74	9.57
49.06	0.00	0.00	0.00	3.24	17.08	738.00	N/A	N/A	207.60	5.49	9.15
HS20-44											
Stringer S1-1											
0	0.00	0.04	0.10	6.62	24.83	523.90	2414.29	4024.61	165.00	2.90	4.84
0.75	4.27	14.45	0.80	6.13	23.34	523.90	16.53	27.56	165.00	3.10	5.17
2.82	16.04	54.22	2.72	4.76	19.23	523.90	4.28	7.13	165.00	3.81	6.34
5.65	26.85	84.96	5.46	2.90	15.06	523.90	2.65	4.42	165.00	4.93	8.22
8.47	32.41	101.06	8.19	1.04	11.50	523.90	2.20	3.66	165.00	6.56	10.93
11.29	32.71	103.91	10.93	0.82	12.80	523.90	2.13	3.56	165.00	5.90	9.84
14.12	27.77	88.29	13.66	0.32	12.56	523.90	2.55	4.24	165.00	6.04	10.07
16.94	24.25	73.85	18.37	2.17	11.85	523.90	3.01	5.02	165.00	6.31	10.51
19.76	15.51	65.02	23.85	4.01	20.54	523.90	3.57	5.95	165.00	3.58	5.98
22.58	1.55	55.17	29.37	5.85	18.89	523.90	4.36	7.27	165.00	3.84	6.40
25.41	-17.64	42.89	63.46	7.70	21.58	523.90	3.64	6.06	165.00	3.31	5.52
27.48	-32.45	12.05	68.88	9.06	25.73	243.03	1.34	2.24	248.02	4.23	7.06
28.23	-37.82	0.87	70.84	9.47	27.23	243.03	1.26	2.10	248.02	3.99	6.65
28.98	-32.32	5.07	62.54	8.45	24.84	243.03	1.48	2.47	248.02	4.40	7.33
30.31	-22.58	12.51	47.82	6.64	20.61	523.90	4.77	7.94	165.00	3.50	5.83
32.4	-10.15	31.32	39.45	5.30	18.15	523.90	5.97	9.94	165.00	4.01	6.69
34.48	-0.52	53.07	32.64	3.95	18.51	523.90	4.54	7.57	165.00	3.98	6.63
36.56	6.30	68.43	25.82	2.60	15.35	523.90	3.49	5.81	165.00	4.85	8.09
38.64	10.36	59.57	19.00	2.36	14.36	523.90	3.95	6.58	165.00	5.20	8.66
40.73	13.97	58.72	15.20	1.01	11.15	523.90	3.97	6.62	165.00	6.77	11.28
42.81	14.56	62.33	11.40	0.34	14.65	523.90	3.73	6.22	165.00	5.18	8.63
44.89	12.45	65.79	7.60	1.69	12.65	523.90	3.56	5.93	165.00	5.93	9.89
46.98	7.54	52.55	4.59	3.03	15.28	523.90	4.51	7.52	165.00	4.86	8.10
48.31	2.72	18.95	1.66	3.89	19.29	215.85	5.16	8.61	201.17	4.69	7.81
49.06	0.00	0.00	0.00	4.38	21.55	215.85	N/A	N/A	201.17	4.18	6.97

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
	D	L+I	L-I	D	L+I						
0	0.00	0.04	0.11	7.96	38.23	523.90	2194.81	3658.74	165.00	1.86	3.11
0.75	5.23	22.91	1.68	7.43	36.30	523.90	10.40	17.34	165.00	1.97	3.29
2.75	19.19	83.90	5.86	6.01	31.16	523.90	2.74	4.57	165.00	2.32	3.88
5.5	33.04	137.06	11.74	4.07	25.09	523.90	1.62	2.70	165.00	2.93	4.89
8.25	41.55	169.40	17.62	2.12	20.37	523.90	1.28	2.13	165.00	3.67	6.12
10.99	44.71	180.20	23.50	0.18	19.55	523.90	1.19	1.99	165.00	3.88	6.47
13.74	42.52	150.91	29.36	2.25	17.31	523.90	1.43	2.38	165.00	4.31	7.19
16.49	33.68	126.83	37.90	4.18	21.02	523.90	1.74	2.91	165.00	3.50	5.83
19.24	19.52	110.63	46.44	6.11	32.58	523.90	2.06	3.46	165.00	2.22	3.70
21.99	0.00	88.05	54.98	8.04	31.54	523.90	2.74	4.57	165.00	2.26	3.76
24.74	-24.77	44.91	100.90	9.97	35.79	523.90	2.25	3.74	165.00	1.96	3.26
26.73	-43.96	13.92	113.66	11.35	41.18	273.51	0.88	1.46	256.24	2.70	4.51
27.48	-51.19	2.24	118.47	11.84	45.21	273.51	0.81	1.34	256.24	2.57	4.28
28.23	-44.16	8.04	107.03	10.73	39.93	273.51	0.93	1.55	256.24	2.80	4.66
29.64	-30.95	18.94	85.51	8.63	33.76	523.90	2.61	4.35	165.00	2.10	3.50
31.8	-13.96	54.11	70.10	7.13	30.05	523.90	3.32	5.54	165.00	2.39	3.98
33.96	-0.21	96.33	59.85	5.62	30.00	523.90	2.50	4.18	165.00	2.42	4.04
36.11	10.30	112.43	49.60	4.12	25.20	523.90	2.10	3.50	165.00	2.92	4.87
38.27	17.61	108.44	39.34	2.11	17.99	523.90	2.13	3.55	165.00	4.16	6.93
40.43	20.84	102.50	31.48	0.61	15.98	523.90	2.24	3.73	165.00	4.74	7.89
42.59	20.23	108.45	23.61	0.90	22.77	523.90	2.11	3.52	165.00	3.32	5.53
44.74	16.67	111.53	15.74	2.40	21.07	523.90	2.08	3.46	165.00	3.54	5.90
46.9	9.86	86.21	7.87	3.91	25.20	523.90	2.73	4.55	165.00	2.92	4.87
48.31	3.42	29.93	2.73	4.89	30.74	250.11	3.78	6.30	212.13	3.08	5.14
49.06	0.00	0.00	0.00	5.41	33.69	250.11	N/A	N/A	212.13	2.81	4.66
0	0.00	0.04	0.07	7.83	38.05	523.90	3448.98	5749.45	165.00	1.88	3.13
0.75	5.17	23.12	1.93	7.30	36.07	523.90	10.31	17.18	165.00	1.99	3.31
2.67	18.40	82.21	6.69	5.93	30.99	523.90	2.80	4.67	165.00	2.34	3.90
5.55	31.71	135.69	13.40	4.03	25.40	523.90	1.64	2.73	165.00	2.90	4.83
8.02	39.95	168.04	20.11	2.13	20.40	523.90	1.29	2.16	165.00	3.66	6.11
10.69	43.41	174.43	26.82	0.23	19.44	523.90	1.24	2.06	165.00	3.90	6.51
13.36	41.18	149.43	33.52	2.50	17.92	523.90	1.45	2.42	165.00	4.16	6.93
16.04	31.96	123.86	41.86	4.39	22.10	523.90	1.80	3.00	165.00	3.32	5.54
18.71	17.69	108.70	50.19	6.28	33.38	523.90	2.42	3.54	165.00	2.17	3.61
21.38	-1.64	86.86	58.58	8.17	32.61	523.90	2.77	4.61	165.00	2.18	3.64
24.05	-26.03	59.73	101.00	10.05	36.96	523.90	2.24	3.73	165.00	1.89	3.16
25.98	-45.11	18.85	114.90	11.36	42.18	304.92	0.99	1.65	267.20	2.76	4.60
26.73	-52.52	2.97	120.30	11.89	47.21	304.92	0.91	1.51	267.20	2.62	4.37
27.48	-45.27	9.65	107.73	10.87	40.75	304.92	1.05	1.75	267.20	2.86	4.77
28.96	-30.95	22.83	82.92	8.87	33.91	523.90	2.69	4.48	165.00	2.09	3.48
31.19	-12.89	55.94	70.43	7.30	30.53	523.90	3.32	5.53	165.00	2.35	3.91
33.43	1.67	99.10	60.66	5.74	27.80	523.90	2.43	4.04	165.00	2.61	4.35
35.66	12.73	119.22	50.88	4.17	25.44	523.90	1.96	3.27	165.00	2.89	4.82
37.89	20.16	116.58	41.13	2.10	15.77	523.90	1.97	3.28	165.00	4.74	7.90
40.13	23.70	109.58	32.91	0.53	16.65	523.90	2.08	3.46	165.00	4.55	7.58
42.36	22.54	117.94	24.68	1.04	23.50	523.90	1.93	3.22	165.00	3.21	5.35
44.59	18.47	118.59	16.46	2.61	21.76	523.90	1.94	3.24	165.00	3.42	5.71
46.82	10.89	90.67	8.24	4.18	25.82	523.90	2.59	4.32	165.00	2.85	4.75
48.31	3.65	30.36	2.76	5.22	31.53	291.21	4.35	7.25	225.83	3.20	5.34
49.06	0.00	0.00	0.00	5.75	34.41	291.21	N/A	N/A	225.83	2.92	4.87

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44 Stringer S4-1	0	0.00	0.05	0.08	7.08	36.74	446.20	2570.28	4284.65	142.30	1.67	2.78
	0.75	4.63	22.29	1.93	6.56	34.72	446.20	9.10	15.17	142.30	1.78	2.96
	2.6	16.04	77.14	6.49	5.27	29.74	446.20	2.54	4.24	142.30	2.10	3.50
	5.19	27.37	126.78	13.00	3.46	24.40	446.20	1.49	2.49	142.30	2.60	4.34
	7.79	33.99	153.56	19.51	1.64	18.72	446.20	1.21	2.01	142.30	3.45	5.75
	10.39	35.90	153.46	26.01	0.17	17.58	446.20	1.20	2.00	142.30	3.72	6.21
	12.98	33.09	133.73	32.49	2.00	17.12	446.20	1.39	2.32	142.30	3.76	6.27
	15.58	25.54	111.82	41.48	3.81	19.92	446.20	1.70	2.84	142.30	3.18	5.30
	18.18	13.30	97.90	50.46	5.61	31.15	446.20	2.02	3.37	142.30	2.00	3.33
	20.78	-3.63	80.13	59.44	7.42	30.23	446.20	2.54	4.23	142.30	2.02	3.37
	23.37	-25.27	46.25	96.77	9.22	34.69	446.20	1.97	3.28	142.30	1.73	2.89
	25.22	-42.48	15.67	110.00	10.45	39.99	294.12	1.00	1.67	239.95	2.61	4.35
	25.97	-49.46	3.27	115.36	11.00	37.14	294.12	0.92	1.53	239.95	2.47	4.11
	26.72	-42.44	9.31	102.85	10.24	39.35	294.12	1.07	1.78	239.95	2.65	4.43
	28.28	-27.85	21.86	76.83	8.56	33.54	446.20	2.46	4.10	142.30	1.80	3.00
	30.59	-9.93	59.57	64.82	6.96	30.01	446.20	3.08	5.14	142.30	2.05	3.41
	32.9	4.29	106.22	55.30	5.36	29.66	446.20	1.91	3.19	142.30	2.10	3.51
	35.2	14.83	124.44	45.78	3.76	24.12	446.20	1.58	2.64	142.30	2.63	4.38
	37.51	21.47	115.45	36.29	2.13	18.10	446.20	1.67	2.78	142.30	3.55	5.92
	39.82	24.34	110.31	29.03	0.53	15.91	446.20	1.73	2.89	142.30	4.10	6.84
	42.13	23.91	121.18	21.78	1.07	23.52	446.20	1.58	2.63	142.30	2.76	4.60
	44.44	19.58	120.87	14.52	2.68	21.30	446.20	1.60	2.67	142.30	3.00	5.01
	46.75	11.56	92.85	7.27	4.28	25.35	446.20	2.14	3.57	142.30	2.49	4.14
	48.31	3.75	30.15	2.36	5.36	31.41	301.56	4.54	7.56	221.62	3.15	5.25
49.06	0.00	0.00	0.00	5.88	34.33	301.56	N/A	N/A	221.62	2.87	4.79	
HS20-44 Stringer S5-1	0	0.00	0.04	0.07	7.11	37.28	446.20	2937.46	4896.74	142.30	1.64	2.71
	0.75	4.68	23.15	2.38	6.59	35.37	446.20	8.76	14.60	142.30	1.74	2.90
	2.52	15.72	77.70	7.82	5.36	30.85	446.20	2.53	4.21	142.30	2.02	3.37
	5.01	27.01	129.62	15.66	3.60	25.72	446.20	1.46	2.44	142.30	2.47	4.11
	7.56	33.89	154.93	23.51	1.85	20.18	446.20	1.20	1.99	142.30	3.19	5.33
	10.08	36.95	156.19	31.35	0.10	18.03	446.20	1.18	1.96	142.30	3.63	6.06
	12.61	34.40	144.57	39.22	2.80	19.25	446.20	1.28	2.13	142.30	3.32	5.53
	15.13	25.13	120.55	48.57	4.55	21.42	446.20	1.58	2.63	142.30	2.93	4.89
	17.65	11.46	105.85	57.92	6.29	32.71	446.20	1.68	3.13	142.30	1.89	3.15
	20.17	-6.63	82.84	67.26	8.04	31.42	446.20	2.43	4.06	142.30	1.93	3.22
	22.69	-29.12	29.12	102.88	9.79	35.93	446.20	1.83	3.05	142.30	1.66	2.77
	24.46	-46.87	10.58	119.03	11.00	41.30	321.72	1.01	1.68	247.07	2.60	4.33
	25.21	-54.39	2.72	125.87	11.51	38.57	321.72	0.92	1.53	247.07	2.45	4.09
	25.96	-46.73	8.71	111.66	10.85	40.96	321.72	1.08	1.80	247.07	2.62	4.37
	27.6	-29.97	21.81	80.58	9.42	35.26	446.20	2.33	3.88	142.30	1.70	2.83
	29.98	-9.47	63.19	68.18	7.77	31.88	446.20	2.93	4.89	142.30	1.91	3.19
	32.37	7.10	116.67	58.74	6.12	30.78	446.20	1.73	2.88	142.30	2.01	3.35
	34.75	19.74	139.26	49.29	4.48	24.66	446.20	1.40	2.34	142.30	2.55	4.25
	37.13	28.30	133.15	39.86	1.74	17.04	446.20	1.42	2.36	142.30	3.79	6.31
	39.52	30.49	126.29	31.89	0.09	17.00	446.20	1.48	2.47	142.30	3.85	6.43
	41.9	28.74	135.46	23.93	1.56	25.18	446.20	1.39	2.32	142.30	2.57	4.28
	44.29	23.05	131.06	15.96	3.21	22.44	446.20	1.46	2.44	142.30	2.84	4.73
	46.67	13.42	98.99	7.99	4.86	26.50	446.20	2.00	3.33	142.30	2.36	3.94
	48.31	4.21	31.06	2.51	5.99	32.99	340.95	4.98	8.30	233.50	3.15	5.26
49.06	0.00	0.00	0.00	6.51	35.96	340.95	N/A	N/A	233.50	2.88	4.81	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
HS20-44 Stringer S6-1	0	0.00	0.05	0.15	5.21	23.02	306.00	940.09	1567.13	98.70	1.84	3.07
	0.75	3.31	13.86	1.13	4.74	21.64	306.00	10.03	16.73	98.70	1.97	3.29
	2.45	10.81	45.15	3.35	3.66	18.50	306.00	2.98	4.97	98.70	2.34	3.90
	4.89	17.88	70.97	6.72	2.12	14.53	306.00	1.84	3.06	98.70	3.04	5.07
	7.34	21.17	81.12	10.09	0.57	11.03	306.00	1.58	2.64	98.70	4.09	6.82
	9.79	20.69	79.51	13.46	0.97	13.10	306.00	1.62	2.70	98.70	3.43	5.71
	12.23	16.42	69.62	16.82	0.63	12.01	306.00	1.88	3.14	98.70	3.76	6.26
	14.68	13.00	67.11	22.37	2.17	11.52	306.00	1.99	3.31	98.70	3.84	6.39
	17.13	5.80	60.38	28.48	3.71	15.06	306.00	2.28	3.80	98.70	2.87	4.79
	19.57	-5.18	43.44	34.66	5.26	19.20	306.00	3.17	5.29	98.70	2.20	3.68
	22.02	-19.93	22.77	45.87	6.80	23.06	306.00	2.81	4.69	98.70	1.80	2.99
	23.71	-32.76	7.62	65.55	7.87	24.77	306.00	1.85	3.09	98.70	1.65	2.74
	24.46	-38.45	0.89	74.29	8.35	25.53	306.00	1.59	2.65	98.70	1.59	2.64
	25.21	-32.80	6.40	65.79	7.87	24.31	306.00	1.84	3.08	98.70	1.68	2.80
	26.92	-19.92	18.97	46.40	6.76	21.54	306.00	2.78	4.64	98.70	1.92	3.21
	29.38	-5.21	39.26	34.97	5.21	18.01	306.00	3.51	5.85	98.70	2.35	3.92
	31.84	5.68	56.30	28.82	3.65	14.25	306.00	2.44	4.07	98.70	3.04	5.07
	34.3	12.76	62.57	22.68	2.10	12.36	306.00	2.13	3.55	98.70	3.58	5.96
	36.76	16.02	63.67	16.59	2.58	15.16	306.00	2.06	3.44	98.70	2.90	4.83
	39.22	20.45	71.67	13.27	1.03	13.08	306.00	1.80	2.99	98.70	3.43	5.72
41.68	21.07	75.25	9.96	0.53	9.42	306.00	1.71	2.84	98.70	4.79	7.99	
44.14	17.86	64.87	6.64	2.08	8.43	306.00	2.01	3.35	98.70	5.25	8.75	
46.6	10.84	38.05	3.32	3.63	11.73	306.00	3.54	5.89	98.70	3.69	6.15	
48.31	3.30	11.60	1.01	4.71	19.75	306.00	11.99	19.98	98.70	2.16	3.60	
49.06	0.00	0.00	0.00	5.18	23.27	306.00	N/A	N/A	98.70	1.82	3.04	
HS20-44 Stringer F2-1	0	0.00	0.13	0.03	5.03	18.53	1028.40	3645.52	6077.07	190.80	4.58	7.64
	0.75	3.30	11.89	2.56	4.63	17.77	1028.40	39.71	66.19	190.80	4.79	7.99
	2.39	10.53	37.59	8.09	3.76	16.11	1028.40	12.44	20.74	190.80	5.32	8.87
	4.77	17.96	63.47	16.17	2.48	13.64	1028.40	7.30	12.16	190.80	6.34	10.56
	7.16	22.35	77.93	24.26	1.20	11.27	1028.40	5.91	9.85	190.80	7.74	12.90
	9.54	23.69	81.84	32.35	0.08	8.99	1028.40	5.62	9.36	190.80	9.78	16.30
	11.93	21.98	82.11	40.45	2.50	12.60	1028.40	5.61	9.35	190.80	6.86	11.43
	14.31	14.48	70.73	41.74	3.78	12.00	1028.40	6.58	10.97	190.80	7.14	11.90
	16.7	3.93	60.29	43.03	5.06	14.96	1028.40	7.82	13.04	190.80	5.67	9.46
	19.09	-9.66	38.23	44.31	6.34	17.55	1028.40	10.56	17.61	190.80	4.79	7.99
	21.47	-26.31	16.90	47.90	7.62	19.85	1028.40	9.56	15.94	190.80	4.20	7.00
	23.11	-39.83	8.27	64.99	8.49	21.22	1028.40	6.93	11.54	190.80	3.90	6.51
	23.86	-46.01	4.33	72.80	8.89	21.85	1028.40	6.13	10.22	190.80	3.78	6.30
	24.61	-39.60	8.02	64.69	8.59	21.40	1028.40	6.96	11.60	190.80	3.87	6.45
	26.38	-24.48	16.72	45.54	7.87	20.35	1028.40	10.08	16.81	190.80	4.09	6.82
	28.9	-6.35	38.78	38.11	6.52	18.10	1028.40	12.12	20.21	190.80	4.64	7.74
	31.42	8.37	64.44	37.46	5.17	15.43	1028.40	7.28	12.13	190.80	5.50	9.16
	33.94	19.70	78.80	36.81	3.82	12.55	1028.40	5.86	9.78	190.80	6.82	11.38
	36.46	27.62	86.39	36.16	2.47	12.74	1028.40	5.29	8.83	190.80	6.79	11.31
	38.98	28.90	87.64	28.93	0.17	8.99	1028.40	5.21	8.69	190.80	9.77	16.29
41.5	26.78	83.75	21.70	1.52	11.36	1028.40	5.47	9.11	190.80	7.66	12.77	
44.02	21.26	67.98	14.46	2.87	13.73	1028.40	6.78	11.31	190.80	6.28	10.47	
46.54	12.33	40.15	7.23	4.22	16.18	1028.40	11.62	19.37	190.80	5.28	8.80	
48.31	3.67	11.95	2.15	5.17	17.96	1028.40	39.48	65.81	190.80	4.72	7.88	
49.06	0.00	0.00	0.00	5.57	18.71	1028.40	N/A	N/A	190.80	4.52	7.54	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
			L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.09	0.02	5.78	18.74	738.00	3778.80	6299.26	207.60	4.92	8.20
0.75	3.85	12.08	2.00	5.39	18.22	738.00	27.97	46.62	207.60	5.07	8.46
2.5	12.84	40.05	6.63	4.47	17.01	738.00	8.30	13.84	207.60	5.47	9.11
5	22.36	67.93	13.28	3.15	14.45	738.00	4.81	8.02	207.60	6.49	10.82
7.5	28.60	83.03	19.92	1.84	11.06	738.00	3.89	6.48	207.60	8.55	14.25
10	31.56	85.52	26.57	0.53	10.33	738.00	3.76	6.26	207.60	9.23	15.39
12.5	31.23	85.70	33.22	2.27	12.62	738.00	3.75	6.25	207.60	7.47	12.46
15	23.90	75.89	33.06	3.59	15.79	738.00	4.29	7.16	207.60	5.92	9.87
17.5	13.29	61.96	32.91	4.90	16.21	738.00	5.36	8.94	207.60	5.72	9.54
20	-0.61	36.42	33.08	6.22	19.94	738.00	9.33	15.55	207.60	4.61	7.69
22.5	-17.79	23.32	44.75	7.53	22.01	738.00	7.36	12.27	207.60	4.14	6.90
24.25	-32.12	20.47	63.56	8.45	23.03	738.00	5.05	8.42	207.60	3.94	6.56
25	-38.26	19.25	71.62	8.84	23.46	738.00	4.43	7.38	207.60	3.85	6.42
25.75	-33.35	21.05	64.99	7.96	21.97	738.00	4.93	8.21	207.60	4.14	6.90
27.53	-21.71	25.31	49.27	5.87	18.45	738.00	6.64	11.07	207.60	4.99	8.33
30.06	-8.54	40.10	43.08	4.54	16.05	738.00	7.78	12.96	207.60	5.79	9.65
32.6	1.27	58.52	39.02	3.21	12.64	738.00	5.80	9.67	207.60	7.42	12.36
35.13	7.71	66.39	34.97	1.88	11.54	738.00	5.05	8.42	207.60	8.19	13.66
37.66	10.78	69.03	30.97	0.28	10.26	738.00	4.83	8.06	207.60	9.31	15.52
40.19	8.40	66.58	32.21	1.61	11.59	738.00	5.03	8.39	207.60	8.17	13.62
42.73	2.65	58.82	35.78	2.94	12.77	738.00	5.75	9.59	207.60	7.35	12.26
45.26	-6.47	39.41	39.34	4.27	16.33	738.00	8.53	14.22	207.60	5.70	9.50
47.79	-18.96	25.74	44.96	5.60	17.52	738.00	7.31	12.19	207.60	5.27	8.78
49.57	-30.11	22.60	62.41	7.55	20.78	738.00	5.16	8.60	207.60	4.39	7.31
50.32	-34.81	21.28	69.76	8.37	22.15	738.00	4.58	7.63	207.60	4.09	6.82
51.07	-29.00	21.92	61.62	7.97	21.64	738.00	5.24	8.73	207.60	4.20	7.00
52.71	-16.30	23.32	43.83	7.11	20.51	738.00	7.54	12.56	207.60	4.46	7.43
55.1	-0.80	35.62	33.88	5.86	18.43	738.00	9.53	15.89	207.60	5.00	8.34
57.49	11.70	58.45	34.34	4.60	15.83	738.00	5.70	9.50	207.60	5.87	9.78
59.88	21.20	70.06	35.02	3.35	13.94	738.00	4.67	7.79	207.60	6.72	11.20
62.27	27.68	81.83	35.69	0.82	7.60	738.00	3.95	6.59	207.60	12.52	20.88
64.66	28.15	79.41	28.55	0.43	9.41	738.00	4.07	6.79	207.60	10.14	16.90
67.05	25.62	77.69	21.41	1.69	10.66	738.00	4.18	6.97	207.60	8.88	14.80
69.44	20.08	64.02	14.27	2.94	14.17	738.00	5.12	8.54	207.60	6.63	11.05
71.83	11.54	37.92	7.14	4.20	16.62	738.00	8.79	14.65	207.60	5.60	9.34
73.47	3.62	11.90	2.24	5.06	17.95	738.00	28.40	47.34	207.60	5.16	8.60
74.22	0.00	0.00	0.00	5.46	18.56	738.00	N/A	N/A	207.60	4.98	8.30

HS20-44

Stringer F1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.03	0.08	5.74	22.99	215.85	1243.38	2072.71	201.17	3.88	6.47
0.75	3.69	12.65	0.81	5.25	21.32	215.85	7.69	12.82	201.17	4.20	7.00
2.5	12.31	42.10	2.52	4.12	17.43	523.90	5.56	9.27	165.00	4.22	7.04
5	20.60	70.21	5.05	2.50	14.19	523.90	3.26	5.44	165.00	5.25	8.76
7.5	24.83	93.75	7.59	0.89	15.97	523.90	2.42	4.03	165.00	4.73	7.88
10	25.03	100.77	10.12	0.73	10.43	523.90	2.25	3.75	165.00	7.25	12.08
12.5	19.36	73.32	12.66	2.36	18.14	523.90	3.13	5.23	165.00	4.11	6.86
15	16.30	60.27	17.28	2.04	15.53	523.90	3.84	6.41	165.00	4.82	8.03
17.5	9.15	52.08	22.48	3.67	20.39	523.90	4.53	7.55	165.00	3.62	6.04
20	-2.10	44.56	31.26	5.30	18.56	523.90	5.39	8.95	165.00	3.93	6.54
22.5	-17.43	40.35	64.67	6.93	21.01	523.90	3.57	5.95	165.00	3.42	5.70
24.25	-28.62	19.06	70.12	8.02	25.67	204.30	1.10	1.83	234.31	4.02	6.70
25	-33.41	9.85	72.45	8.48	27.66	204.30	1.02	1.71	234.31	3.72	6.20
25.75	-28.36	13.60	63.96	7.71	25.18	204.30	1.21	2.01	234.31	4.11	6.84
27.47	-16.78	22.19	44.50	5.93	19.48	523.90	5.20	8.67	165.00	3.72	6.20
29.94	-4.08	43.24	36.01	4.34	17.44	523.90	5.53	9.21	165.00	4.21	7.02
32.41	4.68	68.93	28.50	2.75	19.70	523.90	3.46	5.77	165.00	3.78	6.29
34.89	9.50	82.44	22.17	1.15	12.42	523.90	2.86	4.77	165.00	6.07	10.11
37.36	8.14	59.44	13.74	0.60	11.53	523.90	3.98	6.63	165.00	6.56	10.94
39.83	7.62	51.51	18.80	1.01	12.53	523.90	4.60	7.67	165.00	6.02	10.04
42.3	3.10	45.85	25.56	2.63	19.15	523.90	5.23	8.71	165.00	3.89	6.48
44.77	-5.42	41.87	33.54	4.24	16.26	523.90	5.69	9.48	165.00	4.52	7.54
47.24	-17.93	41.66	64.58	5.85	16.10	523.90	3.57	5.95	165.00	4.51	7.51
48.96	-26.97	20.30	67.67	7.70	22.65	196.47	1.10	1.83	231.57	4.51	7.52
49.71	-30.91	10.99	69.02	8.50	25.50	196.47	1.04	1.74	231.57	3.99	6.64
50.46	-25.15	14.58	59.88	8.02	24.39	196.47	1.26	2.10	231.57	4.18	6.96
52.17	-12.01	22.79	39.05	6.92	21.87	523.90	6.00	10.00	165.00	3.29	5.48
54.62	3.02	44.49	27.74	5.34	19.26	523.90	5.39	8.95	165.00	3.78	6.30
57.07	14.28	75.21	22.48	3.77	19.50	523.90	3.10	5.16	165.00	3.78	6.31
59.52	21.48	91.67	18.05	2.19	14.30	523.90	2.49	4.16	165.00	5.23	8.71
61.97	22.62	78.11	13.56	2.16	14.68	523.90	2.92	4.86	165.00	5.09	8.49
64.42	25.95	80.89	10.85	0.55	11.38	523.90	2.79	4.66	165.00	6.65	11.09
66.87	25.31	83.06	8.13	1.07	16.09	523.90	2.72	4.54	165.00	4.69	7.81
69.32	20.71	80.46	5.42	2.68	13.37	523.90	2.85	4.74	165.00	5.57	9.28
71.77	12.15	63.28	3.80	4.30	15.88	523.90	3.70	6.17	165.00	4.63	7.71
73.47	3.72	19.37	1.16	5.42	20.72	523.90	12.35	20.58	165.00	3.51	5.96
74.22	0.00	0.00	0.00	5.92	22.86	523.90	N/A	N/A	165.00	3.17	5.29

HS20-44

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.03	0.07	7.19	35.80	250.11	1646.54	2744.79	212.13	2.61	4.35
0.75	4.73	20.63	1.66	6.67	33.59	250.11	5.45	9.09	212.13	2.79	4.65
2.5	15.77	68.69	5.38	5.44	28.44	523.90	3.38	5.63	165.00	2.56	4.27
5	27.19	117.56	10.77	3.70	23.65	523.90	1.92	3.19	165.00	3.12	5.20
7.5	34.26	156.74	16.17	1.95	24.59	523.90	1.41	2.35	165.00	3.04	5.08
10	36.96	165.66	21.56	0.21	18.63	523.90	1.32	2.21	165.00	4.07	6.79
12.5	33.59	128.82	26.96	1.80	25.52	523.90	1.72	2.86	165.00	2.94	4.90
15	26.90	107.47	34.93	3.55	26.79	523.90	2.10	3.49	165.00	2.76	4.60
17.5	15.81	95.38	42.90	5.30	31.17	523.90	2.43	4.05	165.00	2.34	3.90
20	0.32	75.58	50.88	7.06	30.43	523.90	3.19	5.32	165.00	2.36	3.93
22.5	-19.57	60.32	97.83	8.81	33.94	523.90	2.35	3.91	165.00	2.08	3.48
24.25	-34.34	32.84	107.84	9.99	40.44	243.03	0.85	1.41	248.02	2.68	4.47
25	-40.67	17.63	112.13	10.50	43.22	243.03	0.78	1.30	248.02	2.50	4.17
25.75	-34.90	23.85	98.84	9.37	40.05	243.03	0.92	1.53	248.02	2.71	4.52
27.4	-22.21	37.54	69.91	6.87	33.09	523.90	3.26	5.44	165.00	2.17	3.62
29.79	-7.74	63.31	54.38	5.20	27.66	523.90	3.74	6.23	165.00	2.64	4.39
32.19	2.73	83.19	43.29	3.54	22.91	523.90	2.88	4.81	165.00	3.23	5.38
34.59	9.21	91.79	32.20	1.87	17.43	523.90	2.57	4.28	165.00	4.30	7.17
36.98	11.68	87.96	21.63	0.03	12.35	523.90	2.67	4.44	165.00	4.14	6.91
39.38	9.60	90.61	29.74	1.70	17.21	523.90	2.60	4.34	165.00	4.34	7.24
41.78	3.53	80.77	39.86	3.21	21.74	523.90	2.96	4.94	165.00	3.40	5.68
44.17	-6.54	62.36	49.98	5.03	27.98	523.90	3.81	6.35	165.00	2.61	4.35
46.57	-20.60	25.92	66.45	6.70	33.64	523.90	3.45	5.75	165.00	2.14	3.57
48.22	-33.02	21.54	95.64	9.37	39.70	243.03	0.96	1.61	248.02	2.74	4.56
48.97	-38.67	19.55	108.91	10.59	42.45	243.03	0.88	1.36	248.02	2.54	4.24
49.72	-31.37	25.79	96.11	10.07	39.87	243.03	0.97	1.62	248.02	2.72	4.53
51.49	-14.15	49.51	65.90	8.83	33.77	523.90	3.53	5.89	165.00	2.09	3.49
54.02	5.94	78.69	52.77	7.08	30.33	523.90	3.02	5.04	165.00	2.37	3.95
56.54	21.60	133.48	44.23	5.32	29.99	523.90	1.71	2.85	165.00	2.43	4.05
59.07	32.81	158.32	35.69	3.56	22.45	523.90	1.40	2.34	165.00	3.29	5.49
61.6	37.37	131.69	27.17	1.49	15.70	523.90	1.66	2.77	165.00	4.79	7.98
64.12	38.87	134.28	21.73	0.30	18.03	523.90	1.62	2.71	165.00	4.21	7.01
66.65	35.85	139.60	16.30	2.09	24.21	523.90	1.58	2.63	165.00	3.09	5.15
69.17	28.31	134.84	10.86	3.88	21.95	523.90	1.66	2.78	165.00	3.36	5.60
71.7	16.26	103.57	5.42	5.67	26.26	523.90	2.24	3.73	165.00	2.77	4.61
73.47	4.84	30.82	1.61	6.92	33.23	523.90	7.74	12.90	165.00	2.16	3.64
74.22	0.00	0.00	0.00	7.45	36.19	523.90	N/A	N/A	165.00	1.98	3.30

HS20-44

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.05	7.55	36.38	291.21	2683.96	4474.17	225.83	2.74	4.56
0.75	5.01	21.17	1.76	7.03	34.21	291.21	6.20	10.33	225.83	2.92	4.87
2.5	16.69	70.52	5.74	5.80	29.15	523.90	3.28	5.47	165.00	2.49	4.15
5	28.98	121.13	11.50	4.04	24.38	523.90	1.85	3.08	165.00	3.02	5.03
7.5	36.88	161.25	17.25	2.28	24.98	523.90	1.36	2.27	165.00	2.99	4.98
10	40.38	170.40	23.01	0.52	19.35	523.90	1.27	2.13	165.00	3.91	6.52
12.5	38.09	135.36	28.77	2.16	25.87	523.90	1.62	2.69	165.00	2.89	4.82
15	30.47	112.91	35.63	3.93	28.32	523.90	1.98	3.29	165.00	2.60	4.34
17.5	18.44	99.01	42.50	5.69	32.03	523.90	2.33	3.88	165.00	2.27	3.78
20	1.97	80.92	50.09	7.46	31.89	523.90	2.97	4.98	165.00	2.24	3.74
22.5	-18.91	65.17	99.34	9.22	35.41	523.90	2.32	3.86	165.00	1.99	3.32
24.25	-34.79	34.69	111.77	10.42	41.64	270.45	0.93	1.55	237.58	2.48	4.13
25	-41.59	21.62	117.09	10.94	44.31	270.45	0.85	1.42	237.58	2.32	3.87
25.75	-35.88	27.78	104.54	9.60	41.11	270.45	0.99	1.64	237.58	2.52	4.21
27.32	-23.94	40.67	78.26	6.79	34.41	523.90	2.90	4.84	165.00	2.09	3.49
29.64	-10.06	63.84	62.56	5.17	28.70	523.90	3.69	6.15	165.00	2.54	4.24
31.96	0.00	90.29	51.19	3.54	23.39	523.90	2.67	4.46	165.00	3.16	5.27
34.28	6.38	97.88	39.82	1.91	18.68	523.90	2.43	4.05	165.00	4.02	6.69
36.61	8.92	94.05	30.12	0.33	15.42	523.90	2.51	4.18	165.00	4.62	7.70
38.93	6.26	97.01	38.67	1.96	18.15	523.90	2.45	4.08	165.00	4.12	6.86
41.25	-0.18	88.55	49.80	3.69	22.72	523.90	2.73	4.54	165.00	3.25	5.42
43.57	-10.40	63.48	60.92	5.21	29.08	523.90	3.71	6.18	165.00	2.51	4.18
45.89	-24.39	34.08	75.88	6.84	34.42	523.90	2.99	4.98	165.00	2.09	3.48
47.46	-36.42	26.26	106.54	9.90	42.03	270.45	0.99	1.66	237.58	2.46	4.11
48.21	-42.17	22.52	116.76	11.36	45.66	270.45	0.85	1.42	237.58	2.25	3.75
48.96	-34.33	27.18	102.37	10.84	42.53	270.45	1.02	1.69	237.58	2.42	4.04
50.81	-14.98	33.66	66.86	9.54	34.80	523.90	3.48	5.80	165.00	2.02	3.37
53.41	7.47	77.56	49.13	7.72	31.39	523.90	3.06	5.05	165.00	2.27	3.79
56.01	25.27	136.27	41.81	5.89	30.99	523.90	1.66	2.77	165.00	2.34	3.90
58.62	38.14	164.21	34.50	4.07	24.19	523.90	1.33	2.22	165.00	3.04	5.07
61.22	44.39	139.62	27.23	1.19	17.12	523.90	1.54	2.57	165.00	4.40	7.33
63.82	45.09	144.26	21.78	0.66	18.51	523.90	1.49	2.48	165.00	4.09	6.81
66.42	40.98	147.99	16.33	2.51	24.62	523.90	1.47	2.44	165.00	3.93	5.05
69.02	32.05	142.32	10.88	4.35	22.47	523.90	1.56	2.60	165.00	3.27	5.45
71.62	18.32	108.90	5.43	6.20	27.04	523.90	2.12	3.53	165.00	2.67	4.46
73.47	5.28	31.41	1.57	7.52	34.27	523.90	7.58	12.64	165.00	2.09	3.48
74.22	0.00	0.00	0.00	8.05	37.20	523.90	N/A	N/A	165.00	1.91	3.19

HS20-44

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.03	0.05	7.23	35.67	301.56	2779.35	4633.18	221.62	2.74	4.57
0.75	4.77	20.51	1.42	6.71	33.44	301.56	6.63	11.06	221.62	2.93	4.89
2.5	15.90	68.31	4.60	5.49	28.24	446.20	2.87	4.79	142.30	2.21	3.68
5	27.46	116.02	9.23	3.76	23.40	446.20	1.63	2.72	142.30	2.71	4.51
7.5	34.69	153.26	13.86	2.03	24.20	446.20	1.21	2.01	142.30	2.66	4.43
10	37.59	161.20	18.48	0.29	17.97	446.20	1.14	1.89	142.30	3.64	6.07
12.5	34.87	124.97	23.11	1.58	25.40	446.20	1.48	2.46	142.30	2.54	4.24
15	28.75	105.67	29.62	3.32	26.91	446.20	1.78	2.97	142.30	2.36	3.94
17.5	18.27	93.28	36.30	5.06	31.14	446.20	2.09	3.48	142.30	2.01	3.35
20	3.43	82.00	45.38	6.80	30.77	446.20	2.48	4.17	142.30	2.00	3.33
22.5	-15.75	69.08	91.33	8.53	34.49	446.20	2.15	3.58	142.30	1.75	2.92
24.25	-30.89	36.22	104.22	9.73	40.70	289.41	1.10	1.84	237.57	2.55	4.25
25	-37.38	22.13	109.74	10.24	43.36	289.41	1.01	1.69	237.57	2.38	3.97
25.75	-32.32	25.49	98.89	8.82	39.03	289.41	1.15	1.92	237.57	2.67	4.45
27.25	-22.19	32.20	77.20	5.99	30.37	446.20	2.49	4.15	142.30	2.04	3.40
29.49	-10.48	57.05	63.40	4.44	26.98	446.20	3.14	5.24	142.30	2.33	3.89
31.74	-2.26	89.37	51.70	2.08	27.33	446.20	2.29	3.81	142.30	2.34	3.89
33.98	2.47	108.86	40.00	1.33	22.54	446.20	1.88	3.13	142.30	2.87	4.79
36.23	3.81	87.74	33.14	0.18	19.57	446.20	2.32	3.86	142.30	3.95	6.59
38.47	1.66	78.51	41.96	1.74	19.65	446.20	2.61	4.34	142.30	3.28	5.46
40.72	-3.98	78.01	54.17	3.25	27.14	446.20	2.61	4.34	142.30	2.34	3.91
42.96	-13.12	71.84	66.45	4.84	25.76	446.20	2.75	4.59	142.30	2.43	4.06
45.21	-25.74	58.60	93.54	6.40	29.34	446.20	2.03	3.39	142.30	2.10	3.51
46.7	-36.33	33.45	107.00	9.51	35.77	294.12	1.06	1.77	239.95	2.93	4.89
47.45	-41.66	20.79	113.78	11.07	39.01	294.12	0.97	1.62	239.95	2.66	4.44
48.2	-34.06	25.94	99.73	10.55	37.75	294.12	1.15	1.92	239.95	2.76	4.60
50.13	-14.50	39.07	63.58	9.22	34.49	446.20	3.10	5.16	142.30	1.74	2.90
52.81	7.70	74.61	42.28	7.37	30.39	446.20	2.69	4.43	142.30	2.01	3.35
55.48	24.94	126.03	35.18	5.51	31.50	446.20	1.51	2.52	142.30	1.98	3.30
58.16	37.22	160.05	28.08	3.66	23.38	446.20	1.15	1.91	142.30	2.71	4.52
60.84	43.04	130.87	21.04	1.43	17.72	446.20	1.37	2.29	142.30	3.65	6.09
63.52	44.37	141.97	16.83	0.44	17.13	446.20	1.26	2.10	142.30	3.81	6.36
66.19	40.68	145.38	12.62	2.31	24.75	446.20	1.25	2.08	142.30	2.59	4.32
68.87	31.99	141.26	8.41	4.18	21.60	446.20	1.32	2.20	142.30	2.92	4.87
71.55	18.29	109.69	4.20	6.05	26.48	446.20	1.77	2.96	142.30	2.34	3.90
73.47	5.14	30.81	1.18	7.39	34.53	446.20	6.57	10.96	142.30	1.77	2.95
74.22	0.00	0.00	0.00	7.92	37.68	446.20	N/A	N/A	142.30	1.61	2.69

HS20-44

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.05	7.39	36.19	340.95	3142.40	5238.37	233.50	2.85	4.75
0.75	4.89	21.04	1.48	6.87	34.02	340.95	7.33	12.22	233.50	3.04	5.87
2.5	16.31	70.07	4.81	5.66	28.95	446.20	2.80	4.66	142.30	2.15	3.58
5	28.29	119.54	9.64	3.93	24.16	446.20	1.58	2.63	142.30	2.62	4.36
7.5	35.95	157.74	14.47	2.20	24.58	446.20	1.17	1.95	142.30	2.61	4.36
10	39.28	166.22	19.31	0.47	18.78	446.20	1.10	1.83	142.30	3.48	5.80
12.5	37.51	132.12	24.14	1.81	25.37	446.20	1.39	2.31	142.30	2.54	4.24
15	30.82	111.32	28.88	3.54	28.51	446.20	1.68	2.80	142.30	2.23	3.71
17.5	19.70	97.08	34.35	5.27	31.94	446.20	2.00	3.33	142.30	1.95	3.26
20	4.43	83.57	42.11	7.01	32.22	446.20	2.43	4.05	142.30	1.90	3.18
22.5	-15.27	69.14	91.27	8.74	35.92	446.20	2.15	3.59	142.30	1.68	2.80
24.25	-31.17	37.66	107.27	9.94	41.86	312.06	1.17	1.94	225.19	2.34	3.90
25	-37.99	24.59	114.12	10.45	44.40	312.06	1.06	1.77	225.19	2.20	3.66
25.75	-33.01	27.72	104.17	8.87	39.74	312.06	1.19	1.98	225.19	2.48	4.13
27.17	-23.58	33.64	85.33	5.89	30.92	446.20	2.24	3.74	142.30	2.01	3.35
29.34	-12.43	58.13	71.00	4.39	27.29	446.20	2.79	4.65	142.30	2.31	3.85
31.51	-4.52	95.06	58.61	2.80	25.50	446.20	2.13	3.56	142.30	2.50	4.17
33.68	0.13	112.10	46.21	1.40	23.89	446.20	1.83	3.06	142.30	2.71	4.52
35.85	1.56	86.06	41.68	0.55	23.86	446.20	2.38	3.96	142.30	3.87	6.45
38.02	-1.25	77.95	50.49	2.05	20.85	446.20	2.63	4.38	142.30	3.08	5.14
40.19	-7.32	78.83	64.00	3.54	26.17	446.20	2.55	4.26	142.30	2.42	4.04
42.36	-16.64	71.83	77.50	5.04	26.21	446.20	2.52	4.21	142.30	2.39	3.98
44.53	-29.21	42.57	98.79	6.54	30.00	446.20	1.90	3.17	142.30	2.06	3.43
45.95	-39.48	29.45	115.86	9.73	34.44	320.22	1.12	1.86	227.56	2.88	4.79
46.7	-44.91	22.52	117.24	11.41	36.78	320.22	1.03	1.72	227.56	2.67	4.44
47.45	-37.06	23.46	103.24	10.89	35.99	320.22	1.21	2.02	227.56	2.73	4.55
49.45	-16.12	20.95	65.92	9.51	33.89	446.20	2.97	4.96	142.30	1.77	2.95
52.2	7.43	67.98	39.91	7.60	31.59	446.20	2.96	4.95	142.30	1.93	3.22
54.95	25.74	120.85	33.72	5.70	41.49	446.20	1.57	2.62	142.30	1.50	2.50
57.71	38.82	152.93	27.54	3.80	34.22	446.20	1.19	1.99	142.30	1.85	3.08
60.46	45.29	134.59	21.36	1.47	14.07	446.20	1.33	2.21	142.30	4.60	7.67
63.21	46.72	138.85	17.09	0.44	22.81	446.20	1.28	2.13	142.30	2.86	4.77
65.96	42.87	144.66	12.82	2.36	23.19	446.20	1.24	2.07	142.30	2.77	4.61
68.72	33.75	133.79	8.54	4.27	22.85	446.20	1.39	2.31	142.30	2.76	4.60
71.47	19.36	99.33	4.27	6.18	22.19	446.20	1.95	3.26	142.30	2.79	4.65
73.47	5.28	27.09	1.16	7.58	35.36	446.20	7.47	12.46	142.30	1.73	2.88
74.22	0.00	0.00	0.00	8.10	40.30	446.20	N/A	N/A	142.30	1.51	2.51

HS20-44

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.03	0.06	6.15	23.74	344.25	2644.01	4407.56	233.50	4.38	7.30
0.75	4.01	13.43	0.90	5.67	22.14	344.25	11.64	19.40	233.50	4.71	7.34
2.5	13.35	44.69	2.86	4.54	18.42	446.20	4.42	7.37	142.30	3.41	5.69
5	22.70	74.70	5.72	2.93	15.17	446.20	2.57	4.29	142.30	4.21	7.01
7.5	28.01	98.07	8.58	1.32	16.13	446.20	1.93	3.21	142.30	4.02	6.70
10	29.31	104.55	11.44	0.29	11.07	446.20	1.80	3.00	142.30	5.91	9.85
12.5	25.95	81.28	14.30	1.90	17.30	446.20	2.34	3.90	142.30	3.72	6.21
15	22.39	69.48	16.76	2.23	17.41	446.20	2.77	4.61	142.30	3.69	6.15
17.5	14.78	60.26	20.12	3.85	20.84	446.20	3.27	5.44	142.30	3.04	5.06
20	3.14	55.45	26.06	5.46	20.05	446.20	3.67	6.13	142.30	3.11	5.18
22.5	-12.54	47.21	58.23	7.08	22.73	446.20	3.40	5.67	142.30	2.70	4.50
24.25	-25.74	25.34	69.30	8.20	27.06	352.68	2.12	3.54	235.88	3.84	6.39
25	-31.40	15.97	74.05	8.68	28.91	352.68	1.94	3.24	235.88	3.58	5.97
25.75	-27.05	18.13	67.46	7.40	25.90	352.68	2.17	3.62	235.88	4.03	6.71
27.09	-19.29	21.98	55.69	5.11	20.53	446.20	3.48	5.81	142.30	3.05	5.08
29.19	-10.00	38.12	46.30	3.76	18.34	446.20	4.31	7.19	142.30	3.45	5.76
31.28	-3.55	58.25	38.34	2.44	16.37	446.20	3.49	5.82	142.30	3.92	6.53
33.38	0.09	71.31	30.38	1.06	12.84	446.20	2.88	4.81	142.30	5.06	8.43
35.47	0.72	57.07	28.73	0.28	12.64	446.20	3.60	5.99	142.30	5.17	8.63
37.57	-1.28	51.38	34.69	1.63	13.71	446.20	3.99	6.65	142.30	4.71	7.85
39.66	-6.11	50.36	43.74	2.88	17.42	446.20	4.01	6.69	142.30	3.66	6.10
41.76	-13.77	48.24	52.78	4.33	17.03	446.20	3.74	6.23	142.30	3.70	6.17
43.85	-24.26	40.40	68.19	5.68	19.58	446.20	2.80	4.67	142.30	3.18	5.29
45.2	-32.86	23.53	70.37	8.10	22.82	364.68	1.94	3.24	240.63	4.65	7.75
45.95	-37.64	14.16	80.92	9.44	24.62	364.68	1.80	3.00	240.63	4.27	7.13
46.7	-31.25	16.78	70.85	8.96	24.08	364.68	2.11	3.51	240.63	4.38	7.31
48.78	-13.54	23.98	42.91	7.61	22.57	446.20	4.60	7.67	142.30	2.70	4.51
51.6	5.40	45.86	23.64	5.79	19.82	446.20	4.41	7.35	142.30	3.13	5.22
54.43	19.43	77.40	18.82	3.97	19.29	446.20	2.51	4.18	142.30	3.28	5.46
57.26	27.83	96.25	15.62	2.14	14.30	446.20	1.96	3.27	142.30	4.50	7.49
60.09	30.49	82.91	13.14	2.42	13.87	446.20	2.26	3.77	142.30	4.62	7.71
62.91	34.75	91.18	10.51	0.59	11.29	446.20	2.03	3.38	142.30	5.78	9.63
65.74	33.84	93.44	7.88	1.24	9.95	446.20	1.98	3.31	142.30	6.52	10.86
68.57	27.76	91.33	5.25	3.07	11.11	446.20	2.07	3.45	142.30	5.74	9.56
71.4	16.50	63.58	2.62	4.89	13.18	446.20	3.08	5.13	142.30	4.75	7.92
73.47	4.39	16.91	0.70	6.23	22.21	446.20	12.00	20.01	142.30	2.78	4.64
74.22	0.00	0.00	0.00	6.72	25.48	446.20	N/A	N/A	142.30	2.42	4.03

HS20-44

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.06	0.01	6.05	18.20	1028.40	7898.62	13167.00	190.80	4.63	7.72	
0.75	4.04	11.49	1.35	5.65	17.64	1028.40	41.04	68.41	190.80	4.79	7.99	
2.5	13.47	38.16	4.46	4.71	16.32	1028.40	12.21	20.35	190.80	5.21	8.69	
5	23.57	63.93	8.92	3.37	13.76	1028.40	7.19	11.99	190.80	6.24	10.41	
7.5	30.32	77.45	13.38	2.03	10.73	1028.40	5.88	9.81	190.80	8.08	13.47	
10	33.72	79.43	17.84	0.69	9.52	1028.40	5.71	9.52	190.80	9.19	15.32	
12.5	33.78	77.86	22.30	1.61	11.63	1028.40	5.83	9.71	190.80	7.48	12.46	
15	28.07	68.75	20.31	2.95	14.79	1028.40	6.65	11.08	190.80	5.83	9.71	
17.5	19.02	55.14	18.31	4.29	15.92	1028.40	8.39	13.98	190.80	5.36	8.94	
20	6.62	38.48	19.02	5.63	19.30	1028.40	12.21	20.36	190.80	4.38	7.30	
22.5	-9.13	26.98	37.42	6.97	21.35	1028.40	12.52	20.87	190.80	3.92	6.54	
24.25	1.90	35.03	24.54	7.91	22.40	1028.40	13.50	22.50	190.80	3.71	6.19	
25	6.62	38.48	19.02	8.31	22.85	1028.40	12.21	20.36	190.80	3.63	6.05	
25.75	-3.13	33.26	30.69	6.57	20.22	1028.40	14.19	23.66	190.80	4.15	6.93	
27.03	-19.77	24.34	50.62	3.61	15.72	1028.40	9.13	15.22	190.80	5.46	9.09	
29.07	-13.54	32.89	44.34	2.52	13.82	1028.40	10.51	17.51	190.80	6.25	10.42	
31.1	-9.53	41.40	39.64	1.43	11.61	1028.40	11.31	18.85	190.80	7.50	12.50	
33.14	-7.73	43.43	34.95	0.34	10.12	1028.40	10.81	18.01	190.80	8.67	14.45	
35.17	-8.15	46.94	39.64	0.79	8.97	1028.40	9.99	16.66	190.80	9.75	16.25	
37.2	-10.88	44.45	47.84	1.88	10.53	1028.40	9.77	16.29	190.80	8.24	13.74	
39.24	-15.82	43.93	56.04	2.97	11.72	1028.40	8.29	13.82	190.80	7.35	12.25	
41.27	-22.97	36.16	64.23	4.06	13.34	1028.40	7.16	11.94	190.80	6.41	10.68	
43.31	-32.35	25.24	72.70	5.15	15.78	1028.40	6.25	10.42	190.80	5.38	8.96	
44.59	-39.65	20.58	81.03	8.28	21.11	1028.40	5.56	9.26	190.80	3.93	6.55	
45.34	-43.93	17.85	85.91	10.12	24.24	1028.40	5.21	8.69	190.80	3.38	5.63	
46.09	-36.93	19.09	74.73	9.72	23.87	1028.40	6.05	10.08	190.80	3.44	5.73	
48.23	-16.94	22.64	42.83	8.57	22.80	1028.40	10.83	18.05	190.80	3.63	6.05	
51.12	5.58	39.35	18.27	7.02	20.72	1028.40	11.96	19.94	190.80	4.04	6.74	
54.01	23.63	66.21	18.35	5.48	18.16	1028.40	6.94	11.58	190.80	4.66	7.77	
56.89	37.22	90.24	22.00	3.93	16.33	1028.40	5.00	8.34	190.80	5.24	8.74	
59.78	46.33	100.09	25.63	0.66	7.33	1028.40	4.46	7.43	190.80	11.94	19.91	
62.67	46.00	105.49	20.51	0.89	10.35	1028.40	4.23	7.05	190.80	8.44	14.08	
65.56	41.20	100.31	15.38	2.43	11.55	1028.40	4.48	7.47	190.80	7.49	12.48	
68.45	31.94	81.48	10.25	3.98	14.86	1028.40	5.58	9.30	190.80	5.76	9.60	
71.34	18.20	48.02	5.12	5.53	17.40	1028.40	9.64	16.07	190.80	4.86	8.11	
73.47	4.74	12.51	1.33	6.68	19.03	1028.40	37.67	62.80	190.80	4.41	7.35	
74.22	0.00	0.00	0.00	7.08	19.60	1028.40	N/A	N/A	190.80	4.27	7.12	

HS20-44

Stringer F2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V								
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
2F1 Stringer F1-1	0	0.00	0.06	0.02	6.69	10.61	738.00	---	9461.54	207.60	---	14.42
	0.75	4.46	7.03	0.96	6.29	10.33	738.00	---	80.10	207.60	---	14.85
	2.88	17.14	26.83	3.62	5.17	9.54	738.00	---	20.52	207.60	---	16.20
	5.77	29.88	47.17	7.24	3.66	8.42	738.00	---	11.40	207.60	---	18.53
	8.65	38.25	60.75	10.87	2.14	7.26	738.00	---	8.72	207.60	---	21.70
	11.54	42.25	67.39	14.50	0.63	6.08	738.00	---	7.80	207.60	---	26.16
	14.42	41.88	69.29	18.13	2.57	7.89	738.00	---	7.59	207.60	---	19.91
	17.3	32.30	58.95	17.24	4.08	7.93	738.00	---	9.08	207.60	---	19.62
	20.19	18.34	43.51	16.36	5.60	9.12	738.00	---	12.63	207.60	---	16.90
	23.07	0.00	21.01	15.49	7.11	10.23	738.00	---	27.02	207.60	---	14.92
	25.95	-22.68	4.06	17.30	8.63	10.23	738.00	---	31.50	207.60	---	14.77
	28.09	-42.72	2.91	35.58	9.75	11.30	738.00	---	14.76	207.60	---	13.27
	28.84	-49.75	2.51	41.98	10.14	11.67	738.00	---	12.34	207.60	---	12.82
	29.59	-44.02	5.58	40.73	9.01	11.23	738.00	---	12.86	207.60	---	13.42
	30.86	-34.32	10.77	38.61	7.10	10.48	738.00	---	13.81	207.60	---	14.56
	32.88	-21.04	24.58	36.02	6.04	9.65	738.00	---	15.18	207.60	---	15.92
	34.9	-9.91	35.77	33.61	4.97	8.66	738.00	---	15.59	207.60	---	17.87
	36.93	-0.92	43.45	31.23	3.91	7.54	738.00	---	13.04	207.60	---	20.66
	38.95	5.93	46.80	28.84	2.07	3.67	738.00	---	12.00	207.60	---	42.95
	40.97	9.04	46.27	23.07	1.01	4.79	738.00	---	12.07	207.60	---	33.13
42.99	10.00	41.69	17.30	0.06	5.89	738.00	---	13.38	207.60	---	27.10	
45.01	8.82	32.48	11.53	1.12	7.04	738.00	---	17.21	207.60	---	22.52	
47.04	5.48	18.46	5.76	2.18	8.20	738.00	---	30.46	207.60	---	19.21	
48.31	2.03	6.85	2.14	2.85	9.48	738.00	---	82.53	207.60	---	16.55	
49.06	0.00	0.00	0.00	3.24	10.23	738.00	---	N/A	207.60	---	15.29	
2F1 Stringer S1-1	0	0.00	0.02	0.06	6.62	15.05	523.90	---	6716.67	165.00	---	7.99
	0.75	4.27	9.33	0.49	6.13	14.35	523.90	---	42.76	165.00	---	8.42
	2.82	16.04	35.01	1.67	4.76	12.41	523.90	---	11.05	165.00	---	9.84
	5.65	26.85	55.29	3.35	2.90	9.80	523.90	---	6.80	165.00	---	12.66
	8.47	32.41	63.22	5.03	1.04	7.47	523.90	---	5.86	165.00	---	16.85
	11.29	39.71	63.23	6.71	0.82	6.28	523.90	---	5.86	165.00	---	20.08
	14.12	27.77	59.07	8.39	0.32	6.84	523.90	---	6.38	165.00	---	18.51
	16.94	24.25	48.45	11.27	2.17	6.69	523.90	---	7.87	165.00	---	18.65
	19.76	15.51	40.91	14.61	4.01	8.48	523.90	---	9.47	165.00	---	14.49
	22.58	1.55	35.59	18.94	5.85	10.19	523.90	---	11.28	165.00	---	11.88
	25.41	-17.64	21.32	26.08	7.70	11.48	523.90	---	14.78	165.00	---	10.39
	27.48	-32.45	5.92	29.62	9.06	14.93	243.03	---	5.22	248.02	---	12.18
	28.23	-37.82	0.34	30.90	9.47	16.18	243.03	---	4.83	248.02	---	11.21
	28.98	-32.32	2.22	29.17	8.45	14.82	243.03	---	5.30	248.02	---	12.30
	30.31	-22.58	5.56	26.11	6.64	12.42	523.90	---	14.57	165.00	---	9.68
	32.4	-10.15	20.30	22.14	5.30	10.86	523.90	---	17.74	165.00	---	11.20
	34.48	-0.52	36.06	18.17	3.95	9.75	523.90	---	11.16	165.00	---	12.61
	36.56	6.30	48.50	14.23	2.60	8.34	523.90	---	8.53	165.00	---	14.91
	38.64	10.36	38.87	10.46	2.36	8.47	523.90	---	10.10	165.00	---	14.71
	40.73	15.87	39.50	8.37	1.01	7.10	523.90	---	9.85	165.00	---	17.73
42.81	14.56	40.37	6.28	0.34	6.15	523.90	---	9.62	165.00	---	20.58	
44.89	12.45	40.97	4.19	1.69	7.47	523.90	---	9.53	165.00	---	16.76	
46.98	7.54	33.07	2.10	3.03	8.58	523.90	---	11.96	165.00	---	14.44	
48.31	2.72	11.92	0.76	3.89	12.02	215.85	---	13.70	201.17	---	12.55	
49.06	0.00	0.00	0.00	4.38	13.96	215.85	---	N/A	201.17	---	10.77	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.06	7.96	22.18	523.90	---	6716.67	165.00	---	5.36
0.75	5.23	14.18	1.00	7.43	21.29	523.90	---	28.05	165.00	---	5.61
2.75	19.19	51.95	3.50	6.01	18.92	523.90	---	7.39	165.00	---	6.39
5.5	33.04	85.11	7.01	4.07	15.49	523.90	---	4.35	165.00	---	7.93
8.25	41.55	102.29	10.52	2.12	12.41	523.90	---	3.53	165.00	---	10.06
10.99	44.71	108.55	14.04	0.18	10.31	523.90	---	3.30	165.00	---	12.29
13.74	42.52	104.87	17.54	2.25	10.64	523.90	---	3.44	165.00	---	11.72
16.49	33.68	84.00	22.54	4.18	10.64	523.90	---	4.40	165.00	---	11.54
19.24	19.52	68.78	27.54	6.11	14.56	523.90	---	5.58	165.00	---	8.30
21.99	0.00	55.31	32.54	8.04	17.02	523.90	---	7.29	165.00	---	6.98
24.74	-24.77	21.84	37.87	9.97	18.73	523.90	---	9.99	165.00	---	6.24
26.73	-43.96	6.62	47.17	11.38	22.55	273.51	---	3.53	256.24	---	8.24
27.48	-51.19	0.89	50.67	11.84	23.99	273.51	---	3.14	256.24	---	7.72
28.23	-44.16	3.12	48.68	10.73	22.44	273.51	---	3.41	256.24	---	8.31
29.64	-30.95	7.31	44.93	8.63	19.53	523.90	---	8.28	165.00	---	6.06
31.8	-13.96	34.26	39.78	7.13	17.59	523.90	---	9.93	165.00	---	6.81
33.96	-0.21	62.22	33.44	5.62	16.18	523.90	---	6.47	165.00	---	7.50
36.11	10.30	82.27	27.70	4.12	14.24	523.90	---	4.77	165.00	---	8.62
38.27	17.61	74.71	21.95	2.11	9.51	523.90	---	5.15	165.00	---	13.12
40.43	20.54	72.39	17.56	0.61	7.99	523.90	---	5.28	165.00	---	15.81
42.59	20.23	71.07	13.17	0.90	10.51	523.90	---	5.39	165.00	---	11.99
44.74	16.67	69.08	8.78	2.40	12.49	523.90	---	5.59	165.00	---	9.97
46.9	9.86	53.67	4.39	3.91	14.10	523.90	---	7.33	165.00	---	8.72
48.31	3.42	18.64	1.52	4.89	18.79	250.11	---	10.14	212.13	---	8.43
49.06	0.00	0.00	0.00	5.41	21.28	250.11	---	N/A	212.13	---	7.41
0	0.00	0.02	0.04	7.83	22.20	523.90	---	10075.00	165.00	---	5.36
0.75	5.17	14.28	1.14	7.30	21.30	523.90	---	27.86	165.00	---	5.62
2.67	18.40	50.78	3.94	5.93	19.01	523.90	---	7.57	165.00	---	6.36
5.35	31.71	83.44	7.89	4.03	15.62	523.90	---	4.45	165.00	---	7.87
8.02	39.95	101.36	11.84	2.13	12.65	523.90	---	3.58	165.00	---	9.87
10.69	42.11	108.66	15.79	0.23	10.62	523.90	---	3.31	165.00	---	11.93
13.36	41.18	105.42	19.74	2.50	10.99	523.90	---	3.45	165.00	---	11.32
16.04	31.96	84.34	24.60	4.39	10.99	523.90	---	4.40	165.00	---	11.15
18.71	17.69	68.95	29.47	6.28	14.88	523.90	---	5.59	165.00	---	8.11
21.38	-1.64	56.51	34.93	8.17	17.31	523.90	---	7.10	165.00	---	6.86
24.05	-26.03	29.29	39.20	10.05	19.02	523.90	---	9.62	165.00	---	6.14
25.98	-45.11	9.04	47.29	11.38	22.69	304.92	---	4.01	267.20	---	8.56
26.73	-52.52	1.17	50.43	11.89	24.12	304.92	---	3.61	267.20	---	8.03
27.48	-45.27	3.48	48.58	10.87	22.71	304.92	---	3.90	267.20	---	8.57
28.96	-30.95	8.04	44.93	8.87	19.93	523.90	---	8.28	165.00	---	5.92
31.19	-12.89	36.89	39.44	7.30	17.93	523.90	---	9.89	165.00	---	6.67
33.43	1.67	66.53	33.99	5.74	16.51	523.90	---	6.03	165.00	---	7.34
35.66	12.73	88.10	28.56	4.17	14.55	523.90	---	4.43	165.00	---	8.44
37.89	20.16	81.30	23.14	2.10	9.21	523.90	---	4.74	165.00	---	13.55
40.13	23.10	77.63	18.52	0.53	8.07	523.90	---	4.89	165.00	---	15.66
42.36	22.54	75.55	13.89	1.04	10.81	523.90	---	5.04	165.00	---	11.65
44.59	18.47	73.02	9.26	2.61	12.78	523.90	---	5.27	165.00	---	9.73
46.82	10.89	56.46	4.63	4.18	14.42	523.90	---	6.94	165.00	---	8.51
48.31	3.65	18.90	1.55	5.22	19.24	291.21	---	11.66	225.83	---	8.76
49.06	0.00	0.00	0.00	5.75	21.66	291.21	---	N/A	225.83	---	7.75

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V			(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.03	0.05	7.08	21.87	446.20	---	6864.62	142.30	---	4.68	
0.75	4.63	13.89	1.11	6.56	20.91	446.20	---	24.37	142.30	---	7.92	
2.6	16.04	48.09	3.73	5.27	18.53	446.20	---	6.80	142.30	---	5.62	
5.19	27.37	77.99	7.47	3.46	15.02	446.20	---	4.05	142.30	---	7.06	
7.79	33.99	93.94	11.21	1.64	12.06	446.20	---	3.29	142.30	---	8.94	
10.39	35.90	99.46	14.95	0.17	10.09	446.20	---	3.09	142.30	---	10.83	
12.98	33.09	93.66	18.68	2.00	10.25	446.20	---	3.21	142.30	---	10.48	
15.58	25.54	76.76	23.68	3.81	10.25	446.20	---	4.14	142.30	---	10.31	
18.18	13.30	64.15	28.69	5.61	14.11	446.20	---	5.14	142.30	---	7.36	
20.78	-3.63	53.63	33.70	7.42	16.55	446.20	---	6.33	142.30	---	6.17	
23.37	-25.27	24.30	38.70	9.22	18.32	446.20	---	8.22	142.30	---	5.47	
25.22	-42.48	7.86	45.00	10.49	22.18	294.12	---	4.08	239.95	---	7.85	
25.97	-49.46	1.19	47.55	11.00	23.75	294.12	---	3.72	239.95	---	7.31	
26.72	-42.44	3.69	45.80	10.21	22.44	294.12	---	4.01	239.95	---	7.77	
28.28	-27.85	8.89	42.17	8.56	19.72	446.20	---	7.48	142.30	---	5.12	
30.59	-9.93	37.93	36.78	6.96	17.55	446.20	---	8.79	142.30	---	5.84	
32.9	4.29	67.33	31.39	5.36	16.03	446.20	---	5.03	142.30	---	6.49	
35.2	14.83	89.38	26.01	3.76	14.06	446.20	---	3.72	142.30	---	7.52	
37.51	21.47	80.75	20.63	2.13	9.49	446.20	---	3.38	142.30	---	11.31	
39.82	27.54	77.06	16.51	0.53	8.15	446.20	---	4.14	142.30	---	13.37	
42.13	23.91	75.71	12.38	1.07	10.46	446.20	---	4.22	142.30	---	10.36	
44.44	19.58	74.20	8.26	2.68	12.41	446.20	---	4.36	142.30	---	8.60	
46.75	11.56	58.05	4.13	4.28	14.11	446.20	---	5.71	142.30	---	7.45	
48.31	3.75	18.85	1.34	5.36	19.24	301.56	---	12.11	221.62	---	8.58	
49.06	0.00	0.00	0.00	5.88	21.71	301.56	---	N/A	221.62	---	7.58	
0	0.00	0.02	0.04	7.11	22.08	446.20	---	6380.77	142.30	---	4.64	
0.75	4.68	14.27	1.37	6.59	21.17	446.20	---	23.72	142.30	---	7.86	
2.52	15.72	47.91	4.51	5.36	19.02	446.20	---	6.84	142.30	---	5.47	
5.04	27.01	79.18	9.03	3.60	15.71	446.20	---	3.99	142.30	---	6.74	
7.56	33.89	97.63	13.55	1.85	12.91	446.20	---	3.17	142.30	---	8.34	
10.08	36.35	105.38	18.07	0.10	10.79	446.20	---	2.91	142.30	---	10.14	
12.61	34.40	100.84	22.60	2.80	11.49	446.20	---	3.08	142.30	---	9.28	
15.13	25.13	83.23	27.90	4.55	11.49	446.20	---	3.82	142.30	---	9.13	
17.65	11.46	67.48	33.20	6.29	15.38	446.20	---	4.92	142.30	---	6.71	
20.17	-6.63	53.87	38.49	8.04	17.63	446.20	---	6.25	142.30	---	5.75	
22.69	-29.12	13.63	43.79	9.79	19.13	446.20	---	7.17	142.30	---	5.21	
24.46	-46.87	4.82	48.69	11.00	22.66	321.72	---	4.12	247.07	---	7.90	
25.21	-54.39	1.09	50.76	11.51	24.16	321.72	---	3.80	247.07	---	7.39	
25.96	-46.73	3.49	48.92	10.85	23.08	321.72	---	4.10	247.07	---	7.78	
27.6	-29.97	8.73	44.89	9.42	20.56	446.20	---	6.98	142.30	---	4.87	
29.98	-9.47	40.98	39.40	7.77	18.61	446.20	---	8.14	142.30	---	5.46	
32.37	7.10	74.26	33.97	6.12	17.24	446.20	---	4.53	142.30	---	5.99	
34.75	19.74	98.75	28.60	4.48	15.27	446.20	---	3.28	142.30	---	6.88	
37.13	28.30	93.50	23.32	1.74	8.54	446.20	---	3.37	142.30	---	12.61	
39.52	20.49	88.19	18.66	0.09	7.95	446.20	---	3.55	142.30	---	13.76	
41.9	28.74	84.17	14.00	1.56	11.35	446.20	---	3.74	142.30	---	9.51	
44.29	23.05	79.94	9.33	3.21	13.23	446.20	---	4.01	142.30	---	8.03	
46.67	13.42	61.21	4.67	4.86	14.79	446.20	---	5.39	142.30	---	7.07	
48.31	4.21	19.21	1.47	5.99	19.89	340.95	---	13.43	233.50	---	8.73	
49.06	0.00	0.00	0.00	6.51	22.22	340.95	---	N/A	233.50	---	7.79	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		C* (k-ft)	Inventory	Operating	C* (kips)	Inventory	Operating	
	D	L+I	L+I	D	L+I							
2F1 Stringer S6-1	0	0.00	0.03	0.09	5.21	14.30	306.00	---	2615.38	98.70	---	4.94
	0.75	3.31	8.71	0.66	4.74	13.48	306.00	---	26.63	98.70	---	5.28
	2.45	10.81	28.40	1.96	3.66	11.63	306.00	---	7.91	98.70	---	6.21
	4.89	17.88	44.82	3.94	2.12	9.17	306.00	---	4.85	98.70	---	8.05
	7.34	21.17	51.45	5.91	0.57	7.02	306.00	---	4.16	98.70	---	10.73
	9.79	20.69	50.83	7.89	0.97	6.48	306.00	---	4.22	98.70	---	11.57
	12.23	16.42	45.64	9.86	0.63	6.76	306.00	---	4.80	98.70	---	11.14
	14.68	13.00	45.01	13.21	2.17	6.76	306.00	---	4.94	98.70	---	10.91
	17.13	5.80	39.69	16.97	3.71	7.34	306.00	---	5.78	98.70	---	9.84
	19.57	-5.18	27.93	20.76	5.26	9.37	306.00	---	8.24	98.70	---	7.54
	22.02	-19.93	10.49	24.55	6.80	11.52	306.00	---	8.78	98.70	---	6.00
	23.71	-32.76	3.49	28.57	7.87	14.02	306.00	---	7.09	98.70	---	4.85
	24.46	-38.45	0.39	30.35	8.35	15.13	306.00	---	6.49	98.70	---	4.47
	25.21	-32.80	2.80	28.77	7.87	14.45	306.00	---	7.04	98.70	---	4.71
	26.92	-19.92	8.30	25.18	6.76	12.89	306.00	---	8.56	98.70	---	5.37
	29.38	-5.21	24.92	21.31	5.21	10.82	306.00	---	9.24	98.70	---	6.54
	31.84	5.68	36.15	17.45	3.65	8.74	306.00	---	6.35	98.70	---	8.27
	34.3	12.76	41.30	13.61	2.10	6.83	306.00	---	5.39	98.70	---	10.81
	36.76	16.02	42.13	9.78	2.58	9.01	306.00	---	5.21	98.70	---	8.14
	39.22	20.45	47.54	7.82	1.03	7.67	306.00	---	4.52	98.70	---	9.76
41.68	21.07	48.32	5.87	0.53	5.98	306.00	---	4.44	98.70	---	12.61	
44.14	17.86	41.19	3.91	2.08	5.54	306.00	---	5.28	98.70	---	13.33	
46.6	10.84	24.11	1.96	3.63	7.50	306.00	---	9.31	98.70	---	9.64	
48.31	3.30	7.35	0.60	4.71	12.35	306.00	---	31.57	98.70	---	5.77	
49.06	0.00	0.00	0.00	5.18	14.47	306.00	---	N/A	98.70	---	4.89	
2F1 Stringer F2-1	0	0.00	0.08	0.02	5.03	10.50	1028.40	---	9888.46	190.80	---	13.50
	0.75	3.30	6.99	1.55	4.63	10.18	1028.40	---	112.75	190.80	---	13.96
	2.39	10.53	22.09	4.89	3.76	9.48	1028.40	---	35.33	190.80	---	15.09
	4.77	17.96	39.08	9.77	2.48	8.42	1028.40	---	19.78	190.80	---	17.14
	7.16	22.35	50.63	14.66	1.20	7.31	1028.40	---	15.18	190.80	---	19.91
	9.54	23.69	56.43	19.55	0.08	6.15	1028.40	---	13.60	190.80	---	23.85
	11.93	21.98	56.95	24.45	2.50	7.08	1028.40	---	13.50	190.80	---	20.38
	14.31	14.48	51.46	25.25	3.78	7.11	1028.40	---	15.09	190.80	---	20.11
	16.7	3.93	40.12	26.04	5.06	8.46	1028.40	---	19.62	190.80	---	16.75
	19.09	-9.66	25.11	26.84	6.34	9.54	1028.40	---	29.11	190.80	---	14.72
	21.47	-26.31	8.32	28.02	7.62	10.38	1028.40	---	27.29	190.80	---	13.41
	23.11	-39.83	3.75	29.42	8.49	11.17	1028.40	---	25.54	190.80	---	12.38
	23.86	-46.01	1.66	30.06	8.89	11.53	1028.40	---	24.79	190.80	---	11.96
	24.61	-39.60	3.37	28.43	8.59	11.40	1028.40	---	26.44	190.80	---	12.13
	26.38	-24.48	7.40	24.57	7.87	11.08	1028.40	---	31.20	190.80	---	12.54
	28.9	-6.35	25.11	23.65	6.52	10.47	1028.40	---	31.25	190.80	---	13.40
	31.42	8.37	41.34	23.22	5.17	9.67	1028.40	---	18.93	190.80	---	14.64
	33.94	19.70	53.91	22.81	3.82	8.60	1028.40	---	14.31	190.80	---	16.62
	36.46	27.62	60.21	22.40	2.47	7.23	1028.40	---	12.68	190.80	---	19.96
	38.98	28.90	59.61	17.92	0.17	4.90	1028.40	---	12.79	190.80	---	29.92
41.5	26.78	53.47	13.44	1.52	6.10	1028.40	---	14.29	190.80	---	23.81	
44.02	21.26	41.20	8.96	2.87	7.26	1028.40	---	18.68	190.80	---	19.82	
46.54	12.33	23.24	4.48	4.22	8.36	1028.40	---	33.51	190.80	---	17.05	
48.31	3.67	6.92	1.33	5.17	9.87	1028.40	---	113.84	190.80	---	14.35	
49.06	0.00	0.00	0.00	5.57	10.51	1028.40	---	N/A	190.80	---	13.43	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.05	0.01	5.78	10.49	738.00	---	11353.85	207.60	---	14.67	
0.75	3.85	7.10	1.26	5.39	10.25	738.00	---	79.41	207.60	---	15.05	
2.5	12.84	23.55	4.16	4.47	9.69	738.00	---	23.56	207.60	---	16.02	
5	22.36	41.07	8.32	3.15	8.48	738.00	---	13.28	207.60	---	18.46	
7.5	28.60	52.36	12.48	1.84	7.25	738.00	---	10.30	207.60	---	21.77	
10	31.56	58.15	16.65	0.53	6.08	738.00	---	9.22	207.60	---	26.18	
12.5	31.23	61.17	20.82	2.27	7.69	738.00	---	8.77	207.60	---	20.47	
15	23.90	52.33	20.85	3.59	7.66	738.00	---	10.39	207.60	---	20.38	
17.5	13.29	39.49	20.88	4.90	8.77	738.00	---	14.04	207.60	---	17.65	
20	-0.61	23.59	20.99	6.22	9.79	738.00	---	24.04	207.60	---	15.68	
22.5	-17.79	9.18	22.49	7.53	10.71	738.00	---	24.45	207.60	---	14.21	
24.25	-32.12	10.31	29.19	8.45	11.33	738.00	---	18.35	207.60	---	13.35	
25	-38.26	10.80	32.06	8.84	11.59	738.00	---	16.51	207.60	---	13.02	
25.75	-33.35	10.55	30.97	7.96	11.24	738.00	---	17.25	207.60	---	13.50	
27.53	-21.71	9.94	28.39	5.87	10.40	738.00	---	19.23	207.60	---	14.79	
30.06	-8.54	25.79	25.45	4.54	9.39	738.00	---	21.68	207.60	---	16.52	
32.6	1.27	38.25	23.22	3.21	8.26	738.00	---	14.81	207.60	---	18.94	
35.13	7.71	46.75	21.02	1.88	7.09	738.00	---	11.98	207.60	---	22.26	
37.66	10.78	51.65	18.82	0.28	6.05	738.00	---	10.78	207.60	---	26.35	
40.19	8.40	46.75	19.81	1.61	6.05	738.00	---	11.96	207.60	---	26.13	
42.73	2.65	38.13	21.87	2.94	7.13	738.00	---	14.82	207.60	---	21.98	
45.26	-6.47	25.25	23.93	4.27	8.27	738.00	---	22.23	207.60	---	18.79	
47.79	-18.96	9.84	26.66	5.60	9.15	738.00	---	20.58	207.60	---	16.84	
49.57	-30.11	11.31	29.05	7.55	11.04	738.00	---	18.51	207.60	---	13.78	
50.32	-34.81	11.93	30.05	8.37	11.84	738.00	---	17.73	207.60	---	12.78	
51.07	-29.00	11.31	27.83	7.97	11.76	738.00	---	19.36	207.60	---	12.90	
52.71	-16.30	9.97	22.97	7.11	11.59	738.00	---	24.00	207.60	---	13.16	
55.1	-0.80	23.13	21.64	5.86	10.83	738.00	---	24.51	207.60	---	14.20	
57.49	11.70	38.48	21.87	4.60	9.91	738.00	---	14.45	207.60	---	15.65	
59.88	21.20	50.52	22.11	3.35	8.84	738.00	---	10.82	207.60	---	17.69	
62.27	27.68	57.36	22.35	0.82	3.84	738.00	---	9.41	207.60	---	41.37	
64.66	28.15	55.19	17.88	0.43	5.12	738.00	---	9.78	207.60	---	31.11	
67.05	25.62	49.59	13.41	1.69	6.10	738.00	---	10.93	207.60	---	25.90	
69.44	20.08	38.87	8.94	2.94	7.24	738.00	---	14.09	207.60	---	21.65	
71.83	11.54	22.24	4.47	4.20	8.46	738.00	---	25.01	207.60	---	18.38	
73.47	3.62	6.98	1.40	5.06	9.85	738.00	---	80.82	207.60	---	15.69	
74.22	0.00	0.00	0.00	5.46	10.49	738.00	---	N/A	207.60	---	14.70	

2F1

Stringer F1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V						
0	0.00	0.02	0.05	5.74	15.06	215.85	---	3320.77	201.17	---	9.89
0.75	3.69	8.26	0.54	5.25	13.85	215.85	---	19.64	201.17	---	10.79
2.5	12.31	27.50	1.68	4.12	11.04	523.90	---	14.21	165.00	---	11.12
5	20.60	44.38	3.36	2.50	8.88	523.90	---	8.62	165.00	---	14.01
7.5	24.83	57.60	5.04	0.89	9.53	523.90	---	6.57	165.00	---	13.22
10	25.03	63.56	6.72	0.73	6.37	523.90	---	5.95	165.00	---	19.81
12.5	19.36	49.26	8.41	2.36	9.29	523.90	---	7.79	165.00	---	13.41
15	16.30	39.28	11.41	2.04	6.14	523.90	---	9.84	165.00	---	20.34
17.5	9.45	31.92	14.81	3.67	8.59	523.90	---	12.34	165.00	---	14.35
20	-2.10	27.57	18.33	5.30	10.10	523.90	---	14.54	165.00	---	12.04
22.5	-17.43	21.10	26.91	6.93	11.30	523.90	---	14.33	165.00	---	10.62
24.25	-28.62	10.27	30.38	8.02	14.68	204.30	---	4.23	234.31	---	11.73
25	-33.41	5.63	31.87	8.48	16.13	204.30	---	3.88	234.31	---	10.65
25.75	-28.36	6.73	29.86	7.71	14.98	204.30	---	4.31	234.31	---	11.52
27.47	-16.78	9.26	25.28	5.93	12.33	523.90	---	15.29	165.00	---	9.81
29.94	-4.08	26.48	20.75	4.34	10.45	523.90	---	15.06	165.00	---	11.73
32.41	4.68	44.26	16.30	2.75	9.28	523.90	---	9.00	165.00	---	13.38
34.89	9.50	54.48	12.06	1.15	7.78	523.90	---	7.22	165.00	---	16.27
37.36	8.14	42.10	7.82	0.60	6.22	523.90	---	9.38	165.00	---	20.31
39.83	7.62	35.34	10.76	1.01	6.05	523.90	---	11.19	165.00	---	20.81
42.3	3.10	29.88	14.81	2.83	7.85	523.90	---	13.38	165.00	---	15.83
44.77	-5.42	25.48	18.85	4.24	9.41	523.90	---	15.60	165.00	---	13.04
47.24	-17.93	21.01	26.10	5.85	9.41	523.90	---	14.75	165.00	---	12.87
48.96	-26.97	10.78	28.59	7.70	14.08	196.47	---	4.34	231.57	---	12.11
49.71	-30.91	6.32	29.68	8.50	16.11	196.47	---	4.05	231.57	---	10.53
50.46	-25.15	7.58	27.19	8.02	15.18	196.47	---	4.63	231.57	---	11.21
52.17	-12.01	10.37	21.52	6.92	13.06	523.90	---	18.17	165.00	---	9.19
54.62	3.02	28.36	18.15	5.34	11.28	523.90	---	14.40	165.00	---	10.78
57.07	14.18	48.09	14.79	3.77	10.06	523.90	---	8.09	165.00	---	12.24
59.52	21.48	60.62	11.53	2.19	8.69	523.90	---	6.29	165.00	---	14.35
61.97	22.62	52.49	9.07	2.16	8.68	523.90	---	7.25	165.00	---	14.37
64.42	25.95	50.55	7.26	0.55	7.22	523.90	---	7.46	165.00	---	17.50
66.87	25.31	50.55	5.44	1.07	6.58	523.90	---	7.47	165.00	---	19.13
69.32	20.71	50.80	3.63	2.68	7.93	523.90	---	7.53	165.00	---	15.67
71.77	12.15	40.99	1.86	4.30	9.18	523.90	---	9.54	165.00	---	13.36
73.47	3.72	12.55	0.57	5.42	13.33	523.90	---	31.82	165.00	---	9.42
74.22	0.00	0.00	0.00	5.92	15.16	523.90	---	N/A	165.00	---	7.98

2F1

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.02	0.04	7.19	22.32	250.11	---	4809.81	212.13	---	6.99	
0.75	4.73	13.02	1.07	6.67	20.83	250.11	---	14.41	212.13	---	7.51	
2.5	15.77	43.35	3.47	5.44	17.36	523.90	---	8.93	165.00	---	7.00	
5	27.19	72.06	6.95	3.70	14.42	523.90	---	5.22	165.00	---	8.55	
7.5	34.26	95.26	10.44	1.95	12.84	523.90	---	3.87	165.00	---	9.73	
10	36.96	107.83	13.92	0.21	10.78	523.90	---	3.39	165.00	---	11.75	
12.5	33.59	92.52	17.41	1.80	12.99	523.90	---	3.99	165.00	---	9.63	
15	26.90	72.51	22.51	3.55	10.61	523.90	---	5.19	165.00	---	11.63	
17.5	15.81	57.93	27.62	5.30	14.19	523.90	---	6.68	165.00	---	8.57	
20	0.32	47.96	32.73	7.06	16.13	523.90	---	8.40	165.00	---	7.43	
22.5	-19.57	31.99	37.85	8.81	17.64	523.90	---	10.13	165.00	---	6.70	
24.25	-34.34	16.58	42.94	9.99	21.78	243.03	---	3.55	248.02	---	8.30	
25	-40.67	9.97	45.12	10.50	23.55	243.03	---	3.24	248.02	---	7.66	
25.75	-34.90	11.00	42.82	9.37	22.37	243.03	---	3.55	248.02	---	8.11	
27.4	-22.21	13.26	37.77	6.87	19.76	523.90	---	10.08	165.00	---	6.08	
29.79	-7.74	38.71	31.37	5.20	16.82	523.90	---	10.21	165.00	---	7.24	
32.19	2.73	55.54	24.96	3.54	13.70	523.90	---	7.21	165.00	---	9.01	
34.59	9.21	63.30	18.56	1.87	10.78	523.90	---	6.22	165.00	---	11.63	
36.98	11.68	64.65	12.17	0.03	8.16	523.90	---	6.05	165.00	---	15.55	
39.38	9.60	63.06	16.79	1.70	8.59	523.90	---	6.24	165.00	---	14.58	
41.78	3.53	55.01	22.45	3.37	10.83	523.90	---	7.26	165.00	---	11.41	
44.17	-6.54	37.92	28.15	5.03	13.79	523.90	---	10.46	165.00	---	8.84	
46.57	-20.60	6.57	33.85	6.70	16.89	523.90	---	11.30	165.00	---	7.12	
48.22	-33.02	9.79	47.58	9.37	21.48	243.03	---	3.70	248.02	---	8.44	
48.97	-38.67	11.26	45.09	10.59	23.57	243.03	---	3.29	248.02	---	7.65	
49.72	-31.37	12.65	43.20	10.07	22.45	243.03	---	3.60	248.02	---	8.05	
51.49	-14.15	16.04	38.75	8.83	19.81	523.90	---	10.03	165.00	---	5.96	
54.02	5.94	49.22	33.31	7.08	17.49	523.90	---	8.97	165.00	---	6.85	
56.54	21.30	81.83	27.87	5.32	15.94	523.90	---	4.66	165.00	---	7.63	
59.07	32.81	104.45	22.46	3.56	13.99	523.90	---	3.54	165.00	---	8.82	
61.6	37.37	95.72	17.31	1.49	9.02	523.90	---	3.82	165.00	---	13.91	
64.12	38.87	87.52	13.84	0.30	8.45	523.90	---	4.16	165.00	---	14.98	
66.65	35.85	84.77	10.38	2.09	10.80	523.90	---	4.33	165.00	---	11.56	
69.17	28.31	82.99	6.92	3.88	12.72	523.90	---	4.51	165.00	---	9.67	
71.7	16.26	64.67	3.45	5.67	14.55	523.90	---	5.98	165.00	---	8.33	
73.47	4.84	19.25	1.03	6.92	20.04	523.90	---	20.69	165.00	---	5.99	
74.22	0.00	0.00	0.00	7.45	22.36	523.90	---	N/A	165.00	---	5.34	

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Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+ L+I	M- L+I	V		D						
0	0.00	0.01	0.03	7.55	22.46	291.21	---	7466.92	225.83	---	7.40	
0.75	5.01	13.25	1.16	7.03	21.02	291.21	---	16.53	225.83	---	7.92	
2.5	16.69	44.13	3.78	5.80	17.66	523.90	---	8.75	165.00	---	6.86	
5	28.98	73.79	7.58	4.04	14.76	523.90	---	5.07	165.00	---	8.33	
7.5	36.88	97.89	11.37	2.28	13.05	523.90	---	3.74	165.00	---	9.55	
10	40.38	111.43	15.16	0.52	11.14	523.90	---	3.25	165.00	---	11.35	
12.5	38.09	97.60	18.95	2.16	13.33	523.90	---	3.74	165.00	---	9.36	
15	30.47	76.29	23.63	3.93	11.39	523.90	---	4.88	165.00	---	10.80	
17.5	18.43	60.15	28.31	5.69	14.92	523.90	---	6.39	165.00	---	8.13	
20	1.97	49.73	32.99	7.46	16.83	523.90	---	8.06	165.00	---	7.10	
22.5	-18.91	30.06	38.03	9.22	18.32	523.90	---	10.10	165.00	---	6.42	
24.25	-34.79	17.51	45.76	10.42	22.18	270.45	---	3.79	237.58	---	7.77	
25	-41.59	12.13	49.07	10.94	23.83	270.45	---	3.39	237.58	---	7.21	
25.75	-35.88	12.76	46.96	9.60	22.65	270.45	---	3.67	237.58	---	7.65	
27.32	-23.94	14.07	42.58	6.79	20.17	523.90	---	8.91	165.00	---	5.96	
29.64	-10.06	40.37	35.99	5.17	17.43	523.90	---	9.73	165.00	---	6.99	
31.96	0.00	58.84	29.45	3.54	14.53	523.90	---	6.85	165.00	---	8.49	
34.28	6.38	68.82	22.91	1.91	11.73	523.90	---	5.76	165.00	---	10.66	
36.61	8.92	70.78	16.38	0.33	8.98	523.90	---	5.57	165.00	---	14.10	
38.93	6.26	68.33	21.67	1.96	8.98	523.90	---	5.81	165.00	---	13.92	
41.25	-0.18	58.68	27.89	3.55	11.70	523.90	---	6.86	165.00	---	10.54	
43.57	-10.40	40.04	34.15	5.21	14.62	523.90	---	9.81	165.00	---	8.33	
45.89	-24.39	10.22	40.41	6.84	17.54	523.90	---	9.37	165.00	---	6.85	
47.46	-36.42	12.07	47.94	9.90	21.80	270.45	---	3.82	237.58	---	7.93	
48.21	-42.17	12.95	47.10	11.36	23.83	270.45	---	3.52	237.58	---	7.19	
48.96	-34.33	13.35	44.50	10.84	22.85	270.45	---	3.90	237.58	---	7.53	
50.81	-14.98	14.28	38.10	9.54	20.42	523.90	---	10.18	165.00	---	5.75	
53.41	7.47	48.78	33.06	7.72	18.17	523.90	---	8.14	165.00	---	6.56	
56.01	25.77	83.71	28.03	5.89	16.58	523.90	---	4.51	165.00	---	7.30	
58.62	38.14	108.59	22.99	4.07	14.61	523.90	---	3.36	165.00	---	8.41	
61.22	44.39	101.77	17.96	1.19	8.80	523.90	---	3.52	165.00	---	14.29	
63.82	45.09	92.67	14.37	0.66	8.46	523.90	---	3.86	165.00	---	14.92	
66.42	40.98	89.69	10.77	2.51	11.03	523.90	---	4.04	165.00	---	11.28	
69.02	32.05	87.53	7.18	4.35	12.98	523.90	---	4.24	165.00	---	9.44	
71.62	18.32	66.33	3.58	6.20	14.87	523.90	---	5.80	165.00	---	8.12	
73.47	5.28	19.13	1.03	7.52	20.33	523.90	---	20.79	165.00	---	5.07	
74.22	0.00	0.00	0.00	8.05	22.54	523.90	---	N/A	165.00	---	5.27	

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Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.03	7.23	22.21	301.56	---	1732.31	221.62	---	7.35
0.75	4.77	12.89	0.94	6.71	20.70	301.56	---	17.63	221.62	---	7.94
2.5	15.90	42.92	3.05	5.49	17.18	446.20	---	7.63	142.30	---	6.05
5	27.46	70.98	6.10	3.76	14.20	446.20	---	4.45	142.30	---	7.44
7.5	34.69	93.31	9.15	2.03	12.65	446.20	---	3.31	142.30	---	8.49
10	37.59	105.15	12.20	0.29	10.52	446.20	---	2.91	142.30	---	10.38
12.5	34.87	89.72	15.26	1.58	13.05	446.20	---	3.44	142.30	---	8.27
15	28.75	71.19	19.50	3.32	10.76	446.20	---	4.42	142.30	---	9.86
17.5	18.27	57.12	23.76	5.06	14.30	446.20	---	5.69	142.30	---	7.30
20	3.43	47.69	28.01	6.80	16.26	446.20	---	7.13	142.30	---	6.31
22.5	-15.75	28.65	36.05	8.53	17.83	446.20	---	8.08	142.30	---	5.66
24.25	-30.89	17.00	45.49	9.73	21.87	289.41	---	4.22	237.57	---	7.91
25	-37.38	12.01	49.53	10.24	23.60	289.41	---	3.74	237.57	---	7.31
25.75	-32.32	11.61	47.31	8.82	21.87	289.41	---	4.02	237.57	---	7.95
27.25	-22.19	10.80	42.85	5.99	18.42	446.20	---	7.49	142.30	---	5.62
29.49	-10.48	36.19	36.20	4.44	16.13	446.20	---	9.19	142.30	---	6.51
31.74	-2.26	61.55	29.53	2.88	14.85	446.20	---	5.54	142.30	---	7.18
33.98	2.47	78.09	22.87	1.33	12.58	446.20	---	4.36	142.30	---	8.65
36.23	3.81	66.35	16.62	0.18	8.59	446.20	---	5.12	142.30	---	12.72
38.47	1.66	59.38	23.37	1.74	8.50	446.20	---	5.75	142.30	---	12.54
40.72	-3.98	52.26	30.22	3.25	12.48	446.20	---	6.49	142.30	---	8.51
42.96	-13.12	45.58	37.07	4.84	14.62	446.20	---	7.24	142.30	---	7.16
45.21	-25.74	27.42	43.92	6.40	16.21	446.20	---	7.23	142.30	---	6.36
46.7	-36.33	17.12	48.49	9.51	21.27	294.12	---	3.92	239.95	---	8.23
47.45	-41.66	11.94	50.79	11.07	23.82	294.12	---	3.63	239.95	---	7.28
48.2	-34.06	12.05	45.55	10.55	22.88	294.12	---	4.22	239.95	---	7.61
50.13	-14.50	12.33	32.06	9.22	20.45	446.20	---	10.25	142.30	---	4.90
52.81	7.70	45.64	27.56	7.37	17.98	446.20	---	7.35	142.30	---	5.68
55.48	24.84	80.01	23.06	5.51	16.47	446.20	---	3.98	142.30	---	6.31
58.16	37.22	104.19	18.56	3.66	14.16	446.20	---	2.94	142.30	---	7.47
60.84	43.04	94.28	14.14	1.43	9.46	446.20	---	3.18	142.30	---	11.42
63.52	44.37	88.47	11.31	0.44	8.70	446.20	---	3.38	142.30	---	12.53
66.19	40.68	87.68	8.48	2.31	10.38	446.20	---	3.45	142.30	---	10.32
68.87	31.99	87.15	5.65	4.18	12.37	446.20	---	3.57	142.30	---	8.51
71.55	18.29	65.35	2.82	6.05	14.27	446.20	---	4.97	142.30	---	7.25
73.47	5.14	18.36	0.79	7.39	20.06	446.20	---	18.42	142.30	---	5.09
74.22	0.00	0.00	0.00	7.92	22.32	446.20	---	N/A	142.30	---	4.55

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Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V			(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.01	0.03	7.39	22.32	340.95	---	8742.31	233.50	---	7.72	
0.75	4.89	13.12	0.98	6.87	20.87	340.95	---	19.62	233.50	---	8.28	
2.5	16.31	43.70	3.20	5.66	17.49	446.20	---	7.48	142.30	---	5.93	
5	28.29	72.78	6.42	3.93	14.56	446.20	---	4.33	142.30	---	7.25	
7.5	35.95	96.04	9.63	2.20	12.81	446.20	---	3.20	142.30	---	8.37	
10	39.28	108.90	12.85	0.47	10.89	446.20	---	2.79	142.30	---	10.01	
12.5	37.51	95.37	16.07	1.81	13.29	446.20	---	3.21	142.30	---	8.10	
15	30.82	75.20	19.40	3.54	11.63	446.20	---	4.15	142.30	---	9.11	
17.5	18.79	59.40	23.11	5.27	15.05	446.20	---	5.45	142.30	---	6.92	
20	4.43	47.76	26.81	7.01	16.94	446.20	---	7.08	142.30	---	6.05	
22.5	-15.27	26.70	37.68	8.74	18.46	446.20	---	5.70	142.30	---	5.46	
24.25	-31.17	17.10	49.48	9.94	22.21	312.06	---	4.22	225.19	---	7.35	
25	-37.99	13.42	54.54	10.45	23.82	312.06	---	3.70	225.19	---	6.83	
25.75	-33.01	12.80	52.10	8.87	22.01	312.06	---	3.97	225.19	---	7.47	
27.17	-23.58	11.63	47.40	5.89	18.58	446.20	---	6.73	142.30	---	5.57	
29.34	-12.43	37.02	40.44	4.39	16.36	446.20	---	8.18	142.30	---	6.42	
31.51	-4.52	62.08	33.39	2.89	14.78	446.20	---	5.46	142.30	---	7.21	
33.68	0.13	77.48	26.33	1.40	12.45	446.20	---	4.43	142.30	---	8.65	
35.85	1.56	69.49	20.38	0.55	8.85	446.20	---	4.92	142.30	---	12.31	
38.02	-1.25	60.60	27.76	2.05	8.85	446.20	---	5.64	142.30	---	12.14	
40.19	-7.32	53.19	35.18	3.54	12.69	446.20	---	6.32	142.30	---	8.35	
42.36	-16.64	46.32	42.60	5.04	14.76	446.20	---	7.05	142.30	---	7.07	
44.53	-29.21	17.34	50.03	6.54	16.34	446.20	---	6.28	142.30	---	6.30	
45.95	-39.48	14.39	57.89	9.73	19.30	320.22	---	3.77	227.56	---	8.56	
46.7	-44.91	12.83	57.45	11.41	20.87	320.22	---	3.51	227.56	---	7.84	
47.45	-37.06	12.42	49.90	10.89	20.45	320.22	---	4.19	227.56	---	8.03	
49.45	-16.12	11.32	29.76	9.51	19.32	446.20	---	10.99	142.30	---	5.17	
52.2	7.43	39.43	25.79	7.60	17.44	446.20	---	8.52	142.30	---	5.84	
54.95	25.74	73.25	21.84	5.70	15.57	446.20	---	4.33	142.30	---	6.66	
57.71	38.82	91.74	17.92	3.80	12.90	446.20	---	3.32	142.30	---	8.19	
60.46	45.29	87.96	14.06	1.47	7.48	446.20	---	3.39	142.30	---	14.44	
63.21	46.72	91.87	11.25	0.44	7.28	446.20	---	3.23	142.30	---	14.98	
65.96	42.87	88.91	8.44	2.36	8.85	446.20	---	3.38	142.30	---	12.10	
68.72	33.75	81.55	5.62	4.27	11.63	446.20	---	3.79	142.30	---	9.04	
71.47	19.36	60.01	2.81	6.18	13.68	446.20	---	5.40	142.30	---	7.55	
73.47	5.28	16.37	0.77	7.58	20.37	446.20	---	20.65	142.30	---	5.00	
74.22	0.00	0.00	0.00	8.10	22.88	446.20	---	N/A	142.30	---	4.43	

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Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+ L+I	M- L+I	V		D						
0	0.00	0.02	0.04	6.15	15.10	344.25	---	6620.19	233.50	---	11.49	
0.75	4.01	8.50	0.59	5.67	13.98	344.25	---	30.67	233.50	---	12.46	
2.5	13.35	28.30	1.88	4.54	11.35	446.20	---	11.66	142.30	---	9.24	
5	22.70	46.22	3.77	2.93	9.25	446.20	---	6.93	142.30	---	11.52	
7.5	28.01	60.19	5.66	1.32	8.03	446.20	---	5.24	142.30	---	13.47	
10	29.31	67.17	7.55	0.29	6.73	446.20	---	4.67	142.30	---	16.22	
12.5	25.95	55.54	9.44	1.90	8.92	446.20	---	5.71	142.30	---	12.06	
15	22.39	45.49	11.12	2.23	6.99	446.20	---	7.05	142.30	---	15.34	
17.5	14.78	37.17	13.48	3.85	9.39	446.20	---	8.84	142.30	---	11.25	
20	3.14	31.06	15.97	5.46	10.78	446.20	---	10.95	142.30	---	9.65	
22.5	-12.54	20.27	24.93	7.08	11.95	446.20	---	13.26	142.30	---	8.57	
24.25	-25.74	12.90	32.27	8.20	15.03	352.68	---	7.61	235.88	---	11.53	
25	-31.40	8.88	35.42	8.68	16.35	352.68	---	6.77	235.88	---	10.57	
25.75	-27.05	8.71	33.78	7.40	14.89	352.68	---	7.23	235.88	---	11.69	
27.09	-19.29	8.41	30.85	5.11	12.28	446.20	---	10.50	142.30	---	8.50	
29.19	-10.00	24.08	26.28	3.76	10.77	446.20	---	12.68	142.30	---	9.81	
31.28	-3.55	39.85	21.72	2.41	9.70	446.20	---	8.52	142.30	---	11.04	
33.38	0.09	49.98	17.24	1.06	8.28	446.20	---	6.87	142.30	---	13.09	
35.47	0.72	43.25	14.07	0.28	7.57	446.20	---	7.92	142.30	---	19.60	
37.57	-1.28	38.50	19.25	1.63	5.57	446.20	---	8.88	142.30	---	19.36	
39.66	-6.11	34.31	24.43	2.98	8.18	446.20	---	9.83	142.30	---	13.02	
41.76	-13.77	30.30	29.62	4.33	9.60	446.20	---	10.87	142.30	---	10.95	
43.85	-24.26	20.39	34.88	5.68	10.68	446.20	---	9.14	142.30	---	9.72	
45.2	-32.86	12.36	39.27	8.10	13.05	364.68	---	6.47	240.63	---	13.56	
45.95	-37.64	7.90	40.16	9.44	14.37	364.68	---	6.05	240.63	---	12.22	
46.7	-31.25	7.65	34.72	8.96	14.16	364.68	---	7.18	240.63	---	12.44	
48.78	-13.54	26.94	19.63	7.61	13.59	446.20	---	16.80	142.30	---	7.49	
51.6	5.40	26.31	15.18	5.79	11.73	446.20	---	12.84	142.30	---	8.84	
54.43	19.49	48.47	12.63	3.97	10.28	446.20	---	6.69	142.30	---	10.26	
57.26	27.83	60.54	10.28	2.14	8.54	446.20	---	5.21	142.30	---	12.57	
60.09	30.49	54.74	8.59	2.42	8.18	446.20	---	5.71	142.30	---	13.09	
62.91	34.75	55.16	6.87	0.59	7.79	446.20	---	5.59	142.30	---	13.98	
65.74	33.84	57.59	5.15	1.24	6.12	446.20	---	5.37	142.30	---	17.68	
68.57	27.76	56.94	3.43	3.07	6.74	446.20	---	5.54	142.30	---	15.79	
71.4	16.50	36.96	1.71	4.89	8.14	446.20	---	8.84	142.30	---	12.85	
73.47	4.39	9.83	0.45	6.23	13.54	446.20	---	34.47	142.30	---	7.93	
74.22	0.00	0.00	0.00	6.72	15.49	446.20	---	N/A	142.30	---	6.63	

2F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)						
0	0.00	0.04	0.01	6.05	10.39	1028.40	---	19776.92	190.80	---	13.54	
0.75	4.04	6.84	0.96	5.65	10.09	1028.40	---	115.15	190.80	---	13.99	
2.5	13.47	22.69	3.16	4.71	9.38	1028.40	---	34.27	190.80	---	15.14	
5	23.57	39.08	6.33	3.37	8.11	1028.40	---	19.64	190.80	---	17.68	
7.5	30.32	49.19	9.50	2.03	6.86	1028.40	---	15.47	190.80	---	21.10	
10	33.72	53.65	12.66	0.69	5.66	1028.40	---	14.12	190.80	---	25.81	
12.5	33.78	55.04	15.83	1.61	7.28	1028.40	---	13.76	190.80	---	19.94	
15	28.07	47.32	14.97	2.95	7.27	1028.40	---	16.12	190.80	---	19.78	
17.5	19.02	35.45	14.10	4.29	8.43	1028.40	---	21.78	190.80	---	16.90	
20	6.62	20.47	13.52	5.63	9.51	1028.40	---	38.32	190.80	---	14.84	
22.5	-9.13	10.57	14.38	6.97	10.46	1028.40	---	54.38	190.80	---	13.37	
24.25	1.90	17.50	13.78	7.91	11.21	1028.40	---	45.10	190.80	---	12.39	
25	6.62	20.47	13.52	8.31	11.53	1028.40	---	38.32	190.80	---	12.01	
25.75	-3.13	16.72	19.32	6.57	10.76	1028.40	---	40.78	190.80	---	13.03	
27.03	-19.77	10.31	29.23	3.61	9.44	1028.40	---	26.39	190.80	---	15.17	
29.07	-13.54	21.77	26.35	2.52	8.40	1028.40	---	29.51	190.80	---	17.17	
31.1	-9.53	30.21	23.68	1.43	7.27	1028.40	---	25.87	190.80	---	19.99	
33.14	-7.73	35.16	21.05	0.34	6.10	1028.40	---	22.28	190.80	---	24.00	
35.17	-8.15	36.53	22.59	0.79	3.73	1028.40	---	21.43	190.80	---	39.14	
37.2	-10.88	35.91	26.95	1.88	4.67	1028.40	---	21.73	190.80	---	31.03	
39.24	-15.82	31.76	31.31	2.97	5.85	1028.40	---	24.41	190.80	---	24.58	
41.27	-22.97	23.99	35.70	4.06	7.02	1028.40	---	21.52	190.80	---	20.33	
43.31	-32.35	12.89	40.17	5.15	8.17	1028.40	---	18.89	190.80	---	17.33	
44.59	-39.65	11.48	43.56	8.28	10.54	1028.40	---	17.25	190.80	---	13.14	
45.34	-43.93	10.66	45.55	10.12	11.93	1028.40	---	16.40	190.80	---	11.45	
46.09	-36.93	10.00	39.07	9.72	11.93	1028.40	---	19.30	190.80	---	11.49	
48.23	-16.94	8.11	20.59	8.57	11.93	1028.40	---	37.60	190.80	---	11.58	
51.12	5.58	22.16	12.03	7.02	11.41	1028.40	---	35.45	190.80	---	12.25	
54.01	23.63	41.65	13.58	5.48	10.51	1028.40	---	18.43	190.80	---	13.44	
56.89	37.22	58.21	15.45	3.93	9.49	1028.40	---	12.95	190.80	---	15.05	
59.78	46.33	70.18	17.32	0.66	4.30	1028.40	---	10.61	190.80	---	33.98	
62.67	46.00	67.04	13.86	0.89	5.07	1028.40	---	11.11	190.80	---	28.77	
65.56	41.20	60.77	10.39	2.43	6.14	1028.40	---	12.34	190.80	---	23.51	
68.45	31.94	47.82	6.93	3.98	7.35	1028.40	---	15.87	190.80	---	19.43	
71.34	18.20	27.11	3.46	5.53	8.61	1028.40	---	28.51	190.80	---	16.40	
73.47	4.74	7.06	0.90	6.68	10.17	1028.40	---	111.38	190.80	---	13.77	
74.22	0.00	0.00	0.00	7.08	10.72	1028.40	---	N/A	190.80	---	13.03	

2F1

Stringer F2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
		D	L+I	L+I	D							L+I
3F1 Stringer F1-1	0	0.00	0.09	0.02	6.69	15.01	738.00	---	6307.69	207.60	---	10.19
	0.75	4.46	9.77	1.36	6.29	14.55	738.00	---	57.62	207.60	---	10.54
	2.88	17.14	37.28	5.17	5.17	13.26	738.00	---	14.77	207.60	---	11.65
	5.77	29.88	64.64	10.35	3.66	11.54	738.00	---	8.32	207.60	---	13.52
	8.65	38.25	81.84	15.53	2.14	9.72	738.00	---	6.47	207.60	---	16.21
	11.54	42.25	92.73	20.71	0.63	8.05	738.00	---	5.67	207.60	---	19.76
	14.42	41.88	97.50	25.90	2.57	10.32	738.00	---	5.39	207.60	---	15.23
	17.3	32.30	79.63	24.50	4.08	12.51	738.00	---	6.72	207.60	---	12.44
	20.19	18.34	56.87	23.09	5.60	13.94	738.00	---	9.66	207.60	---	11.05
	23.07	0.00	26.68	21.72	7.11	15.82	738.00	---	21.28	207.60	---	9.64
	25.95	-22.68	1.47	24.70	8.63	14.34	738.00	---	22.07	207.60	---	10.53
	28.09	-42.72	3.05	52.17	9.75	15.30	738.00	---	10.06	207.60	---	9.80
	28.84	-49.75	3.61	61.80	10.14	15.63	738.00	---	8.38	207.60	---	9.57
	29.59	-44.02	6.63	59.97	9.01	15.65	738.00	---	8.73	207.60	---	9.63
	30.86	-34.32	11.75	56.86	7.10	15.69	738.00	---	9.38	207.60	---	9.73
	32.88	-21.04	31.27	53.03	6.04	14.32	738.00	---	10.31	207.60	---	10.73
	34.9	-9.91	45.64	49.33	4.97	12.41	738.00	---	11.31	207.60	---	12.47
	36.93	-0.92	56.42	45.68	3.91	11.43	738.00	---	10.05	207.60	---	13.63
	38.95	5.93	64.73	42.04	2.07	7.16	738.00	---	8.68	207.60	---	22.01
	40.97	9.04	60.52	33.63	1.01	8.81	738.00	---	9.23	207.60	---	18.01
42.99	10.00	54.48	25.22	0.06	9.43	738.00	---	10.24	207.60	---	16.93	
45.01	8.82	43.25	16.81	1.12	11.09	738.00	---	12.92	207.60	---	14.30	
47.04	5.48	25.03	8.40	2.18	12.73	738.00	---	22.46	207.60	---	12.37	
48.31	2.03	9.29	3.12	2.85	13.64	738.00	---	60.87	207.60	---	11.50	
49.06	0.00	0.00	0.00	3.24	14.18	738.00	---	N/A	207.60	---	11.03	
3F1 Stringer S1-1	0	0.00	0.04	0.08	6.62	20.19	523.90	---	5037.50	165.00	---	5.96
	0.75	4.27	12.13	0.71	6.13	19.11	523.90	---	32.88	165.00	---	6.32
	2.82	16.04	45.49	2.43	4.76	16.13	523.90	---	8.51	165.00	---	7.57
	5.65	26.85	71.72	4.88	2.90	12.71	523.90	---	5.24	165.00	---	9.76
	8.47	32.41	83.38	7.32	1.04	9.78	523.90	---	4.44	165.00	---	12.87
	11.29	32.71	87.30	9.77	0.82	11.11	523.90	---	4.24	165.00	---	11.35
	14.12	27.77	79.52	12.21	0.32	8.83	523.90	---	4.72	165.00	---	14.34
	16.94	24.25	66.87	16.44	2.17	9.62	523.90	---	5.66	165.00	---	12.97
	19.76	15.51	57.11	21.30	4.01	15.21	523.90	---	6.78	165.00	---	8.08
	22.58	1.55	43.46	26.09	5.85	15.81	523.90	---	9.24	165.00	---	7.66
	25.41	-17.64	16.76	32.88	7.70	17.98	523.90	---	11.72	165.00	---	6.63
	27.48	-32.45	4.82	43.36	9.69	18.88	243.03	---	3.56	248.02	---	9.63
	28.23	-37.82	0.49	47.16	9.47	19.20	243.03	---	3.16	248.02	---	9.44
	28.98	-32.32	1.40	43.71	8.45	18.56	243.03	---	3.54	248.02	---	9.81
	30.31	-22.58	3.02	37.59	6.64	17.49	523.90	---	10.12	165.00	---	6.88
	32.4	-10.15	27.21	31.86	5.30	15.52	523.90	---	12.29	165.00	---	7.84
	34.48	-0.52	41.62	26.32	3.95	12.87	523.90	---	9.67	165.00	---	9.56
	36.56	6.30	54.33	20.69	2.60	10.21	523.90	---	7.73	165.00	---	12.18
	38.64	10.36	48.18	15.07	2.36	12.11	523.90	---	8.45	165.00	---	10.29
	40.73	16.87	53.57	12.06	1.01	10.06	523.90	---	7.26	165.00	---	12.52
42.81	14.56	53.79	9.05	0.34	10.69	523.90	---	7.22	165.00	---	11.84	
44.89	12.45	44.82	6.03	1.69	11.32	523.90	---	8.71	165.00	---	11.06	
46.98	7.54	34.10	3.02	3.03	13.67	523.90	---	11.60	165.00	---	9.06	
48.31	2.72	12.30	1.09	3.89	15.66	215.85	---	13.28	201.17	---	9.63	
49.06	0.00	0.00	0.00	4.38	16.78	215.85	---	N/A	201.17	---	8.96	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
3F1 Stringer S2-1	0	0.00	0.03	0.09	7.96	30.52	523.90	---	4477.78	165.00	---	3.90
	0.75	5.23	18.94	1.45	7.43	29.09	523.90	---	21.00	165.00	---	4.11
	2.75	19.19	69.36	5.09	6.01	25.26	523.90	---	5.53	165.00	---	4.79
	5.5	33.04	114.40	10.21	4.07	20.83	523.90	---	3.23	165.00	---	5.90
	8.25	41.55	139.26	15.33	2.12	16.90	523.90	---	2.60	165.00	---	7.38
	10.99	44.71	147.77	20.44	0.18	13.43	523.90	---	2.42	165.00	---	9.44
	13.74	42.52	147.23	25.54	2.25	13.50	523.90	---	2.45	165.00	---	9.24
	16.49	33.68	117.28	32.81	4.18	17.58	523.90	---	3.15	165.00	---	6.98
	19.24	19.52	96.40	40.09	6.11	25.15	523.90	---	3.98	165.00	---	4.80
	21.99	0.00	68.75	47.98	8.04	26.18	523.90	---	5.86	165.00	---	4.54
	24.74	-24.77	17.23	54.66	9.97	28.94	523.90	---	6.92	165.00	---	4.04
	26.73	-43.96	5.65	70.07	11.38	28.62	273.51	---	2.38	256.24	---	6.49
	27.48	-51.19	1.29	75.88	11.84	28.52	273.51	---	2.10	256.24	---	6.50
	28.23	-44.16	1.75	71.93	10.78	28.23	273.51	---	2.31	256.24	---	6.60
	29.64	-30.95	2.62	64.49	8.63	27.68	523.90	---	5.77	165.00	---	4.27
	31.8	-13.96	45.74	56.22	7.13	24.95	523.90	---	6.92	165.00	---	4.80
	33.96	-0.21	75.47	47.94	5.62	21.56	523.90	---	5.34	165.00	---	5.63
	36.11	10.30	94.17	39.67	4.12	17.84	523.90	---	4.17	165.00	---	6.88
	38.27	17.61	95.90	31.39	2.11	13.46	523.90	---	4.92	165.00	---	9.27
	40.43	20.54	99.28	25.12	0.61	12.37	523.90	---	3.85	165.00	---	10.21
	42.59	20.23	94.18	18.84	0.90	17.41	523.90	---	4.06	165.00	---	7.24
44.74	16.67	78.12	12.56	2.40	18.84	523.90	---	4.95	165.00	---	6.61	
46.9	9.86	55.79	6.28	3.91	22.12	523.90	---	7.05	165.00	---	5.56	
48.31	3.42	19.37	2.18	4.89	24.37	250.11	---	9.75	212.13	---	6.49	
49.06	0.00	0.00	0.00	5.41	25.57	250.11	---	N/A	212.13	---	6.17	
3F1 Stringer S3-1	0	0.00	0.03	0.06	7.83	30.70	523.90	---	6716.67	165.00	---	3.88
	0.75	5.17	19.24	1.67	7.30	30.18	523.90	---	20.68	165.00	---	3.96
	2.67	18.40	68.40	5.78	5.93	28.84	523.90	---	5.62	165.00	---	4.20
	5.35	31.71	113.73	11.59	4.03	23.79	523.90	---	3.26	165.00	---	5.17
	8.02	39.95	139.26	17.39	2.13	18.89	523.90	---	2.61	165.00	---	6.61
	10.69	43.11	147.58	23.19	0.23	17.29	523.90	---	2.44	165.00	---	7.33
	13.36	41.18	147.20	28.98	2.50	14.18	523.90	---	2.46	165.00	---	8.77
	16.04	31.96	116.42	36.13	4.39	18.22	523.90	---	3.19	165.00	---	6.73
	18.71	17.69	94.83	43.29	6.28	25.69	523.90	---	4.06	165.00	---	4.70
	21.38	-1.64	65.84	50.44	8.17	26.63	523.90	---	6.10	165.00	---	4.46
	24.05	-26.03	22.22	57.60	10.05	29.38	523.90	---	6.54	165.00	---	3.98
	25.98	-45.11	7.44	71.48	11.38	32.34	304.92	---	2.65	267.20	---	6.00
	26.73	-52.52	1.69	76.88	11.89	33.49	304.92	---	2.37	267.20	---	5.78
	27.48	-45.27	2.11	72.86	10.81	31.66	304.92	---	2.60	267.20	---	6.15
	28.96	-30.95	2.94	64.92	8.87	28.04	523.90	---	5.73	165.00	---	4.21
	31.19	-12.89	48.90	57.84	7.30	25.40	523.90	---	6.84	165.00	---	4.71
	33.43	1.67	83.09	49.15	5.74	21.79	523.90	---	4.83	165.00	---	5.56
	35.66	12.73	100.14	41.27	4.17	18.14	523.90	---	3.78	165.00	---	6.77
	37.89	20.16	105.25	33.41	2.10	13.11	523.90	---	3.54	165.00	---	9.52
	40.13	23.10	107.08	26.73	0.53	12.88	523.90	---	3.55	165.00	---	9.81
	42.36	22.54	100.99	20.05	1.04	17.85	523.90	---	3.77	165.00	---	7.05
44.59	18.47	83.91	13.37	2.61	19.27	523.90	---	4.58	165.00	---	6.45	
46.82	10.89	59.50	6.69	4.18	22.47	523.90	---	6.59	165.00	---	5.46	
48.31	3.65	19.92	2.24	5.22	24.69	291.21	---	11.06	225.83	---	6.83	
49.06	0.00	0.00	0.00	5.75	25.80	291.21	---	N/A	225.83	---	6.51	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
3F1 Stringer S4-1	0	0.00	0.04	0.07	7.08	27.46	446.20	---	4903.30	142.30	---	3.73
	0.75	4.63	18.31	1.64	6.56	26.59	446.20	---	18.49	142.30	---	5.87
	2.6	16.04	63.39	5.50	5.27	24.43	446.20	---	5.16	142.30	---	4.26
	5.19	27.37	105.41	11.02	3.46	20.01	446.20	---	3.00	142.30	---	5.30
	7.79	33.99	127.20	16.54	1.64	15.43	446.20	---	2.43	142.30	---	6.99
	10.39	35.90	133.55	22.06	0.17	13.05	446.20	---	2.30	142.30	---	8.37
	12.98	33.09	128.92	27.55	2.00	12.79	446.20	---	2.41	142.30	---	8.40
	15.58	25.54	104.40	34.89	3.81	16.28	446.20	---	3.04	142.30	---	6.49
	18.18	13.30	84.94	42.22	5.61	23.28	446.20	---	3.88	142.30	---	4.46
	20.78	-3.63	57.66	49.58	7.42	24.33	446.20	---	5.89	142.30	---	4.19
	23.37	-25.27	16.92	56.98	9.22	27.48	446.20	---	5.58	142.30	---	3.65
	25.22	-42.48	6.13	69.55	10.40	28.33	294.12	---	2.64	239.95	---	6.15
	25.97	-49.46	1.75	74.65	11.00	28.67	294.12	---	2.37	239.95	---	6.05
	26.72	-42.44	2.64	70.14	10.21	28.26	294.12	---	2.62	239.95	---	6.17
	28.28	-27.85	4.50	60.76	8.56	27.40	446.20	---	5.19	142.30	---	3.68
	30.59	-9.93	49.61	52.87	6.96	24.69	446.20	---	6.29	142.30	---	4.15
	32.9	4.29	85.18	45.18	5.36	21.20	446.20	---	3.98	142.30	---	4.91
	35.2	14.83	104.28	37.41	3.76	17.38	446.20	---	3.15	142.30	---	6.08
	37.51	21.47	103.99	29.71	2.13	13.66	446.20	---	3.90	142.30	---	7.86
	39.82	24.54	106.48	23.77	0.53	12.35	446.20	---	2.99	142.30	---	8.82
42.13	23.91	102.10	17.83	1.07	17.52	446.20	---	3.13	142.30	---	6.19	
44.44	19.58	85.62	11.89	2.68	18.72	446.20	---	3.78	142.30	---	5.70	
46.75	11.56	61.88	5.95	4.28	21.92	446.20	---	5.36	142.30	---	4.80	
48.31	3.75	20.09	1.93	5.36	24.47	301.56	---	11.36	221.62	---	6.75	
49.06	0.00	0.00	0.00	5.88	25.69	301.56	---	N/A	221.62	---	6.41	
3F1 Stringer S5-1	0	0.00	0.04	0.06	7.11	28.28	446.20	---	5720.51	142.30	---	3.62
	0.75	4.68	18.61	2.01	6.59	27.24	446.20	---	18.19	142.30	---	5.78
	2.52	15.72	62.44	6.62	5.36	24.78	446.20	---	5.25	142.30	---	4.20
	5.04	27.01	107.02	13.26	3.60	20.59	446.20	---	2.95	142.30	---	5.14
	7.56	33.89	130.92	19.91	1.85	16.36	446.20	---	2.36	142.30	---	6.58
	10.08	36.35	141.29	26.55	0.10	14.08	446.20	---	2.17	142.30	---	7.77
	12.61	34.40	137.37	33.21	2.80	14.45	446.20	---	2.38	142.30	---	7.38
	15.13	25.13	112.63	41.02	4.55	18.22	446.20	---	2.82	142.30	---	5.76
	17.65	11.46	86.12	48.82	6.29	24.73	446.20	---	3.85	142.30	---	4.17
	20.17	-6.63	53.66	56.63	8.04	25.85	446.20	---	5.94	142.30	---	3.92
	22.69	-29.12	9.57	64.44	9.79	28.66	446.20	---	4.87	142.30	---	3.48
	24.46	-46.87	3.95	75.05	11.00	28.97	321.72	---	2.67	247.07	---	6.18
	25.21	-54.39	1.57	79.54	11.51	29.10	321.72	---	2.43	247.07	---	6.14
	25.96	-46.73	2.56	74.73	10.85	28.95	321.72	---	2.69	247.07	---	6.18
	27.6	-29.97	4.73	64.22	9.42	28.76	446.20	---	4.88	142.30	---	3.48
	29.98	-9.47	54.21	56.81	7.77	26.28	446.20	---	5.91	142.30	---	3.87
	32.37	7.10	95.88	48.81	6.12	22.86	446.20	---	3.51	142.30	---	4.52
	34.75	19.74	119.61	41.11	4.48	18.99	446.20	---	2.70	142.30	---	5.53
	37.13	28.30	122.96	33.44	1.74	12.38	446.20	---	2.56	142.30	---	8.70
	39.52	20.49	121.44	26.76	0.09	13.52	446.20	---	2.58	142.30	---	8.09
41.9	28.74	112.89	20.07	1.56	18.80	446.20	---	2.79	142.30	---	5.74	
44.29	23.05	94.44	13.39	3.21	19.79	446.20	---	3.39	142.30	---	5.37	
46.67	13.42	66.77	6.70	4.86	22.73	446.20	---	4.94	142.30	---	4.60	
48.31	4.21	20.95	2.10	5.99	24.91	340.95	---	12.32	233.50	---	6.97	
49.06	0.00	0.00	0.00	6.51	25.90	340.95	---	N/A	233.50	---	6.68	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)						
		D	L+I	L+I	D		L+I					
3F1 Stringer S6-1	0	0.00	0.05	0.13	5.21	17.91	306.00	---	1810.65	98.70	---	3.95
	0.75	3.31	10.96	0.97	4.74	16.90	306.00	---	21.18	98.70	---	4.21
	2.45	10.81	35.68	2.87	3.66	14.61	306.00	---	6.29	98.70	---	4.95
	4.89	17.88	57.55	5.76	2.12	11.53	306.00	---	3.78	98.70	---	6.40
	7.34	21.17	65.87	8.65	0.57	8.78	306.00	---	3.25	98.70	---	8.58
	9.79	20.69	66.78	11.54	0.97	10.97	306.00	---	3.21	98.70	---	6.83
	12.23	16.42	59.45	14.42	0.63	10.40	306.00	---	3.68	98.70	---	7.24
	14.68	13.00	57.87	19.32	2.17	9.32	306.00	---	3.84	98.70	---	7.91
	17.13	5.80	48.99	24.70	3.71	12.34	306.00	---	4.69	98.70	---	5.85
	19.57	-5.18	32.37	30.14	5.26	15.37	306.00	---	7.11	98.70	---	4.60
	22.02	-19.93	7.59	35.64	6.80	18.11	306.00	---	6.05	98.70	---	3.82
	23.71	-32.76	2.73	44.11	7.87	19.02	306.00	---	4.59	98.70	---	3.58
	24.46	-38.45	0.58	47.87	8.35	19.42	306.00	---	4.11	98.70	---	3.48
	25.21	-32.80	1.84	44.39	7.87	18.67	306.00	---	4.56	98.70	---	3.65
	26.92	-19.92	4.72	36.44	6.76	16.96	306.00	---	5.91	98.70	---	4.08
	29.38	-5.21	29.42	30.84	5.21	14.24	306.00	---	7.46	98.70	---	4.97
	31.84	5.68	46.86	25.24	3.65	11.42	306.00	---	4.90	98.70	---	6.33
	34.3	12.76	56.16	19.64	2.10	8.93	306.00	---	3.96	98.70	---	8.27
	36.76	16.02	56.95	14.04	2.58	13.04	306.00	---	3.85	98.70	---	5.62
	39.22	20.45	63.29	11.23	1.03	10.06	306.00	---	3.40	98.70	---	7.44
41.68	21.07	64.95	8.42	0.53	7.26	306.00	---	3.30	98.70	---	10.38	
44.14	17.86	56.10	5.62	2.08	7.06	306.00	---	3.88	98.70	---	10.46	
46.6	10.84	33.08	2.81	3.63	10.21	306.00	---	6.79	98.70	---	7.08	
48.31	3.30	10.09	0.86	4.71	15.63	306.00	---	23.01	98.70	---	4.56	
49.06	0.00	0.00	0.00	5.18	18.01	306.00	---	N/A	98.70	---	3.93	
3F1 Stringer F2-1	0	0.00	0.12	0.03	5.03	14.31	1028.40	---	6592.31	190.80	---	9.90
	0.75	3.30	9.33	2.23	4.63	13.80	1028.40	---	84.40	190.80	---	10.30
	2.39	10.53	29.48	7.05	3.76	12.68	1028.40	---	26.48	190.80	---	11.28
	4.77	17.96	52.14	14.10	2.48	10.99	1028.40	---	14.83	190.80	---	13.13
	7.16	22.35	67.30	21.15	1.20	9.29	1028.40	---	11.42	190.80	---	15.67
	9.54	23.69	75.57	28.20	0.08	8.00	1028.40	---	10.15	190.80	---	18.34
	11.93	21.98	80.30	35.27	2.50	9.78	1028.40	---	9.58	190.80	---	14.75
	14.31	14.48	67.16	36.36	3.78	11.12	1028.40	---	11.56	190.80	---	12.86
	16.7	3.93	52.37	37.50	5.06	12.49	1028.40	---	15.03	190.80	---	11.35
	19.09	-9.66	31.23	38.68	6.34	14.14	1028.40	---	20.20	190.80	---	9.93
	21.47	-26.31	6.22	40.46	7.62	15.45	1028.40	---	18.90	190.80	---	9.01
	23.11	-39.83	3.54	42.52	8.49	14.32	1028.40	---	17.67	190.80	---	9.65
	23.86	-46.01	2.32	43.46	8.89	13.81	1028.40	---	17.14	190.80	---	9.98
	24.61	-39.60	3.13	41.01	8.59	14.33	1028.40	---	18.32	190.80	---	9.64
	26.38	-24.48	5.03	35.23	7.87	15.56	1028.40	---	21.76	190.80	---	8.93
	28.9	-6.35	31.65	33.90	6.52	14.30	1028.40	---	23.15	190.80	---	9.81
	31.42	8.37	54.53	33.22	5.17	12.89	1028.40	---	14.35	190.80	---	10.99
	33.94	19.70	70.63	32.61	3.82	11.10	1028.40	---	10.92	190.80	---	12.88
	36.46	27.62	85.00	32.02	2.47	9.86	1028.40	---	8.98	190.80	---	14.63
	38.98	28.90	80.27	25.61	0.17	7.87	1028.40	---	9.50	190.80	---	18.63
41.5	26.78	71.84	19.21	1.52	9.17	1028.40	---	10.64	190.80	---	15.84	
44.02	21.26	55.99	12.81	2.87	10.80	1028.40	---	13.75	190.80	---	13.32	
46.54	12.33	31.44	6.40	4.22	12.47	1028.40	---	24.77	190.80	---	11.43	
48.31	3.67	9.36	1.90	5.17	12.44	1028.40	---	84.15	190.80	---	11.38	
49.06	0.00	0.00	0.00	5.57	12.43	1028.40	---	N/A	190.80	---	11.36	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.08	0.02	5.78	14.34	738.00	---	7096.15	207.60	---	10.73	
0.75	3.85	9.44	1.83	5.39	13.91	738.00	---	59.73	207.60	---	11.10	
2.5	12.84	31.28	6.05	4.47	12.89	738.00	---	17.74	207.60	---	12.04	
5	22.36	55.46	12.11	3.15	11.14	738.00	---	9.83	207.60	---	14.05	
7.5	28.60	70.99	18.17	1.84	9.23	738.00	---	7.59	207.60	---	17.10	
10	31.56	79.14	24.23	0.53	8.30	738.00	---	6.77	207.60	---	19.18	
12.5	31.23	84.52	30.29	2.27	10.32	738.00	---	6.35	207.60	---	15.25	
15	23.90	69.57	30.33	3.59	11.95	738.00	---	7.82	207.60	---	13.06	
17.5	13.29	52.56	30.37	4.90	12.73	738.00	---	10.55	207.60	---	12.16	
20	-0.61	29.29	30.49	6.22	14.65	738.00	---	18.60	207.60	---	10.48	
22.5	-17.79	13.36	32.67	7.53	15.96	738.00	---	16.83	207.60	---	9.53	
24.25	-32.12	14.93	42.62	8.45	14.44	738.00	---	12.57	207.60	---	10.47	
25	-38.26	15.60	46.89	8.84	13.79	738.00	---	11.29	207.60	---	10.94	
25.75	-33.35	13.75	45.33	7.96	13.93	738.00	---	11.79	207.60	---	10.89	
27.53	-21.71	9.36	41.64	5.87	14.27	738.00	---	13.11	207.60	---	10.78	
30.06	-8.54	32.56	37.31	4.54	12.68	738.00	---	14.99	207.60	---	12.24	
32.6	1.27	50.47	34.00	3.21	10.64	738.00	---	11.22	207.60	---	14.71	
35.13	7.71	61.81	30.73	1.88	9.64	738.00	---	9.06	207.60	---	16.37	
37.66	10.78	70.82	27.47	0.28	7.64	738.00	---	7.86	207.60	---	20.87	
40.19	8.40	61.83	28.79	1.61	9.61	738.00	---	9.05	207.60	---	16.45	
42.73	2.65	50.45	31.75	2.94	10.47	738.00	---	11.20	207.60	---	14.97	
45.26	-6.47	32.04	34.80	4.27	12.42	738.00	---	16.13	207.60	---	12.51	
47.79	-18.96	9.75	38.78	5.60	13.55	738.00	---	14.15	207.60	---	11.37	
49.57	-30.11	15.10	42.83	7.55	13.52	738.00	---	12.55	207.60	---	11.25	
50.32	-34.81	17.36	44.53	8.37	13.51	738.00	---	11.97	207.60	---	11.20	
51.07	-29.00	16.49	41.05	7.97	14.34	738.00	---	13.12	207.60	---	10.58	
52.71	-16.30	14.60	33.43	7.11	16.15	738.00	---	16.49	207.60	---	9.45	
55.1	-0.80	28.33	31.53	5.86	14.84	738.00	---	17.98	207.60	---	10.37	
57.49	11.70	50.59	31.83	4.60	13.15	738.00	---	10.99	207.60	---	11.79	
59.88	21.20	66.61	32.13	3.35	11.51	738.00	---	8.20	207.60	---	13.58	
62.27	27.68	80.02	32.44	0.82	6.45	738.00	---	6.75	207.60	---	24.63	
64.66	28.15	74.02	25.95	0.43	8.18	738.00	---	7.29	207.60	---	19.47	
67.05	25.62	66.44	19.46	1.69	9.03	738.00	---	8.16	207.60	---	17.50	
69.44	20.08	51.57	12.97	2.94	11.00	738.00	---	10.62	207.60	---	14.25	
71.83	11.54	29.22	6.49	4.20	12.76	738.00	---	19.03	207.60	---	12.19	
73.47	3.62	9.17	2.04	5.06	12.63	738.00	---	61.52	207.60	---	12.24	
74.22	0.00	0.00	0.00	5.46	12.57	738.00	---	N/A	207.60	---	12.27	

3F1

Stringer F1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V							
0	0.00	0.03	0.07	5.74	17.81	215.85	---	2371.98	201.17	---	8.37
0.75	3.69	10.88	0.77	5.25	16.83	215.85	---	14.92	201.17	---	8.85
2.5	12.31	36.20	2.39	4.12	14.53	523.90	---	10.79	165.00	---	8.45
5	20.60	62.22	4.80	2.50	12.39	523.90	---	6.15	165.00	---	10.04
7.5	24.83	76.48	7.20	0.89	11.82	523.90	---	4.94	165.00	---	10.66
10	25.03	80.22	9.60	0.73	9.56	523.90	---	4.71	165.00	---	13.20
12.5	19.36	60.70	12.01	2.36	15.12	523.90	---	6.32	165.00	---	8.24
15	16.30	52.92	16.42	2.04	10.42	523.90	---	7.31	165.00	---	11.98
17.5	9.45	44.44	21.38	3.67	14.99	523.90	---	8.86	165.00	---	8.22
20	-2.10	30.79	26.45	5.30	15.59	523.90	---	13.02	165.00	---	7.80
22.5	-17.43	12.49	34.11	6.93	17.22	523.90	---	11.30	165.00	---	6.97
24.25	-28.62	9.55	44.11	8.02	18.73	204.30	---	2.91	234.31	---	9.19
25	-33.41	8.29	48.39	8.48	19.38	204.30	---	2.56	234.31	---	8.86
25.75	-28.36	8.51	44.89	7.71	18.68	204.30	---	2.87	234.31	---	9.23
27.47	-16.78	9.02	36.87	5.93	17.09	523.90	---	10.48	165.00	---	7.08
29.94	-4.08	36.11	30.37	4.34	15.30	523.90	---	11.05	165.00	---	8.01
32.41	4.68	56.30	23.92	2.75	13.21	523.90	---	7.07	165.00	---	9.40
34.89	9.50	65.47	18.05	1.15	9.12	523.90	---	6.01	165.00	---	13.78
37.36	8.14	50.39	11.25	0.60	4.84	523.90	---	7.84	165.00	---	12.84
39.83	7.62	46.45	15.83	1.01	9.15	523.90	---	8.51	165.00	---	13.76
42.3	3.10	40.70	21.61	2.63	14.57	523.90	---	9.83	165.00	---	8.53
44.77	-5.42	28.40	27.47	4.24	14.79	523.90	---	14.00	165.00	---	8.30
47.24	-17.93	13.78	35.33	5.85	13.25	523.90	---	10.90	165.00	---	9.14
48.96	-26.97	10.56	47.92	7.70	17.30	196.47	---	2.96	231.57	---	9.85
49.71	-30.91	9.15	44.79	8.50	19.07	196.47	---	2.68	231.57	---	8.90
50.46	-25.15	9.56	40.75	8.02	18.66	196.47	---	3.09	231.57	---	9.12
52.17	-12.01	10.48	31.54	6.92	17.73	523.90	---	12.40	165.00	---	6.77
54.62	3.02	38.42	26.35	5.34	15.80	523.90	---	10.41	165.00	---	7.70
57.07	14.78	61.56	21.39	3.77	14.00	523.90	---	6.32	165.00	---	8.80
59.52	21.48	73.19	16.92	2.19	10.29	523.90	---	5.21	165.00	---	12.12
61.97	22.62	67.97	13.00	2.16	12.54	523.90	---	5.60	165.00	---	9.95
64.42	25.95	71.32	10.40	0.55	9.77	523.90	---	5.29	165.00	---	12.93
66.87	25.31	70.40	7.80	1.07	12.01	523.90	---	5.36	165.00	---	10.48
69.32	20.71	59.63	5.20	2.68	12.20	523.90	---	6.41	165.00	---	10.18
71.77	12.15	45.65	2.60	4.30	14.29	523.90	---	8.56	165.00	---	8.58
73.47	3.72	13.97	0.80	5.42	16.59	523.90	---	28.57	165.00	---	7.92
74.22	0.00	0.00	0.00	5.92	17.61	523.90	---	N/A	165.00	---	6.87

3F1

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V								
0	0.00	0.02	0.06	7.19	26.62	250.11	---	3206.54	212.13	---	5.86	
0.75	4.73	17.15	1.57	6.67	25.50	250.11	---	10.94	212.13	---	6.14	
2.5	15.77	57.13	5.08	5.44	22.87	523.90	---	6.78	165.00	---	5.31	
5	27.19	101.86	10.18	3.70	19.76	523.90	---	3.69	165.00	---	6.24	
7.5	34.26	129.42	15.27	1.95	17.99	523.90	---	2.85	165.00	---	6.95	
10	36.96	138.32	20.37	0.21	13.13	523.90	---	2.65	165.00	---	9.65	
12.5	33.59	117.57	25.47	1.80	22.01	523.90	---	3.14	165.00	---	5.68	
15	26.90	100.82	32.80	3.55	18.06	523.90	---	3.73	165.00	---	6.83	
17.5	15.81	79.32	40.20	5.30	22.30	523.90	---	4.88	165.00	---	5.45	
20	0.32	53.43	47.61	7.06	24.45	523.90	---	7.51	165.00	---	4.90	
22.5	-19.57	19.62	55.02	8.81	26.91	523.90	---	6.97	165.00	---	4.39	
24.25	-34.34	16.17	66.59	9.99	27.96	243.03	---	2.29	248.02	---	6.47	
25	-40.67	14.69	71.55	10.50	28.41	243.03	---	2.04	248.02	---	6.35	
25.75	-34.90	12.75	66.13	9.37	27.58	243.03	---	2.30	248.02	---	6.58	
27.4	-22.21	8.47	54.18	6.87	25.74	523.90	---	7.03	165.00	---	4.66	
29.79	-7.74	43.93	45.00	5.20	22.03	523.90	---	8.78	165.00	---	5.53	
32.19	2.73	68.29	35.82	3.54	18.00	523.90	---	5.86	165.00	---	6.85	
34.59	9.21	79.52	26.63	1.87	13.00	523.90	---	4.95	165.00	---	9.00	
36.98	11.68	82.54	17.46	0.03	11.32	523.90	---	4.74	165.00	---	11.21	
39.38	9.60	78.97	24.76	1.70	14.15	523.90	---	4.98	165.00	---	8.85	
41.78	3.53	69.10	33.12	3.87	17.88	523.90	---	5.78	165.00	---	6.91	
44.17	-6.54	44.75	41.48	5.03	22.23	523.90	---	8.86	165.00	---	5.48	
46.57	-20.60	9.43	49.84	6.70	26.10	523.90	---	7.67	165.00	---	4.61	
48.22	-33.02	14.06	67.38	9.37	27.66	243.03	---	2.35	248.02	---	6.56	
48.97	-38.67	16.16	72.44	10.59	28.37	243.03	---	2.05	248.02	---	6.35	
49.72	-31.37	16.16	67.64	10.07	27.97	243.03	---	2.30	248.02	---	6.46	
51.49	-14.15	17.07	56.30	8.83	27.04	523.90	---	6.91	165.00	---	4.37	
54.02	5.94	68.57	48.41	7.08	24.42	523.90	---	5.70	165.00	---	4.91	
56.54	21.80	108.90	40.51	5.32	22.66	523.90	---	3.50	165.00	---	5.37	
59.07	32.81	129.25	32.62	3.56	17.13	523.90	---	2.86	165.00	---	7.20	
61.6	37.37	124.00	24.76	1.49	13.26	523.90	---	2.95	165.00	---	9.46	
64.12	38.87	123.30	19.80	0.30	13.25	523.90	---	2.95	165.00	---	9.56	
66.65	35.85	116.89	14.85	2.09	18.16	523.90	---	3.14	165.00	---	6.87	
69.17	28.31	98.82	9.89	3.88	19.23	523.90	---	3.79	165.00	---	6.40	
71.7	16.26	73.91	4.94	5.67	22.25	523.90	---	5.23	165.00	---	5.45	
73.47	4.84	22.00	1.47	6.92	24.92	523.90	---	18.10	165.00	---	4.82	
74.22	0.00	0.00	0.00	7.45	26.05	523.90	---	N/A	165.00	---	4.59	

3F1

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+ L+I	M- L+I	V		D						
0	0.00	0.02	0.04	7.55	27.03	291.21	---	5600.19	225.83	---	6.15	
0.75	5.01	17.50	1.68	7.03	25.92	291.21	---	12.52	225.83	---	6.46	
2.5	16.69	58.28	5.50	5.80	23.33	523.90	---	6.63	165.00	---	5.19	
5	28.98	104.36	11.02	4.04	20.27	523.90	---	3.58	165.00	---	6.06	
7.5	36.88	133.36	16.53	2.28	18.37	523.90	---	2.75	165.00	---	6.79	
10	40.38	143.31	22.04	0.52	13.70	523.90	---	2.53	165.00	---	9.23	
12.5	38.09	125.32	27.56	2.16	22.56	523.90	---	2.91	165.00	---	5.53	
15	30.47	106.06	34.30	3.93	19.21	523.90	---	3.51	165.00	---	6.40	
17.5	18.43	82.02	41.08	5.69	23.01	523.90	---	4.69	165.00	---	5.27	
20	1.97	54.39	47.87	7.46	25.50	523.90	---	7.37	165.00	---	4.68	
22.5	-18.91	18.72	54.66	9.22	27.90	523.90	---	7.03	165.00	---	4.22	
24.25	-34.79	18.45	68.28	10.42	28.44	270.45	---	2.54	237.58	---	6.06	
25	-41.59	17.90	74.12	10.94	28.67	270.45	---	2.25	237.58	---	5.99	
25.75	-35.88	15.26	69.94	9.60	28.02	270.45	---	2.46	237.58	---	6.18	
27.32	-23.94	9.74	61.78	6.79	26.67	523.90	---	6.20	165.00	---	4.50	
29.64	-10.06	45.97	51.75	5.17	22.96	523.90	---	7.59	165.00	---	5.30	
31.96	0.00	72.53	42.34	3.54	19.14	523.90	---	5.56	165.00	---	6.45	
34.28	6.38	86.47	32.93	1.91	15.28	523.90	---	4.59	165.00	---	8.13	
36.61	8.92	91.88	23.55	0.33	12.17	523.90	---	4.29	165.00	---	10.40	
38.93	6.26	86.10	32.00	1.96	15.45	523.90	---	4.61	165.00	---	8.09	
41.25	-0.18	71.85	41.14	3.59	19.06	523.90	---	5.61	165.00	---	6.47	
43.57	-10.40	46.47	50.27	5.21	23.19	523.90	---	7.81	165.00	---	5.25	
45.89	-24.39	10.17	59.40	6.84	26.94	523.90	---	6.37	165.00	---	4.46	
47.46	-36.42	15.89	67.52	9.90	30.89	270.45	---	2.47	237.58	---	5.60	
48.21	-42.17	18.62	74.36	11.36	32.78	270.45	---	2.23	237.58	---	5.23	
48.96	-34.33	18.01	68.72	10.84	31.48	270.45	---	2.53	237.58	---	5.46	
50.81	-14.98	16.49	54.81	9.54	28.28	523.90	---	7.08	165.00	---	4.15	
53.41	7.47	68.45	47.61	7.72	25.80	523.90	---	5.78	165.00	---	4.62	
56.01	25.77	112.68	40.41	5.89	24.78	523.90	---	3.35	165.00	---	4.88	
58.62	38.14	135.77	33.21	4.07	19.39	523.90	---	2.69	165.00	---	6.34	
61.22	44.39	132.39	26.04	1.19	13.88	523.90	---	2.71	165.00	---	9.06	
63.82	45.09	130.39	20.83	0.66	13.36	523.90	---	2.74	165.00	---	9.45	
66.42	40.98	124.27	15.62	2.51	18.48	523.90	---	2.91	165.00	---	6.73	
69.02	32.05	105.32	10.41	4.35	19.53	523.90	---	3.52	165.00	---	6.28	
71.62	18.32	79.68	5.20	6.20	22.57	523.90	---	4.83	165.00	---	5.35	
73.47	5.28	22.98	1.50	7.52	25.93	523.90	---	17.30	165.00	---	4.61	
74.22	0.00	0.00	0.00	8.05	27.29	523.90	---	N/A	165.00	---	4.36	

3F1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+ L+I	M- L+I	V D L+I							
0	0.00	0.02	0.05	7.23	26.41	301.56	---	4639.38	221.62	---	6.18
0.75	4.77	16.95	1.36	6.71	25.27	301.56	---	13.40	221.62	---	6.46
2.5	15.90	56.46	4.43	5.49	22.60	446.20	---	5.80	142.30	---	4.60
5	27.46	99.98	8.86	3.76	19.35	446.20	---	3.16	142.30	---	5.46
7.5	34.69	126.23	13.30	2.03	17.60	446.20	---	2.44	142.30	---	6.10
10	37.59	134.07	17.73	0.29	12.69	446.20	---	2.28	142.30	---	8.60
12.5	34.87	114.41	22.17	1.58	22.10	446.20	---	2.70	142.30	---	4.88
15	28.75	97.72	28.41	3.32	18.23	446.20	---	3.22	142.30	---	5.82
17.5	18.27	77.67	34.66	5.06	22.30	446.20	---	4.18	142.30	---	4.68
20	3.43	51.70	40.91	6.80	24.64	446.20	---	6.57	142.30	---	4.17
22.5	-15.75	17.51	47.16	8.53	27.19	446.20	---	6.94	142.30	---	3.71
24.25	-30.89	17.59	66.27	9.73	28.02	289.41	---	2.89	237.57	---	6.18
25	-37.38	17.77	74.46	10.24	28.37	289.41	---	2.49	237.57	---	6.08
25.75	-32.32	14.96	70.30	8.82	27.41	289.41	---	2.71	237.57	---	6.35
27.25	-22.19	9.34	61.98	5.99	25.48	446.20	---	5.18	142.30	---	4.06
29.49	-10.48	47.60	52.33	4.44	22.63	446.20	---	6.36	142.30	---	4.64
31.74	-2.26	75.22	42.66	2.88	19.85	446.20	---	4.53	142.30	---	5.37
33.98	2.47	89.27	33.00	1.33	15.46	446.20	---	3.82	142.30	---	7.02
36.23	3.81	83.03	24.53	0.18	9.33	446.20	---	4.09	142.30	---	11.71
38.47	1.66	78.27	34.56	1.74	15.54	446.20	---	4.36	142.30	---	6.93
40.72	-3.98	67.27	44.75	3.89	21.25	446.20	---	5.04	142.30	---	5.00
42.96	-13.12	44.24	54.95	4.84	22.16	446.20	---	6.01	142.30	---	4.72
45.21	-25.74	16.35	65.15	6.40	24.96	446.20	---	4.87	142.30	---	4.13
46.7	-36.33	16.92	75.74	9.51	28.96	294.12	---	2.58	239.95	---	6.04
47.45	-41.66	17.20	78.06	11.07	30.98	294.12	---	2.36	239.95	---	5.60
48.2	-34.06	16.55	69.36	10.55	30.79	294.12	---	2.77	239.95	---	5.65
50.13	-14.50	75.15	46.96	9.22	30.31	446.20	---	7.00	142.30	---	3.31
52.81	7.70	63.96	40.32	7.37	26.81	446.20	---	5.25	142.30	---	3.81
55.48	24.34	107.06	33.68	5.51	27.38	446.20	---	2.97	142.30	---	3.80
58.16	37.22	130.22	27.06	3.66	21.69	446.20	---	2.35	142.30	---	4.88
60.84	43.04	122.77	20.56	1.43	14.99	446.20	---	2.45	142.30	---	7.21
63.52	44.37	124.38	16.45	0.44	13.43	446.20	---	2.40	142.30	---	8.12
66.19	40.68	121.21	12.34	2.31	19.11	446.20	---	2.50	142.30	---	5.61
68.87	31.99	105.17	8.22	4.18	19.34	446.20	---	2.96	142.30	---	5.44
71.55	18.29	81.54	4.11	6.05	22.69	446.20	---	3.99	142.30	---	4.56
73.47	5.14	22.90	1.15	7.39	27.33	446.20	---	14.76	142.30	---	3.73
74.22	0.00	0.00	0.00	7.92	29.14	446.20	---	N/A	142.30	---	3.48

3F1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
	D	L+I	L+I	D	L+I						
0	0.00	0.02	0.04	7.39	26.80	340.95	---	6556.73	233.50	---	6.43
0.75	4.89	17.30	1.41	6.87	25.68	340.95	---	14.88	233.50	---	6.75
2.5	16.31	57.62	4.62	5.66	23.06	446.20	---	5.67	142.30	---	4.50
5	28.29	102.56	9.25	3.93	19.87	446.20	---	3.07	142.30	---	5.31
7.5	35.95	130.37	13.88	2.20	17.95	446.20	---	2.36	142.30	---	5.98
10	39.28	139.44	18.52	0.47	13.32	446.20	---	2.18	142.30	---	8.18
12.5	37.51	122.97	23.15	1.81	22.30	446.20	---	2.49	142.30	---	4.83
15	30.82	103.28	28.07	3.54	19.43	446.20	---	3.02	142.30	---	5.45
17.5	19.79	80.39	33.47	5.27	23.02	446.20	---	4.02	142.30	---	4.53
20	4.43	51.76	38.87	7.01	25.66	446.20	---	6.55	142.30	---	3.99
22.5	-15.27	17.85	45.93	8.74	28.12	446.20	---	7.14	142.30	---	3.58
24.25	-31.17	19.17	69.70	9.94	28.37	312.06	---	3.00	225.19	---	5.76
25	-37.99	19.88	79.89	10.45	28.48	312.06	---	2.53	225.19	---	5.72
25.75	-33.01	16.58	76.03	8.87	27.60	312.06	---	2.72	225.19	---	5.95
27.17	-23.58	10.34	68.73	5.89	25.94	446.20	---	4.65	142.30	---	3.99
29.34	-12.43	49.48	58.51	4.39	23.16	446.20	---	5.65	142.30	---	4.54
31.51	-4.52	74.60	48.29	2.89	19.97	446.20	---	4.54	142.30	---	5.34
33.68	0.13	89.84	38.08	1.40	15.71	446.20	---	3.82	142.30	---	6.85
35.85	1.56	86.88	30.32	0.55	13.51	446.20	---	3.93	142.30	---	11.45
38.02	-1.25	80.28	41.11	2.05	15.82	446.20	---	4.26	142.30	---	6.75
40.19	-7.32	65.59	51.89	3.84	21.22	446.20	---	5.12	142.30	---	4.99
42.36	-16.64	55.61	62.67	5.04	22.57	446.20	---	5.21	142.30	---	4.63
44.53	-29.21	26.19	73.46	6.54	25.36	446.20	---	4.27	142.30	---	4.06
45.95	-39.48	21.20	80.75	9.73	26.60	320.22	---	2.56	227.56	---	6.21
46.7	-44.91	18.56	84.60	11.41	27.26	320.22	---	2.38	227.56	---	6.00
47.45	-37.06	17.96	73.43	10.89	27.32	320.22	---	2.85	227.56	---	6.01
49.45	-16.12	16.36	43.66	9.51	27.49	446.20	---	7.49	142.30	---	3.64
52.2	7.43	53.43	37.86	7.60	24.74	446.20	---	6.28	142.30	---	4.12
54.95	25.74	100.41	32.05	5.70	24.81	446.20	---	3.16	142.30	---	4.18
57.71	38.82	132.12	26.25	3.80	19.86	446.20	---	2.30	142.30	---	5.32
60.46	45.29	126.47	20.48	1.47	11.49	446.20	---	2.36	142.30	---	9.40
63.21	46.72	132.56	16.38	0.44	11.69	446.20	---	2.24	142.30	---	9.33
65.96	42.87	125.81	12.28	2.36	11.72	446.20	---	2.39	142.30	---	9.14
68.72	33.75	110.82	8.19	4.27	14.94	446.20	---	2.79	142.30	---	7.04
71.47	19.36	72.61	4.09	6.18	19.01	446.20	---	4.46	142.30	---	5.43
73.47	5.28	19.80	1.12	7.58	25.16	446.20	---	17.07	142.30	---	4.95
74.22	0.00	0.00	0.00	8.10	27.46	446.20	---	N/A	142.30	---	3.69

3F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+ L+I	M- L+I	V		D						
0	0.00	0.03	0.05	6.15	17.83	344.25	---	5296.15	233.50	---	9.73	
0.75	4.01	11.18	0.86	5.67	16.95	344.25	---	23.34	233.50	---	10.26	
2.5	13.35	37.18	2.76	4.54	14.90	446.20	---	8.87	142.30	---	7.04	
5	22.70	64.61	5.52	2.93	12.57	446.20	---	4.96	142.30	---	8.48	
7.5	28.01	80.28	8.28	1.32	11.44	446.20	---	3.93	142.30	---	9.45	
10	29.31	84.87	11.05	0.29	9.09	446.20	---	3.70	142.30	---	12.01	
12.5	25.95	70.55	13.81	1.90	14.60	446.20	---	4.50	142.30	---	7.37	
15	22.39	61.03	16.36	2.23	11.86	446.20	---	5.26	142.30	---	9.04	
17.5	14.78	50.78	19.86	3.85	15.32	446.20	---	6.47	142.30	---	6.89	
20	3.14	34.01	23.35	5.46	16.23	446.20	---	10.05	142.30	---	6.41	
22.5	-12.54	13.85	29.34	7.08	18.18	446.20	---	11.27	142.30	---	5.63	
24.25	-25.74	13.98	46.43	8.20	15.01	352.68	---	5.29	235.88	---	11.54	
25	-31.40	13.03	53.75	8.68	13.65	352.68	---	4.46	235.88	---	12.66	
25.75	-27.05	11.20	50.72	7.40	14.91	352.68	---	4.82	235.88	---	11.67	
27.09	-19.29	7.93	45.35	5.11	17.16	446.20	---	7.15	142.30	---	6.08	
29.19	-10.00	32.74	38.61	3.76	15.34	446.20	---	8.63	142.30	---	6.89	
31.28	-3.55	47.44	31.91	2.41	12.84	446.20	---	7.16	142.30	---	8.34	
33.38	0.09	56.50	25.25	1.06	10.07	446.20	---	6.07	142.30	---	10.76	
35.47	0.72	53.38	20.66	0.28	8.18	446.20	---	6.42	142.30	---	17.67	
37.57	-1.28	50.93	28.21	1.63	10.88	446.20	---	6.71	142.30	---	10.39	
39.66	-6.11	44.81	35.79	2.88	14.01	446.20	---	7.52	142.30	---	7.60	
41.76	-13.77	32.80	43.37	4.33	14.88	446.20	---	7.60	142.30	---	7.07	
43.85	-24.26	14.11	50.97	5.68	16.72	446.20	---	6.26	142.30	---	6.21	
45.2	-32.86	12.49	57.77	8.10	17.92	364.68	---	4.36	240.63	---	9.88	
45.95	-37.64	11.59	59.99	9.44	18.58	364.68	---	4.05	240.63	---	9.45	
46.7	-31.25	11.21	51.70	8.96	18.62	364.68	---	4.82	240.63	---	9.46	
48.78	-13.54	10.16	28.72	7.61	18.72	446.20	---	11.48	142.30	---	5.44	
51.6	5.40	34.53	22.24	5.79	16.45	446.20	---	9.78	142.30	---	6.30	
54.43	19.19	63.27	18.48	3.97	13.82	446.20	---	5.12	142.30	---	7.63	
57.26	27.83	82.22	15.12	2.14	10.78	446.20	---	3.84	142.30	---	9.96	
60.09	30.49	74.33	12.59	2.42	12.42	446.20	---	4.21	142.30	---	8.62	
62.81	34.75	79.16	10.07	0.59	10.66	446.20	---	3.90	142.30	---	10.21	
65.74	33.84	79.49	7.55	1.24	8.45	446.20	---	3.89	142.30	---	12.81	
68.57	27.76	71.43	5.03	3.07	9.02	446.20	---	4.42	142.30	---	11.80	
71.4	16.50	52.86	2.51	4.89	11.47	446.20	---	6.18	142.30	---	9.12	
73.47	4.39	14.06	0.67	6.23	16.29	446.20	---	24.10	142.30	---	6.94	
74.22	0.00	0.00	0.00	6.72	18.03	446.20	---	N/A	142.30	---	5.70	

3F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)						
		D	L+I	L+I	D		L+I					
0	0.00	0.05	0.01	6.05	13.96	1028.40	---	15821.54	190.80	---	10.08	
0.75	4.04	9.04	1.37	5.65	13.50	1028.40	---	87.08	190.80	---	10.45	
2.5	13.47	30.01	4.53	4.71	12.43	1028.40	---	25.91	190.80	---	11.43	
5	23.57	52.47	9.06	3.37	10.59	1028.40	---	14.63	190.80	---	13.54	
7.5	30.32	66.02	13.59	2.03	8.58	1028.40	---	11.52	190.80	---	16.87	
10	33.72	72.86	18.12	0.69	7.62	1028.40	---	10.39	190.80	---	19.17	
12.5	33.78	75.79	22.66	1.61	9.72	1028.40	---	9.99	190.80	---	14.93	
15	28.07	62.00	21.35	2.95	11.30	1028.40	---	12.31	190.80	---	12.73	
17.5	19.02	46.48	20.05	4.29	12.30	1028.40	---	16.61	190.80	---	11.58	
20	6.62	24.61	19.17	5.63	14.19	1028.40	---	31.88	190.80	---	9.95	
22.5	-9.13	15.56	20.35	6.97	15.59	1028.40	---	38.42	190.80	---	8.97	
24.25	1.90	21.90	19.52	7.91	14.49	1028.40	---	36.04	190.80	---	9.58	
25	6.62	24.61	19.17	8.31	14.02	1028.40	---	31.88	190.80	---	9.88	
25.75	-3.13	19.55	27.81	6.57	14.04	1028.40	---	28.34	190.80	---	9.99	
27.03	-19.77	10.91	42.55	3.61	14.07	1028.40	---	18.13	190.80	---	10.17	
29.07	-13.54	27.03	38.39	2.52	12.46	1028.40	---	20.25	190.80	---	11.58	
31.1	-9.53	38.15	34.52	1.43	10.50	1028.40	---	20.49	190.80	---	13.84	
33.14	-7.73	44.15	30.64	0.34	9.09	1028.40	---	17.74	190.80	---	16.11	
35.17	-8.15	48.44	33.31	0.79	7.05	1028.40	---	16.16	190.80	---	20.71	
37.2	-10.88	45.58	39.79	1.88	8.99	1028.40	---	17.12	190.80	---	16.12	
39.24	-15.82	40.26	46.31	2.97	10.23	1028.40	---	16.74	190.80	---	14.06	
41.27	-22.97	30.30	52.84	4.06	11.86	1028.40	---	14.54	190.80	---	12.03	
43.31	-32.35	14.94	59.43	5.15	13.18	1028.40	---	12.77	190.80	---	10.75	
44.59	-39.65	15.23	64.45	8.28	13.84	1028.40	---	11.66	190.80	---	10.00	
45.34	-43.93	15.40	67.39	10.12	14.23	1028.40	---	11.09	190.80	---	9.60	
46.09	-36.93	14.45	57.52	9.72	15.04	1028.40	---	13.11	190.80	---	9.11	
48.23	-16.94	11.73	29.34	8.57	17.34	1028.40	---	26.39	190.80	---	7.97	
51.12	5.58	25.45	17.05	7.02	16.21	1028.40	---	30.86	190.80	---	8.62	
54.01	23.63	54.70	19.44	5.48	14.80	1028.40	---	14.03	190.80	---	9.55	
56.89	37.22	78.88	22.24	3.93	12.93	1028.40	---	9.56	190.80	---	11.05	
59.78	46.33	98.06	25.03	0.66	6.25	1028.40	---	7.59	190.80	---	23.38	
62.67	46.00	93.08	20.02	0.89	8.44	1028.40	---	8.00	190.80	---	17.28	
65.56	41.20	82.11	15.02	2.43	9.64	1028.40	---	9.13	190.80	---	14.97	
68.45	31.94	64.85	10.01	3.98	11.79	1028.40	---	11.71	190.80	---	12.11	
71.34	18.20	37.64	5.00	5.53	13.60	1028.40	---	20.53	190.80	---	10.39	
73.47	4.74	9.80	1.30	6.68	12.94	1028.40	---	80.22	190.80	---	10.82	
74.22	0.00	0.00	0.00	7.08	12.71	1028.40	---	N/A	190.80	---	10.99	

3F1

Stringer F2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1 Stringer F1-1	0	0.00	0.10	0.02	6.69	15.89	738.00	---	5676.92	207.60	---	9.63
	0.75	4.46	10.20	1.46	6.29	15.36	738.00	---	55.20	207.60	---	9.99
	2.88	17.14	38.90	5.56	5.17	13.86	738.00	---	14.15	207.60	---	11.15
	5.77	29.88	67.39	11.13	3.66	11.90	738.00	---	7.98	207.60	---	13.11
	8.65	38.25	87.70	16.71	2.14	9.90	738.00	---	6.04	207.60	---	15.91
	11.54	42.25	100.97	22.28	0.63	8.23	738.00	---	5.20	207.60	---	19.33
	14.42	41.88	101.95	27.86	2.57	12.65	738.00	---	5.16	207.60	---	12.42
	17.3	32.30	86.00	26.58	4.08	13.00	738.00	---	6.23	207.60	---	11.97
	20.19	18.34	59.36	25.44	5.60	14.62	738.00	---	9.25	207.60	---	10.54
	23.07	0.00	26.84	24.38	7.11	15.76	738.00	---	21.15	207.60	---	9.68
	25.95	-22.68	1.64	26.45	8.63	15.77	738.00	---	20.61	207.60	---	9.58
	28.09	-42.72	3.36	56.66	9.75	16.39	738.00	---	9.26	207.60	---	9.15
	28.84	-49.75	3.96	67.25	10.14	16.61	738.00	---	7.70	207.60	---	9.00
	29.59	-44.02	6.14	65.24	9.01	16.18	738.00	---	8.03	207.60	---	9.31
	30.86	-34.32	9.82	61.84	7.10	15.45	738.00	---	8.63	207.60	---	9.88
	32.88	-21.04	30.04	57.65	6.04	14.03	738.00	---	9.48	207.60	---	10.95
	34.9	-9.91	46.66	53.61	4.97	12.56	738.00	---	10.40	207.60	---	12.32
	36.93	-0.92	60.42	49.74	3.91	10.93	738.00	---	9.38	207.60	---	14.25
	38.95	5.93	71.38	45.85	2.07	6.70	738.00	---	7.87	207.60	---	23.53
	40.97	9.04	65.74	36.68	1.01	8.61	738.00	---	8.50	207.60	---	18.43
42.99	10.00	55.99	27.51	0.06	9.69	738.00	---	9.96	207.60	---	16.47	
45.01	8.82	43.83	18.34	1.12	11.66	738.00	---	12.75	207.60	---	13.60	
47.04	5.48	25.28	9.16	2.18	13.31	738.00	---	22.24	207.60	---	11.83	
48.31	2.03	9.39	3.40	2.85	14.12	738.00	---	60.27	207.60	---	11.11	
49.06	0.00	0.00	0.00	3.24	14.60	738.00	---	N/A	207.60	---	10.72	
4F1 Stringer S1-1	0	0.00	0.04	0.09	6.62	20.22	523.90	---	4477.78	165.00	---	5.95
	0.75	4.27	12.41	0.75	6.13	19.23	523.90	---	32.13	165.00	---	6.28
	2.82	16.04	46.55	2.59	4.76	16.51	523.90	---	8.31	165.00	---	7.40
	5.65	26.85	73.39	5.19	2.90	13.02	523.90	---	5.13	165.00	---	9.53
	8.47	32.41	91.09	7.78	1.04	9.38	523.90	---	4.07	165.00	---	13.42
	11.29	32.71	91.68	10.38	0.82	10.90	523.90	---	4.04	165.00	---	11.57
	14.12	27.77	80.79	12.98	0.32	10.39	523.90	---	4.04	165.00	---	12.19
	16.94	24.25	70.08	17.04	2.17	9.43	523.90	---	5.40	165.00	---	13.23
	19.76	15.51	58.14	22.22	4.01	15.22	523.90	---	6.66	165.00	---	8.08
	22.58	1.55	37.20	27.49	5.85	16.36	523.90	---	10.79	165.00	---	7.40
	25.41	-17.64	9.75	37.61	7.70	19.47	523.90	---	10.25	165.00	---	6.12
	27.48	-32.45	2.98	49.72	9.58	21.17	243.03	---	3.11	248.02	---	8.60
	28.23	-37.82	0.53	54.11	9.47	21.75	243.03	---	2.76	248.02	---	8.34
	28.98	-32.32	0.55	49.43	8.45	20.56	243.03	---	3.13	248.02	---	8.89
	30.31	-22.58	0.59	41.13	6.64	18.28	523.90	---	9.25	165.00	---	6.58
	32.4	-10.15	23.39	34.93	5.30	15.52	523.90	---	11.25	165.00	---	7.84
	34.48	-0.52	38.31	28.81	3.95	12.80	523.90	---	10.51	165.00	---	9.61
	36.56	6.30	50.38	22.82	2.60	10.10	523.90	---	7.87	165.00	---	12.31
	38.64	10.36	48.98	16.93	2.36	12.35	523.90	---	8.02	165.00	---	10.09
	40.73	15.87	54.07	13.54	1.01	8.08	523.90	---	7.20	165.00	---	15.58
42.81	14.56	56.70	10.16	0.34	9.86	523.90	---	6.85	165.00	---	12.84	
44.89	12.45	45.16	6.78	1.69	10.85	523.90	---	8.65	165.00	---	11.54	
46.98	7.54	32.17	3.39	3.03	13.52	523.90	---	12.29	165.00	---	9.16	
48.31	2.72	11.60	1.22	3.89	16.21	215.85	---	14.08	201.17	---	9.31	
49.06	0.00	0.00	0.00	4.38	17.73	215.85	---	N/A	201.17	---	8.48	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	From Rear (Ft)	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
4F1 Stringer S2-1	0	0.00	0.04	0.10	7.96	31.29	523.90	---	4030.00	165.00	---	3.80
	0.75	5.23	19.68	1.53	7.43	29.90	523.90	---	20.21	165.00	---	4.00
	2.75	19.19	72.06	5.35	6.01	26.18	523.90	---	5.33	165.00	---	4.62
	5.5	33.04	118.25	10.71	4.07	21.45	523.90	---	3.13	165.00	---	5.73
	8.25	41.55	149.30	16.08	2.12	16.39	523.90	---	2.42	165.00	---	7.61
	10.99	44.71	160.25	21.45	0.18	12.85	523.90	---	2.24	165.00	---	9.86
	13.74	42.52	149.36	26.80	2.25	17.53	523.90	---	2.41	165.00	---	7.11
	16.49	33.68	125.47	34.40	4.18	17.54	523.90	---	2.94	165.00	---	7.00
	19.24	19.52	101.14	42.12	6.11	25.02	523.90	---	3.79	165.00	---	4.83
	21.99	0.00	60.56	49.05	8.04	27.88	523.90	---	6.65	165.00	---	4.26
	24.74	-24.77	5.83	62.09	9.97	29.84	523.90	---	6.09	165.00	---	3.92
	26.73	-43.96	2.62	83.09	11.88	32.42	273.51	---	2.00	256.24	---	5.73
	27.48	-51.19	1.41	91.01	11.84	33.39	273.51	---	1.75	256.24	---	5.55
	28.23	-44.16	1.27	84.22	10.73	31.83	273.51	---	1.97	256.24	---	5.86
	29.64	-30.95	1.00	71.46	8.63	28.90	523.90	---	5.21	165.00	---	4.09
	31.8	-13.96	39.85	62.82	7.13	25.32	523.90	---	6.24	165.00	---	4.73
	33.96	-0.21	70.83	53.18	5.62	22.07	523.90	---	5.69	165.00	---	5.50
	36.11	10.30	99.24	44.03	4.12	18.11	523.90	---	4.21	165.00	---	6.78
	38.27	17.61	97.75	34.89	2.11	13.70	523.90	---	3.94	165.00	---	9.11
	40.43	20.54	101.41	27.91	0.61	11.92	523.90	---	3.77	165.00	---	10.60
42.59	20.23	101.14	20.93	0.90	16.68	523.90	---	3.78	165.00	---	7.56	
44.74	16.67	79.68	13.96	2.40	18.26	523.90	---	4.85	165.00	---	6.82	
46.9	9.86	53.47	6.98	3.91	22.38	523.90	---	7.35	165.00	---	5.50	
48.31	3.42	18.57	2.42	4.89	26.13	250.11	---	10.18	212.13	---	6.06	
49.06	0.00	0.00	0.00	5.41	28.13	250.11	---	N/A	212.13	---	5.61	
4F1 Stringer S3-1	0	0.00	0.04	0.07	7.83	31.76	523.90	---	5757.14	165.00	---	3.73
	0.75	5.17	20.17	1.77	7.30	30.36	523.90	---	19.73	165.00	---	6.94
	2.67	18.40	71.69	6.11	5.93	26.78	523.90	---	5.36	165.00	---	4.52
	5.35	31.71	118.05	12.24	4.03	22.02	523.90	---	3.15	165.00	---	5.58
	8.02	39.95	147.30	18.37	2.13	16.99	523.90	---	2.46	165.00	---	7.35
	10.69	43.11	158.46	24.50	0.23	13.45	523.90	---	2.27	165.00	---	9.42
	13.36	41.16	148.61	30.62	2.50	18.45	523.90	---	2.48	165.00	---	6.74
	16.04	31.96	106.04	38.35	4.39	18.46	523.90	---	2.94	165.00	---	6.64
	18.71	17.69	100.54	46.08	6.28	25.45	523.90	---	3.83	165.00	---	4.74
	21.38	-1.64	59.34	58.81	8.17	28.56	523.90	---	6.76	165.00	---	4.16
	24.05	-26.03	9.81	63.94	10.05	31.43	523.90	---	5.90	165.00	---	3.72
	25.98	-45.11	4.08	84.62	11.88	33.74	304.92	---	2.24	267.20	---	5.75
	26.73	-52.52	1.86	92.65	11.89	34.64	304.92	---	1.96	267.20	---	5.59
	27.48	-45.27	1.59	85.83	10.87	32.88	304.92	---	2.21	267.20	---	5.92
	28.96	-30.95	1.07	72.38	8.87	29.41	523.90	---	5.14	165.00	---	4.01
	31.19	-12.89	45.09	63.88	7.30	25.97	523.90	---	6.13	165.00	---	4.61
	33.43	1.67	78.05	54.81	5.74	22.50	523.90	---	5.14	165.00	---	5.39
	35.66	12.73	104.30	46.02	4.17	18.52	523.90	---	3.85	165.00	---	6.63
	37.89	20.16	106.00	37.25	2.10	13.47	523.90	---	3.61	165.00	---	9.27
	40.13	28.10	110.23	29.81	0.53	12.48	523.90	---	3.45	165.00	---	10.13
42.36	22.54	108.78	22.36	1.04	17.24	523.90	---	3.50	165.00	---	7.30	
44.59	18.47	85.98	14.91	2.61	18.91	523.90	---	4.47	165.00	---	6.57	
46.82	10.89	56.04	7.46	4.18	23.05	523.90	---	7.00	165.00	---	5.33	
48.31	3.65	18.76	2.50	5.22	26.74	291.21	---	11.74	225.83	---	6.30	
49.06	0.00	0.00	0.00	5.75	28.59	291.21	---	N/A	225.83	---	5.87	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	From Rear (Ft)	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
4F1 Stringer S4-1	0	0.00	0.04	0.08	7.08	29.28	446.20	---	4290.38	142.30	---	3.50
	0.75	4.63	18.93	1.77	6.56	28.12	446.20	---	17.89	142.30	---	3.66
	2.6	16.04	65.53	5.93	5.27	25.26	446.20	---	4.99	142.30	---	4.12
	5.19	27.37	107.52	11.87	3.46	20.04	446.20	---	2.94	142.30	---	5.29
	7.79	33.99	133.32	17.81	1.64	14.91	446.20	---	2.32	142.30	---	7.23
	10.39	35.90	140.58	23.76	0.17	12.39	446.20	---	2.19	142.30	---	8.82
	12.98	33.09	128.69	29.67	2.00	15.60	446.20	---	2.41	142.30	---	6.89
	15.58	25.54	113.21	37.78	3.81	17.13	446.20	---	2.81	142.30	---	6.17
	18.18	13.30	89.69	45.88	5.61	24.31	446.20	---	3.68	142.30	---	4.27
	20.78	-3.63	51.67	53.99	7.42	25.78	446.20	---	6.29	142.30	---	3.96
	23.37	-25.27	5.17	63.05	9.22	29.54	446.20	---	5.04	142.30	---	3.39
	25.22	-42.48	2.90	81.43	10.40	32.18	294.12	---	2.26	239.95	---	5.41
	25.97	-49.46	1.98	88.88	11.00	33.25	294.12	---	1.99	239.95	---	5.22
	26.72	-42.44	1.85	81.89	10.21	32.28	294.12	---	2.24	239.95	---	5.41
	28.28	-27.85	1.58	67.36	8.56	30.10	446.20	---	4.68	142.30	---	3.35
	30.59	-9.93	47.11	58.78	6.96	26.07	446.20	---	5.67	142.30	---	3.93
	32.9	4.29	78.76	50.17	5.36	21.78	446.20	---	4.30	142.30	---	4.78
	35.2	14.83	101.53	41.58	3.76	17.68	446.20	---	3.23	142.30	---	5.98
	37.51	21.47	104.58	33.00	2.13	14.23	446.20	---	3.08	142.30	---	7.54
	39.82	24.54	110.87	26.40	0.53	12.05	446.20	---	2.87	142.30	---	9.04
42.13	23.91	109.64	19.80	1.07	16.88	446.20	---	2.91	142.30	---	6.42	
44.44	19.58	87.75	13.21	2.68	19.59	446.20	---	3.69	142.30	---	5.45	
46.75	11.56	58.20	6.61	4.28	23.84	446.20	---	5.70	142.30	---	4.41	
48.31	3.75	18.90	2.15	5.36	26.93	301.56	---	12.08	221.62	---	6.13	
49.06	0.00	0.00	0.00	5.88	28.41	301.56	---	N/A	221.62	---	5.79	
4F1 Stringer S5-1	0	0.00	0.04	0.08	7.11	30.06	446.20	---	3720.31	142.30	---	3.40
	0.75	4.68	19.25	2.19	6.59	28.76	446.20	---	17.59	142.30	---	3.38
	2.52	15.72	64.58	7.21	5.36	25.64	446.20	---	5.07	142.30	---	4.06
	5.04	27.01	108.05	14.45	3.60	21.14	446.20	---	2.93	142.30	---	5.01
	7.56	33.89	135.41	21.68	1.85	16.46	446.20	---	2.28	142.30	---	6.54
	10.08	36.35	146.94	28.91	0.10	13.77	446.20	---	2.09	142.30	---	7.94
	12.61	34.48	139.65	36.17	2.80	17.98	446.20	---	2.21	142.30	---	5.93
	15.13	25.13	121.36	44.77	4.55	19.29	446.20	---	2.62	142.30	---	5.44
	17.65	11.46	92.72	53.37	6.29	26.16	446.20	---	3.58	142.30	---	3.94
	20.17	-6.63	50.58	61.98	8.04	27.23	446.20	---	5.43	142.30	---	3.72
	22.69	-29.12	1.19	70.58	9.79	30.96	446.20	---	4.45	142.30	---	3.22
	24.46	-46.87	1.58	87.77	11.00	33.13	321.72	---	2.29	247.07	---	5.40
	25.21	-54.39	1.75	95.05	11.51	34.05	321.72	---	2.03	247.07	---	5.24
	25.96	-46.73	1.67	87.29	10.85	33.28	321.72	---	2.30	247.07	---	5.38
	27.6	-29.97	1.49	70.33	9.42	31.61	446.20	---	4.45	142.30	---	3.16
	29.98	-9.47	50.56	61.89	7.77	27.93	446.20	---	5.40	142.30	---	3.64
	32.37	7.10	89.46	53.39	6.12	23.43	446.20	---	3.76	142.30	---	4.41
	34.75	19.74	118.26	44.92	4.48	19.49	446.20	---	2.74	142.30	---	5.39
	37.13	28.30	123.90	36.46	1.74	13.10	446.20	---	2.54	142.30	---	8.22
	39.52	30.49	128.03	29.17	0.09	13.31	446.20	---	2.44	142.30	---	8.22
41.9	28.74	122.45	21.88	1.56	18.48	446.20	---	2.57	142.30	---	5.84	
44.29	23.05	97.47	14.60	3.21	20.71	446.20	---	3.28	142.30	---	5.13	
46.67	13.42	60.71	7.31	4.86	24.74	446.20	---	5.43	142.30	---	4.23	
48.31	4.21	19.05	2.29	5.99	27.73	340.95	---	13.55	233.50	---	6.26	
49.06	0.00	0.00	0.00	6.51	29.10	340.95	---	N/A	233.50	---	5.95	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1 Stringer S6-1	0	0.00	0.05	0.14	5.21	18.73	306.00	---	1681.32	98.70	---	3.78
	0.75	3.31	11.20	1.05	4.74	17.57	306.00	---	20.72	98.70	---	4.05
	2.45	10.81	36.47	3.11	3.66	14.95	306.00	---	6.16	98.70	---	4.83
	4.89	17.88	56.38	6.25	2.12	11.59	306.00	---	3.86	98.70	---	6.37
	7.34	21.17	67.96	9.38	0.57	8.66	306.00	---	3.15	98.70	---	8.70
	9.79	20.69	69.41	12.52	0.97	10.26	306.00	---	3.09	98.70	---	7.31
	12.23	16.42	60.41	15.65	0.63	9.92	306.00	---	3.62	98.70	---	7.59
	14.68	13.00	59.77	20.90	2.17	9.37	306.00	---	3.72	98.70	---	7.87
	17.13	5.80	49.89	26.64	3.71	12.57	306.00	---	4.60	98.70	---	5.74
	19.57	-5.18	30.64	32.50	5.26	15.92	306.00	---	7.08	98.70	---	4.44
	22.02	-19.93	2.47	38.48	6.80	19.14	306.00	---	5.60	98.70	---	3.61
	23.71	-32.76	1.20	49.69	7.87	20.60	306.00	---	4.08	98.70	---	3.30
	24.46	-38.45	0.64	54.67	8.35	21.25	306.00	---	3.60	98.70	---	3.18
	25.21	-32.80	0.67	49.94	7.87	20.24	306.00	---	4.06	98.70	---	3.36
	26.92	-19.92	0.74	39.14	6.76	17.93	306.00	---	5.50	98.70	---	3.86
	29.38	-5.21	27.89	33.10	5.21	14.79	306.00	---	6.95	98.70	---	4.78
	31.84	5.68	48.46	27.08	3.65	11.71	306.00	---	4.74	98.70	---	6.17
	34.3	12.76	57.56	21.24	2.10	8.95	306.00	---	3.87	98.70	---	8.25
	36.76	16.02	58.01	15.39	2.58	12.98	306.00	---	3.78	98.70	---	5.65
	39.22	20.45	66.83	12.31	1.03	9.20	306.00	---	3.22	98.70	---	8.14
41.68	21.07	65.85	9.23	0.53	5.51	306.00	---	3.25	98.70	---	13.68	
44.14	17.86	55.95	6.16	2.08	7.72	306.00	---	3.89	98.70	---	9.57	
46.6	10.84	34.32	3.08	3.63	11.50	306.00	---	6.54	98.70	---	6.29	
48.31	3.30	10.46	0.94	4.71	16.78	306.00	---	22.18	98.70	---	4.24	
49.06	0.00	0.00	0.00	5.18	19.10	306.00	---	N/A	98.70	---	3.70	
4F1 Stringer F2-1	0	0.00	0.13	0.03	5.03	15.41	1028.40	---	6085.21	190.80	---	9.20
	0.75	3.30	9.91	2.40	4.63	14.81	1028.40	---	79.51	190.80	---	9.60
	2.39	10.53	31.29	7.57	3.76	13.50	1028.40	---	24.95	190.80	---	10.59
	4.77	17.96	53.42	15.14	2.48	11.58	1028.40	---	14.47	190.80	---	12.46
	7.16	22.35	69.39	22.72	1.20	9.98	1028.40	---	11.08	190.80	---	14.59
	9.54	23.69	80.19	30.29	0.08	8.25	1028.40	---	9.57	190.80	---	17.78
	11.93	21.98	84.92	37.88	2.50	11.67	1028.40	---	9.06	190.80	---	12.36
	14.31	14.48	70.93	39.08	3.78	11.88	1028.40	---	10.95	190.80	---	12.04
	16.7	3.93	53.11	40.35	5.06	13.60	1028.40	---	14.82	190.80	---	10.42
	19.09	-9.66	30.06	41.72	6.34	14.97	1028.40	---	18.73	190.80	---	9.38
	21.47	-26.31	2.52	43.59	7.62	16.72	1028.40	---	17.54	190.80	---	8.32
	23.11	-39.83	2.55	49.61	8.49	16.54	1028.40	---	15.14	190.80	---	8.36
	23.86	-46.01	2.57	52.37	8.89	16.46	1028.40	---	14.23	190.80	---	8.38
	24.61	-39.60	2.56	48.02	8.59	16.57	1028.40	---	15.65	190.80	---	8.34
	26.38	-24.48	2.55	37.76	7.87	16.84	1028.40	---	20.30	190.80	---	8.25
	28.9	-6.35	30.37	36.20	6.52	15.15	1028.40	---	21.68	190.80	---	9.26
	31.42	8.37	55.28	35.46	5.17	13.74	1028.40	---	14.16	190.80	---	10.31
	33.94	19.70	75.90	34.77	3.82	12.02	1028.40	---	10.16	190.80	---	11.89
	36.46	27.62	90.30	34.11	2.47	10.07	1028.40	---	8.45	190.80	---	14.33
	38.98	28.90	86.17	27.28	0.17	8.19	1028.40	---	8.85	190.80	---	17.90
41.5	26.78	74.15	20.46	1.52	9.89	1028.40	---	10.31	190.80	---	14.69	
44.02	21.26	57.66	13.64	2.87	11.46	1028.40	---	13.35	190.80	---	12.56	
46.54	12.33	32.59	6.82	4.22	13.17	1028.40	---	23.90	190.80	---	10.82	
48.31	3.67	9.70	2.03	5.17	13.91	1028.40	---	81.18	190.80	---	10.18	
49.06	0.00	0.00	0.00	5.57	14.22	1028.40	---	N/A	190.80	---	9.93	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.08	0.02	5.78	16.75	738.00	---	7096.15	207.60	---	9.19
0.75	3.85	10.79	1.09	5.39	16.22	738.00	---	52.24	207.60	---	9.51
2.5	12.84	35.79	3.60	4.47	14.98	738.00	---	15.50	207.60	---	10.36
5	22.36	64.53	7.22	3.15	13.26	738.00	---	8.45	207.60	---	11.81
7.5	28.60	84.69	10.83	1.84	11.31	738.00	---	6.37	207.60	---	13.96
10	31.56	99.76	14.44	0.53	10.18	738.00	---	5.37	207.60	---	15.63
12.5	31.23	106.72	18.06	2.27	9.31	738.00	---	5.03	207.60	---	16.91
15	23.90	94.22	14.45	3.59	10.57	738.00	---	5.77	207.60	---	14.77
17.5	13.29	77.00	10.84	4.90	11.42	738.00	---	7.20	207.60	---	13.55
20	-0.61	54.26	7.22	6.22	13.68	738.00	---	10.45	207.60	---	11.22
22.5	-17.79	24.02	3.61	7.53	15.04	738.00	---	22.89	207.60	---	10.12
24.25	-32.12	7.21	13.70	8.45	15.37	738.00	---	39.08	207.60	---	9.84
25	-38.26	0.00	18.03	8.84	15.51	738.00	---	29.36	207.60	---	9.73
25.75	-33.35	10.32	18.22	7.96	15.13	738.00	---	29.32	207.60	---	10.03
27.53	-21.71	34.82	18.68	5.87	14.22	738.00	---	15.68	207.60	---	10.82
30.06	-8.54	62.89	19.97	4.54	12.84	738.00	---	8.89	207.60	---	12.08
32.6	1.27	81.83	21.26	3.21	10.82	738.00	---	6.92	207.60	---	14.46
35.13	7.71	96.15	22.59	1.88	9.55	738.00	---	5.82	207.60	---	16.52
37.66	10.78	102.04	24.03	0.28	8.68	738.00	---	5.46	207.60	---	18.37
40.19	8.40	91.52	19.22	1.61	9.81	738.00	---	6.11	207.60	---	16.11
42.73	2.65	75.18	14.42	2.94	10.94	738.00	---	7.52	207.60	---	14.33
45.26	-6.47	52.71	9.61	4.27	13.22	738.00	---	10.65	207.60	---	11.76
47.79	-18.96	22.83	4.80	5.60	14.16	738.00	---	24.04	207.60	---	10.88
49.57	-30.11	6.77	14.38	7.55	14.88	738.00	---	37.40	207.60	---	10.22
50.32	-34.81	0.00	18.41	8.37	15.19	738.00	---	28.95	207.60	---	9.96
51.07	-29.00	10.99	18.86	7.97	15.27	738.00	---	28.56	207.60	---	9.93
52.71	-16.30	35.02	19.85	7.11	15.45	738.00	---	15.75	207.60	---	9.88
55.1	-0.80	61.16	21.82	5.86	13.44	738.00	---	9.27	207.60	---	11.45
57.49	11.70	81.14	23.79	4.60	11.81	738.00	---	6.85	207.60	---	13.13
59.88	21.20	94.42	25.86	3.35	10.54	738.00	---	5.79	207.60	---	14.83
62.27	27.68	103.04	28.08	0.82	8.33	738.00	---	5.24	207.60	---	19.07
64.66	28.15	93.40	22.46	0.43	10.36	738.00	---	5.78	207.60	---	15.37
67.05	25.62	79.96	16.84	1.69	11.30	738.00	---	6.78	207.60	---	13.98
69.44	20.08	60.37	11.23	2.94	13.20	738.00	---	9.07	207.60	---	11.88
71.83	11.54	34.55	5.61	4.20	15.23	738.00	---	16.10	207.60	---	10.21
73.47	3.62	10.84	1.76	5.06	15.13	738.00	---	52.03	207.60	---	10.22
74.22	0.00	0.00	0.00	5.46	15.09	738.00	---	N/A	207.60	---	10.22

4F1

Stringer F1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V							
0	0.00	0.03	0.08	5.74	19.41	215.85	---	2075.48	201.17	---	7.68
0.75	3.69	11.77	0.77	5.25	18.29	215.85	---	13.79	201.17	---	8.41
2.5	12.31	39.16	2.37	4.12	15.69	523.90	---	9.98	165.00	---	7.83
5	20.60	61.95	4.74	2.50	12.55	523.90	---	6.17	165.00	---	9.91
7.5	24.83	75.82	7.12	0.89	9.50	523.90	---	4.99	165.00	---	13.27
10	25.03	81.19	9.50	0.73	9.63	523.90	---	4.66	165.00	---	13.10
12.5	19.36	61.97	11.88	2.36	16.30	523.90	---	6.19	165.00	---	7.64
15	16.30	56.25	17.47	2.04	10.56	523.90	---	6.87	165.00	---	11.83
17.5	9.45	46.58	23.66	3.67	14.81	523.90	---	8.46	165.00	---	8.32
20	-2.10	23.83	29.89	5.30	16.36	523.90	---	13.41	165.00	---	7.43
22.5	-17.43	7.78	41.72	6.93	19.24	523.90	---	9.24	165.00	---	6.24
24.25	-28.62	8.84	52.28	8.02	21.19	204.30	---	2.46	234.31	---	8.13
25	-33.41	8.96	56.81	8.48	22.03	204.30	---	2.18	234.31	---	7.80
25.75	-28.36	8.12	52.30	7.71	21.10	204.30	---	2.46	234.31	---	8.18
27.47	-16.78	6.18	41.97	5.93	18.98	523.90	---	9.20	165.00	---	6.37
29.94	-4.08	32.05	34.32	4.34	15.83	523.90	---	11.62	165.00	---	7.74
32.41	4.68	52.29	26.80	2.75	12.56	523.90	---	7.62	165.00	---	9.89
34.89	9.50	65.18	19.37	1.15	8.90	523.90	---	6.04	165.00	---	13.99
37.36	8.14	50.66	11.94	0.60	8.91	523.90	---	7.79	165.00	---	14.18
39.83	7.62	49.78	17.01	1.01	9.45	523.90	---	7.94	165.00	---	13.76
42.3	3.10	42.68	23.88	2.33	14.19	523.90	---	9.37	165.00	---	8.76
44.77	-5.42	21.65	30.75	4.24	15.39	523.90	---	12.93	165.00	---	7.97
47.24	-17.93	6.12	42.34	5.85	14.54	523.90	---	9.10	165.00	---	8.33
48.96	-26.97	9.05	43.17	7.70	19.34	196.47	---	2.53	231.57	---	8.81
49.71	-30.91	10.33	52.16	8.50	21.44	196.47	---	2.30	231.57	---	7.91
50.46	-25.15	9.93	47.32	8.02	20.89	196.47	---	2.66	231.57	---	8.14
52.17	-12.01	8.93	36.28	6.92	19.63	523.90	---	10.78	165.00	---	6.11
54.62	3.02	34.86	29.74	5.34	16.62	523.90	---	11.47	165.00	---	7.32
57.07	14.18	57.85	23.56	3.77	13.80	523.90	---	6.72	165.00	---	8.92
59.52	21.48	73.68	17.43	2.19	10.87	523.90	---	5.18	165.00	---	11.47
61.97	22.62	71.77	12.61	2.16	13.03	523.90	---	5.30	165.00	---	9.58
64.42	25.95	77.36	10.08	0.55	9.47	523.90	---	4.87	165.00	---	13.34
66.87	25.31	76.50	7.56	1.07	11.21	523.90	---	4.94	165.00	---	11.23
69.32	20.71	61.37	5.04	2.68	12.58	523.90	---	6.23	165.00	---	9.88
71.77	12.15	39.73	2.52	4.30	15.58	523.90	---	9.84	165.00	---	7.87
73.47	3.72	12.16	0.77	5.42	18.18	523.90	---	32.83	165.00	---	6.68
74.22	0.00	0.00	0.00	5.92	19.33	523.90	---	N/A	165.00	---	6.26

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Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.03	0.07	7.19	29.14	250.11	---	2748.46	212.13	---	5.35
0.75	4.73	18.43	1.74	6.67	27.78	250.11	---	10.18	212.13	---	5.65
2.5	15.77	61.36	5.63	5.44	24.59	523.90	---	6.31	165.00	---	4.94
5	27.19	103.36	11.27	3.70	20.62	523.90	---	3.64	165.00	---	5.98
7.5	34.26	127.73	16.91	1.95	16.50	523.90	---	2.89	165.00	---	7.57
10	36.96	140.45	22.55	0.21	12.53	523.90	---	2.61	165.00	---	10.11
12.5	33.59	119.27	28.20	1.80	23.66	523.90	---	3.10	165.00	---	5.29
15	26.90	105.82	36.22	3.55	18.11	523.90	---	3.55	165.00	---	6.81
17.5	15.81	85.98	44.25	5.30	22.64	523.90	---	4.50	165.00	---	5.37
20	0.32	46.50	52.29	7.06	25.54	523.90	---	7.75	165.00	---	4.69
22.5	-19.57	14.83	63.06	8.81	29.68	523.90	---	6.08	165.00	---	3.98
24.25	-34.34	16.40	77.07	9.99	31.96	243.03	---	1.98	248.02	---	5.66
25	-40.67	16.65	83.07	10.50	32.94	243.03	---	1.76	248.02	---	5.47
25.75	-34.90	14.45	76.32	9.37	31.27	243.03	---	1.99	248.02	---	5.80
27.4	-22.21	9.60	61.48	6.87	27.59	523.90	---	6.19	165.00	---	4.35
29.79	-7.74	38.99	51.09	5.20	23.10	523.90	---	7.74	165.00	---	5.27
32.19	2.73	68.08	40.69	3.54	18.34	523.90	---	5.88	165.00	---	6.73
34.59	9.21	82.24	30.30	1.87	13.70	523.90	---	4.79	165.00	---	9.13
36.98	11.68	80.25	19.92	0.03	12.55	523.90	---	4.88	165.00	---	10.11
39.38	9.60	81.04	28.03	1.70	15.95	523.90	---	4.85	165.00	---	8.98
41.78	3.53	71.90	37.47	3.87	18.25	523.90	---	5.56	165.00	---	6.77
44.17	-6.54	43.30	46.91	5.03	23.29	523.90	---	8.45	165.00	---	5.23
46.57	-20.60	10.72	56.35	6.70	27.88	523.90	---	6.79	165.00	---	4.31
48.22	-33.02	16.00	55.25	9.37	30.31	243.03	---	2.05	248.02	---	5.99
48.97	-38.67	18.40	83.84	10.59	31.41	243.03	---	1.77	248.02	---	5.74
49.72	-31.37	17.79	77.33	10.07	30.90	243.03	---	2.01	248.02	---	5.85
51.49	-14.15	16.35	61.95	8.83	29.68	523.90	---	6.28	165.00	---	3.98
54.02	5.94	65.23	53.34	7.08	25.75	523.90	---	6.99	165.00	---	4.65
56.54	21.60	103.45	44.75	5.32	22.00	523.90	---	3.69	165.00	---	5.53
59.07	32.81	131.45	36.17	3.56	17.28	523.90	---	2.82	165.00	---	7.14
61.6	37.37	127.32	27.60	1.49	13.91	523.90	---	2.87	165.00	---	9.02
64.12	38.87	133.60	22.08	0.30	12.65	523.90	---	2.73	165.00	---	10.01
66.65	35.85	128.03	16.55	2.09	17.56	523.90	---	2.87	165.00	---	7.11
69.17	28.31	102.49	11.03	3.88	19.81	523.90	---	3.66	165.00	---	6.21
71.7	16.26	62.38	5.51	5.67	24.25	523.90	---	6.20	165.00	---	5.00
73.47	4.84	18.57	1.64	6.92	27.75	523.90	---	21.45	165.00	---	4.32
74.22	0.00	0.00	0.00	7.45	29.23	523.90	---	N/A	165.00	---	4.09

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Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.05	7.35	29.42	291.21	---	4480.15	225.83	---	5.85
0.75	5.01	18.83	1.81	7.03	28.13	291.21	---	11.63	225.83	---	5.85
2.5	16.69	62.73	5.93	5.80	25.13	523.90	---	6.16	165.00	---	4.82
5	28.98	106.36	11.87	4.04	21.16	523.90	---	3.52	165.00	---	5.81
7.5	36.88	132.18	17.80	2.28	17.01	523.90	---	2.77	165.00	---	7.33
10	40.38	146.18	23.74	0.52	13.20	523.90	---	2.48	165.00	---	9.58
12.5	38.09	127.78	29.69	2.16	24.28	523.90	---	2.86	165.00	---	5.14
15	30.47	111.63	36.88	3.93	19.43	523.90	---	3.34	165.00	---	6.33
17.5	18.43	88.99	44.12	5.69	23.50	523.90	---	4.32	165.00	---	5.16
20	1.97	47.32	51.35	7.46	26.60	523.90	---	7.82	165.00	---	4.49
22.5	-18.91	18.06	62.91	9.22	30.85	523.90	---	6.11	165.00	---	3.82
24.25	-34.79	15.61	81.59	10.42	32.68	270.45	---	2.12	237.58	---	5.27
25	-41.59	20.28	89.60	10.94	33.47	270.45	---	1.86	237.58	---	5.13
25.75	-35.88	17.29	83.03	9.60	31.92	270.45	---	2.07	237.58	---	5.43
27.32	-23.94	11.04	69.28	6.79	28.66	523.90	---	5.47	165.00	---	4.19
29.64	-10.06	42.43	58.63	5.17	24.29	523.90	---	6.70	165.00	---	5.01
31.96	0.00	72.75	47.98	3.54	19.78	523.90	---	5.54	165.00	---	6.24
34.28	6.38	88.59	37.33	1.91	15.23	523.90	---	4.48	165.00	---	8.14
36.61	8.92	90.82	26.75	0.33	13.92	523.90	---	4.34	165.00	---	9.09
38.93	6.26	88.17	36.26	1.96	13.38	523.90	---	4.50	165.00	---	8.13
41.25	-0.18	73.52	46.64	3.89	19.70	523.90	---	5.48	165.00	---	6.26
43.57	-10.40	43.26	57.02	5.21	24.59	523.90	---	6.89	165.00	---	4.95
45.89	-24.39	11.53	67.40	6.84	28.74	523.90	---	5.62	165.00	---	4.18
47.46	-36.42	18.01	81.19	9.90	31.05	270.45	---	2.11	237.58	---	5.57
48.21	-42.17	21.11	87.78	11.36	32.15	270.45	---	1.89	237.58	---	5.33
48.96	-34.33	20.41	79.53	10.84	31.85	270.45	---	2.18	237.58	---	5.40
50.81	-14.98	18.70	59.17	9.54	31.12	523.90	---	6.56	165.00	---	3.77
53.41	7.47	65.15	51.45	7.72	26.69	523.90	---	6.07	165.00	---	4.47
56.01	25.17	108.54	43.74	5.89	22.76	523.90	---	3.48	165.00	---	5.32
58.62	38.14	140.92	36.03	4.07	18.15	523.90	---	2.59	165.00	---	6.77
61.22	44.39	136.86	28.37	1.19	13.79	523.90	---	2.62	165.00	---	9.12
63.82	45.09	142.98	22.69	0.66	12.88	523.90	---	2.50	165.00	---	9.80
66.42	40.98	136.47	17.02	2.51	18.06	523.90	---	2.65	165.00	---	6.89
69.02	32.05	108.70	11.34	4.35	21.08	523.90	---	3.41	165.00	---	5.81
71.62	18.32	66.84	5.66	6.20	25.05	523.90	---	5.76	165.00	---	4.82
73.47	5.28	19.28	1.63	7.52	28.76	523.90	---	20.63	165.00	---	1.15
74.22	0.00	0.00	0.00	8.05	30.27	523.90	---	N/A	165.00	---	3.95

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.05	0.05	7.25	26.86	301.56	---	4659.36	221.62	---	5.65
0.75	4.77	18.12	1.45	6.71	27.46	301.56	---	12.54	221.62	---	5.95
2.5	15.90	60.33	4.73	5.49	24.14	446.20	---	5.43	142.30	---	4.31
5	27.46	101.12	9.48	3.76	20.13	446.20	---	3.12	142.30	---	5.25
7.5	34.69	124.36	14.22	2.03	16.19	446.20	---	2.48	142.30	---	6.64
10	37.59	136.19	18.97	0.29	12.18	446.20	---	2.24	142.30	---	8.96
12.5	34.87	116.15	23.71	1.58	23.81	446.20	---	2.65	142.30	---	4.53
15	28.75	102.97	30.48	3.32	18.39	446.20	---	3.05	142.30	---	5.77
17.5	19.27	83.09	37.25	5.06	22.78	446.20	---	3.91	142.30	---	4.58
20	3.43	43.76	44.02	6.80	25.67	446.20	---	7.72	142.30	---	4.00
22.5	-15.75	17.85	57.75	8.53	29.94	446.20	---	3.67	142.30	---	3.37
24.25	-30.89	15.41	80.13	9.73	32.03	289.41	---	2.39	237.57	---	5.40
25	-37.38	20.08	89.72	10.24	32.93	289.41	---	2.06	237.57	---	5.24
25.75	-32.32	16.90	83.23	8.82	31.05	289.41	---	2.29	237.57	---	5.60
27.25	-22.19	10.54	70.24	5.99	27.29	446.20	---	4.57	142.30	---	3.79
29.49	-10.48	44.15	59.29	4.44	23.32	446.20	---	5.61	142.30	---	4.50
31.74	-2.26	69.19	48.34	2.88	19.77	446.20	---	4.93	142.30	---	5.39
33.98	2.47	86.44	37.39	1.35	15.45	446.20	---	3.94	142.30	---	7.15
36.23	3.81	80.24	27.63	0.18	11.34	446.20	---	4.23	142.30	---	9.64
38.47	1.66	79.33	39.05	1.74	15.20	446.20	---	4.31	142.30	---	7.09
40.72	-3.98	70.32	50.47	3.23	20.90	446.20	---	4.82	142.30	---	5.08
42.96	-13.12	41.09	61.96	4.84	23.12	446.20	---	5.33	142.30	---	4.53
45.21	-25.74	10.48	73.44	6.40	27.05	446.20	---	4.32	142.30	---	3.81
46.7	-36.33	16.43	87.50	9.51	30.92	294.12	---	2.20	239.95	---	5.66
47.45	-41.66	19.42	93.07	11.07	32.87	294.12	---	1.98	239.95	---	5.28
48.2	-34.06	18.75	81.09	10.55	32.61	294.12	---	2.37	239.95	---	5.34
50.13	-14.50	17.17	50.27	9.22	31.94	446.20	---	6.54	142.30	---	3.14
52.81	7.70	59.46	43.11	7.37	28.62	446.20	---	5.64	142.30	---	3.57
55.48	24.94	104.15	35.96	5.51	22.94	446.20	---	3.06	142.30	---	4.53
58.16	37.22	135.38	28.80	3.66	16.99	446.20	---	2.26	142.30	---	6.23
60.84	43.04	125.70	21.76	1.43	15.40	446.20	---	2.39	142.30	---	7.02
63.62	44.37	135.93	17.41	0.44	12.96	446.20	---	2.20	142.30	---	8.41
66.19	40.68	132.54	13.05	2.31	17.55	446.20	---	2.28	142.30	---	6.11
68.87	31.99	106.09	8.70	4.18	21.03	446.20	---	2.93	142.30	---	5.01
71.55	18.29	68.24	4.34	6.05	25.05	446.20	---	4.76	142.30	---	4.13
73.47	5.14	19.17	1.22	7.39	27.83	446.20	---	17.64	142.30	---	3.67
74.22	0.00	0.00	0.00	7.92	28.91	446.20	---	N/A	142.30	---	3.51

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Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.05	7.39	29.13	340.95	---	5245.38	233.50	---	5.91
0.75	4.89	18.53	1.57	6.87	27.80	340.95	---	13.89	233.50	---	6.21
2.5	16.31	61.71	5.10	5.66	24.71	446.20	---	5.30	142.30	---	4.20
5	28.29	104.17	10.23	3.93	20.68	446.20	---	3.02	142.30	---	5.10
7.5	35.95	128.99	15.35	2.20	16.64	446.20	---	2.38	142.30	---	6.45
10	39.28	142.19	20.47	0.47	12.88	446.20	---	2.14	142.30	---	8.46
12.5	37.51	125.45	25.60	1.81	24.01	446.20	---	2.44	142.30	---	4.48
15	30.82	108.81	31.04	3.54	19.77	446.20	---	2.87	142.30	---	5.36
17.5	15.79	86.03	36.94	5.27	23.62	446.20	---	3.76	142.30	---	4.41
20	4.43	44.13	42.83	7.01	26.69	446.20	---	7.65	142.30	---	3.84
22.5	-15.27	19.93	56.08	8.74	31.02	446.20	---	5.85	142.30	---	3.25
24.25	-31.17	21.63	83.86	9.94	32.59	312.06	---	2.49	225.19	---	5.01
25	-37.99	22.36	95.76	10.45	33.26	312.06	---	2.11	225.19	---	4.89
25.75	-33.01	18.54	89.47	8.87	31.29	312.06	---	2.31	225.19	---	5.25
27.17	-23.58	11.32	77.55	5.89	27.56	446.20	---	4.12	142.30	---	3.76
29.34	-12.43	44.53	66.07	4.39	23.63	446.20	---	5.01	142.30	---	4.45
31.51	-4.52	70.11	54.59	2.89	19.90	446.20	---	4.83	142.30	---	5.36
33.68	0.13	88.69	43.11	1.40	15.53	446.20	---	3.87	142.30	---	6.95
35.85	1.56	84.31	34.23	0.55	12.11	446.20	---	4.05	142.30	---	8.99
38.02	-1.25	79.05	46.20	2.05	15.58	446.20	---	4.33	142.30	---	6.89
40.19	-7.32	68.56	58.20	3.34	20.92	446.20	---	4.90	142.30	---	5.06
42.36	-16.64	45.95	70.20	5.04	23.27	446.20	---	4.65	142.30	---	4.49
44.53	-29.21	10.48	82.20	6.54	27.25	446.20	---	3.82	142.30	---	3.78
45.95	-39.48	17.38	85.10	9.73	29.72	320.22	---	2.22	227.56	---	5.56
46.7	-44.91	21.02	98.85	11.41	31.02	320.22	---	2.04	227.56	---	5.28
47.45	-37.06	20.34	84.40	10.89	30.88	320.22	---	2.48	227.56	---	5.32
49.45	-16.12	18.54	45.88	9.51	30.49	446.20	---	7.13	142.30	---	3.28
52.2	7.43	54.68	38.33	7.60	26.14	446.20	---	6.14	142.30	---	3.90
54.95	25.74	104.72	32.53	5.70	24.33	446.20	---	3.03	142.30	---	4.26
57.71	38.82	133.55	26.89	3.80	19.09	446.20	---	2.28	142.30	---	5.53
60.46	45.29	128.57	21.26	1.47	13.19	446.20	---	2.32	142.30	---	8.19
63.21	46.72	142.95	17.01	0.44	10.44	446.20	---	2.07	142.30	---	10.44
65.96	42.87	135.94	12.75	2.36	9.27	446.20	---	2.21	142.30	---	11.55
68.72	33.75	112.23	8.50	4.27	13.91	446.20	---	2.76	142.30	---	7.56
71.47	19.36	70.31	4.25	6.18	18.67	446.20	---	4.61	142.30	---	5.53
73.47	5.28	19.18	1.16	7.58	27.61	446.20	---	17.62	142.30	---	5.69
74.22	0.00	0.00	0.00	8.10	30.96	446.20	---	N/A	142.30	---	3.27

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.03	0.06	6.15	19.50	344.25	---	4413.46	233.50	---	8.90
0.75	4.01	11.97	0.89	5.67	18.44	344.25	---	21.79	233.50	---	9.24
2.5	13.35	39.83	2.84	4.54	15.95	446.20	---	8.28	142.30	---	6.58
5	22.70	64.75	5.69	2.93	12.96	446.20	---	4.95	142.30	---	8.22
7.5	28.01	79.62	8.53	1.32	10.12	446.20	---	3.96	142.30	---	10.69
10	29.31	86.72	11.38	0.29	9.03	446.20	---	3.62	142.30	---	12.09
12.5	25.95	72.22	14.23	1.90	15.79	446.20	---	4.39	142.30	---	6.81
15	22.39	65.50	17.12	2.23	12.16	446.20	---	4.90	142.30	---	8.82
17.5	15.78	53.18	21.08	3.85	15.56	446.20	---	6.18	142.30	---	6.79
20	3.14	28.76	25.05	5.46	17.25	446.20	---	11.83	142.30	---	6.03
22.5	-12.54	12.77	35.50	7.08	19.91	446.20	---	9.32	142.30	---	5.14
24.25	-25.74	13.88	55.63	8.20	21.58	352.68	---	4.41	235.88	---	8.03
25	-31.40	14.50	64.25	8.68	22.29	352.68	---	3.73	235.88	---	7.75
25.75	-27.05	11.98	69.68	7.40	20.86	352.68	---	4.09	235.88	---	8.34
27.09	-19.29	7.49	51.51	5.11	18.31	446.20	---	6.29	142.30	---	5.70
29.19	-10.00	28.24	43.63	3.76	15.59	446.20	---	7.64	142.30	---	6.78
31.28	-3.55	43.83	35.77	2.41	12.74	446.20	---	7.75	142.30	---	8.40
33.38	0.09	55.35	28.07	1.06	10.33	446.20	---	6.20	142.30	---	10.81
35.47	0.72	52.02	22.26	0.28	8.16	446.20	---	6.58	142.30	---	13.38
37.57	-1.28	50.17	31.30	1.63	10.97	446.20	---	6.82	142.30	---	10.50
39.66	-6.11	46.77	40.34	2.98	13.71	446.20	---	7.21	142.30	---	7.77
41.76	-13.77	28.80	49.38	4.33	15.18	446.20	---	6.67	142.30	---	6.93
43.85	-24.26	7.91	58.45	5.68	17.94	446.20	---	5.46	142.30	---	5.78
45.2	-32.86	11.23	66.60	8.10	19.82	364.68	---	3.72	240.63	---	8.93
45.95	-37.64	13.08	71.13	9.44	20.86	364.68	---	3.41	240.63	---	8.42
46.7	-31.25	12.83	60.48	8.96	20.80	364.68	---	4.12	240.63	---	8.47
48.78	-13.54	11.37	30.93	7.61	20.63	446.20	---	10.66	142.30	---	4.94
51.6	5.40	33.15	23.35	5.79	17.72	446.20	---	10.19	142.30	---	5.85
54.43	18.19	65.97	19.37	3.97	14.29	446.20	---	4.91	142.30	---	7.38
57.26	27.83	85.43	15.80	2.14	10.66	446.20	---	3.69	142.30	---	10.07
60.09	30.49	78.28	13.08	2.42	13.26	446.20	---	4.00	142.30	---	8.07
62.91	34.75	88.99	10.46	0.59	10.86	446.20	---	3.47	142.30	---	10.03
65.74	33.84	87.88	7.84	1.24	7.09	446.20	---	3.52	142.30	---	15.26
68.57	27.76	72.72	5.23	3.07	9.97	446.20	---	4.34	142.30	---	10.67
71.4	16.50	47.21	2.61	4.89	12.88	446.20	---	6.92	142.30	---	8.12
73.47	4.39	12.56	0.69	6.23	18.05	446.20	---	26.99	142.30	---	5.72
74.22	0.00	0.00	0.00	6.72	19.92	446.20	---	N/A	142.30	---	5.16

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
0	0.00	0.06	0.01	6.05	16.29	1028.40	---	13184.62	190.80	---	8.64
0.75	4.04	10.34	0.97	5.65	15.74	1028.40	---	76.11	190.80	---	8.97
2.5	13.47	34.33	3.21	4.71	14.44	1028.40	---	22.65	190.80	---	9.84
5	23.57	61.35	6.42	3.37	12.76	1028.40	---	12.51	190.80	---	11.24
7.5	30.32	79.93	9.63	2.03	10.73	1028.40	---	9.52	190.80	---	13.49
10	33.72	93.76	12.85	0.69	9.53	1028.40	---	8.08	190.80	---	15.33
12.5	33.78	99.15	16.06	1.61	9.00	1028.40	---	7.64	190.80	---	16.13
15	28.07	88.16	12.85	2.95	9.89	1028.40	---	8.65	190.80	---	14.54
17.5	19.02	72.98	9.64	4.29	11.07	1028.40	---	10.58	190.80	---	12.87
20	6.62	50.97	6.43	5.63	13.22	1028.40	---	15.39	190.80	---	10.68
22.5	-9.13	22.43	3.21	6.97	14.71	1028.40	---	34.86	190.80	---	9.50
24.25	1.90	42.41	5.46	7.91	15.15	1028.40	---	18.61	190.80	---	9.17
25	6.62	50.97	6.43	8.31	15.34	1028.40	---	15.39	190.80	---	9.03
25.75	-3.13	41.32	10.55	6.57	14.36	1028.40	---	19.07	190.80	---	9.76
27.03	-19.77	24.86	17.59	3.61	12.70	1028.40	---	31.03	190.80	---	11.27
29.07	-13.54	42.69	17.80	2.52	11.24	1028.40	---	18.21	190.80	---	12.83
31.1	-9.53	53.85	18.01	1.43	9.35	1028.40	---	14.51	190.80	---	15.54
33.14	-7.73	64.28	18.21	0.34	7.73	1028.40	---	12.19	190.80	---	18.94
35.17	-8.15	67.60	18.42	0.79	6.77	1028.40	---	11.58	190.80	---	21.56
37.2	-10.88	59.86	14.73	1.88	8.56	1028.40	---	13.03	190.80	---	16.93
39.24	-15.82	51.76	11.05	2.97	10.11	1028.40	---	14.98	190.80	---	14.22
41.27	-22.97	35.46	7.37	4.06	12.22	1028.40	---	21.66	190.80	---	11.68
43.31	-32.35	14.01	3.68	5.15	13.89	1028.40	---	54.16	190.80	---	10.20
44.59	-39.65	5.18	9.20	8.28	15.69	1028.40	---	81.70	190.80	---	8.83
45.34	-43.93	0.00	12.43	10.12	16.74	1028.40	---	60.11	190.80	---	8.16
46.09	-36.93	11.55	13.12	9.72	16.59	1028.40	---	57.47	190.80	---	8.26
48.23	-16.94	44.52	15.10	8.57	16.16	1028.40	---	17.39	190.80	---	8.55
51.12	5.58	79.96	18.04	7.02	14.36	1028.40	---	9.82	190.80	---	9.73
54.01	23.63	106.54	20.98	5.48	12.49	1028.40	---	7.20	190.80	---	11.31
56.89	37.22	125.86	23.92	3.93	10.88	1028.40	---	5.99	190.80	---	13.13
59.78	46.33	134.20	26.85	0.66	8.51	1028.40	---	5.55	190.80	---	17.17
62.67	46.00	126.66	21.48	0.89	10.88	1028.40	---	5.88	190.80	---	13.41
65.56	41.20	107.32	16.11	2.43	12.20	1028.40	---	6.99	190.80	---	11.83
68.45	31.94	80.48	10.74	3.98	14.49	1028.40	---	9.43	190.80	---	9.85
71.34	18.20	44.77	5.37	5.53	16.31	1028.40	---	17.26	190.80	---	8.66
73.47	4.74	11.66	1.40	6.68	15.76	1028.40	---	67.45	190.80	---	8.89
74.22	0.00	0.00	0.00	7.08	15.57	1028.40	---	N/A	190.80	---	8.97

4F1

Stringer F2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012
Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V								
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1 Stringer F1-1	0	0.00	0.09	0.02	6.69	14.60	738.00	---	6307.69	207.60	---	10.48
	0.75	4.46	9.50	1.19	6.29	14.15	738.00	---	59.26	207.60	---	10.84
	2.88	17.14	36.24	4.51	5.17	12.88	738.00	---	15.19	207.60	---	12.00
	5.77	29.88	62.23	9.03	3.66	11.10	738.00	---	8.64	207.60	---	14.06
	8.65	38.25	78.90	13.56	2.14	9.46	738.00	---	6.71	207.60	---	16.65
	11.54	42.25	88.51	18.08	0.63	7.73	738.00	---	5.94	207.60	---	20.58
	14.42	41.88	93.56	22.61	2.57	10.28	738.00	---	5.62	207.60	---	15.28
	17.3	32.30	76.20	20.95	4.08	11.90	738.00	---	7.03	207.60	---	13.08
	20.19	18.34	55.02	19.29	5.60	13.32	738.00	---	9.98	207.60	---	11.57
	23.07	0.00	26.02	21.62	7.11	15.24	738.00	---	21.82	207.60	---	10.01
	25.95	-22.68	2.31	34.89	8.63	13.74	738.00	---	15.62	207.60	---	10.99
	28.09	-42.72	3.64	52.34	9.75	14.68	738.00	---	10.03	207.60	---	10.21
	28.84	-49.75	4.10	58.45	10.14	15.01	738.00	---	8.86	207.60	---	9.96
	29.59	-44.02	7.11	56.73	9.01	15.03	738.00	---	9.23	207.60	---	10.02
	30.86	-34.32	12.20	53.83	7.10	15.07	738.00	---	9.91	207.60	---	10.13
	32.88	-21.04	26.17	50.16	6.04	13.62	738.00	---	10.90	207.60	---	11.28
	34.9	-9.91	39.22	46.51	4.97	11.81	738.00	---	11.99	207.60	---	13.10
	36.93	-0.92	49.70	43.08	3.91	11.81	738.00	---	11.40	207.60	---	13.19
	38.95	5.93	60.50	39.64	2.07	6.72	738.00	---	9.29	207.60	---	23.46
	40.97	9.04	56.36	31.71	1.01	7.65	738.00	---	9.91	207.60	---	20.74
42.99	10.00	51.94	23.78	0.06	8.49	738.00	---	10.74	207.60	---	18.80	
45.01	8.82	41.16	15.85	1.12	10.48	738.00	---	13.58	207.60	---	15.13	
47.04	5.48	24.04	7.92	2.18	12.19	738.00	---	23.39	207.60	---	12.92	
48.31	2.03	8.93	2.94	2.85	13.10	738.00	---	63.37	207.60	---	11.97	
49.06	0.00	0.00	0.00	3.24	13.64	738.00	---	N/A	207.60	---	11.47	
5C1 Stringer S1-1	0	0.00	0.03	0.08	6.62	19.40	523.90	---	5037.50	165.00	---	6.20
	0.75	4.27	11.81	0.63	6.13	18.42	523.90	---	33.75	165.00	---	9.56
	2.82	16.04	44.34	2.15	4.76	15.72	523.90	---	8.73	165.00	---	7.77
	5.65	26.85	70.80	4.31	2.90	12.55	523.90	---	5.31	165.00	---	9.88
	8.47	32.41	82.14	6.47	1.04	9.67	523.90	---	4.51	165.00	---	13.02
	11.29	32.71	85.65	8.63	0.82	11.28	523.90	---	4.32	165.00	---	11.18
	14.12	27.71	77.29	10.79	0.32	8.11	523.90	---	4.85	165.00	---	15.61
	16.94	24.25	63.06	14.49	2.17	9.40	523.90	---	6.01	165.00	---	13.27
	19.76	15.51	54.77	18.84	4.01	15.20	523.90	---	7.07	165.00	---	8.09
	22.58	1.55	42.14	23.86	5.85	15.36	523.90	---	9.53	165.00	---	7.88
	25.41	-17.64	16.90	36.40	7.70	17.49	523.90	---	10.59	165.00	---	6.82
	27.48	-32.45	5.03	45.95	9.68	18.91	243.03	---	3.36	248.02	---	9.60
	28.23	-37.82	0.73	49.41	9.47	19.47	243.03	---	3.02	248.02	---	9.31
	28.98	-32.32	1.89	44.62	8.45	18.68	243.03	---	3.47	248.02	---	9.76
	30.31	-22.58	3.94	36.13	6.64	17.30	523.90	---	10.53	165.00	---	6.95
	32.4	-10.15	26.13	30.58	5.30	15.45	523.90	---	12.88	165.00	---	7.87
	34.48	-0.52	38.65	25.03	3.95	12.95	523.90	---	10.41	165.00	---	9.50
	36.56	6.30	47.81	19.66	2.60	10.47	523.90	---	8.30	165.00	---	11.87
	38.64	10.36	45.57	14.37	2.36	12.19	523.90	---	8.62	165.00	---	10.22
	40.73	18.87	50.69	11.49	1.01	10.45	523.90	---	7.68	165.00	---	12.05
42.81	14.56	52.41	8.62	0.34	10.25	523.90	---	7.41	165.00	---	12.35	
44.89	12.45	43.73	5.75	1.69	11.36	523.90	---	8.93	165.00	---	11.02	
46.98	7.54	33.16	2.88	3.03	13.46	523.90	---	11.93	165.00	---	9.20	
48.31	2.72	11.96	1.04	3.89	15.38	215.85	---	13.66	201.17	---	9.81	
49.06	0.00	0.00	0.00	4.38	16.47	215.85	---	N/A	201.17	---	9.15	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1 Stringer S2-1	0	0.00	0.03	0.09	7.96	29.34	523.90	---	4477.78	165.00	---	4.05
	0.75	5.23	18.49	1.27	7.43	28.06	523.90	---	21.51	165.00	---	4.26
	2.75	19.19	67.71	4.42	6.01	24.66	523.90	---	5.67	165.00	---	4.90
	5.5	33.04	112.94	8.91	4.07	20.56	523.90	---	3.28	165.00	---	5.98
	8.25	41.55	137.83	13.58	2.12	16.73	523.90	---	2.62	165.00	---	7.46
	10.99	44.71	145.36	18.29	0.18	13.94	523.90	---	2.46	165.00	---	9.09
	13.74	42.52	141.25	22.98	2.25	14.30	523.90	---	2.85	165.00	---	8.72
	16.49	33.68	140.36	29.72	4.18	17.12	523.90	---	3.35	165.00	---	7.17
	19.24	19.52	92.75	36.45	6.11	24.33	523.90	---	4.13	165.00	---	4.97
	21.99	0.00	67.15	43.19	8.04	25.36	523.90	---	6.00	165.00	---	4.69
	24.74	-24.77	17.62	56.05	9.97	28.12	523.90	---	6.75	165.00	---	4.16
	26.73	-43.96	6.19	72.95	11.83	28.35	273.51	---	2.28	256.24	---	6.55
	27.48	-51.19	1.88	79.32	11.84	28.44	273.51	---	2.01	256.24	---	6.51
	28.23	-44.16	2.73	72.99	10.73	27.53	273.51	---	2.28	256.24	---	6.67
	29.64	-30.95	4.32	61.09	8.63	26.95	523.90	---	6.09	165.00	---	4.39
	31.8	-13.96	43.42	53.25	7.13	24.16	523.90	---	7.31	165.00	---	4.96
	33.96	-0.21	68.13	45.42	5.62	21.72	523.90	---	5.91	165.00	---	5.58
	36.11	10.30	82.81	37.58	4.12	18.27	523.90	---	4.52	165.00	---	6.72
	38.27	17.61	89.47	29.77	2.11	14.05	523.90	---	4.81	165.00	---	8.88
	40.43	20.54	93.66	23.82	0.61	12.54	523.90	---	4.08	165.00	---	10.07
42.59	20.23	91.36	17.86	0.90	16.44	523.90	---	4.19	165.00	---	7.67	
44.74	16.67	76.04	11.91	2.40	18.50	523.90	---	5.08	165.00	---	6.73	
46.9	9.86	53.94	5.96	3.91	21.68	523.90	---	7.29	165.00	---	5.67	
48.31	3.42	18.73	2.07	4.89	23.04	250.11	---	10.09	212.13	---	6.87	
49.06	0.00	0.00	0.00	5.41	23.77	250.11	---	N/A	212.13	---	6.64	
5C1 Stringer S3-1	0	0.00	0.03	0.09	7.96	29.34	523.90	---	6716.87	165.00	---	4.04
	0.75	5.17	18.77	1.52	7.30	28.98	523.90	---	21.20	165.00	---	4.13
	2.67	18.40	66.73	5.27	5.93	27.64	523.90	---	5.76	165.00	---	4.38
	5.35	31.71	112.14	10.56	4.03	23.17	523.90	---	3.31	165.00	---	5.30
	8.02	39.95	136.95	15.84	2.13	18.59	523.90	---	2.65	165.00	---	6.71
	10.69	43.11	144.20	21.13	0.23	17.00	523.90	---	2.50	165.00	---	7.45
	13.36	41.12	139.95	26.41	2.50	15.03	523.90	---	2.55	165.00	---	8.28
	16.04	31.96	108.90	33.07	4.39	17.75	523.90	---	3.41	165.00	---	6.90
	18.71	17.69	91.14	39.72	6.28	24.80	523.90	---	4.23	165.00	---	4.86
	21.38	-1.64	64.20	46.38	8.17	25.75	523.90	---	6.25	165.00	---	4.61
	24.05	-26.03	22.92	58.24	10.05	28.51	523.90	---	6.47	165.00	---	4.10
	25.98	-45.11	8.18	74.77	11.88	31.49	304.92	---	2.53	267.20	---	6.17
	26.73	-52.52	2.45	81.20	11.89	32.65	304.92	---	2.24	267.20	---	5.93
	27.48	-45.27	3.20	74.67	10.87	30.87	304.92	---	2.54	267.20	---	6.31
	28.96	-30.95	4.68	61.77	8.87	27.36	523.90	---	6.02	165.00	---	4.31
	31.19	-12.89	47.25	54.27	7.30	24.56	523.90	---	7.19	165.00	---	4.87
	33.43	1.67	75.67	46.77	5.74	22.00	523.90	---	5.30	165.00	---	5.51
	35.66	12.73	96.88	39.27	4.17	18.56	523.90	---	4.04	165.00	---	6.61
	37.89	20.16	98.03	31.79	2.10	13.76	523.90	---	3.91	165.00	---	9.07
	40.13	23.10	101.70	25.44	0.53	12.94	523.90	---	3.74	165.00	---	9.77
42.36	22.54	98.13	19.08	1.04	16.64	523.90	---	3.88	165.00	---	7.57	
44.59	18.47	81.84	12.72	2.61	18.76	523.90	---	4.70	165.00	---	6.63	
46.82	10.89	56.06	6.37	4.18	22.04	523.90	---	6.99	165.00	---	5.57	
48.31	3.65	18.77	2.13	5.22	23.13	291.21	---	11.74	225.83	---	7.28	
49.06	0.00	0.00	0.00	5.75	23.68	291.21	---	N/A	225.83	---	7.08	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1 Stringer S4-1	0	0.00	0.04	0.07	7.08	26.75	446.20	---	4903.30	142.30	---	3.83
	0.75	4.63	17.90	1.51	6.56	25.92	446.20	---	18.92	142.30	---	3.97
	2.6	16.04	61.95	5.07	5.27	23.88	446.20	---	5.28	142.30	---	4.36
	5.19	27.37	103.82	10.15	3.46	19.70	446.20	---	3.04	142.30	---	5.38
	7.79	33.99	123.89	15.23	1.64	15.00	446.20	---	2.50	142.30	---	7.19
	10.39	35.90	129.54	20.31	0.17	12.90	446.20	---	2.37	142.30	---	8.47
	12.98	33.05	122.64	25.37	2.00	13.70	446.20	---	2.58	142.30	---	7.84
	15.58	25.54	97.29	32.36	3.81	16.78	446.20	---	3.27	142.30	---	6.30
	18.18	13.30	81.62	39.35	5.61	23.50	446.20	---	4.04	142.30	---	4.42
	20.78	-3.63	56.02	46.35	7.42	23.63	446.20	---	6.06	142.30	---	4.32
	23.37	-25.27	17.71	56.02	9.22	26.63	446.20	---	5.68	142.30	---	3.76
	25.22	-42.48	7.06	71.92	10.49	28.07	294.12	---	2.56	239.95	---	6.20
	25.97	-49.46	2.74	78.37	11.00	28.66	294.12	---	2.26	239.95	---	6.06
	26.72	-42.44	3.72	71.90	10.24	28.07	294.12	---	2.56	239.95	---	6.21
	28.28	-27.85	5.76	58.43	8.56	26.83	446.20	---	5.40	142.30	---	3.76
	30.59	-9.93	49.11	50.28	6.96	24.04	446.20	---	6.63	142.30	---	4.26
	32.9	4.29	79.46	42.85	5.36	21.53	446.20	---	4.27	142.30	---	4.84
	35.2	14.83	90.75	35.44	3.76	17.74	446.20	---	3.29	142.30	---	5.96
	37.51	21.47	96.86	28.07	2.13	14.27	446.20	---	3.22	142.30	---	7.52
	39.82	27.54	102.14	22.46	0.53	12.69	446.20	---	3.12	142.30	---	8.58
42.13	23.91	99.59	16.85	1.07	16.45	446.20	---	3.21	142.30	---	6.59	
44.44	19.58	83.81	11.24	2.68	18.53	446.20	---	3.86	142.30	---	5.76	
46.75	11.56	59.35	5.62	4.28	21.56	446.20	---	5.59	142.30	---	4.88	
48.31	3.75	19.27	1.82	5.36	22.92	301.56	---	11.84	221.62	---	7.20	
49.06	0.00	0.00	0.00	5.88	23.58	301.56	---	N/A	221.62	---	6.98	
5C1 Stringer S5-1	0	0.00	0.00	0.00	7.11	27.55	446.20	---	5726.51	142.30	---	3.72
	0.75	4.68	18.15	1.89	6.59	26.54	446.20	---	18.66	142.30	---	3.88
	2.52	15.72	60.90	6.22	5.36	24.17	446.20	---	5.38	142.30	---	4.31
	5.04	27.01	104.42	12.45	3.60	20.08	446.20	---	3.03	142.30	---	5.27
	7.56	33.89	126.33	18.69	1.85	16.33	446.20	---	2.45	142.30	---	6.59
	10.08	36.35	134.15	24.93	0.10	13.58	446.20	---	2.29	142.30	---	8.05
	12.61	34.40	132.44	31.19	2.80	15.21	446.20	---	2.33	142.30	---	7.01
	15.13	25.13	104.63	38.52	4.55	18.63	446.20	---	3.04	142.30	---	5.63
	17.65	11.46	82.37	45.85	6.29	24.96	446.20	---	4.03	142.30	---	4.13
	20.17	-6.63	52.01	52.19	8.04	24.81	446.20	---	6.33	142.30	---	4.09
	22.69	-29.12	10.53	62.28	9.79	27.66	446.20	---	5.04	142.30	---	3.60
	24.46	-46.87	4.71	80.09	11.00	28.70	321.72	---	2.50	247.07	---	6.24
	25.21	-54.39	2.25	87.64	11.51	28.14	321.72	---	2.20	247.07	---	6.13
	25.96	-46.73	3.35	80.19	10.85	28.81	321.72	---	2.50	247.07	---	6.22
	27.6	-29.97	5.74	63.91	9.42	28.08	446.20	---	4.90	142.30	---	3.56
	29.98	-9.47	53.92	53.05	7.77	25.47	446.20	---	6.19	142.30	---	3.99
	32.37	7.10	90.50	45.85	6.12	22.82	446.20	---	3.71	142.30	---	4.53
	34.75	19.74	114.84	38.66	4.48	19.21	446.20	---	2.81	142.30	---	5.46
	37.13	28.30	113.81	31.52	1.74	13.15	446.20	---	3.77	142.30	---	8.19
	39.52	30.49	116.64	25.22	0.09	12.92	446.20	---	2.68	142.30	---	8.47
41.9	28.74	109.73	18.92	1.56	17.65	446.20	---	2.87	142.30	---	6.11	
44.29	23.05	92.18	12.62	3.21	19.35	446.20	---	3.47	142.30	---	5.49	
46.67	13.42	65.52	6.32	4.86	22.29	446.20	---	5.03	142.30	---	4.69	
48.31	4.21	20.56	1.98	5.99	23.16	340.95	---	12.55	233.50	---	7.50	
49.06	0.00	0.00	0.00	6.51	23.56	340.95	---	N/A	233.50	---	7.35	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1 Stringer S6-1	0	0.00	0.04	0.13	5.21	17.33	306.00	---	1810.65	98.70	---	4.08
	0.75	3.31	10.65	0.91	4.74	16.38	306.00	---	21.78	98.70	---	4.35
	2.45	10.81	34.71	2.69	3.66	14.22	306.00	---	6.47	98.70	---	5.08
	4.89	17.88	56.32	5.39	2.12	11.05	306.00	---	3.86	98.70	---	6.68
	7.34	21.17	64.49	8.10	0.57	8.42	306.00	---	3.32	98.70	---	8.95
	9.79	20.69	64.67	10.81	0.97	11.05	306.00	---	3.32	98.70	---	6.78
	12.23	16.42	57.47	13.50	0.63	9.98	306.00	---	3.81	98.70	---	7.54
	14.68	13.00	55.96	18.07	2.17	9.77	306.00	---	3.97	98.70	---	7.55
	17.13	5.80	47.75	23.12	3.71	12.42	306.00	---	4.81	98.70	---	5.81
	19.57	-5.18	32.28	28.37	5.26	15.33	306.00	---	7.13	98.70	---	4.61
	22.02	-19.93	8.28	34.25	6.80	17.99	306.00	---	6.29	98.70	---	3.84
	23.71	-32.76	3.06	45.86	7.87	19.17	306.00	---	4.42	98.70	---	3.55
	24.46	-38.45	0.75	51.01	8.35	19.69	306.00	---	3.86	98.70	---	3.43
	25.21	-32.80	2.16	46.06	7.87	18.81	306.00	---	4.40	98.70	---	3.62
	26.92	-19.92	5.39	34.79	6.76	16.81	306.00	---	6.19	98.70	---	4.11
	29.38	-5.21	29.43	29.16	5.21	14.20	306.00	---	7.82	98.70	---	4.98
	31.84	5.68	45.58	23.78	3.65	11.52	306.00	---	5.04	98.70	---	6.27
	34.3	12.76	54.03	18.40	2.10	9.13	306.00	---	4.12	98.70	---	8.09
	36.76	16.02	52.92	13.16	2.58	13.12	306.00	---	4.15	98.70	---	5.59
	39.22	20.45	60.52	10.53	1.03	10.23	306.00	---	3.55	98.70	---	7.32
41.68	21.07	62.83	7.90	0.53	7.63	306.00	---	3.41	98.70	---	9.88	
44.14	17.86	54.46	5.27	2.08	6.83	306.00	---	3.99	98.70	---	10.81	
46.6	10.84	32.18	2.63	3.63	9.88	306.00	---	6.98	98.70	---	7.32	
48.31	3.30	9.81	0.80	4.71	15.29	306.00	---	23.66	98.70	---	4.66	
49.06	0.00	0.00	0.00	5.18	17.66	306.00	---	N/A	98.70	---	4.01	
5C1 Stringer F2-1	0	0.00	0.11	0.03	5.03	13.82	1028.40	---	7191.61	190.80	---	10.26
	0.75	3.30	8.98	2.09	4.63	13.31	1028.40	---	87.74	190.80	---	10.68
	2.39	10.53	28.37	6.59	3.76	12.19	1028.40	---	27.51	190.80	---	11.73
	4.77	17.96	49.99	13.19	2.48	10.54	1028.40	---	15.47	190.80	---	13.69
	7.16	22.35	64.45	19.79	1.20	8.88	1028.40	---	11.93	190.80	---	16.39
	9.54	23.69	71.41	26.38	0.08	7.73	1028.40	---	10.75	190.80	---	18.98
	11.93	21.98	75.83	32.99	2.50	10.23	1028.40	---	10.14	190.80	---	14.10
	14.31	14.48	63.10	33.96	3.78	14.90	1028.40	---	12.31	190.80	---	9.60
	16.7	3.93	48.47	34.93	5.06	12.28	1028.40	---	16.24	190.80	---	11.54
	19.09	-9.66	30.40	36.03	6.34	13.40	1028.40	---	21.69	190.80	---	10.48
	21.47	-26.31	7.01	39.79	7.62	14.77	1028.40	---	19.22	190.80	---	9.42
	23.11	-39.83	4.71	49.37	8.49	14.26	1028.40	---	15.22	190.80	---	9.70
	23.86	-46.01	3.66	53.75	8.89	14.03	1028.40	---	13.86	190.80	---	9.83
	24.61	-39.60	4.30	48.98	8.59	14.29	1028.40	---	15.34	190.80	---	9.67
	26.38	-24.48	5.82	37.72	7.87	14.90	1028.40	---	20.32	190.80	---	9.32
	28.9	-6.35	30.96	31.34	6.52	13.62	1028.40	---	25.04	190.80	---	10.30
	31.42	8.37	52.02	30.73	5.17	12.27	1028.40	---	15.05	190.80	---	11.54
	33.94	19.70	66.68	30.22	3.82	11.13	1028.40	---	11.57	190.80	---	12.84
	36.46	27.62	80.33	29.71	2.47	10.16	1028.40	---	9.50	190.80	---	14.20
	38.98	28.90	76.17	23.77	0.17	7.45	1028.40	---	10.01	190.80	---	19.68
41.5	26.78	68.86	17.82	1.52	8.89	1028.40	---	11.10	190.80	---	16.34	
44.02	21.26	53.82	11.88	2.87	10.36	1028.40	---	14.30	190.80	---	13.89	
46.54	12.33	30.32	5.94	4.22	12.00	1028.40	---	25.68	190.80	---	11.88	
48.31	3.67	9.02	1.77	5.17	11.64	1028.40	---	87.26	190.80	---	12.16	
49.06	0.00	0.00	0.00	5.57	11.49	1028.40	---	N/A	190.80	---	12.29	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.07	0.02	5.78	14.82	738.00	---	8109.89	207.60	---	10.39
0.75	3.85	9.81	0.95	5.39	14.42	738.00	---	57.49	207.60	---	10.70
2.5	12.84	32.53	3.12	4.47	13.47	738.00	---	17.06	207.60	---	11.52
5	22.36	58.89	6.24	3.15	11.92	738.00	---	9.26	207.60	---	13.13
7.5	28.60	77.52	9.36	1.84	11.06	738.00	---	6.95	207.60	---	14.27
10	31.56	88.54	12.48	0.53	9.90	738.00	---	6.06	207.60	---	16.08
12.5	31.23	96.82	15.61	2.27	8.85	738.00	---	5.54	207.60	---	17.79
15	23.90	86.04	12.49	3.59	9.80	738.00	---	6.32	207.60	---	15.93
17.5	13.29	71.97	9.37	4.90	13.19	738.00	---	7.70	207.60	---	11.74
20	-0.61	47.59	6.25	6.22	14.15	738.00	---	11.92	207.60	---	10.85
22.5	-17.79	20.22	3.12	7.53	14.55	738.00	---	27.20	207.60	---	10.46
24.25	-32.12	6.07	14.80	8.45	13.89	738.00	---	36.18	207.60	---	10.89
25	-38.26	0.00	19.81	8.84	13.60	738.00	---	26.73	207.60	---	11.09
25.75	-33.35	9.60	20.36	7.96	13.48	738.00	---	26.25	207.60	---	11.25
27.53	-21.71	32.39	21.66	5.87	13.21	738.00	---	16.86	207.60	---	11.64
30.06	-8.54	57.87	23.52	4.54	11.52	738.00	---	9.66	207.60	---	13.47
32.6	1.27	75.36	25.38	3.21	10.41	738.00	---	7.52	207.60	---	15.03
35.13	7.71	85.19	27.23	1.88	9.40	738.00	---	6.57	207.60	---	16.79
37.66	10.78	92.36	29.08	0.28	8.53	738.00	---	6.03	207.60	---	18.69
40.19	8.40	83.37	23.26	1.61	9.01	738.00	---	6.71	207.60	---	17.55
42.73	2.65	70.74	17.45	2.94	9.80	738.00	---	7.99	207.60	---	16.00
45.26	-6.47	46.15	11.63	4.27	12.18	738.00	---	12.16	207.60	---	12.76
47.79	-18.96	19.58	5.81	5.60	13.58	738.00	---	28.03	207.60	---	11.35
49.57	-30.11	5.80	15.88	7.55	13.31	738.00	---	33.84	207.60	---	11.43
50.32	-34.81	0.00	20.13	8.37	13.19	738.00	---	26.47	207.60	---	11.47
51.07	-29.00	9.94	20.33	7.97	13.39	738.00	---	26.50	207.60	---	11.33
52.71	-16.30	31.66	20.76	7.11	13.84	738.00	---	17.42	207.60	---	11.02
55.1	-0.80	56.89	21.90	5.86	12.25	738.00	---	9.96	207.60	---	12.56
57.49	11.70	74.13	23.24	4.60	10.82	738.00	---	7.50	207.60	---	14.33
59.88	21.20	85.31	24.65	3.35	10.14	738.00	---	6.41	207.60	---	15.42
62.27	27.68	90.66	26.05	0.82	8.19	738.00	---	5.96	207.60	---	19.40
64.66	28.15	82.73	20.84	0.43	9.58	738.00	---	6.52	207.60	---	16.62
67.05	25.62	72.75	15.63	1.69	10.21	738.00	---	7.45	207.60	---	15.48
69.44	20.08	55.51	10.42	2.94	12.01	738.00	---	9.87	207.60	---	13.05
71.83	11.54	31.01	5.21	4.20	13.65	738.00	---	17.93	207.60	---	11.39
73.47	3.62	9.73	1.63	5.06	13.16	738.00	---	57.97	207.60	---	11.75
74.22	0.00	0.00	0.00	5.46	12.93	738.00	---	N/A	207.60	---	11.93

5C1

Stringer F1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
0	0.00	0.03	0.07	5.74	17.38	215.85	---	2371.96	201.17	---	6.37
0.75	3.69	10.63	0.67	5.25	16.42	215.85	---	15.28	201.17	---	9.40
2.5	12.31	35.35	2.06	4.12	14.18	523.90	---	11.05	165.00	---	8.66
5	20.60	61.82	4.13	2.50	12.73	523.90	---	6.19	165.00	---	9.77
7.5	24.83	75.76	6.19	0.89	11.17	523.90	---	4.99	165.00	---	11.28
10	25.03	79.76	8.26	0.73	9.45	523.90	---	4.74	165.00	---	13.35
12.5	19.36	58.40	10.33	2.36	16.05	523.90	---	6.57	165.00	---	7.76
15	16.30	51.67	15.09	2.04	11.04	523.90	---	7.48	165.00	---	11.31
17.5	-3.15	46.68	20.35	3.67	15.22	523.90	---	8.44	165.00	---	8.10
20	-2.10	35.51	25.63	5.30	15.87	523.90	---	11.29	165.00	---	7.66
22.5	-17.43	19.41	37.58	6.93	17.56	523.90	---	10.26	165.00	---	6.83
24.25	-28.62	10.23	47.47	8.02	19.18	204.30	---	2.71	234.31	---	8.98
25	-33.41	6.29	51.71	8.48	19.87	204.30	---	2.39	234.31	---	8.64
25.75	-28.36	8.32	46.52	7.71	18.92	204.30	---	2.77	234.31	---	9.12
27.47	-16.78	12.97	34.62	5.93	16.75	523.90	---	11.16	165.00	---	7.22
29.94	-4.08	37.50	28.41	4.34	15.68	523.90	---	10.64	165.00	---	7.82
32.41	4.68	55.05	24.13	2.75	13.46	523.90	---	7.24	165.00	---	9.23
34.89	9.50	65.63	20.13	1.15	9.07	523.90	---	6.00	165.00	---	12.69
37.36	8.14	48.82	16.58	0.60	9.52	523.90	---	8.09	165.00	---	13.27
39.83	7.62	44.84	19.06	1.01	9.68	523.90	---	8.82	165.00	---	13.01
42.3	3.10	40.11	22.31	2.33	14.59	523.90	---	9.97	165.00	---	8.52
44.77	-5.42	29.68	25.96	4.24	14.44	523.90	---	13.40	165.00	---	8.50
47.24	-17.93	19.48	39.34	5.85	13.24	523.90	---	9.80	165.00	---	9.14
48.96	-26.97	11.12	46.00	7.70	17.20	196.47	---	2.70	231.57	---	9.91
49.71	-30.91	7.47	48.92	8.50	18.92	196.47	---	2.46	231.57	---	8.97
50.46	-25.15	10.56	43.72	8.02	18.55	196.47	---	2.88	231.57	---	9.17
52.17	-12.01	16.95	31.85	6.92	17.71	523.90	---	12.28	165.00	---	6.78
54.62	3.02	42.22	25.27	5.34	15.92	523.90	---	9.17	165.00	---	7.64
57.07	14.18	61.84	20.06	3.77	13.59	523.90	---	6.29	165.00	---	9.06
59.52	21.48	73.68	15.11	2.19	11.05	523.90	---	5.18	165.00	---	11.29
61.97	22.62	66.87	11.11	2.16	12.45	523.90	---	5.69	165.00	---	10.02
64.42	25.95	72.00	8.89	0.55	9.89	523.90	---	5.24	165.00	---	12.78
66.87	25.31	70.36	6.67	1.07	11.94	523.90	---	5.37	165.00	---	10.54
69.32	20.71	59.41	4.44	2.68	12.85	523.90	---	6.43	165.00	---	9.67
71.77	12.15	45.07	2.22	4.30	14.32	523.90	---	8.67	165.00	---	8.56
73.47	3.72	13.80	0.68	5.42	16.72	523.90	---	28.94	165.00	---	7.27
74.22	0.00	0.00	0.00	5.92	17.78	523.90	---	N/A	165.00	---	6.81

5C1

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
0	0.00	0.02	0.06	7.19	25.98	250.11	---	3206.54	212.13	---	6.00
0.75	4.73	16.81	1.53	6.67	24.91	250.11	---	11.16	212.13	---	6.88
2.5	15.77	55.98	4.96	5.44	22.41	523.90	---	6.92	165.00	---	5.42
5	27.19	100.43	9.93	3.70	20.84	523.90	---	3.74	165.00	---	5.91
7.5	34.26	126.13	14.91	1.95	17.54	523.90	---	2.92	165.00	---	7.13
10	36.96	135.39	19.88	0.21	12.79	523.90	---	2.70	165.00	---	9.91
12.5	33.59	109.06	24.86	1.80	22.96	523.90	---	3.39	165.00	---	5.45
15	26.90	96.93	32.03	3.55	18.49	523.90	---	3.88	165.00	---	6.67
17.5	15.81	85.46	39.20	5.30	22.54	523.90	---	4.53	165.00	---	5.40
20	0.32	62.20	46.38	7.06	26.51	523.90	---	6.41	165.00	---	4.52
22.5	-19.57	38.12	53.56	8.81	28.65	523.90	---	7.16	165.00	---	4.12
24.25	-34.34	15.67	66.34	9.99	28.41	243.03	---	2.30	248.02	---	6.36
25	-40.67	11.62	71.81	10.50	28.31	243.03	---	2.04	248.02	---	6.37
25.75	-34.90	13.70	65.19	9.37	27.19	243.03	---	2.33	248.02	---	6.67
27.4	-22.21	18.29	50.54	6.87	24.71	523.90	---	7.52	165.00	---	4.86
29.79	-7.74	44.16	41.53	5.20	20.84	523.90	---	8.95	165.00	---	5.84
32.19	2.73	65.38	36.64	3.54	17.14	523.90	---	6.12	165.00	---	7.20
34.59	9.21	78.19	32.11	1.87	13.31	523.90	---	5.04	165.00	---	9.06
36.98	11.68	74.71	28.41	0.03	13.05	523.90	---	5.24	165.00	---	9.72
39.38	9.60	76.28	30.91	1.70	13.92	523.90	---	5.16	165.00	---	9.00
41.78	3.53	67.29	34.52	2.37	16.83	523.90	---	5.94	165.00	---	7.34
44.17	-6.54	48.61	38.44	5.03	20.83	523.90	---	8.16	165.00	---	5.85
46.57	-20.60	13.65	45.22	6.70	25.03	523.90	---	8.46	165.00	---	4.80
48.22	-33.02	13.44	31.71	9.37	25.86	243.03	---	2.49	248.02	---	7.02
48.97	-38.67	13.35	69.20	10.59	26.23	243.03	---	2.14	248.02	---	6.87
49.72	-31.37	19.50	64.54	10.07	26.20	243.03	---	2.41	248.02	---	6.90
51.49	-14.15	34.01	53.54	8.83	26.13	523.90	---	7.26	165.00	---	4.52
54.02	5.94	75.93	45.86	7.08	23.93	523.90	---	5.23	165.00	---	5.01
56.54	21.60	108.73	38.41	5.32	21.82	523.90	---	3.51	165.00	---	5.57
59.07	32.81	129.62	30.99	3.56	17.51	523.90	---	2.86	165.00	---	7.05
61.6	37.37	116.24	23.58	1.49	13.86	523.90	---	3.15	165.00	---	9.05
64.12	38.87	119.61	18.86	0.30	12.98	523.90	---	3.04	165.00	---	9.76
66.65	35.85	114.51	14.14	2.09	17.54	523.90	---	3.21	165.00	---	7.12
69.17	28.31	96.99	9.42	3.88	19.38	523.90	---	3.86	165.00	---	6.35
71.7	16.26	72.56	4.70	5.67	21.93	523.90	---	5.33	165.00	---	5.53
73.47	4.84	21.60	1.40	6.92	23.78	523.90	---	18.44	165.00	---	5.05
74.22	0.00	0.00	0.00	7.45	24.56	523.90	---	N/A	165.00	---	4.86

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.04	7.55	26.38	291.21	---	5600.19	225.83	---	6.30
0.75	5.01	17.16	1.60	7.03	25.33	291.21	---	12.76	225.83	---	6.56
2.5	16.69	57.16	5.24	5.80	22.88	523.90	---	6.76	165.00	---	5.29
5	28.98	102.78	10.49	4.04	20.32	523.90	---	3.64	165.00	---	6.05
7.5	36.88	129.72	15.74	2.28	17.89	523.90	---	2.82	165.00	---	6.97
10	40.38	139.96	20.99	0.52	13.41	523.90	---	2.59	165.00	---	9.43
12.5	38.09	116.12	26.24	2.16	23.40	523.90	---	3.14	165.00	---	5.33
15	30.47	103.67	32.64	3.93	19.59	523.90	---	3.59	165.00	---	6.28
17.5	18.43	89.83	39.04	5.69	26.89	523.90	---	4.28	165.00	---	4.51
20	1.97	65.19	45.44	7.46	29.70	523.90	---	6.45	165.00	---	4.02
22.5	-18.91	37.42	53.29	9.22	31.81	523.90	---	7.21	165.00	---	3.70
24.25	-34.79	21.16	70.88	10.42	29.56	270.45	---	2.44	237.58	---	5.83
25	-41.59	14.62	78.42	10.94	28.60	270.45	---	2.12	237.58	---	6.01
25.75	-35.88	16.84	70.67	9.60	27.65	270.45	---	2.44	237.58	---	6.26
27.32	-23.94	21.50	54.46	6.79	25.67	523.90	---	6.96	165.00	---	4.68
29.64	-10.06	45.92	48.03	5.17	21.71	523.90	---	8.18	165.00	---	5.61
31.96	0.00	69.61	44.61	3.54	18.16	523.90	---	5.79	165.00	---	6.79
34.28	6.38	83.54	41.47	1.91	15.80	523.90	---	4.75	165.00	---	8.33
36.61	8.92	84.08	39.00	0.33	12.54	523.90	---	4.69	165.00	---	10.10
38.93	6.26	82.17	41.10	1.96	15.93	523.90	---	4.83	165.00	---	8.21
41.25	-0.18	68.65	44.18	2.39	17.99	523.90	---	5.87	165.00	---	6.86
43.57	-10.40	47.90	47.40	5.21	21.85	523.90	---	8.20	165.00	---	5.57
45.89	-24.39	18.08	52.95	6.84	25.90	523.90	---	7.15	165.00	---	4.64
47.46	-36.42	16.29	53.82	9.90	29.29	270.45	---	2.46	237.58	---	5.90
48.21	-42.17	15.43	77.88	11.36	30.91	270.45	---	2.13	237.58	---	5.54
48.96	-34.33	20.26	70.79	10.84	29.77	270.45	---	2.45	237.58	---	5.77
50.81	-14.98	32.17	53.31	9.54	26.97	523.90	---	7.28	165.00	---	4.35
53.41	7.47	77.67	44.55	7.72	24.75	523.90	---	5.99	165.00	---	4.82
56.01	25.17	114.31	37.56	5.89	23.73	523.90	---	3.31	165.00	---	5.10
58.62	38.14	137.25	30.94	4.07	18.39	523.90	---	2.66	165.00	---	6.68
61.22	44.39	124.86	24.33	1.19	14.39	523.90	---	2.87	165.00	---	8.74
63.82	45.09	126.94	19.46	0.66	13.35	523.90	---	2.82	165.00	---	9.46
66.42	40.98	121.40	14.59	2.51	17.98	523.90	---	2.98	165.00	---	6.92
69.02	32.05	102.88	9.72	4.35	19.53	523.90	---	3.61	165.00	---	6.28
71.62	18.32	78.19	4.86	6.20	22.20	523.90	---	4.92	165.00	---	5.44
73.47	5.28	22.55	1.40	7.52	25.41	523.90	---	17.63	165.00	---	4.70
74.22	0.00	0.00	0.00	8.05	26.71	523.90	---	N/A	165.00	---	4.45

5C1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.02	0.04	7.23	25.80	301.56	---	5799.23	221.62	---	6.33
0.75	4.77	16.60	1.27	6.71	24.70	301.56	---	13.69	221.62	---	6.66
2.5	15.90	55.28	4.14	5.49	22.13	446.20	---	5.92	142.30	---	4.70
5	27.46	98.54	8.28	3.76	20.60	446.20	---	3.20	142.30	---	5.13
7.5	34.69	123.00	12.43	2.03	17.16	446.20	---	2.51	142.30	---	6.26
10	37.59	131.10	16.58	0.29	12.59	446.20	---	2.33	142.30	---	8.67
12.5	34.87	106.27	20.73	1.58	23.02	446.20	---	2.90	142.30	---	4.69
15	28.75	98.01	26.59	3.32	18.69	446.20	---	3.21	142.30	---	5.68
17.5	18.27	85.92	32.45	5.06	22.51	446.20	---	3.78	142.30	---	4.64
20	3.43	63.61	38.32	6.80	26.97	446.20	---	5.34	142.30	---	3.81
22.5	-15.75	38.01	47.41	8.53	29.64	446.20	---	6.91	142.30	---	3.41
24.25	-30.89	22.84	68.69	9.73	28.71	289.41	---	2.79	237.57	---	6.03
25	-37.38	15.62	77.81	10.24	28.31	289.41	---	2.38	237.57	---	6.09
25.75	-32.32	17.02	69.59	8.82	27.17	289.41	---	2.73	237.57	---	6.40
27.25	-22.19	19.83	53.71	5.99	24.88	446.20	---	6.04	142.30	---	4.16
29.49	-10.48	48.37	49.17	4.44	21.92	446.20	---	6.77	142.30	---	4.79
31.74	-2.26	72.85	46.11	2.88	18.54	446.20	---	4.68	142.30	---	5.75
33.98	2.47	85.83	43.12	1.33	14.93	446.20	---	3.97	142.30	---	7.24
36.23	3.81	75.53	41.03	0.18	10.68	446.20	---	4.49	142.30	---	10.23
38.47	1.66	73.71	44.38	1.74	15.42	446.20	---	4.63	142.30	---	6.99
40.72	-3.98	65.86	48.49	3.29	20.21	446.20	---	5.15	142.30	---	5.25
42.96	-13.12	44.71	52.65	4.84	21.44	446.20	---	6.27	142.30	---	4.88
45.21	-25.74	29.15	59.70	6.40	24.39	446.20	---	5.32	142.30	---	4.23
46.7	-36.33	19.50	73.06	9.51	27.57	294.12	---	2.60	239.95	---	6.35
47.45	-41.66	14.64	79.79	11.07	29.17	294.12	---	2.31	239.95	---	5.95
48.2	-34.06	18.79	70.75	10.55	28.98	294.12	---	2.72	239.95	---	6.01
50.13	-14.50	29.48	47.49	9.22	28.49	446.20	---	6.92	142.30	---	3.52
52.81	7.70	72.97	37.57	7.37	25.54	446.20	---	4.50	142.30	---	4.00
55.48	24.94	109.78	31.15	5.51	26.38	446.20	---	2.90	142.30	---	3.94
58.16	37.22	132.13	24.92	3.66	20.71	446.20	---	2.32	142.30	---	5.11
60.84	43.04	116.33	18.77	1.43	15.34	446.20	---	2.58	142.30	---	7.04
63.52	44.37	121.04	15.02	0.44	13.31	446.20	---	2.47	142.30	---	8.19
66.19	40.68	118.22	11.26	2.31	18.85	446.20	---	2.56	142.30	---	5.68
68.87	31.99	102.83	7.50	4.18	19.08	446.20	---	3.03	142.30	---	5.52
71.55	18.29	80.01	3.75	6.05	22.12	446.20	---	4.06	142.30	---	4.68
73.47	5.14	22.47	1.05	7.39	26.44	446.20	---	15.04	142.30	---	3.86
74.22	0.00	0.00	0.00	7.92	28.13	446.20	---	N/A	142.30	---	3.61

5C1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
0	0.00	0.02	0.04	7.39	26.17	340.95	---	6556.75	233.50	---	6.36
0.75	4.89	16.94	1.37	6.87	25.10	340.95	---	15.19	233.50	---	6.85
2.5	16.31	56.43	4.48	5.66	22.59	446.20	---	5.79	142.30	---	4.60
5	28.29	100.88	8.98	3.93	20.35	446.20	---	3.12	142.30	---	5.19
7.5	35.95	126.69	13.48	2.20	17.46	446.20	---	2.43	142.30	---	6.14
10	39.28	135.89	17.99	0.47	12.98	446.20	---	2.24	142.30	---	8.40
12.5	37.51	113.99	22.49	1.81	23.08	446.20	---	2.68	142.30	---	4.66
15	30.82	104.67	27.37	3.54	19.82	446.20	---	2.98	142.30	---	5.34
17.5	19.79	89.97	32.54	5.27	27.33	446.20	---	3.59	142.30	---	3.81
20	4.43	65.78	37.71	7.01	30.57	446.20	---	5.15	142.30	---	3.35
22.5	-15.27	40.30	49.40	8.74	28.79	446.20	---	6.64	142.30	---	3.50
24.25	-31.17	24.28	72.84	9.94	28.51	312.06	---	2.87	225.19	---	5.73
25	-37.99	17.42	82.89	10.45	28.39	312.06	---	2.44	225.19	---	5.73
25.75	-33.01	18.44	74.56	8.87	27.25	312.06	---	2.78	225.19	---	6.03
27.17	-23.58	20.38	58.78	5.89	25.10	446.20	---	5.44	142.30	---	4.13
29.34	-12.43	49.38	55.54	4.39	22.24	446.20	---	5.96	142.30	---	4.72
31.51	-4.52	74.47	53.68	2.89	18.49	446.20	---	4.55	142.30	---	5.76
33.68	0.13	87.17	51.86	1.40	15.03	446.20	---	3.94	142.30	---	7.19
35.85	1.56	80.31	51.01	0.55	10.66	446.20	---	4.25	142.30	---	10.22
38.02	-1.25	73.89	53.88	2.05	16.20	446.20	---	4.63	142.30	---	6.63
40.19	-7.32	62.19	57.10	3.24	19.99	446.20	---	5.40	142.30	---	5.30
42.36	-16.64	54.85	60.60	5.04	21.59	446.20	---	5.39	142.30	---	4.84
44.53	-29.21	37.85	66.69	6.54	24.78	446.20	---	4.71	142.30	---	4.15
45.95	-39.48	23.45	75.33	9.73	24.50	320.22	---	2.64	227.56	---	6.75
46.7	-44.91	15.84	84.48	11.41	24.35	320.22	---	2.38	227.56	---	6.72
47.45	-37.06	16.64	74.44	10.89	24.87	320.22	---	2.81	227.56	---	6.60
49.45	-16.12	18.77	47.66	9.51	26.26	446.20	---	6.86	142.30	---	3.81
52.2	7.43	66.15	34.68	7.60	23.65	446.20	---	5.98	142.30	---	4.31
54.95	25.74	107.93	28.20	5.70	23.64	446.20	---	2.94	142.30	---	4.39
57.71	38.82	133.83	22.83	3.80	18.68	446.20	---	2.27	142.30	---	5.66
60.46	45.29	120.86	17.47	1.47	12.05	446.20	---	2.47	142.30	---	8.96
63.21	46.72	126.45	13.82	0.44	11.63	446.20	---	2.34	142.30	---	9.37
65.96	42.87	122.58	10.36	2.36	12.27	446.20	---	2.45	142.30	---	8.73
68.72	33.75	108.41	6.91	4.27	14.23	446.20	---	2.85	142.30	---	7.39
71.47	19.36	70.38	3.45	6.18	18.66	446.20	---	4.60	142.30	---	5.53
73.47	5.28	19.19	0.94	7.58	24.28	446.20	---	17.61	142.30	---	4.20
74.22	0.00	0.00	0.00	8.10	26.39	446.20	---	N/A	142.30	---	3.84

5C1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
0	0.00	0.00	0.00	0.15	17.35	344.25	---	3296.15	233.50	---	10.00
0.75	4.01	11.00	0.78	5.67	16.53	344.25	---	23.72	233.50	---	10.82
2.5	13.35	36.58	2.48	4.54	14.63	446.20	---	9.02	142.30	---	7.17
5	22.70	64.06	4.97	2.93	12.70	446.20	---	5.00	142.30	---	8.39
7.5	28.01	79.15	7.46	1.32	11.33	446.20	---	3.98	142.30	---	9.54
10	29.31	83.89	9.94	0.29	9.18	446.20	---	3.74	142.30	---	11.89
12.5	25.95	68.10	12.43	1.90	15.34	446.20	---	4.66	142.30	---	7.01
15	22.39	63.86	15.03	2.23	12.36	446.20	---	5.02	142.30	---	8.68
17.5	14.78	56.06	18.47	3.85	15.48	446.20	---	5.86	142.30	---	6.82
20	3.14	42.31	21.95	5.46	16.14	446.20	---	8.04	142.30	---	6.44
22.5	-12.54	24.94	34.06	7.08	18.08	446.20	---	9.71	142.30	---	5.66
24.25	-25.74	15.27	49.21	8.20	19.26	352.68	---	4.99	235.88	---	9.00
25	-31.40	11.12	55.70	8.68	19.76	352.68	---	4.31	235.88	---	8.74
25.75	-27.05	11.73	49.87	7.40	18.73	352.68	---	4.90	235.88	---	9.29
27.09	-19.29	12.81	39.15	5.11	16.90	446.20	---	8.21	142.30	---	6.17
29.19	-10.00	32.33	36.87	3.76	14.73	446.20	---	9.04	142.30	---	7.18
31.28	-3.55	46.04	35.35	2.41	12.29	446.20	---	7.38	142.30	---	8.71
33.38	0.09	54.28	34.11	1.06	9.92	446.20	---	6.32	142.30	---	10.93
35.47	0.72	49.53	33.27	0.28	7.15	446.20	---	6.92	142.30	---	15.27
37.57	-1.28	46.63	36.13	1.63	16.70	446.20	---	7.33	142.30	---	10.08
39.66	-6.11	43.63	39.37	2.98	13.79	446.20	---	7.73	142.30	---	7.72
41.76	-13.77	32.25	42.83	4.33	14.20	446.20	---	7.69	142.30	---	7.40
43.85	-24.26	20.12	49.19	5.68	16.39	446.20	---	6.50	142.30	---	6.33
45.2	-32.86	13.67	57.14	8.10	17.24	364.68	---	4.33	240.63	---	10.27
45.95	-37.64	10.08	61.61	9.44	17.71	364.68	---	3.94	240.63	---	9.92
46.7	-31.25	11.82	53.86	8.96	17.82	364.68	---	4.63	240.63	---	9.88
48.78	-13.54	15.52	32.36	7.61	18.13	446.20	---	10.19	142.30	---	5.62
51.6	5.40	43.41	21.31	5.79	16.18	446.20	---	7.78	142.30	---	6.41
54.43	19.19	67.81	16.54	3.97	13.87	446.20	---	4.76	142.30	---	7.61
57.26	27.83	85.52	13.73	2.14	11.00	446.20	---	3.69	142.30	---	9.76
60.09	30.49	75.20	11.55	2.42	12.28	446.20	---	4.16	142.30	---	8.72
62.91	34.75	79.56	9.24	0.59	10.57	446.20	---	3.88	142.30	---	10.30
65.74	33.84	78.52	6.93	1.24	8.52	446.20	---	3.94	142.30	---	12.70
68.57	27.76	70.73	4.62	3.07	9.11	446.20	---	4.46	142.30	---	11.68
71.4	16.50	52.26	2.31	4.89	11.52	446.20	---	6.25	142.30	---	9.08
73.47	4.39	13.90	0.61	6.23	16.40	446.20	---	24.38	142.30	---	5.29
74.22	0.00	0.00	0.00	6.72	18.17	446.20	---	N/A	142.30	---	5.65

5C1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section C - As Built Stringer Ratings

Calculated: DWC 2/28/2012

Checked: CTG 2/29/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.05	0.01	6.05	14.52	1028.40	---	15821.54	190.80	---	9.69
0.75	4.04	9.48	0.84	5.65	14.10	1028.40	---	83.06	190.80	---	10.01
2.5	13.47	31.47	2.76	4.71	13.11	1028.40	---	24.71	190.80	---	10.84
5	23.57	56.42	5.53	3.37	11.49	1028.40	---	13.60	190.80	---	12.48
7.5	30.32	73.53	8.29	2.03	10.46	1028.40	---	10.35	190.80	---	13.84
10	33.72	83.22	11.06	0.69	9.27	1028.40	---	9.10	190.80	---	15.76
12.5	33.78	89.96	13.83	1.61	8.58	1028.40	---	8.42	190.80	---	16.92
15	28.07	81.71	11.06	2.95	9.17	1028.40	---	9.34	190.80	---	15.68
17.5	19.02	68.39	8.30	4.29	11.76	1028.40	---	11.29	190.80	---	12.12
20	6.62	45.17	5.53	5.63	14.01	1028.40	---	17.37	190.80	---	10.07
22.5	-9.13	18.89	2.77	6.97	14.14	1028.40	---	41.39	190.80	---	9.89
24.25	1.90	37.29	4.70	7.91	13.71	1028.40	---	21.17	190.80	---	10.13
25	6.62	45.17	5.53	8.31	13.52	1028.40	---	17.37	190.80	---	10.24
25.75	-3.13	37.15	10.77	6.57	13.27	1028.40	---	21.21	190.80	---	10.57
27.03	-19.77	23.47	19.71	3.61	12.83	1028.40	---	32.86	190.80	---	11.16
29.07	-13.54	41.03	20.24	2.52	11.18	1028.40	---	18.95	190.80	---	12.90
31.1	-9.53	53.78	20.77	1.43	9.40	1028.40	---	14.53	190.80	---	15.46
33.14	-7.73	59.35	21.30	0.34	8.58	1028.40	---	13.20	190.80	---	17.07
35.17	-8.15	63.56	21.95	0.79	7.08	1028.40	---	12.32	190.80	---	20.62
37.2	-10.88	59.28	17.56	1.88	8.50	1028.40	---	13.16	190.80	---	17.05
39.24	-15.82	49.65	13.17	2.97	9.70	1028.40	---	15.61	190.80	---	14.82
41.27	-22.97	31.89	8.78	4.06	11.52	1028.40	---	24.09	190.80	---	12.39
43.31	-32.35	13.22	4.39	5.15	12.97	1028.40	---	57.39	190.80	---	10.92
44.59	-39.65	4.88	11.05	8.28	13.71	1028.40	---	68.01	190.80	---	10.10
45.34	-43.93	0.00	14.95	10.12	14.14	1028.40	---	49.98	190.80	---	9.66
46.09	-36.93	10.62	15.48	9.72	14.31	1028.40	---	48.71	190.80	---	9.58
48.23	-16.94	40.94	17.00	8.57	14.80	1028.40	---	18.91	190.80	---	9.34
51.12	5.58	73.28	19.12	7.02	13.31	1028.40	---	10.72	190.80	---	10.50
54.01	23.63	95.87	21.23	5.48	11.69	1028.40	---	8.01	190.80	---	12.09
56.89	37.22	111.28	23.35	3.93	10.12	1028.40	---	6.77	190.80	---	14.11
59.78	46.33	121.55	25.46	0.66	8.23	1028.40	---	6.13	190.80	---	17.75
62.67	46.00	110.82	20.37	0.89	10.12	1028.40	---	6.72	190.80	---	14.41
65.56	41.20	95.61	15.28	2.43	11.28	1028.40	---	7.84	190.80	---	12.80
68.45	31.94	73.10	10.18	3.98	13.37	1028.40	---	10.38	190.80	---	10.68
71.34	18.20	40.80	5.09	5.53	14.84	1028.40	---	18.94	190.80	---	9.52
73.47	4.74	10.63	1.33	6.68	13.60	1028.40	---	74.01	190.80	---	10.30
74.22	0.00	0.00	0.00	7.08	13.16	1028.40	---	N/A	190.80	---	10.61

5C1

Stringer F2-2



FLOORBEAM RATINGS



SECTION C - FLOORBEAM PROPERTIES

→ INTERIOR FLOORBEAMS (33WF125)

BRACKETS : $3/8"$ WEB PL
 $12\frac{1}{2} \times \frac{1}{2}$ FL'S

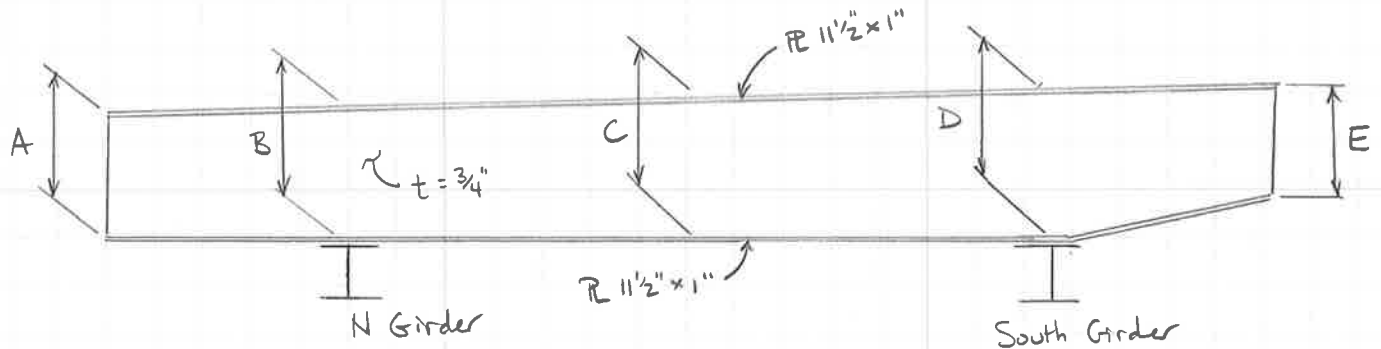
FB	Shop DWG	Height @ CONN	Height @ END	Height Below Stringer	Max Dist. BTWN STIFF
FB2 North	BK5	2'-9"	1'-6 $\frac{3}{8}$ "	↑ all treated the same for modeling purposes ↓	3'-3 $\frac{23}{32}$ "
FB2 South	BK1	2'-9"	1'-6 $\frac{3}{4}$ "		3'-3 $\frac{23}{32}$ "
FB3 North	BK6	2'-9 $\frac{5}{8}$ "	1'-6 $\frac{3}{8}$ "		3'-2 $\frac{17}{32}$ "
FB3 South	BK2	2'-9 $\frac{5}{8}$ "	1'-6 $\frac{3}{4}$ "		3'-2 $\frac{17}{32}$ "
FB4 South	BK7	2'-9 $\frac{5}{8}$ "	1'-6 $\frac{3}{8}$ "		3'-2 $\frac{17}{32}$ "
FB4 North	BK3	2'-9 $\frac{5}{8}$ "	1'-6 $\frac{3}{4}$ "		3'-2 $\frac{17}{32}$ "
FBS North	BK8	2'-9"	1'-6 $\frac{3}{8}$ "		3'-3 $\frac{23}{32}$ "
FBS South	BK4	2'-9"	1'-6 $\frac{3}{4}$ "		3'-3 $\frac{23}{32}$ "

FOR STAAD MODEL, ASSUME ALL SAME SECTION B/C VALUES ARE CLOSE :

$2'-9\frac{5}{8}"$ $1'-6\frac{3}{4}"$ 2.4415'

AND USE ACTUAL CAPACITIES FOR RATING CALCULATION

→ END FLOORBEAMS



Floorbeam Heights :
(inches)

	A	B	C	D	E
FB1	22.4375	23.875	26.625	29.375	18"
FB6	22.125	23.9375	27.4063	30.875	18"

Main Ave. Section C

Unit 1 Un-coped stringers

S6-1 : W14x61 ✓

F1-1: Built-Up Section

FL PL's: $\frac{3}{4}'' \times 8''$ ✓

Web PL: $\frac{3}{8}'' \times 28''$ ✓

F2-1: Built-Up Section

FL PL's: $\frac{3}{4}'' \times 8''$ ✓

Web PL: $\frac{3}{8}'' \times 36\frac{1}{16}''$ ✓

Unit 2 Un-coped stringers

F1-2: Built-Up Section

FL PL's: $\frac{3}{4}'' \times 8''$ ✓

Web PL: $\frac{3}{8}'' \times 28''$ ✓

F2-2: Built-Up Section

FL PL's: $\frac{3}{4}'' \times 8''$ ✓

Web PL: $\frac{3}{8}'' \times 36\frac{1}{16}''$ ✓

Floorbeams:

FBI 2 Rehabbed (see spreadsheet) ← New Designation FBI 6

FB 3 : WF 33x125 ✓

FB 4 : WF 33x125 ✓

FB 5 : WF 33x125 ✓

FB 6 : WF 33x125 ✓

↓

2

3

4

5

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

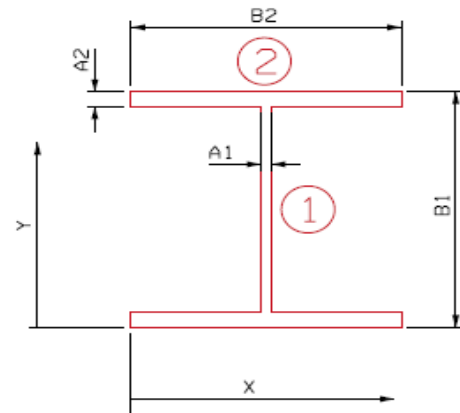
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 23.8750$ in
 $B_2 = b_f = 11.5000$ in



FB1 @ North Frame Girder
SECTION C

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		16.4063	11.9375	195.8496	654.2206	0.0000	0.0000	654.2206
2	Top Flange		11.5000	23.3750	268.8125	0.9583	11.4375	1504.3887	1505.3470
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	11.4375	1504.3887	1505.3470
Total			39.41		470.41	656.14		3008.78	3664.91
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	11.9375	in	S _{top} = 307.01 in ³	y-bar =	11.9375	in	S _{top} = 307.01 in ³
I _x =	3664.91	in ⁴	S _{bott.} = 307.01 in ³	I _x =	3664.91	in ⁴	S _{bott.} = 307.01 in ³
C _{top} =	11.9375	in	A = 39.4063 in ²	C _{top} =	11.9375	in	A = 39.4063 in ²
C _{bottom} =	11.9375	in	r _x = 9.6438 in	C _{bottom} =	11.9375	in	r _x = 9.6438 in
			Z = 352.78 in ³				Z = 352.78 in ³

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1058.34 k-ft	1058.34 k-ft
V	342.56 k	342.56 k

*Compact Section

$F_y =$ **36.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

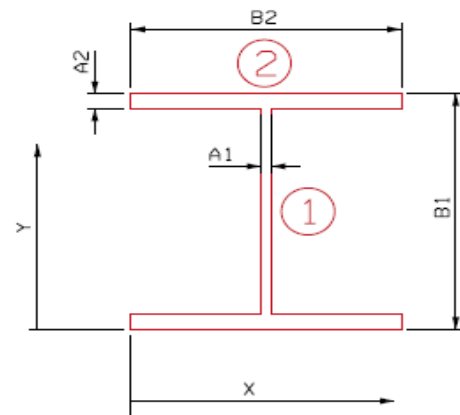
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 26.6250$ in
 $B_2 = b_f = 11.5000$ in



FB1 @ Center between Girders
SECTION C

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		18.4688	13.3125	245.8652	933.2731	0.0000	0.0000	933.2731
2	Top Flange		11.5000	26.1250	300.4375	0.9583	12.8125	1887.8418	1888.8001
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	12.8125	1887.8418	1888.8001
Total			41.47		552.05	935.19		3775.68	4710.87
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	13.3125	in	S _{top} = 353.87 in ³	y-bar =	13.3125	in	S _{top} = 353.87 in ³
I _x =	4710.87	in ⁴	S _{bottom} = 353.87 in ³	I _x =	4710.87	in ⁴	S _{bottom} = 353.87 in ³
C _{top} =	13.3125	in	A = 41.4688 in ²	C _{top} =	13.3125	in	A = 41.4688 in ²
C _{bottom} =	13.3125	in	r _x = 10.6584 in	C _{bottom} =	13.3125	in	r _x = 10.6584 in
			Z = 408.39 in ³				Z = 408.39 in ³

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1225.17 k-ft	1225.17 k-ft
V	385.63 k	385.63 k

*Compact Section

$F_y =$ **36.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

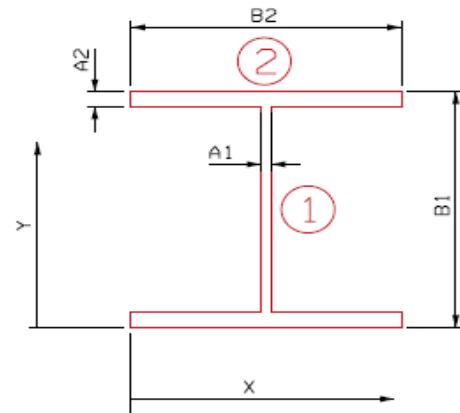
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 29.3750$ in
 $B_2 = b_f = 11.5000$ in



FB1 @ South Frame Girder
SECTION C

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		20.5313	14.6875	301.5527	1282.1605	0.0000	0.0000	1282.1605
2	Top Flange		11.5000	28.8750	332.0625	0.9583	14.1875	2314.7793	2315.7376
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	14.1875	2314.7793	2315.7376
Total			43.53		639.37	1284.08		4629.56	5913.64
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	14.6875	in	S _{top} = 402.63 in ³	y-bar =	14.6875	in	S _{top} = 402.63 in ³
I _x =	5913.64	in ⁴	S _{bottom} = 402.63 in ³	I _x =	5913.64	in ⁴	S _{bottom} = 402.63 in ³
C _{top} =	14.6875	in	A = 43.5313 in ²	C _{top} =	14.6875	in	A = 43.5313 in ²
C _{bottom} =	14.6875	in	r _x = 11.6554 in	C _{bottom} =	14.6875	in	r _x = 11.6554 in
			Z = 466.82 in ³				Z = 466.82 in ³

SECTION C



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Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1400.46 k-ft	1400.46 k-ft
V	428.69 k	428.69 k

*Compact Section

$F_y =$ **36.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

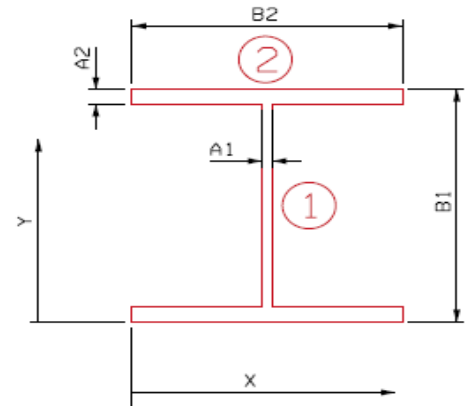
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.5700$ in
 $A_2 = t_f = 0.8050$ in
 $B_1 = d = 33.0000$ in
 $B_2 = b_f = 11.5000$ in

33WF125



Interior Floorbeams
SECTION C

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.8923	16.5000	295.2230	1469.1548	0.0000	0.0000	1469.1548
2	Top Flange		9.2575	32.5975	301.7714	0.4999	16.0975	2398.8914	2399.3913
	Bottom Flange		9.2575	0.4025	3.7261	0.4999	16.0975	2398.8914	2399.3913
Total			36.41		600.72	1470.15		4797.78	6267.94
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	16.5000	in	$S_{top} =$	379.87	in ³	y-bar =	16.5000	in	$S_{top} =$	379.87	in ³
$I_x =$	6267.94	in ⁴	$S_{bott.} =$	379.87	in ³	$I_x =$	6267.94	in ⁴	$S_{bott.} =$	379.87	in ³
$C_{top} =$	16.5000	in	A =	36.4073	in ²	$C_{top} =$	16.5000	in	A =	36.4073	in ²
$C_{bottom} =$	16.5000	in	$r_x =$	13.1210	in	$C_{bottom} =$	16.5000	in	$r_x =$	13.1210	in
			Z =	438.46	in ³				Z =	438.46	in ³

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1205.77 k-ft	1205.77 k-ft
V	342.46 k	342.46 k

*Compact Section

$F_y =$ **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

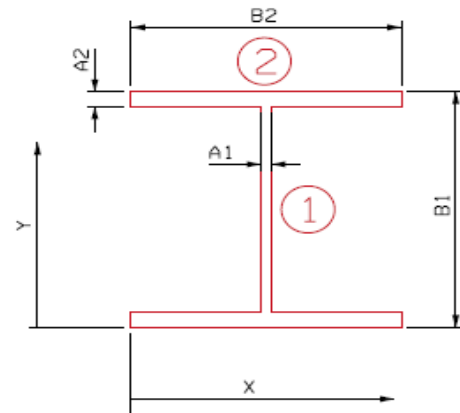
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 23.9375$ in
 $B_2 = b_f = 11.5000$ in



FB6 @ North Frame Girder
SECTION C

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		16.4531	11.9688	196.9233	659.8442	0.0000	0.0000	659.8442
2	Top Flange		11.5000	23.4375	269.5313	0.9583	11.4688	1512.6206	1513.5789
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	11.4688	1512.6206	1513.5789
Total			39.45		472.20	661.76		3025.24	3687.00
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	11.9688	in	S _{top} = 308.05 in ³	y-bar =	11.9688	in	S _{top} = 308.05 in ³
I _x =	3687.00	in ⁴	S _{bottom} = 308.05 in ³	I _x =	3687.00	in ⁴	S _{bottom} = 308.05 in ³
C _{top} =	11.9688	in	A = 39.4531 in ²	C _{top} =	11.9688	in	A = 39.4531 in ²
C _{bottom} =	11.9688	in	r _x = 9.6671 in	C _{bottom} =	11.9688	in	r _x = 9.6671 in
			Z = 354.02 in ³				Z = 354.02 in ³

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1062.06 k-ft	1062.06 k-ft
V	343.54 k	343.54 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C



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Date 3/1/2012
Date 3/1/2012

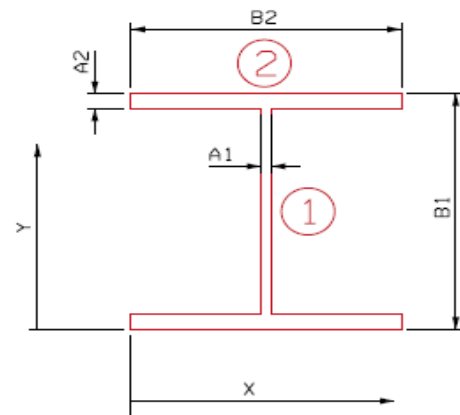
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 27.4063$ in
 $B_2 = b_f = 11.5000$ in



FB6 @ Center between Girders
SECTION C

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		19.0547	13.7032	261.1098	1024.9538	0.0000	0.0000	1024.9538
2	Top Flange		11.5000	26.9063	309.4225	0.9583	13.2032	2004.7165	2005.6748
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	13.2032	2004.7165	2005.6748
Total			42.05		576.28	1026.87		4009.43	5036.30
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	13.7032	in	$S_{top} = 367.53$	in^3	y-bar =	13.7032	in	$S_{top} = 367.53$	in^3		
$I_x =$	5036.30	in^4	$S_{bott.} = 367.53$	in^3	$I_x =$	5036.30	in^4	$S_{bott.} = 367.53$	in^3		
$C_{top} =$	13.7032	in	A =	42.0547	in^2	$C_{top} =$	13.7032	in	A =	42.0547	in^2
$C_{bottom} =$	13.7032	in	$r_x =$	10.9433	in	$C_{bottom} =$	13.7032	in	$r_x =$	10.9433	in
			Z =	424.70	in^3				Z =	424.70	in^3

SECTION C



Made By DWC
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Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1274.10 k-ft	1274.10 k-ft
V	397.86 k	397.86 k

*Compact Section

$F_y =$	36.00 ksi
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AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C



Made By DWC
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Date 3/1/2012
Date 3/1/2012

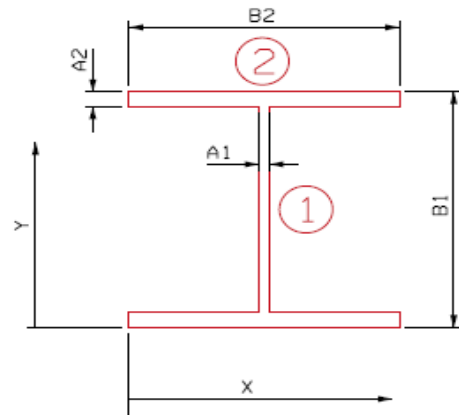
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 30.8750$ in
 $B_2 = b_f = 11.5000$ in



FB6 @ South Frame Girder
SECTION C

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		21.6563	15.4375	334.3184	1504.6864	0.0000	0.0000	1504.6864
2	Top Flange		11.5000	30.3750	349.3125	0.9583	14.9375	2565.9824	2566.9408
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	14.9375	2565.9824	2566.9408
Total			44.66		689.38	1506.60		5131.96	6638.57
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	15.4375	in	S _{top} = 430.03 in ³	y-bar =	15.4375	in	S _{top} = 430.03 in ³
I _x =	6638.57	in ⁴	S _{bott.} = 430.03 in ³	I _x =	6638.57	in ⁴	S _{bott.} = 430.03 in ³
C _{top} =	15.4375	in	A = 44.6563 in ²	C _{top} =	15.4375	in	A = 44.6563 in ²
C _{bottom} =	15.4375	in	r _x = 12.1926 in	C _{bottom} =	15.4375	in	r _x = 12.1926 in
			Z = 499.89 in ³				Z = 499.89 in ³

SECTION C



Made By DWC
Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1499.67 k-ft	1499.67 k-ft
V	452.18 k	452.18 k

*Compact Section

$F_y =$ **36.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION C

FB2, FB5 (North and South)



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Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

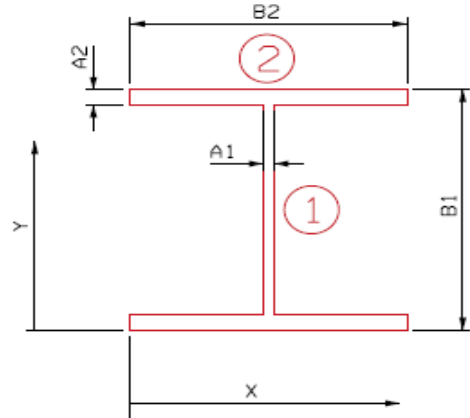
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.3750$ in
- $A_2 = t_f = 0.5000$ in
- $B_1 = d = 33.0000$ in
- $B_2 = b_f = 12.5000$ in

- $d0 = 39.7188$ in (stiffener spacing for shear check)



**FB Bracket
SECTION C**

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		12.0000	16.5000	198.0000	1024.0000	0.0000	0.0000	1024.0000
2	Top Flange		6.2500	32.7500	204.6875	0.1302	16.2500	1650.3906	1650.5208
	Bottom Flange		6.2500	0.2500	1.5625	0.1302	16.2500	1650.3906	1650.5208
Total			24.50		404.25	1024.26		3300.78	4325.04
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.5000	in	S _{top} =	262.12	in ³	y-bar =	16.5000	in	S _{top} =	262.12	in ³
I _x =	4325.04	in ⁴	S _{bott.} =	262.12	in ³	I _x =	4325.04	in ⁴	S _{bott.} =	262.12	in ³
c _{top} =	16.5000	in	A =	24.5000	in ²	c _{top} =	16.5000	in	A =	24.5000	in ²
c _{bottom} =	16.5000	in	r _x =	13.2865	in	c _{bottom} =	16.5000	in	r _x =	13.2865	in
			Z =	299.13	in ³				Z =	299.13	in ³



Made By DWC
 Checked By CTG

Date 3/1/2012
 Date 3/1/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Bracket Capacities

Non-composite Capacities*		
	AB	AI
M	720.84 k-ft	720.84 k-ft
V	229.68 k	229.68 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION C

FB3, FB4 (North and South)



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Checked By CTG

Date 3/1/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

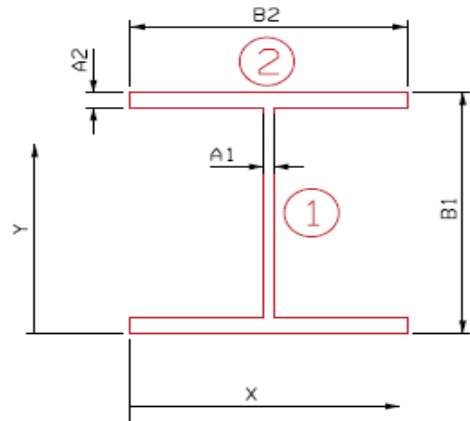
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.3750$ in
- $A_2 = t_f = 0.5000$ in
- $B_1 = d = 33.6250$ in
- $B_2 = b_f = 12.5000$ in

- $d0 = 38.5313$ in (stiffener spacing for shear check)



**FB Bracket
SECTION C**

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		12.2344	16.8125	205.6904	1085.1795	0.0000	0.0000	1085.1795
2	Top Flange		6.2500	33.3750	208.5938	0.1302	16.5625	1714.4775	1714.6077
	Bottom Flange		6.2500	0.2500	1.5625	0.1302	16.5625	1714.4775	1714.6077
Total			24.73		415.85	1085.44		3428.96	4514.39
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	16.8125	in	S _{top} = 268.51 in ³	y-bar =	16.8125	in	S _{top} = 268.51 in ³
I _x =	4514.39	in ⁴	S _{bott.} = 268.51 in ³	I _x =	4514.39	in ⁴	S _{bott.} = 268.51 in ³
c _{top} =	16.8125	in	A = 24.7344 in ²	c _{top} =	16.8125	in	A = 24.7344 in ²
c _{bottom} =	16.8125	in	r _x = 13.5098 in	c _{bottom} =	16.8125	in	r _x = 13.5098 in
			Z = 306.82 in ³				Z = 306.82 in ³



Made By DWC
 Checked By CTG

Date 3/1/2012
 Date 3/1/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Bracket Capacities

Non-composite Capacities*		
	AB	AI
M	738.41 k-ft	738.41 k-ft
V	234.17 k	234.17 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

STAAD SPACE
 START JOB INFORMATION
 ENGINEER DATE 29-Feb-12
 ENGINEER NAME DWC
 *Section C
 *FLOORBEAMS 1
 END JOB INFORMATION
 INPUT WIDTH 79
 UNIT FEET KIP
 JOINT COORDINATES
 1 0.0000 0 0 ;
 2 4.8750 0 0 ;
 3 6.8750 0 0 ;
 4 10.875 0 0 ;
 5 16.9583 0 0 ;
 6 23.0417 0 0 ;
 7 29.125 0 0 ;
 8 33.125 0 0 ;
 9 35.125 0 0 ;
 10 40.00 0 0 ;

***FICTITIOUS DECK
 101 0 10 0 ;
 102 4.8750 10 0 ;
 104 10.875 10 0 ;
 105 16.9583 10 0 ;
 106 23.0417 10 0 ;
 107 29.125 10 0 ;
 109 35.125 10 0 ;
 110 40.00 10 0 ;

MEMBER INCIDENCES
 1 1 2 ;
 2 2 3 ;
 3 3 4 ;
 4 4 5 ;
 5 5 6 ;
 6 6 7 ;
 7 7 8 ;
 8 8 9 ;
 9 9 10 ;

***FICTITIOUS DECK
 101 101 102;
 102 102 104;
 104 104 105;
 105 105 106;
 106 106 107;
 107 107 109;
 109 109 110;

DEFINE MATERIAL START
 ISOTROPIC STEEL
 E 4.176e+006
 POISSON 0.3
 DENSITY 0.489024
 ALPHA 6e-006
 DAMP 0.03
 END DEFINE MATERIAL

UNIT INCHES KIP
 MEMBER PROPERTY AMERICAN

1 TAPERED 22.4375 .75 23.4568 11.5 1 11.5 1
 2 TAPERED 23.4568 .75 23.875 11.5 1 11.5 1
 3 TAPERED 23.875 .75 24.7131 11.5 1 11.5 1
 4 TAPERED 24.7131 .75 25.9877 11.5 1 11.5 1
 5 TAPERED 25.9877 .75 27.2623 11.5 1 11.5 1
 6 TAPERED 27.2623 .75 28.5369 11.5 1 11.5 1
 7 TAPERED 28.5369 .75 29.375 11.5 1 11.5 1
 8 TAPERED 29.375 .75 26.0659 11.5 1 11.5 1
 9 TAPERED 26.0659 .75 18 11.5 1 11.5 1

101 102 104 105 106 107 109 TABLE ST W33x130
 CONSTANTS
 MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS

3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD

*INCLUDES MPF OF 1 FOR 2 TRUCKS, 0.9 FOR 3 TRUCKS

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

*

LOAD 1 LOADTYPE Dead TITLE SELFWEIGHT DL

*USE 5% BUMP-UP FOR ALL COMPONENTS FOR CONTINUOUS FB

SELFWEIGHT Y -1.05 LIST 3 TO 7

SELFWEIGHT Y -1.05 LIST 1 2 8 9

JOINT LOAD

101 FY -7.10

102 FY -7.26

104 FY -8.66

105 FY -8.53

106 FY -7.77

107 FY -7.79

109 FY -5.81

110 FY -5.46

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 0.9 ***

LOAD GENERATION 1000

TYPE 1 2 10 0 XINC 0.01

**

** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***

LOAD GENERATION 2000

TYPE 2 2 10 0 XINC 0.01

PERFORM ANALYSIS

PRINT ALL

FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 29-Feb-12
ENGINEER NAME DWC
*Section C
*FLOORBEAMS 2 and 5
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.9126 0 0 ;
3 6.9281 0 0 ;
4 10.959 0 0 ;
5 17.0893 0 0 ;
6 23.2196 0 0 ;
7 29.3499 0 0 ;
8 33.3808 0 0 ;
9 35.3962 0 0 ;
10 40.3088 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.9126 10 0 ;
104 10.959 10 0 ;
105 17.0893 10 0 ;
106 23.2196 10 0 ;
107 29.3499 10 0 ;
109 35.3962 10 0 ;
110 40.3088 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 109 ;
109 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

UNIT INCHES KIP
MEMBER PROPERTY AMERICAN
3 4 5 6 7 TABLE ST W33x130

1 TAPERED 18.75 .375 29.298 12.5 .5 12.5 .5
2 TAPERED 29.298 .375 33.625 12.5 .5 12.5 .5
8 TAPERED 33.625 .375 29.298 12.5 .5 12.5 .5
9 TAPERED 29.298 .375 18.75 12.5 .5 12.5 .5

101 102 104 105 106 107 109 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS
3 8 PINNED

```
***MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD
*INCLUDES MPF OF 1 FOR 2 TRUCKS, 0.9 FOR 3 TRUCKS
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6.0463 4.0309 6.0463 4.0309 6.0463
TYPE 2 LOAD 1 1 1 1
DIST 6.0463 4.0309 6.0463
*
LOAD 1 LOADTYPE Dead TITLE SELFWEIGHT DL

**USE ONLY 2% FOR ROLLED 33WF125 BECAUSE MODELING AS W33x130
**USE 10% ON BRACKETS FOR CONNECTIONS AND STIFFENERS
SELFWEIGHT Y -1.02 LIST 3 TO 7
SELFWEIGHT Y -1.10 LIST 1 2 8 9

**USE FOR FB2
JOINT LOAD
101 FY -18.31
102 FY -17.46
104 FY -21.98
105 FY -22.33
106 FY -21.16
107 FY -22.58
109 FY -16.66
110 FY -18.12

***USE FOR FB5
*JOINT LOAD
*101 FY -15.30
*102 FY -15.89
*104 FY -18.96
*105 FY -19.83
*106 FY -19.03
*107 FY -19.46
*109 FY -16.47
*110 FY -16.36

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 0.9 ***
LOAD GENERATION 1008
TYPE 1 2.0154 10 0 XINC 0.01
**
*** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 2016
TYPE 2 2.0154 10 0 XINC 0.01

PERFORM ANALYSIS
PRINT ALL
FINISH
```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 29-Feb-12
ENGINEER NAME DWC
*Section C
*FLOORBEAMS 3 AND 4
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.8750 0 0 ;
3 6.8750 0 0 ;
4 10.875 0 0 ;
5 16.9583 0 0 ;
6 23.0417 0 0 ;
7 29.125 0 0 ;
8 33.125 0 0 ;
9 35.125 0 0 ;
10 40.00 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.8750 10 0 ;
104 10.875 10 0 ;
105 16.9583 10 0 ;
106 23.0417 10 0 ;
107 29.125 10 0 ;
109 35.125 10 0 ;
110 40.00 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102;
102 102 104;
104 104 105;
105 105 106;
106 106 107;
107 107 109;
109 109 110;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

UNIT INCHES KIP
MEMBER PROPERTY AMERICAN
3 4 5 6 7 TABLE ST W33x130

1 TAPERED 18.75 .375 29.298 12.5 .5 12.5 .5
2 TAPERED 29.298 .375 33.625 12.5 .5 12.5 .5
8 TAPERED 33.625 .375 29.298 12.5 .5 12.5 .5
9 TAPERED 29.298 .375 18.75 12.5 .5 12.5 .5

101 102 104 105 106 107 109 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS
3 8 PINNED

```
***MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD
*INCLUDES MPF OF 1 FOR 2 TRUCKS, 0.9 FOR 3 TRUCKS
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
*
LOAD 1 LOADTYPE Dead TITLE SELFWEIGHT DL

**USE ONLY 2% FOR ROLLED 33WF125 BECAUSE MODELING AS W33x130
**USE ONLY 10% FOR BRACKETS FOR CONNECTIONS AND STIFFENERS
SELFWEIGHT Y -1.02 LIST 3 TO 7
SELFWEIGHT Y -1.10 LIST 1 2 8 9

**USE FOR FB3
JOINT LOAD
101 FY -9.74
102 FY -11.12
104 FY -13.69
105 FY -14.4
106 FY -14.19
107 FY -14.98
109 FY -12.31
110 FY -12.35

***USE FOR FB4
*JOINT LOAD
*101 FY -16.05
*102 FY -16.01
*104 FY -19.04
*105 FY -19.36
*106 FY -17.79
*107 FY -17.84
*109 FY -15.14
*110 FY -13.01

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 0.9 ***
LOAD GENERATION 1000
TYPE 1 2 10 0 XINC 0.01
**
*** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 2000
TYPE 2 2 10 0 XINC 0.01

PERFORM ANALYSIS
PRINT ALL
FINISH
```

STAAD SPACE
 START JOB INFORMATION
 ENGINEER DATE 29-Feb-12
 ENGINEER NAME DWC

*Section C
 *FLOORBEAMS 1
 END JOB INFORMATION

INPUT WIDTH 79
 UNIT FEET KIP
 JOINT COORDINATES
 1 0.0000 0 0 ;
 2 4.8750 0 0 ;
 3 6.8750 0 0 ;
 4 10.875 0 0 ;
 5 16.9583 0 0 ;
 6 23.0417 0 0 ;
 7 29.125 0 0 ;
 8 33.125 0 0 ;
 9 35.125 0 0 ;
 10 40.00 0 0 ;

***FICTITIOUS DECK
 101 0 10 0 ;
 102 4.8750 10 0 ;
 104 10.875 10 0 ;
 105 16.9583 10 0 ;
 106 23.0417 10 0 ;
 107 29.125 10 0 ;
 109 35.125 10 0 ;
 110 40.00 10 0 ;

MEMBER INCIDENCES
 1 1 2 ;
 2 2 3 ;
 3 3 4 ;
 4 4 5 ;
 5 5 6 ;
 6 6 7 ;
 7 7 8 ;
 8 8 9 ;
 9 9 10 ;

***FICTITIOUS DECK
 101 101 102;
 102 102 104;
 104 104 105;
 105 105 106;
 106 106 107;
 107 107 109;
 109 109 110;

DEFINE MATERIAL START
 ISOTROPIC STEEL
 E 4.176e+006
 POISSON 0.3
 DENSITY 0.489024
 ALPHA 6e-006
 DAMP 0.03
 END DEFINE MATERIAL

UNIT INCHES KIP
 MEMBER PROPERTY AMERICAN

1 TAPERED 22.125 .75 23.4368 11.5 1 11.5 1
 2 TAPERED 23.4368 .75 23.975 11.5 1 11.5 1
 3 TAPERED 23.975 .75 25.0266 11.5 1 11.5 1
 4 TAPERED 25.0266 .75 26.6260 11.5 1 11.5 1
 5 TAPERED 26.6260 .75 28.2253 11.5 1 11.5 1
 6 TAPERED 28.2253 .75 29.8247 11.5 1 11.5 1
 7 TAPERED 29.8247 .75 30.875 11.5 1 11.5 1
 8 TAPERED 30.875 .75 27.1295 11.5 1 11.5 1
 9 TAPERED 27.1295 .75 18 11.5 1 11.5 1

101 102 104 105 106 107 109 TABLE ST W33x130
 CONSTANTS
 MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS

3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD

*INCLUDES MPF OF 1 FOR 2 TRUCKS, 0.9 FOR 3 TRUCKS

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

*

LOAD 1 LOADTYPE Dead TITLE SELFWEIGHT DL

*USE 5% BUMP-UP FOR ALL COMPONENTS FOR CONTINUOUS FB

SELFWEIGHT Y -1.05 LIST 3 TO 7

SELFWEIGHT Y -1.05 LIST 1 2 8 9

JOINT LOAD

101 FY -5.79

102 FY -6.35

104 FY -7.93

105 FY -8.53

106 FY -8.39

107 FY -8.56

109 FY -7.15

110 FY -7.42

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 0.9 ***

LOAD GENERATION 1000

TYPE 1 2 10 0 XINC 0.01

**

*** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***

LOAD GENERATION 2000

TYPE 2 2 10 0 XINC 0.01

PERFORM ANALYSIS

PRINT ALL

FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 29-Feb-12
ENGINEER NAME DWC
END JOB INFORMATION
*Section C
*Stringer Longitudinal LLDF
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
**ALONG NORTH GIRDER
1 0 0 0; 2 27.9818 0 0; 3 49.0547 0 0;
4 74.0547 0 0; 5 98.5235 0 0; 6 123.2813 0 0;

**ALONG SOUTH GIRDER
*1 0 0 0; 2 24.7135 0 0; 3 49.0573 0 0;
*4 74.0573 0 0; 5 95.2552 0 0; 6 123.2813 0 0;
*
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4; 4 4 5; 5 5 6
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 4 5 TABLE ST W16X89
CONSTANTS
BETA 0 MEMB 2
MATERIAL STEEL ALL
SUPPORTS
1 2 3 4 5 6 PINNED
MEMBER RELEASE
1 START MZ
2 END MZ
3 START MZ
5 END MZ
DEFINE MOVING LOAD
TYPE 1 LOAD 16 16 4
DIST 14 14
TYPE 2 LOAD 10 5
DIST 10
TYPE 3 LOAD 6 8.5 8.5
DIST 10 4
TYPE 4 LOAD 6 7 7 7
DIST 10 4 4
TYPE 5 LOAD 6 8.5 8.5 8.5 8.5
DIST 12 4 31 4
TYPE 6 LOAD 4 16 16
DIST 14 14
TYPE 7 LOAD 5 10
DIST 10
TYPE 8 LOAD 8.5 8.5 6
DIST 4 10
TYPE 9 LOAD 7 7 7 6
DIST 4 4 10
TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
DIST 4 31 4 12

*
**LANE LOADING DISTRIBUTED LOAD
*LOAD 1 LOADTYPE Live TITLE LANE LOAD DISTRIBUTED
*MEMBER LOAD
*1 TO 5 UNI GY -0.320

***HS20
*LOAD GENERATION 1513
*TYPE 1 -28 0 0 XINC 0.1
*LOAD GENERATION 1513
*TYPE 6 -28 0 0 XINC 0.1
*
**2F1
*LOAD GENERATION 1333
*TYPE 2 -10 0 0 XINC 0.1
*LOAD GENERATION 1333

```

```
*TYPE 7 -10 0 0 XINC 0.1
**
***3F1
*LOAD GENERATION 1373
*TYPE 3 -14 0 0 XINC 0.1
*LOAD GENERATION 1373
*TYPE 8 -14 0 0 XINC 0.1

****4F1
*LOAD GENERATION 1413
*TYPE 4 -18 0 0 XINC 0.1
*LOAD GENERATION 1413
*TYPE 9 -18 0 0 XINC 0.1
*
*****5C1
LOAD GENERATION 1743
TYPE 5 -51 0 0 XINC 0.1
LOAD GENERATION 1743
TYPE 10 -51 0 0 XINC 0.1

*
PERFORM ANALYSIS
PRINT MAXREACTION
FINISH
```

Section C



Made By DWC
Checked By CTG

Date 2/29/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Longitudinal Distribution Factors

Determine amount of load at each floorbeam by running a wheel line longitudinally across the bridge. Because floorbeams are skewed, run a wheel line with the stringer spacing and support conditions along the North and South Girder centerlines. If numbers are comparable, use maximum distribution factor for entire floorbeam.

		FB1	FB2	FB3	FB4	FB5	FB6	
HS20 (P = 16 k)	N	22.0304	30.037	22.412	29.156	29.077	21.21	
	S	21.401	29.52	22.624	28.772	30.087	22.134	
2F1 (P = 10 k)	N	12.775	14.463	12.539	14.228	14.208	12.477	
	S	12.556	14.226	12.518	14.312	14.684	12.706	
3F1 (P = 8.5 k)	N	17.818	21.774	18.122	21.362	21.327	17.189	
	S	17.321	21.411	18.303	21.44	22.066	17.701	
4F1 (P = 7 k)	N	18.713	24.927	20.019	24.364	24.317	17.784	
	S	17.946	24.502	20.149	24.379	25.187	18.568	
5C1 (P = 8.5 k)	N	17.371	21.316	16.157	20.781	20.749	16.718	
	S	16.847	20.935	16.852	20.716	21.345	17.256	
HS20 Lane Load* (apply half lane only)	N	12.578	18.941	14.394	17.713	17.639	12.184	Total Moment
		16.578	22.941	18.394	21.713	21.639	16.184	Total Shear
		3.578	9.941	5.394	8.713	8.639	3.184	Distributed Load
	S	11.993	18.786	15.252	16.815	17.901	12.704	Total Moment
		15.993	22.786	19.252	20.815	21.901	16.704	Total Shear
		2.993	9.786	6.252	7.815	8.901	3.704	Distributed Load

* Modeled half of HS20 distributed lane loading (320 k/ft) along with half of concentrated loads for shear and moment (13 kips and 9 kips), as this would correspond to one wheel line (half an axle). Because the total factors never exceed those of the HS20 truck, the lane loading will not govern in Section C.

Governing Distribution Factors:

	FB1	FB2	FB3	FB4	FB5	FB6
HS20 (P = 16 k)	22.0304	30.037	22.624	29.156	30.087	22.134
2F1 (P = 10 k)	12.775	14.463	12.539	14.312	14.684	12.706
3F1 (P = 8.5 k)	17.818	21.774	18.303	21.44	22.066	17.701
4F1 (P = 7 k)	18.713	24.927	20.149	24.379	25.187	18.568
5C1 (P = 8.5 k)	17.371	21.316	16.852	20.781	21.345	17.256



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Calculations For: **CUY-2-1441**

Floorbeam Transverse Distribution Factors

		FB1	FB2	FB3	FB4	FB5	FB6
LIVE LOAD*	Mmax- North (k-ft)	-5.833	-5.878	-5.833	-5.833	-5.878	-5.833
	Mmax+ (k-ft)	15.766	15.888	15.766	15.766	15.888	15.766
	Mmax- South (k-ft)	-5.833	-5.878	-5.833	-5.833	-5.878	-5.833
	Vmax North (k)	2.397	2.397	2.397	2.397	2.397	2.397
	Vmax South (k)	2.397	2.397	2.397	2.397	2.397	2.397
	North Reaction (k)	3.729	3.729	3.729	3.729	3.729	3.729
	South Reaction (k)	3.729	3.729	3.729	3.729	3.729	3.729
	Mmax N Bracket (k-ft)	-5.833	-5.878	-5.833	-5.833	-5.878	-5.833
	Vmax N Bracket (k)	1.479	1.479	1.479	1.479	1.479	1.479
	Mmax S Bracket (k-ft)	-5.833	-5.878	-5.833	-5.833	-5.878	-5.833
	Vmax S Bracket (k)	1.479	1.479	1.479	1.479	1.479	1.479

* Load effects represent unit loads for 2 and 3 trucks (1 and 0.9, respectively, accounting for multiple presence factor). These loads must be multiplied by longitudinal LLDFs and impact in order to obtain final load effects. As expected, all non-skewed floorbeams have similar transverse load effects, as do all skewed floorbeams, due to identical geometry in section.

		FB1	FB2	FB3	FB4	FB5	FB6
DEAD LOAD**	Mmax- North (k-ft)	-66.59	-163.93	-91.06	-144.22	-139.91	-55.76
	Mmax+ (k-ft)	68.40	160.14	113.08	139.61	143.38	69.66
	Mmax- South (k-ft)	-52.35	-161.00	-111.38	-121.58	-148.42	-68.54
	Vmax North (k)	19.22	45.82	29.17	40.22	39.99	17.94
	Vmax South (k)	17.41	45.74	31.57	37.29	40.80	19.40
	North Reaction (k)	34.530	82.156	50.597	72.841	71.750	31.035
	South Reaction (k)	29.647	81.090	56.793	66.008	74.195	34.950
	Mmax N Bracket (k-ft)	-66.59	-163.93	-91.06	-144.22	-139.91	-55.76
	Vmax N Bracket (k)	15.31	36.34	21.42	33.62	31.76	13.09
	Mmax S Bracket (k-ft)	-52.35	-161.00	-111.38	-121.58	-148.42	-68.54
	Vmax S Bracket (k)	12.23	35.35	25.22	28.71	33.40	15.55

** Final dead loads including self weight and dead load stringer reactions from MDX.


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 Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**
Section C**Floorbeam 1**

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	22.03	12.78	17.82	18.71	17.37

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-167.05	-96.87	-135.11	-141.90	-131.72
Mmax+ (k-ft)	451.53	261.83	365.19	383.54	356.03
Mmax- South (k-ft)	-167.05	-96.87	-135.11	-141.90	-131.72
Vmax North (k)	68.65	39.81	55.52	58.31	54.13
Vmax South (k)	68.65	39.81	55.52	58.31	54.13
RN (k)	106.80	61.93	86.38	90.72	84.21
RS (k)	106.80	61.93	86.38	90.72	84.21

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-167.05	-96.87	-135.11	-141.90	-131.72
Vmax* (k)	42.36	24.56	34.26	35.98	33.40

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-167.05	-96.87	-135.11	-141.90	-131.72
Vmax* (k)	42.36	24.56	34.26	35.98	33.40



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Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section C

Floorbeam 2

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	30.04	14.46	21.77	24.93	21.32

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-230.93	-111.19	-167.40	-191.64	-163.88
Mmax+ (k-ft)	623.17	300.06	451.74	517.15	442.24
Mmax- South (k-ft)	-230.93	-111.19	-167.40	-191.64	-163.88
Vmax North (k)	94.18	45.35	68.27	78.16	66.84
Vmax South (k)	94.18	45.35	68.27	78.16	66.84
RN (k)	146.51	70.54	106.20	121.58	103.97
RS (k)	146.51	70.54	106.20	121.58	103.97

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-230.93	-111.19	-167.40	-191.64	-163.88
Vmax* (k)	58.14	28.00	42.15	48.25	41.26

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-230.93	-111.19	-167.40	-191.64	-163.88
Vmax* (k)	58.14	28.00	42.15	48.25	41.26



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Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section C

Floorbeam 3

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	22.62	12.54	18.30	20.15	16.85

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-171.56	-95.08	-138.79	-152.79	-127.79
Mmax+ (k-ft)	463.70	257.00	375.13	412.97	345.40
Mmax- South (k-ft)	-171.56	-95.08	-138.79	-152.79	-127.79
Vmax North (k)	70.50	39.07	57.03	62.79	52.51
Vmax South (k)	70.50	39.07	57.03	62.79	52.51
RN (k)	109.67	60.79	88.73	97.68	81.69
RS (k)	109.67	60.79	88.73	97.68	81.69

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-171.56	-95.08	-138.79	-152.79	-127.79
Vmax* (k)	43.50	24.11	35.19	38.74	32.40

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-171.56	-95.08	-138.79	-152.79	-127.79
Vmax* (k)	43.50	24.11	35.19	38.74	32.40



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Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section C

Floorbeam 4

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	29.16	14.31	21.44	24.38	20.78

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-221.09	-108.53	-162.58	-184.86	-157.58
Mmax+ (k-ft)	597.58	293.34	439.43	499.67	425.92
Mmax- South (k-ft)	-221.09	-108.53	-162.58	-184.86	-157.58
Vmax North (k)	90.85	44.60	66.81	75.97	64.76
Vmax South (k)	90.85	44.60	66.81	75.97	64.76
RN (k)	141.34	69.38	103.93	118.18	100.74
RS (k)	141.34	69.38	103.93	118.18	100.74

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-221.09	-108.53	-162.58	-184.86	-157.58
Vmax* (k)	56.06	27.52	41.22	46.87	39.96

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-221.09	-108.53	-162.58	-184.86	-157.58
Vmax* (k)	56.06	27.52	41.22	46.87	39.96



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Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section C

Floorbeam 5

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	30.09	14.68	22.07	25.19	21.35

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-231.31	-112.89	-169.65	-193.64	-164.10
Mmax+ (k-ft)	624.21	304.64	457.80	522.55	442.84
Mmax- South (k-ft)	-231.31	-112.89	-169.65	-193.64	-164.10
Vmax North (k)	94.34	46.04	69.19	78.98	66.93
Vmax South (k)	94.34	46.04	69.19	78.98	66.93
RN (k)	146.75	71.62	107.63	122.85	104.11
RS (k)	146.75	71.62	107.63	122.85	104.11

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-231.31	-112.89	-169.65	-193.64	-164.10
Vmax* (k)	58.24	28.42	42.71	48.75	41.32

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-231.31	-112.89	-169.65	-193.64	-164.10
Vmax* (k)	58.24	28.42	42.71	48.75	41.32



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Date 2/16/2012
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Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section C

Floorbeam 6

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	22.13	12.71	17.70	18.57	17.26

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-167.84	-96.35	-134.22	-140.80	-130.85
Mmax+ (k-ft)	453.65	260.42	362.80	380.57	353.68
Mmax- South (k-ft)	-167.84	-96.35	-134.22	-140.80	-130.85
Vmax North (k)	68.97	39.59	55.16	57.86	53.77
Vmax South (k)	68.97	39.59	55.16	57.86	53.77
RN (k)	107.30	61.59	85.81	90.01	83.65
RS (k)	107.30	61.59	85.81	90.01	83.65

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-167.84	-96.35	-134.22	-140.80	-130.85
Vmax* (k)	42.56	24.43	34.03	35.70	33.18

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-167.84	-96.35	-134.22	-140.80	-130.85
Vmax* (k)	42.56	24.43	34.03	35.70	33.18

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section C - Floorbeam As-Built Ratings

Calculated: **DWC** 3/1/2012

Checked: **CTG** 3/1/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear					
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF			
	From Rear (Ft)	M+	M-	V										
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating		
HS20-44	FB 1	North	-66.59	---	-167.05	19.22	68.65	1058.34	2.68	4.47	342.56	2.13	3.55	
		Center	68.40	451.53	---	---	---	---	1225.17	1.16	1.93	385.63	N/A	N/A
		South	-52.35	---	-167.05	17.41	68.65	1400.46	3.68	6.13	428.69	2.73	4.54	
		N Bracket	-66.59	---	-167.05	15.31	42.36	1058.34	2.68	4.47	342.56	3.51	5.85	
		S Bracket	-52.35	---	-167.05	12.23	42.36	1400.46	3.68	6.13	428.69	4.49	7.49	
	FB 2	North	-163.93	---	-230.93	45.82	94.18	1205.77	1.98	3.30	342.46	1.38	2.31	
		Center	160.14	623.17	---	---	---	---	1205.77	0.74	1.23	342.46	N/A	N/A
		South	-161.00	---	-230.93	45.74	94.18	1205.77	1.99	3.31	342.46	1.38	2.31	
		N Bracket	-163.93	---	-230.93	36.34	58.14	720.84	1.01	1.69	229.68	1.45	2.41	
		S Bracket	-161.00	---	-230.93	35.35	58.14	720.84	1.02	1.70	229.68	1.46	2.43	
	FB 3	North	-91.06	---	-171.56	29.17	70.50	1205.77	2.92	4.87	342.46	1.99	3.32	
		Center	113.08	463.70	---	---	---	---	1205.77	1.05	1.75	342.46	N/A	N/A
		South	-111.38	---	-171.56	31.57	70.50	1205.77	2.85	4.75	342.46	1.97	3.28	
		N Bracket	-91.06	---	-171.56	21.42	43.50	738.41	1.67	2.78	234.17	2.19	3.64	
		S Bracket	-111.38	---	-171.56	25.22	43.50	738.41	1.59	2.66	234.17	2.13	3.56	
	FB 4	North	-144.22	---	-221.09	40.22	90.85	1205.77	2.12	3.54	342.46	1.47	2.45	
		Center	139.61	597.58	---	---	---	---	1205.77	0.79	1.32	342.46	N/A	N/A
		South	-121.58	---	-221.09	37.29	90.85	1205.77	2.18	3.64	342.46	1.49	2.49	
		N Bracket	-144.20	---	-221.09	33.62	56.06	738.41	1.15	1.91	234.17	1.57	2.61	
		S Bracket	-121.58	---	-221.09	28.71	56.06	738.41	1.21	2.02	234.17	1.62	2.70	
FB 5	North	-139.91	---	-231.31	39.99	94.34	1205.77	2.04	3.40	342.46	1.42	2.37		
	Center	143.38	624.21	---	---	---	---	1205.77	0.75	1.25	342.46	N/A	N/A	
	South	-148.42	---	-231.31	40.80	94.34	1205.77	2.02	3.36	342.46	1.41	2.36		
	N Bracket	-139.91	---	-231.31	31.76	58.24	720.84	1.07	1.79	229.68	1.49	2.48		
	S Bracket	-148.42	---	-231.31	33.40	58.24	720.84	1.05	1.75	229.68	1.47	2.46		
FB 6	North	-55.76	---	-167.84	17.94	68.97	1062.06	2.72	4.53	343.54	2.14	3.57		
	Center	69.66	453.65	---	---	---	---	1274.10	1.20	2.00	397.86	N/A	N/A	
	South	-68.54	---	-167.84	19.40	68.97	1499.67	3.87	6.46	452.18	2.85	4.76		
	N Bracket	-55.76	---	-167.84	13.09	42.56	1062.06	2.72	4.53	343.54	3.54	5.89		
	S Bracket	-68.54	---	-167.84	15.55	42.56	1499.67	3.87	6.46	452.18	4.68	7.80		

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section C - Floorbeam As-Built Ratings

Calculated: **DWC** 3/1/2012

Checked: **CTG** 3/1/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
2F1	FB 1	North	-66.59	---	-96.87	19.22	39.81	1058.34	---	7.72	342.56	---	6.14
		Center	68.40	261.83	---	---	---	1225.17	---	3.34	385.63	---	N/A
		South	-52.35	---	-96.87	17.41	39.81	1400.46	---	10.58	428.69	---	7.85
		N Bracket	-66.59	---	-96.87	15.31	24.56	1058.34	---	7.72	342.56	---	10.10
		S Bracket	-52.35	---	-96.87	12.23	24.56	1400.46	---	10.58	428.69	---	12.93
	FB 2	North	-163.93	---	-111.19	45.82	45.35	1205.77	---	6.87	342.46	---	4.80
		Center	160.14	300.06	---	---	---	1205.77	---	2.56	342.46	---	N/A
		South	-161.00	---	-111.19	45.74	45.35	1205.77	---	6.89	342.46	---	4.80
		N Bracket	-163.93	---	-111.19	36.34	28.00	720.84	---	3.51	229.68	---	5.01
		S Bracket	-161.00	---	-111.19	35.35	28.00	720.84	---	3.54	229.68	---	5.05
	FB 3	North	-91.06	---	-95.08	29.17	39.07	1205.77	---	8.80	342.46	---	6.00
		Center	113.08	257.00	---	---	---	1205.77	---	3.17	342.46	---	N/A
		South	-111.38	---	-95.08	31.57	39.07	1205.77	---	8.58	342.46	---	5.93
		N Bracket	-91.06	---	-95.08	21.42	24.11	738.41	---	5.02	234.17	---	6.58
		S Bracket	-111.38	---	-95.08	25.22	24.11	738.41	---	4.80	234.17	---	6.43
	FB 4	North	-144.22	---	-108.53	40.22	44.60	1205.77	---	7.22	342.46	---	5.00
		Center	139.61	293.34	---	---	---	1205.77	---	2.69	342.46	---	N/A
		South	-121.58	---	-108.53	37.29	44.60	1205.77	---	7.43	342.46	---	5.07
		N Bracket	-144.20	---	-108.53	33.62	27.52	738.41	---	3.91	234.17	---	5.32
		S Bracket	-121.58	---	-108.53	28.71	27.52	738.41	---	4.11	234.17	---	5.50
FB 5	North	-139.91	---	-112.89	39.99	46.04	1205.77	---	6.98	342.46	---	4.85	
	Center	143.38	304.64	---	---	---	1205.77	---	2.57	342.46	---	N/A	
	South	-148.42	---	-112.89	40.80	46.04	1205.77	---	6.90	342.46	---	4.84	
	N Bracket	-139.91	---	-112.89	31.76	28.42	720.84	---	3.67	229.68	---	5.10	
	S Bracket	-148.42	---	-112.89	33.40	28.42	720.84	---	3.60	229.68	---	5.04	
FB 6	North	-55.76	---	-96.35	17.94	39.59	1062.06	---	7.90	343.54	---	6.22	
	Center	69.66	260.42	---	---	---	1274.10	---	3.50	397.86	---	N/A	
	South	-68.54	---	-96.35	19.40	39.59	1499.67	---	11.26	452.18	---	8.30	
	N Bracket	-55.76	---	-96.35	13.09	24.43	1062.06	---	7.90	343.54	---	10.28	
	S Bracket	-68.54	---	-96.35	15.55	24.43	1499.67	---	11.26	452.18	---	13.60	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section C - Floorbeam As-Built Ratings

Calculated: **DWC** 3/1/2012

Checked: **CTG** 3/1/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
3F1	FB 1	North	-66.59	---	-135.11	19.22	55.52	1058.34	---	5.53	342.56	---	4.40
		Center	68.40	365.19	---	---	---	1225.17	---	2.39	385.63	---	N/A
		South	-52.35	---	-135.11	17.41	55.52	1400.46	---	7.59	428.69	---	5.63
		N Bracket	-66.59	---	-135.11	15.31	34.26	1058.34	---	5.53	342.56	---	7.24
		S Bracket	-52.35	---	-135.11	12.23	34.26	1400.46	---	7.59	428.69	---	9.27
	FB 2	North	-163.93	---	-167.40	45.82	68.27	1205.77	---	4.56	342.46	---	3.19
		Center	160.14	451.74	---	---	---	1205.77	---	1.70	342.46	---	N/A
		South	-161.00	---	-167.40	45.74	68.27	1205.77	---	4.58	342.46	---	3.19
		N Bracket	-163.93	---	-167.40	36.34	42.15	720.84	---	2.33	229.68	---	3.33
		S Bracket	-161.00	---	-167.40	35.35	42.15	720.84	---	2.35	229.68	---	3.35
	FB 3	North	-91.06	---	-138.79	29.17	57.03	1205.77	---	6.03	342.46	---	4.11
		Center	113.08	375.13	---	---	---	1205.77	---	2.17	342.46	---	N/A
		South	-111.38	---	-138.79	31.57	57.03	1205.77	---	5.88	342.46	---	4.07
		N Bracket	-91.06	---	-138.79	21.42	35.19	738.41	---	3.44	234.17	---	4.51
		S Bracket	-111.38	---	-138.79	25.22	35.19	738.41	---	3.29	234.17	---	4.40
	FB 4	North	-144.22	---	-162.58	40.22	66.81	1205.77	---	4.82	342.46	---	3.34
		Center	139.61	439.43	---	---	---	1205.77	---	1.79	342.46	---	N/A
		South	-121.58	---	-162.58	37.29	66.81	1205.77	---	4.96	342.46	---	3.38
		N Bracket	-144.20	---	-162.58	33.62	41.22	738.41	---	2.61	234.17	---	3.55
		S Bracket	-121.58	---	-162.58	28.71	41.22	738.41	---	2.75	234.17	---	3.67
	FB 5	North	-139.91	---	-169.65	39.99	69.19	1205.77	---	4.64	342.46	---	3.23
		Center	143.38	457.80	---	---	---	1205.77	---	1.71	342.46	---	N/A
		South	-148.42	---	-169.65	40.80	69.19	1205.77	---	4.59	342.46	---	3.22
		N Bracket	-139.91	---	-169.65	31.76	42.71	720.84	---	2.44	229.68	---	3.39
S Bracket		-148.42	---	-169.65	33.40	42.71	720.84	---	2.39	229.68	---	3.35	
FB 6	North	-55.76	---	-134.22	17.94	55.16	1062.06	---	5.67	343.54	---	4.47	
	Center	69.66	362.80	---	---	---	1274.10	---	2.51	397.86	---	N/A	
	South	-68.54	---	-134.22	19.40	55.16	1499.67	---	8.08	452.18	---	5.95	
	N Bracket	-55.76	---	-134.22	13.09	34.03	1062.06	---	5.67	343.54	---	7.38	
	S Bracket	-68.54	---	-134.22	15.55	34.03	1499.67	---	8.08	452.18	---	9.76	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section C - Floorbeam As-Built Ratings

Calculated: **DWC** 3/1/2012

Checked: **CTG** 3/1/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear					
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF			
	From Rear (Ft)	M+	M-	V										
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating		
4F1	FB 1	North	-66.59	---	-141.90	19.22	58.31	1058.34	---	5.27	342.56	---	4.19	
		Center	68.40	383.54	---	---	---	---	1225.17	---	2.28	385.63	---	N/A
		South	-52.35	---	-141.90	17.41	58.31	1400.46	---	7.22	428.69	---	5.36	
		N Bracket	-66.59	---	-141.90	15.31	35.98	1058.34	---	5.27	342.56	---	6.90	
		S Bracket	-52.35	---	-141.90	12.23	35.98	1400.46	---	7.22	428.69	---	8.83	
	FB 2	North	-163.93	---	-191.64	45.82	78.16	1205.77	---	3.98	342.46	---	2.78	
		Center	160.14	517.15	---	---	---	---	1205.77	---	1.48	342.46	---	N/A
		South	-161.00	---	-191.64	45.74	78.16	1205.77	---	4.00	342.46	---	2.79	
		N Bracket	-163.93	---	-191.64	36.34	48.25	720.84	---	2.04	229.68	---	2.91	
		S Bracket	-161.00	---	-191.64	35.35	48.25	720.84	---	2.05	229.68	---	2.93	
	FB 3	North	-91.06	---	-152.79	29.17	62.79	1205.77	---	5.47	342.46	---	3.73	
		Center	113.08	412.97	---	---	---	---	1205.77	---	1.97	342.46	---	N/A
		South	-111.38	---	-152.79	31.57	62.79	1205.77	---	5.34	342.46	---	3.69	
		N Bracket	-91.06	---	-152.79	21.42	38.74	738.41	---	3.12	234.17	---	4.10	
		S Bracket	-111.38	---	-152.79	25.22	38.74	738.41	---	2.99	234.17	---	4.00	
	FB 4	North	-144.22	---	-184.86	40.22	75.97	1205.77	---	4.24	342.46	---	2.94	
		Center	139.61	499.67	---	---	---	---	1205.77	---	1.58	342.46	---	N/A
		South	-121.58	---	-184.86	37.29	75.97	1205.77	---	4.36	342.46	---	2.98	
		N Bracket	-144.20	---	-184.86	33.62	46.87	738.41	---	2.29	234.17	---	3.13	
		S Bracket	-121.58	---	-184.86	28.71	46.87	738.41	---	2.41	234.17	---	3.23	
	FB 5	North	-139.91	---	-193.64	39.99	78.98	1205.77	---	4.07	342.46	---	2.83	
		Center	143.38	522.55	---	---	---	---	1205.77	---	1.50	342.46	---	N/A
		South	-148.42	---	-193.64	40.80	78.98	1205.77	---	4.02	342.46	---	2.82	
		N Bracket	-139.91	---	-193.64	31.76	48.75	720.84	---	2.14	229.68	---	2.97	
S Bracket		-148.42	---	-193.64	33.40	48.75	720.84	---	2.10	229.68	---	2.94		
FB 6	North	-55.76	---	-140.80	17.94	57.86	1062.06	---	5.41	343.54	---	4.26		
	Center	69.66	380.57	---	---	---	---	1274.10	---	2.39	397.86	---	N/A	
	South	-68.54	---	-140.80	19.40	57.86	1499.67	---	7.71	452.18	---	5.68		
	N Bracket	-55.76	---	-140.80	13.09	35.70	1062.06	---	5.41	343.54	---	7.04		
	S Bracket	-68.54	---	-140.80	15.55	35.70	1499.67	---	7.71	452.18	---	9.31		

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section C - Floorbeam As-Built Ratings

Calculated: **DWC** 3/1/2012

Checked: **CTG** 3/1/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear					
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF			
	From Rear (Ft)	M+	M-	V										
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating		
5C1	FB 1	North	-66.59	---	-131.72	19.22	54.13	1058.34	---	5.67	342.56	---	4.51	
		Center	68.40	356.03	---	---	---	---	1225.17	---	2.45	385.63	---	N/A
		South	-52.35	---	-131.72	17.41	54.13	1400.46	---	7.78	428.69	---	5.77	
		N Bracket	-66.59	---	-131.72	15.31	33.40	1058.34	---	5.67	342.56	---	7.43	
		S Bracket	-52.35	---	-131.72	12.23	33.40	1400.46	---	7.78	428.69	---	9.51	
	FB 2	North	-163.93	---	-163.88	45.82	66.84	1205.77	---	4.66	342.46	---	3.26	
		Center	160.14	442.24	---	---	---	---	1205.77	---	1.74	342.46	---	N/A
		South	-161.00	---	-163.88	45.74	66.84	1205.77	---	4.68	342.46	---	3.26	
		N Bracket	-163.93	---	-163.88	36.34	41.26	720.84	---	2.38	229.68	---	3.40	
		S Bracket	-161.00	---	-163.88	35.35	41.26	720.84	---	2.40	229.68	---	3.43	
	FB 3	North	-91.06	---	-127.79	29.17	52.51	1205.77	---	6.55	342.46	---	4.46	
		Center	113.08	345.40	---	---	---	---	1205.77	---	2.36	342.46	---	N/A
		South	-111.38	---	-127.79	31.57	52.51	1205.77	---	6.39	342.46	---	4.42	
		N Bracket	-91.06	---	-127.79	21.42	32.40	738.41	---	3.73	234.17	---	4.90	
		S Bracket	-111.38	---	-127.79	25.22	32.40	738.41	---	3.57	234.17	---	4.78	
	FB 4	North	-144.22	---	-157.58	40.22	64.76	1205.77	---	4.97	342.46	---	3.45	
		Center	139.61	425.92	---	---	---	---	1205.77	---	1.85	342.46	---	N/A
		South	-121.58	---	-157.58	37.29	64.76	1205.77	---	5.11	342.46	---	3.49	
		N Bracket	-144.20	---	-157.58	33.62	39.96	738.41	---	2.69	234.17	---	3.67	
		S Bracket	-121.58	---	-157.58	28.71	39.96	738.41	---	2.83	234.17	---	3.79	
	FB 5	North	-139.91	---	-164.10	39.99	66.93	1205.77	---	4.80	342.46	---	3.34	
		Center	143.38	442.84	---	---	---	---	1205.77	---	1.77	342.46	---	N/A
		South	-148.42	---	-164.10	40.80	66.93	1205.77	---	4.75	342.46	---	3.33	
		N Bracket	-139.91	---	-164.10	31.76	41.32	720.84	---	2.53	229.68	---	3.51	
S Bracket		-148.42	---	-164.10	33.40	41.32	720.84	---	2.47	229.68	---	3.47		
FB 6	North	-55.76	---	-130.85	17.94	53.77	1062.06	---	5.82	343.54	---	4.58		
	Center	69.66	353.68	---	---	---	---	1274.10	---	2.57	397.86	---	N/A	
	South	-68.54	---	-130.85	19.40	53.77	1499.67	---	8.29	452.18	---	6.11		
	N Bracket	-55.76	---	-130.85	13.09	33.18	1062.06	---	5.82	343.54	---	7.57		
	S Bracket	-68.54	---	-130.85	15.55	33.18	1499.67	---	8.29	452.18	---	10.02		

SECTION C UNIT 1
 Girder 1 : Rating Output : Reactions
 Wed Feb 29 20:20:39 2012

Girder 1 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.09	0.00	0.00	0.00	7.09	7.09
Steel	1.40					
Conc	5.69					
23.86	23.55	0.00	0.00	0.00	23.55	23.55
Steel	4.21					
Conc	19.33					
49.06	7.68	0.00	0.00	0.00	7.68	7.68
Steel	1.41					
Conc	6.27					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	5.45	0.00	0.00	0.00	5.46	5.46
Steel	1.08					
Conc	4.38					
23.86	18.11	0.00	0.00	0.00	18.12	18.12
Steel	3.24					
Conc	14.87					
49.06	5.91	0.00	0.00	0.00	5.91	5.91
Steel	1.08					
Conc	4.83					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 2 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.56	0.00	0.00	0.00	7.56	7.56
Steel	1.14					
Conc	6.42					
24.46	21.65	0.00	0.00	0.00	21.66	21.66
Steel	2.65					
Conc	19.00					
49.06	7.27	0.00	0.00	0.00	7.27	7.27
Steel	0.88					
Conc	6.38					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	5.81	0.00	0.00	0.00	5.81	5.81
Steel	0.88					
Conc	4.93					
24.46	16.66	0.00	0.00	0.00	16.66	16.66
Steel	2.04					
Conc	14.62					
49.06	5.59	0.00	0.00	0.00	5.59	5.59
Steel	0.68					
Conc	4.91					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 3 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.13	0.00	0.00	0.00	10.13	10.13
Steel	1.58					
Conc	8.55					
25.21	29.35	0.00	0.00	0.00	29.35	29.35
Steel	3.73					
Conc	25.62					
49.06	9.06	0.00	0.00	0.00	9.06	9.06
Steel	1.16					
Conc	7.90					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.79	0.00	0.00	0.00	7.79	7.79
Steel	1.21					
Conc	6.57					
25.21	22.57	0.00	0.00	0.00	22.58	22.58
Steel	2.87					
Conc	19.71					
49.06	6.97	0.00	0.00	0.00	6.97	6.97
Steel	0.89					
Conc	6.08					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 4 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.10	0.00	0.00	0.00	10.10	10.10
Steel	1.60					
Conc	8.50					
25.97	27.50	0.00	0.00	0.00	27.51	27.51
Steel	3.52					
Conc	23.98					
49.06	8.24	0.00	0.00	0.00	8.24	8.24
Steel	1.05					
Conc	7.19					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.77	0.00	0.00	0.00	7.77	7.77
Steel	1.23					
Conc	6.54					
25.97	21.16	0.00	0.00	0.00	21.16	21.16
Steel	2.71					
Conc	18.45					
49.06	6.34	0.00	0.00	0.00	6.34	6.34
Steel	0.81					
Conc	5.53					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 5 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	11.09	0.00	0.00	0.00	11.09	11.09
Steel	1.86					
Conc	9.22					
26.73	29.03	0.00	0.00	0.00	29.03	29.03
Steel	3.99					
Conc	25.04					
49.06	8.08	0.00	0.00	0.00	8.08	8.08
Steel	1.11					
Conc	6.97					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.53	0.00	0.00	0.00	8.53	8.53
Steel	1.43					
Conc	7.10					
26.73	22.33	0.00	0.00	0.00	22.33	22.33
Steel	3.07					
Conc	19.26					
49.06	6.21	0.00	0.00	0.00	6.22	6.22
Steel	0.85					
Conc	5.36					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 6 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	11.25	0.00	0.00	0.00	11.25	11.25
Steel	1.91					
Conc	9.34					
27.48	28.57	0.00	0.00	0.00	28.57	28.57
Steel	3.98					
Conc	24.59					
49.06	7.64	0.00	0.00	0.00	7.64	7.64
Steel	1.05					
Conc	6.59					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.66	0.00	0.00	0.00	8.66	8.66
Steel	1.47					
Conc	7.19					
27.48	21.98	0.00	0.00	0.00	21.98	21.98
Steel	3.06					
Conc	18.92					
49.06	5.88	0.00	0.00	0.00	5.88	5.88
Steel	0.81					
Conc	5.07					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 7 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	9.44	0.00	0.00	0.00	9.44	9.44
Steel	1.69					
Conc	7.75					
28.23	22.70	0.00	0.00	0.00	22.70	22.70
Steel	3.25					
Conc	19.44					
49.06	6.25	0.00	0.00	0.00	6.25	6.25
Steel	0.89					
Conc	5.35					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.26	0.00	0.00	0.00	7.26	7.26
Steel	1.30					
Conc	5.96					
28.23	17.46	0.00	0.00	0.00	17.46	17.46
Steel	2.50					
Conc	14.96					
49.06	4.80	0.00	0.00	0.00	4.80	4.80
Steel	0.69					
Conc	4.12					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 8 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	9.22	0.00	0.00	0.00	9.23	9.23
Steel	1.66					
Conc	7.57					
28.84	23.80	0.00	0.00	0.00	23.80	23.80
Steel	3.99					
Conc	19.80					
49.06	4.65	0.00	0.00	0.00	4.65	4.65
Steel	0.81					
Conc	3.84					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.10	0.00	0.00	0.00	7.10	7.10
Steel	1.27					
Conc	5.82					
28.84	18.30	0.00	0.00	0.00	18.31	18.31
Steel	3.07					
Conc	15.23					
49.06	3.58	0.00	0.00	0.00	3.58	3.58
Steel	0.62					
Conc	2.95					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 1 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.38	0.00	0.00	0.00	8.38	8.38
Steel	1.62					
Conc	6.76					
25.00	16.91	0.00	0.00	0.00	16.91	16.91
Steel	3.11					
Conc	13.79					
45.34	21.27	0.00	0.00	0.00	21.27	21.27
Steel	3.89					
Conc	17.38					
74.22	9.64	0.00	0.00	0.00	9.65	9.65
Steel	1.78					
Conc	7.87					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	6.44	0.00	0.00	0.00	6.44	6.44
Steel	1.25					
Conc	5.20					
25.00	13.01	0.00	0.00	0.00	13.01	13.01
Steel	2.40					
Conc	10.61					
45.34	16.36	0.00	0.00	0.00	16.36	16.36
Steel	2.99					
Conc	13.37					
74.22	7.42	0.00	0.00	0.00	7.42	7.42
Steel	1.37					
Conc	6.05					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 2 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.74	0.00	0.00	0.00	8.74	8.74
Steel	1.37					
Conc	7.37					
25.00	19.68	0.00	0.00	0.00	19.68	19.68
Steel	2.71					
Conc	16.97					
45.95	21.41	0.00	0.00	0.00	21.41	21.41
Steel	3.00					
Conc	18.41					
74.22	9.29	0.00	0.00	0.00	9.29	9.29
Steel	1.32					
Conc	7.97					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	6.72	0.00	0.00	0.00	6.72	6.72
Steel	1.05					
Conc	5.67					
25.00	15.14	0.00	0.00	0.00	15.14	15.14
Steel	2.08					
Conc	13.05					
45.95	16.47	0.00	0.00	0.00	16.47	16.47
Steel	2.31					
Conc	14.16					
74.22	7.15	0.00	0.00	0.00	7.15	7.15
Steel	1.02					
Conc	6.13					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 3 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.41	0.00	0.00	0.00	10.41	10.41
Steel	1.54					
Conc	8.87					
25.00	23.19	0.00	0.00	0.00	23.20	23.20
Steel	2.97					
Conc	20.23					
46.70	25.29	0.00	0.00	0.00	25.29	25.29
Steel	3.32					
Conc	21.97					
74.22	11.13	0.00	0.00	0.00	11.13	11.13
Steel	1.51					
Conc	9.62					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.01	0.00	0.00	0.00	8.01	8.01
Steel	1.18					
Conc	6.82					
25.00	17.84	0.00	0.00	0.00	17.84	17.84
Steel	2.28					
Conc	15.56					
46.70	19.45	0.00	0.00	0.00	19.46	19.46
Steel	2.56					
Conc	16.90					
74.22	8.56	0.00	0.00	0.00	8.56	8.56
Steel	1.16					
Conc	7.40					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 4 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.20	0.00	0.00	0.00	10.20	10.20
Steel	1.49					
Conc	8.71					
25.00	23.12	0.00	0.00	0.00	23.12	23.12
Steel	2.90					
Conc	20.22					
47.45	24.73	0.00	0.00	0.00	24.74	24.74
Steel	3.20					
Conc	21.54					
74.22	10.90	0.00	0.00	0.00	10.90	10.90
Steel	1.48					
Conc	9.42					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.85	0.00	0.00	0.00	7.85	7.85
Steel	1.15					
Conc	6.70					
25.00	17.78	0.00	0.00	0.00	17.79	17.79
Steel	2.23					
Conc	15.55					
47.45	19.03	0.00	0.00	0.00	19.03	19.03
Steel	2.46					
Conc	16.57					
74.22	8.38	0.00	0.00	0.00	8.39	8.39
Steel	1.14					
Conc	7.25					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 5 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.64	0.00	0.00	0.00	10.64	10.64
	Steel 1.65					
	Conc 8.99					
25.00	25.16	0.00	0.00	0.00	25.17	25.17
	Steel 3.38					
	Conc 21.79					
48.21	25.78	0.00	0.00	0.00	25.78	25.78
	Steel 3.55					
	Conc 22.23					
74.22	11.09	0.00	0.00	0.00	11.09	11.09
	Steel 1.64					
	Conc 9.45					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.18	0.00	0.00	0.00	8.18	8.18
	Steel 1.27					
	Conc 6.91					
25.00	19.36	0.00	0.00	0.00	19.36	19.36
	Steel 2.60					
	Conc 16.76					
48.21	19.83	0.00	0.00	0.00	19.83	19.83
	Steel 2.73					
	Conc 17.10					
74.22	8.53	0.00	0.00	0.00	8.53	8.53
	Steel 1.26					
	Conc 7.27					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 6 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.16	0.00	0.00	0.00	10.16	10.16
Steel	1.59					
Conc	8.57					
25.00	24.75	0.00	0.00	0.00	24.76	24.76
Steel	3.33					
Conc	21.42					
48.97	24.64	0.00	0.00	0.00	24.64	24.64
Steel	3.41					
Conc	21.23					
74.22	10.30	0.00	0.00	0.00	10.30	10.30
Steel	1.56					
Conc	8.75					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.81	0.00	0.00	0.00	7.81	7.81
Steel	1.22					
Conc	6.59					
25.00	19.04	0.00	0.00	0.00	19.04	19.04
Steel	2.56					
Conc	16.48					
48.97	18.95	0.00	0.00	0.00	18.96	18.96
Steel	2.62					
Conc	16.33					
74.22	7.93	0.00	0.00	0.00	7.93	7.93
Steel	1.20					
Conc	6.73					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 7 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.21	0.00	0.00	0.00	8.21	8.21
Steel	1.34					
Conc	6.88					
25.00	20.82	0.00	0.00	0.00	20.82	20.82
Steel	2.89					
Conc	17.92					
49.71	20.65	0.00	0.00	0.00	20.65	20.65
Steel	2.93					
Conc	17.72					
74.22	8.26	0.00	0.00	0.00	8.26	8.26
Steel	1.32					
Conc	6.94					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	6.32	0.00	0.00	0.00	6.32	6.32
Steel	1.03					
Conc	5.29					
25.00	16.01	0.00	0.00	0.00	16.01	16.01
Steel	2.23					
Conc	13.79					
49.71	15.88	0.00	0.00	0.00	15.89	15.89
Steel	2.26					
Conc	13.63					
74.22	6.35	0.00	0.00	0.00	6.35	6.35
Steel	1.01					
Conc	5.34					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 8 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.01	0.00	0.00	0.00	8.01	8.01
Steel	1.43					
Conc	6.58					
25.00	20.86	0.00	0.00	0.00	20.86	20.86
Steel	3.48					
Conc	17.38					
50.32	19.89	0.00	0.00	0.00	19.89	19.89
Steel	3.37					
Conc	16.52					
74.22	7.53	0.00	0.00	0.00	7.53	7.53
Steel	1.31					
Conc	6.22					

Unfactored Reactions - k

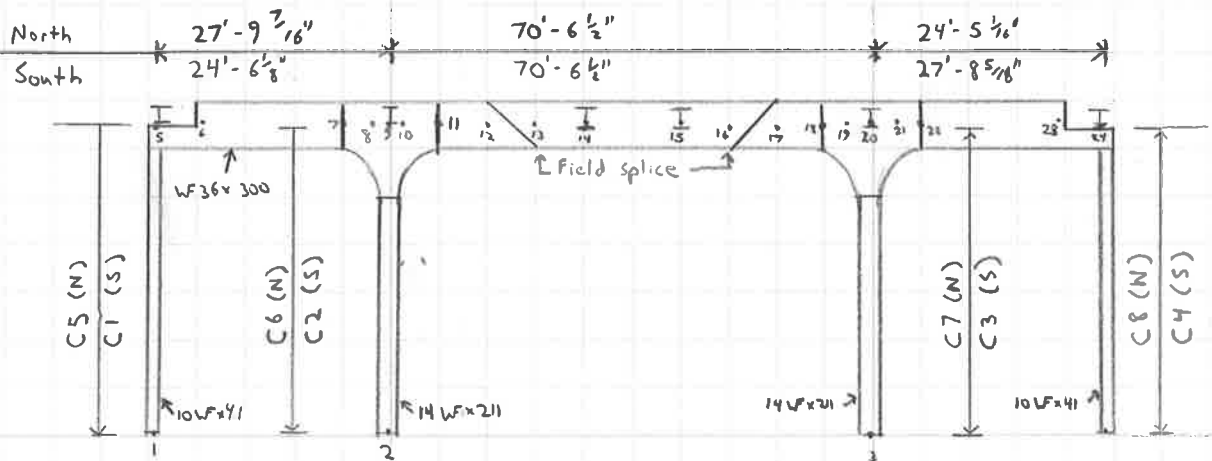
Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	6.16	0.00	0.00	0.00	6.16	6.16
Steel	1.10					
Conc	5.06					
25.00	16.04	0.00	0.00	0.00	16.05	16.05
Steel	2.68					
Conc	13.37					
50.32	15.30	0.00	0.00	0.00	15.30	15.30
Steel	2.59					
Conc	12.71					
74.22	5.79	0.00	0.00	0.00	5.79	5.79
Steel	1.00					
Conc	4.78					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.



FRAME RATINGS





South Elevation

$$C5, C1: 12'-11\frac{3}{32}'' + \frac{1}{2}(36.720'') = 14.4805'$$

$$C6, C2: 10'-7\frac{3}{8}'' + 2'-6'' + \frac{1}{2}(36.720'') = 14.6446'$$

$$C7: 11'-1\frac{7}{16}'' + 2'-6'' + \frac{1}{2}(36.720'') = 15.1498'$$

$$C3: 11'-1\frac{7}{16}'' + 2'-6'' + \frac{1}{2}(36.720'') = 15.1863'$$

$$C8, C4: 13'-9\frac{7}{32}'' + \frac{1}{2}(36.720'') = 15.3243'$$

$$\text{Sect 5-6, 23-24: } 7'' = 0.5833' \text{ (N+S)}$$

$$\text{Sect 6-7: } 27'-9\frac{7}{16}'' - 3'-1\frac{3}{8}'' - 7'' = 24.0469' \text{ (N)}$$

$$24'-6\frac{1}{8}'' - 3'-1\frac{3}{8}'' - 7'' = 20.7708' \text{ (S)}$$

$$\text{Sect 7-8, 10-11, 18-19, 21-22: } 3'-1\frac{7}{8}'' - 7\frac{7}{8}'' = 2.5' \text{ (N+S)}$$

$$\text{Sect 8-9, 9-10, 19-20, 20-21: } 7\frac{7}{8}'' = 0.6563' \text{ (N+S)}$$

$$\text{Sect 11-12, 17-18: } 12'-0'' - 3'-1\frac{3}{8}'' = 8.8437' \text{ (N+S)}$$

$$\text{Sect 12-13, 16-17: } 1'-5\frac{3}{4}'' = 1.4792' \text{ (N+S)}$$

$$\text{Sect 13-14: } 9'-0\frac{3}{4}'' - 1'-5\frac{3}{4}'' = 7.5833' \text{ (N)}$$

$$12'-4'' - 1'-5\frac{3}{4}'' = 10.8541' \text{ (S)}$$

$$\text{Sect 14-15: } 25'-0'' \text{ (N+S)}$$

$$\text{Sect 15-16: } 12'-5\frac{3}{4}'' - 1'-5\frac{3}{4}'' = 11'-0'' \text{ (N)}$$

$$9'-2\frac{1}{2}'' - 1'-5\frac{3}{4}'' = 7.7291' \text{ (S)}$$

$$\text{Sect 22-23: } 24'-5\frac{1}{16}'' - 3'-1\frac{3}{8}'' - 7'' = 20.6823' \text{ (N)}$$

$$27'-8\frac{5}{16}'' - 3'-1\frac{3}{8}'' - 7'' = 23.9531' \text{ (S)}$$

Section Properties:

See Excel Sheets for Section Properties

Capacity of WF 36x300 (calculated previously by CTG (see section K)
 $M_U = 3039 \text{ K-ft}$ $V_U = 603.4 \text{ K}$

Releases:

Supports (1, 2, 3, 4) Pinned

Top of Exterior Columns (1, 4) Pinned

Fictitious Deck: Start of 102 } To account for
 End of 101 } 2 Units

For Nodal Geometry, See Excel Sheet "Girder Node Geometry" in the directory:
 G:\CL11\0046\Bridges\Analysis\West Approach\Section C\STAAD

STAAD SPACE
 START JOB INFORMATION
 ENGINEER DATE 16-Feb-12
 JOB NAME Section C North Frame
 JOB NO P402110046
 ENGINEER NAME NRF
 END JOB INFORMATION

INPUT WIDTH 79
 UNIT FEET KIP
 JOINT COORDINATES
 1 0 0 0 ;
 2 27.7865 0 0 ;
 3 98.3281 0 0 ;
 4 122.7500 0 0 ;
 5 0 14.4805 0 ;
 6 0.5833 14.4839 0 ;
 7 24.6302 14.6260 0 ;
 8 27.1302 14.6407 0 ;
 9 27.7865 14.6446 0 ;
 10 28.4428 14.6493 0 ;
 11 30.9428 14.6672 0 ;
 12 39.7865 14.7305 0 ;
 13 41.2657 14.7411 0 ;
 14 48.849 14.7954 0 ;
 15 73.849 14.9745 0 ;
 16 84.849 15.0533 0 ;
 17 86.3282 15.0639 0 ;
 18 95.1719 15.1272 0 ;
 19 97.6719 15.1451 0 ;
 20 98.3282 15.1498 0 ;
 21 98.9845 15.1545 0 ;
 22 101.4845 15.1724 0 ;
 23 122.1668 15.3201 0 ;
 24 122.7500 15.3243 0 ;

100 0 25 0 ;
 101 27.7865 25 0 ;
 102 48.8490 25 0 ;
 103 73.8490 25 0 ;
 104 98.3282 25 0 ;
 105 122.7501 25 0 ;

MEMBER INCIDENCES
 1 1 5; 2 2 9; 3 3 20; 4 4 24; 5 5 6; 6 6 7; 7 8 7; 8 8 9; 9 9 10; 10 10 11;
 11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 17; 17 17 18; 18 19 18;
 19 19 20; 20 20 21; 21 21 22; 22 22 23; 23 23 24; 100 100 101; 101 101 102;
 102 102 103; 103 103 104; 104 104 105;

DEFINE MATERIAL START

ISOTROPIC STEEL
 E 4.176e+006
 POISSON 0.3
 DENSITY 0.489024
 ALPHA 6.5e-006
 DAMP 0.03

END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN

1 4 TABLE ST W10X45
 2 3 TABLE ST W14X211
 6 22 11 TO 17 TABLE ST W36X300

MEMBER PROPERTY AMERICAN

7 10 18 21 TAPERED 5.56 0.07875 3.06 1.38875 0.14 1.3125 0.1302
 5 23 TAPERED 1.59375 0.07875 1.59375 1.125 0.0625 1.38875 0.14
 8 9 19 20 TAPERED 5.56 0.17 5.56 1.38875 0.14 1.38875 0.14
 100 TO 104 TABLE ST W18X60

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

1 TO 4 PINNED

MEMBER RELEASE

101 END MX MY MZ
 102 START MX MY MZ
 1 4 END MX MY MZ

SLAVE FY MASTER 100 JOINT 5
 SLAVE FY MASTER 101 JOINT 9
 SLAVE FY MASTER 102 JOINT 14
 SLAVE FY MASTER 103 JOINT 15
 SLAVE FY MASTER 104 JOINT 20

SLAVE FY MASTER 105 JOINT 24

*DEFINE MOVING LOAD

**HS20 TRUCK

*TYPE 1 LOAD 16 16 4

*DIST 14 14

*TYPE 2 LOAD 4 16 16

*DIST 14 14

**2F1 TRUCK

*TYPE 3 LOAD 5 10

*DIST 10

*TYPE 4 LOAD 10 5

*DIST 10

**3F1 TRUCK

*TYPE 5 LOAD 6 8.5 8.5

*DIST 10 4

*TYPE 6 LOAD 8.5 8.5 6

*DIST 4 10

**4F1 TRUCK

*TYPE 7 LOAD 6 7 7 7

*DIST 10 4 4

*TYPE 8 LOAD 7 7 7 6

*DIST 4 4 10

**5C1 TRUCK

*TYPE 9 LOAD 6 8.5 8.5 8.5 8.5

*DIST 12 4 31 4

*TYPE 10 LOAD 8.5 8.5 8.5 8.5 6

*DIST 4 31 4 12

LOAD 1 LOADTYPE Dead TITLE SELF WEIGHT

SELFWEIGHT Y -1.05 LIST 1 TO 23

*Dead Loads reactions from FB models

LOAD 2 LOADTYPE Dead TITLE LOAD CASE 2

JOINT LOAD

5 FY -34.53

9 FY -82.156

14 FY -50.597

15 FY -72.841

20 FY -71.75

24 FY -31.035

**HS20 LOADING 1 TRUCK - FORWARD

*LOAD GENERATION 2000

*TYPE 1 -28 25 0 XINC 0.1

**HS20 LOADING 1 TRUCK - BACKWARD

*LOAD GENERATION 2000

*TYPE 2 -28 25 0 XINC 0.1

**2F1 FORWARD

*LOAD GENERATION 2000

*TYPE 3 -10 25 0 XINC 0.1

**2F1 BACKWARD

*LOAD GENERATION 2000

*TYPE 4 -10 25 0 XINC 0.1

**3F1 FORWARD

*LOAD GENERATION 2000

*TYPE 5 -14 25 0 XINC 0.1

**3F1 BACKWARD

*LOAD GENERATION 2000

*TYPE 6 -14 25 0 XINC 0.1

**4F1 FORWARD

*LOAD GENERATION 2000

*TYPE 7 -18 25 0 XINC 0.1

**4F1 BACKWARD

*LOAD GENERATION 2000

*TYPE 8 -18 25 0 XINC 0.1

*5C1 FORWARD

*LOAD GENERATION 2000

*TYPE 9 -51 25 0 XINC 0.1

**5C1 BACKWARD

*LOAD GENERATION 2000

*TYPE 10 -51 25 0 XINC 0.1

*

LOAD COMB 5000 ALL DEAD LOADS

1 1.0 2 1.0

PERFORM ANALYSIS

FINISH

STAAD SPACE
 START JOB INFORMATION
 ENGINEER DATE 24-Feb-12
 JOB NAME Section C South Frame
 JOB NO P402110046
 ENGINEER NAME NRF
 END JOB INFORMATION

INPUT WIDTH 79
 UNIT FEET KIP
 JOINT COORDINATES
 1 0 0 0 ;
 2 24.5104 0 0 ;
 3 95.0520 0 0 ;
 4 122.7447 0 0 ;
 5 0 14.4805 0 ;
 6 0.5833 14.4844 0 ;
 7 21.3541 14.6235 0 ;
 8 23.8541 14.6402 0 ;
 9 24.5104 14.6446 0 ;
 10 25.1667 14.6493 0 ;
 11 27.6667 14.6672 0 ;
 12 36.5104 14.7305 0 ;
 13 37.9896 14.7411 0 ;
 14 48.8437 14.8189 0 ;
 15 73.8437 14.9979 0 ;
 16 81.5728 15.0533 0 ;
 17 83.0520 15.0639 0 ;
 18 91.8957 15.1272 0 ;
 19 94.3957 15.1451 0 ;
 20 95.052 15.1498 0 ;
 21 95.7083 15.1539 0 ;
 22 98.2083 15.1697 0 ;
 23 122.1614 15.3206 0 ;
 24 122.7447 15.3243 0 ;

100 0 25 0 ;
 101 24.5104 25 0 ;
 102 48.8437 25 0 ;
 103 73.8437 25 0 ;
 104 95.052 25 0 ;
 105 122.7447 25 0 ;

MEMBER INCIDENCES

1 1 5; 2 2 9; 3 3 20; 4 4 24; 5 5 6; 6 6 7; 7 8 7; 8 8 9; 9 9 10; 10 10 11;
 11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 17; 17 17 18; 18 19 18;
 19 19 20; 20 20 21; 21 21 22; 22 22 23; 23 23 24; 100 100 101; 101 101 102;
 102 102 103; 103 103 104; 104 104 105;

DEFINE MATERIAL START

ISOTROPIC STEEL

E 4.176e+006
 POISSON 0.3
 DENSITY 0.489024
 ALPHA 6.5e-006
 DAMP 0.03

END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN

1 4 TABLE ST W10X45
 2 3 TABLE ST W14X211
 6 22 11 TO 17 TABLE ST W36X300

MEMBER PROPERTY AMERICAN

7 10 18 21 TAPERED 5.56 0.07875 3.06 1.38875 0.14 1.3125 0.1302
 5 23 TAPERED 1.59375 0.07875 1.59375 1.125 0.0625 1.38875 0.14
 8 9 19 20 TAPERED 5.56 0.17 5.56 1.38875 0.14 1.38875 0.14
 100 TO 104 TABLE ST W18X60

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

1 TO 4 PINNED

MEMBER RELEASE

101 END MX MY MZ
 102 START MX MY MZ
 1 4 END MX MY MZ

SLAVE FY MASTER 100 JOINT 5
 SLAVE FY MASTER 101 JOINT 9
 SLAVE FY MASTER 102 JOINT 14
 SLAVE FY MASTER 103 JOINT 15
 SLAVE FY MASTER 104 JOINT 20

```

SLAVE FY MASTER 105 JOINT 24
*DEFINE MOVING LOAD
**HS20 TRUCK
*TYPE 1 LOAD 16 16 4
*DIST 14 14
*TYPE 2 LOAD 4 16 16
*DIST 14 14
***2F1 TRUCK
*TYPE 3 LOAD 5 10
*DIST 10
*TYPE 4 LOAD 10 5
*DIST 10
**3F1 TRUCK
*TYPE 5 LOAD 6 8.5 8.5
*DIST 10 4
*TYPE 6 LOAD 8.5 8.5 6
*DIST 4 10
**4F1 TRUCK
*TYPE 7 LOAD 6 7 7 7
*DIST 10 4 4
*TYPE 8 LOAD 7 7 7 6
*DIST 4 4 10
***5C1 TRUCK
*TYPE 9 LOAD 6 8.5 8.5 8.5 8.5
*DIST 12 4 31 4
*TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
*DIST 4 31 4 12

```

```

LOAD 1 LOADTYPE Dead TITLE SELF WEIGHT
SELFWEIGHT Y -1.05 LIST 1 TO 23
*Dead Loads reactions from FB models
LOAD 2 LOADTYPE Dead TITLE LOAD CASE 2
JOINT LOAD
5 FY -29.647
9 FY -81.09
14 FY -56.793
15 FY -66.008
20 FY -74.195
24 FY -34.95

```

```

**HS20 LOADING 1 TRUCK - FORWARD
*LOAD GENERATION 2000
*TYPE 1 -28 25 0 XINC 0.1
**HS20 LOADING 1 TRUCK - BACKWARD
*LOAD GENERATION 2000
*TYPE 2 -28 25 0 XINC 0.1
**2F1 FORWARD
*LOAD GENERATION 2000
*TYPE 3 -10 25 0 XINC 0.1
**2F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 4 -10 25 0 XINC 0.1
**3F1 FORWARD
*LOAD GENERATION 2000
*TYPE 5 -14 25 0 XINC 0.1
**3F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 6 -14 25 0 XINC 0.1
**4F1 FORWARD
*LOAD GENERATION 2000
*TYPE 7 -18 25 0 XINC 0.1
**4F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 8 -18 25 0 XINC 0.1
**5C1 FORWARD
*LOAD GENERATION 2000
*TYPE 9 -51 25 0 XINC 0.1
**5C1 BACKWARD
*LOAD GENERATION 2000
*TYPE 10 -51 25 0 XINC 0.1

```

```

LOAD COMB 5000 ALL DEAD LOADS
1 1.0 2 1.0

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PERFORM ANALYSIS
FINISH

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Section C



Made By NRF
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Date 2/24/2012
Date 2/25/2012

Job No. P402110046
Sheet No. _____

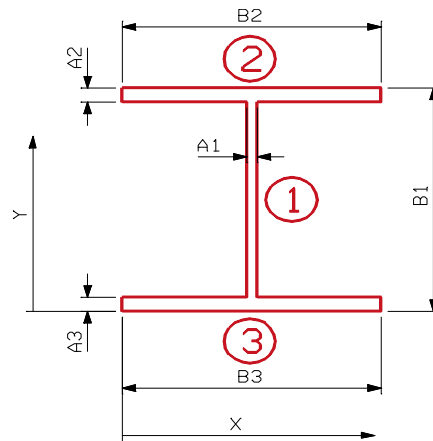
Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.9450$ in
- $B_1 = d = 19.1250$ in
- $A_2 = t_f = 0.7500$ in
- $B_2 = b_f = 13.5000$ in
- $A_3 = t_f = 1.6800$ in
- $B_3 = b_f = 16.6550$ in

$d_o = n/a$ in

d_o = stiffener spacing for shear check for no stiffeners use "N/A"



Frame Girder at FB Seat

* P.N.A. is in flange, so calculate Z by hand *

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		15.7768	9.5625	150.8654	366.4459	2.8031	123.9615	490.4073
2	Top Flange		10.1250	18.7500	189.8438	0.4746	11.9906	1455.7098	1456.1844
3	Bottom Flange		27.9804	0.8400	23.5035	6.5810	5.9194	980.4229	987.0039
Total			53.88		364.21	373.50		2560.09	2933.60
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.7594	in	$S_{top} =$	237.24	in ³	y-bar =	6.7594	in	$S_{top} =$	237.24	in ³
$I_x =$	2933.60	in ⁴	$S_{bott.} =$	434.00	in ³	$I_x =$	2933.60	in ⁴	$S_{bott.} =$	434.00	in ³
$C_{top} =$	12.3656	in	A =	53.8822	in ²	$C_{top} =$	12.3656	in	A =	53.8822	in ²
$C_{bottom} =$	6.7594	in	$r_x =$	7.3787	in	$C_{bottom} =$	6.7594	in	$r_x =$	7.3787	in
			Z =	333.39	in ³				Z =	333.39	in ³

Section C



Made By NRF
Checked By SFH

Date 2/24/2012
Date 2/25/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web	15.7768	8.3275	131.3811	1.1741	0.0000	0.0000	1.1741
2	Top Flange	10.1250	8.3275	84.3159	153.7734	0.0000	0.0000	153.7734
3	Bottom Flange	27.9804	8.3275	233.0068	646.7880	0.0000	0.0000	646.7880
Total		53.88		448.70	801.74		0.00	801.74
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	8.3275	in	S _{right} = 96.28 in ³	x-bar =	8.3275	in	S _{right} = 96.28 in ³
I _y =	801.74	in ⁴	S _{left} = 96.28 in ³	I _y =	801.74	in ⁴	S _{left} = 96.28 in ³
C _{right} =	8.3275	in	A = 53.8822 in ²	C _{right} =	8.3275	in	A = 53.8822 in ²
C _{left} =	8.3275	in	r _y = 3.8574 in	C _{left} =	8.3275	in	r _y = 3.8574 in

Non-composite Capacities*		
	AB	AI
M	916.83 k-ft	916.83 k-ft
V	301.97 k	301.97 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Section C



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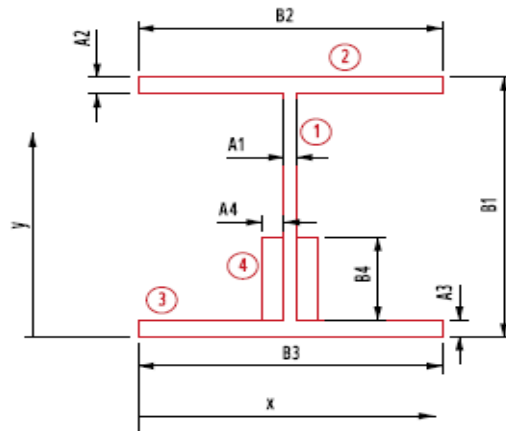
Date 2/24/2012
Date 2/25/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.9450$ in
- $B_1 = d = 36.7200$ in
- $A_2 = t_f = 1.6800$ in
- $B_2 = b_f = 16.6550$ in
- $A_3 = t_f = 1.5625$ in
- $B_3 = b_f = 15.7500$ in
- $A_4 = t = 0.7500$ in
- $B_4 = h = 9.0000$ in
- $d_o = n/a$ in



d_o = stiffener spacing for shear check for no stiffeners use "N/A"

Frame Girder @ short side of taper

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		31.6362	18.3600	580.8413	2954.6743	1.1092	38.9257	2993.6000
2	Top Flange		27.9804	35.8800	1003.9368	6.5810	18.6292	9710.5591	9717.1401
3	Bottom Flange		24.6094	0.7813	19.2261	5.0068	16.4695	6675.1633	6680.1700
4	Web Plates		13.5000	6.0625	81.8438	91.1250	11.1883	1689.8914	1781.0164
Total			97.73		1685.85	3057.39		18114.54	21171.93
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
\bar{y} =	17.2508	S_{top} =	1087.46 in ³	\bar{y} =	17.2508 in	S_{top} =	1087.46 in ³
I_x =	21171.93	S_{bottom} =	1227.30 in ³	I_x =	21171.93 in ⁴	S_{bottom} =	1227.30 in ³
C_{top} =	19.4692	A =	97.7260 in ²	C_{top} =	19.4692 in	A =	97.7260 in ²
C_{bottom} =	17.2508	r_x =	14.7189 in	C_{bottom} =	17.2508 in	r_x =	14.7189 in
		Z =	1330.24 in ³			Z =	1330.24 in ³

Section C



Made By NRF
 Checked By SFH

Date 2/24/2012
 Date 2/25/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		31.6362	8.3275	263.4508	2.3543	0.0000	0.0000	2.3543
2	Top Flange		27.9804	8.3275	233.0068	646.7880	0.0000	0.0000	646.7880
3	Bottom Flange		24.6094	8.3275	204.9346	508.7219	0.0000	0.0000	508.7219
4	Left web plate		6.7500	7.4800	50.4900	0.3164	0.8475	4.8482	5.1646
4	Right web plate		6.7500	9.1750	61.9313	0.3164	0.8475	4.8482	5.1646
Total			84.23		701.39	1157.86		0.00	1157.86
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	8.3275	S _{right} =	139.04 in ³	x-bar =	8.3275 in	S _{right} =	139.04 in ³
I _y =	1157.86	S _{left} =	139.04 in ³	I _y =	1157.86 in ⁴	S _{left} =	139.04 in ³
C _{right} =	8.3275	A =	84.2260 in ²	C _{right} =	8.3275 in	A =	84.2260 in ²
C _{left} =	8.3275	r _y =	3.7077 in	C _{left} =	8.3275 in	r _y =	3.7077 in

Non-composite Capacities*		
	AB	AI
M	3658.16 k-ft	3658.16 k-ft
V	863.91 k	863.91 k

*Compact Section

F_y = 33.00 ksi

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Section C



Made By NRF
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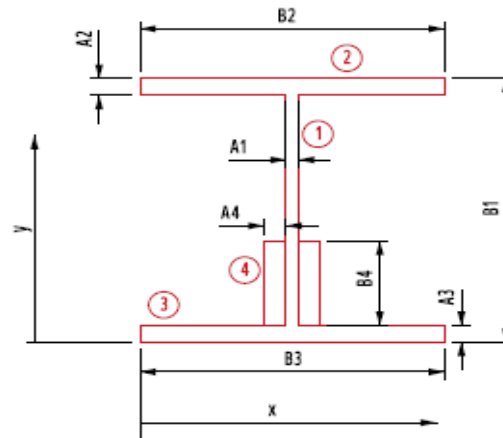
Date 2/24/2012
 Date 2/25/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.9450$ in
- $B_1 = d = 66.7200$ in
- $A_2 = t_f = 1.6800$ in
- $B_2 = b_f = 16.6550$ in
- $A_3 = t_f = 1.0000$ in
- $B_3 = b_f = 15.7500$ in
- $A_4 = t = 0.7500$ in
- $B_4 = h = 39.0000$ in
- $d_o = n/a$ in



d_o = stiffener spacing for shear check for no stiffeners use "N/A"

Frame Girder @ tall side of taper

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		60.5178	33.3600	2018.8738	20682.5714	2.2116	296.0006	20978.5720
2	Top Flange		27.9804	65.8800	1843.3488	6.5810	34.7316	33752.2917	33758.8727
3	Bottom Flange		15.7500	0.5000	7.8750	1.3125	30.6484	14794.3687	14795.6812
4	Web Plates		58.5000	20.5000	1199.2500	7414.8750	10.6484	6633.2344	14048.1094
Total			162.75		5069.35	28105.34		55475.90	83581.24
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 31.1484	$S_{top} = 2349.66$	in ³		y-bar = 31.1484	in	$S_{top} = 2349.66$	in ³
$I_x = 83581.24$	$S_{bott.} = 2683.32$	in ³		$I_x = 83581.24$	in ⁴	$S_{bott.} = 2683.32$	in ³
$C_{top} = 35.5716$	A = 162.7482	in ²		$C_{top} = 35.5716$	in	A = 162.7482	in ²
$C_{bottom} = 31.1484$	$r_x = 22.6619$	in		$C_{bottom} = 31.1484$	in	$r_x = 22.6619$	in
	Z = 3140.41	in ³				Z = 3140.41	in ³

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I_o	d	Ad^2	$I_{y, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)

Section C



Made By NRF
 Checked By SFH

Date 2/24/2012
 Date 2/25/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

1	Web	60.5178	8.3275	503.9620	4.5037	0.0000	0.0000	4.5037
2	Top Flange	27.9804	8.3275	233.0068	646.7880	0.0000	0.0000	646.7880
3	Bottom Flange	15.7500	8.3275	131.1581	325.5820	0.0000	0.0000	325.5820
4	Left web plate	29.2500	7.4800	218.7900	1.3711	0.8475	21.0090	22.3801
4	Right web plate	29.2500	9.1750	268.3688	1.3711	0.8475	21.0090	22.3801
Total		104.25		868.13	976.87		0.00	976.87
Section Losses		A	x	Ax	I_o	d	Ad²	I_{y,loss}
Loss #	b (in)	h (in)	(in²)	(in)	(in³)	(in⁴)	(in)	(in⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar = 8.3275	S _{right} = 117.31	in ³		x-bar = 8.3275	S _{right} = 117.31	in ³	
I _y = 976.87	S _{left} = 117.31	in ³		I _y = 976.87	S _{left} = 117.31	in ³	
C _{right} = 8.3275	A = 104.2482	in ²		C _{right} = 8.3275	A = 104.2482	in ²	
C _{left} = 8.3275	r _y = 3.0612	in		C _{left} = 8.3275	r _y = 3.0612	in	

Non-composite Capacities*		
	AB	AI
M	8636.13 k-ft	8636.13 k-ft
V	2278.00 k	2278.00 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - Frame Girder Ratings

Calculated: CTG 3/1/2012

Checked: SFH 3/2/2012

*capacities taken from spreadsheet or hand calculations

	Location	Impact	LLDF	Service Moment from STAAD Model		Total Moment	Service Shear from STAAD Model		Total Shear	RF - Moment			RF - Shear			
				D	L		Total L+I	D		L	Total L+I	C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory
						Total L+I			Total L+I							
HS20-44	North Girder	Beam Seat at FB1	1.30	3.729	13.31	4.49	21.79	22.88	7.71	37.35	916.83	19.02	31.71	301.97	3.36	5.60
		Rear End Span	1.30	3.729	654.58	189.77	919.96	30.45	7.71	37.35	3039.00	1.10	1.83	603.40	6.96	11.60
		Short End of Taper at FB 2	1.30	3.729	654.58	189.77	919.96	30.45	7.71	37.35	3658.16	1.41	2.34	863.91	10.17	16.95
		Tall End of Taper at FB 2	1.30	3.729	731.75	209.03	1013.33	31.33	7.71	37.35	8636.13	3.49	5.83	2278.00	27.60	46.02
		At FB2	1.30	3.729	896.54	254.03	1231.46	69.92	20.48	99.3	8636.13	2.80	4.66	2278.00	10.15	16.92
		Tall End of Taper at FB 2	1.26	3.729	850.79	240.60	1130.45	69.49	20.48	96.24	8636.13	3.07	5.12	2278.00	10.48	17.46
		Short End of Taper at FB 2	1.26	3.729	678.22	189.43	890.03	68.61	20.48	96.24	3658.16	1.44	2.40	863.91	3.71	6.18
		Center Span	1.26	3.729	728.94	241.35	1133.99	70.52	20.79	97.68	3039.00	0.85	1.42	603.40	2.41	4.02
		Short End of Taper at FB 5	1.26	3.729	728.94	206.20	968.82	70.52	20.79	97.68	3658.16	1.29	2.15	863.91	3.64	6.07
		Tall End of Taper at FB 5	1.26	3.729	906.29	257.80	1211.26	71.40	20.79	97.68	8636.13	2.84	4.73	2278.00	10.31	17.19
	At FB5	1.30	3.729	953.29	271.36	1315.45	71.83	20.79	100.78	8636.13	2.59	4.32	2278.00	9.99	16.65	
	Tall End of Taper at FB 5	1.30	3.729	780.02	224.27	1087.17	36.65	9.44	45.74	8636.13	3.23	5.39	2278.00	22.47	37.46	
	Short End of Taper at FB 5	1.30	3.729	689.55	200.67	972.81	35.77	9.44	45.74	3658.16	1.31	2.18	863.91	8.24	13.73	
	Forward End Span	1.30	3.729	689.55	200.67	972.81	35.77	9.44	45.74	3039.00	1.01	1.69	603.40	5.61	9.35	
	Beam Seat At FB6	1.30	3.729	17.03	5.50	26.68	29.26	9.44	45.74	3039.00	52.11	86.87	603.40	5.70	9.50	
	South Girder	Beam Seat at FB1	1.30	3.729	15.97	5.16	25.02	27.44	8.85	42.9	916.83	16.50	27.51	301.97	2.86	4.77
		Rear End Span	1.30	3.729	653.83	188.98	916.09	33.98	8.85	42.9	3039.00	1.10	1.84	603.40	6.01	10.01
		Short End of Taper at FB 2	1.30	3.729	653.83	188.98	916.09	33.98	8.85	42.9	3658.16	1.41	2.35	863.91	8.81	14.68
		Tall End of Taper at FB 2	1.30	3.729	739.82	211.10	1023.34	34.86	8.85	42.9	8636.13	3.46	5.76	2278.00	23.98	39.98
		At FB2	1.30	3.729	905.90	257.51	1248.34	66.97	18.92	91.73	8636.13	2.75	4.59	2278.00	11.01	18.35
Tall End of Taper at FB 2		1.26	3.729	862.08	245.16	1151.89	66.54	18.92	88.91	8636.13	3.01	5.01	2278.00	11.36	18.94	
Short End of Taper at FB 2		1.26	3.729	696.88	198.10	930.79	65.66	18.92	88.91	3658.16	1.36	2.27	863.91	4.04	6.73	
Center Span		1.26	3.729	696.88	215.31	1011.66	72.86	22.45	105.49	3039.00	0.97	1.62	603.40	2.22	3.70	
Short End of Taper at FB 5		1.26	3.729	693.01	195.64	919.23	72.86	22.45	105.49	3658.16	1.38	2.30	863.91	3.36	5.60	
Tall End of Taper at FB 5		1.26	3.729	876.20	251.32	1180.84	73.73	22.45	105.49	8636.13	2.93	4.88	2278.00	9.53	15.89	
At FB5	1.30	3.729	924.74	265.98	1289.37	74.17	22.45	108.84	8636.13	2.66	4.43	2278.00	9.24	15.40		
Tall End of Taper at FB 5	1.30	3.729	755.42	219.79	1065.49	32.28	8.13	39.41	8636.13	3.31	5.52	2278.00	26.15	43.59		
Short End of Taper at FB 5	1.30	3.729	675.86	199.47	966.97	31.41	8.13	39.41	3658.16	1.32	2.21	863.91	9.62	16.04		
Forward End Span	1.30	3.729	675.86	199.47	966.97	31.41	8.13	39.41	3039.00	1.03	1.72	603.40	6.58	10.97		
Beam Seat At FB6	1.30	3.729	13.89	4.74	22.99	23.87	8.13	39.41	3039.00	60.55	100.94	603.40	6.69	11.16		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - Frame Girder Ratings

Calculated: CTG 3/1/2012

Checked: SFH 3/2/2012

*capacities taken from spreadsheet or hand calculations

2F1	Girder	Location	Impact	LLDF	Service Moment from STAAD Model		Total Moment		Service Shear from STAAD Model		Total Shear		RF - Moment			RF - Shear		
					D	L	Total L+I	D	L	Total L+I	C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating		
2F1	North Girder	Beam Seat at FB1	1.30	3.729	13.31	2.09	10.13	22.88	3.58	17.36	916.83	---	68.31	301.97	---	12.06		
		Rear End Span	1.30	3.729	654.58	88.23	427.69	30.45	3.58	17.36	3039.00	---	3.94	603.40	---	24.98		
		Short End of Taper at FB 2	1.30	3.729	654.58	88.23	427.69	30.45	3.58	17.36	3658.16	---	5.05	863.91	---	36.53		
		Tall End of Taper at FB 2	1.30	3.729	731.75	97.18	471.1	31.33	3.58	17.36	8636.13	---	12.55	2278.00	---	99.13		
		At FB2	1.30	3.729	896.54	115.84	561.58	69.92	10.15	49.22	8636.13	---	10.23	2278.00	---	34.18		
		Tall End of Taper at FB 2	1.26	3.729	850.79	109.18	512.99	69.49	10.15	47.71	8636.13	---	11.29	2278.00	---	35.27		
		Short End of Taper at FB 2	1.26	3.729	678.22	83.80	393.71	68.61	10.15	47.71	3658.16	---	5.42	863.91	---	12.49		
		Center Span	1.26	3.729	728.94	116.37	546.77	70.52	10.15	47.71	3039.00	---	2.94	603.40	---	8.25		
		Short End of Taper at FB 5	1.26	3.729	728.94	94.61	444.52	70.52	9.85	46.26	3658.16	---	4.69	863.91	---	12.84		
		Tall End of Taper at FB 5	1.26	3.729	906.29	119.06	559.42	71.40	9.85	46.26	8636.13	---	10.26	2278.00	---	36.34		
		At FB5	1.30	3.729	953.29	125.50	608.36	71.83	9.85	47.73	8636.13	---	9.35	2278.00	---	35.21		
		Tall End of Taper at FB 5	1.30	3.729	780.02	104.65	507.3	36.65	4.40	21.34	8636.13	---	11.56	2278.00	---	80.40		
	Short End of Taper at FB 5	1.30	3.729	689.55	93.64	453.93	35.77	4.40	21.34	3658.16	---	4.68	863.91	---	29.46			
	Forward End Span	1.30	3.729	689.55	93.64	453.93	35.77	4.40	21.34	3039.00	---	3.63	603.40	---	20.07			
	Beam Seat At FB6	1.30	3.729	17.03	2.57	12.45	29.26	4.40	21.34	3039.00	---	186.40	603.40	---	20.38			
	South Girder	Beam Seat at FB1	1.30	3.729	15.97	2.48	12.02	27.44	4.25	20.6	916.83	---	57.34	301.97	---	9.94		
		Rear End Span	1.30	3.729	653.83	90.77	440	33.98	4.25	20.6	3039.00	---	3.83	603.40	---	20.88		
		Short End of Taper at FB 2	1.30	3.729	653.83	90.77	440	33.98	4.25	20.6	3658.16	---	4.91	863.91	---	30.61		
		Tall End of Taper at FB 2	1.30	3.729	739.82	101.39	491.51	34.86	4.25	20.6	8636.13	---	12.01	2278.00	---	83.37		
		At FB2	1.30	3.729	905.90	121.15	587.31	66.97	9.46	45.86	8636.13	---	9.77	2278.00	---	36.75		
		Tall End of Taper at FB 2	1.26	3.729	862.08	114.95	540.08	66.54	9.46	44.45	8636.13	---	10.70	2278.00	---	37.93		
		Short End of Taper at FB 2	1.26	3.729	696.88	91.30	428.99	65.66	9.46	44.45	3658.16	---	4.94	863.91	---	13.47		
		Center Span	1.26	3.729	696.88	109.13	512.73	72.86	10.69	50.24	3039.00	---	3.20	603.40	---	7.79		
		Short End of Taper at FB 5	1.26	3.729	693.01	89.02	418.26	72.86	10.69	50.24	3658.16	---	5.07	863.91	---	11.78		
Tall End of Taper at FB 5		1.26	3.729	876.20	115.38	542.14	73.73	10.69	50.24	8636.13	---	10.64	2278.00	---	33.41			
At FB5		1.30	3.729	924.74	122.34	593.06	74.17	10.69	51.84	8636.13	---	9.64	2278.00	---	32.37			
Tall End of Taper at FB 5		1.30	3.729	755.42	101.91	494.03	32.28	3.77	18.27	8636.13	---	11.92	2278.00	---	94.14			
Short End of Taper at FB 5	1.30	3.729	675.86	92.49	448.35	31.41	3.77	18.27	3658.16	---	4.77	863.91	---	34.65				
Forward End Span	1.30	3.729	675.86	92.49	448.35	31.41	3.77	18.27	3039.00	---	3.71	603.40	---	23.69				
Beam Seat At FB6	1.30	3.729	13.89	2.20	10.66	23.87	3.77	18.27	3039.00	---	217.99	603.40	---	24.10				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - Frame Girder Ratings

Calculated: CTG 3/1/2012

Checked: SFH 3/2/2012

*capacities taken from spreadsheet or hand calculations

3F1	Girder	Location	Impact	LLDF	Service Moment from STAAD Model		Total Moment		Service Shear from STAAD Model		Total Shear		RF - Moment			RF - Shear		
					D	L	Total L+I	D	L	Total L+I	C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating		
North Girder	Beam Seat at FB1	1.30	3.729	13.31	3.12	15.1	22.88	5.34	25.89	916.83	---	45.82	301.97	---	8.09			
	Rear End Span	1.30	3.729	654.58	131.52	637.58	30.45	5.34	25.89	3039.00	---	2.64	603.40	---	16.75			
	Short End of Taper at FB 2	1.30	3.729	654.58	131.52	637.58	30.45	5.34	25.89	3658.16	---	3.39	863.91	---	24.49			
	Tall End of Taper at FB 2	1.30	3.729	731.75	144.87	702.3	31.33	5.34	25.89	8636.13	---	8.42	2278.00	---	66.47			
	At FB2	1.30	3.729	896.54	173.84	842.72	69.92	14.82	71.84	8636.13	---	6.82	2278.00	---	23.42			
	Tall End of Taper at FB 2	1.26	3.729	850.79	164.12	771.14	69.49	14.82	69.63	8636.13	---	7.51	2278.00	---	24.17			
	Short End of Taper at FB 2	1.26	3.729	678.22	127.11	597.25	68.61	14.82	69.63	3658.16	---	3.58	863.91	---	8.56			
	Center Span	1.26	3.729	728.94	175.07	822.55	70.52	14.85	69.78	3039.00	---	1.96	603.40	---	5.64			
	Short End of Taper at FB 5	1.26	3.729	728.94	143.30	673.28	70.52	14.85	69.78	3658.16	---	3.10	863.91	---	8.51			
	Tall End of Taper at FB 5	1.26	3.729	906.29	180.18	846.57	71.40	14.85	69.78	8636.13	---	6.78	2278.00	---	24.09			
	At FB5	1.30	3.729	953.29	189.88	920.47	71.83	14.85	71.99	8636.13	---	6.18	2278.00	---	23.34			
	Tall End of Taper at FB 5	1.30	3.729	780.02	158.16	766.72	36.65	6.66	32.26	8636.13	---	7.65	2278.00	---	53.18			
	Short End of Taper at FB 5	1.30	3.729	689.55	141.52	686.06	35.77	6.66	32.26	3658.16	---	3.10	863.91	---	19.49			
	Forward End Span	1.30	3.729	689.55	141.52	686.06	35.77	6.66	32.26	3039.00	---	2.40	603.40	---	13.28			
	Beam Seat At FB6	1.30	3.729	17.03	3.88	18.81	29.26	6.66	32.26	3039.00	---	123.37	603.40	---	13.48			
	South Girder	Beam Seat at FB1	1.30	3.729	15.97	3.66	17.74	27.44	6.27	30.41	916.83	---	38.85	301.97	---	6.74		
		Rear End Span	1.30	3.729	653.83	133.97	649.46	33.98	6.27	30.41	3039.00	---	2.59	603.40	---	14.15		
		Short End of Taper at FB 2	1.30	3.729	653.83	133.97	649.46	33.98	6.27	30.41	3658.16	---	3.33	863.91	---	20.74		
		Tall End of Taper at FB 2	1.30	3.729	739.82	149.66	725.49	34.86	6.27	30.41	8636.13	---	8.14	2278.00	---	56.48		
		At FB2	1.30	3.729	905.90	180.08	872.97	66.97	13.75	66.67	8636.13	---	6.57	2278.00	---	25.28		
		Tall End of Taper at FB 2	1.26	3.729	862.08	171.06	803.71	66.54	13.75	64.61	8636.13	---	7.19	2278.00	---	26.09		
Short End of Taper at FB 2		1.26	3.729	696.88	136.67	642.16	65.66	13.75	64.61	3658.16	---	3.30	863.91	---	9.27			
Center Span		1.26	3.729	696.88	159.02	747.16	72.86	16.12	75.74	3039.00	---	2.20	603.40	---	5.17			
Short End of Taper at FB 5		1.26	3.729	693.01	135.02	634.38	72.86	16.12	75.74	3658.16	---	3.34	863.91	---	7.81			
Tall End of Taper at FB 5		1.26	3.729	876.20	174.74	821.04	73.73	16.12	75.74	8636.13	---	7.02	2278.00	---	22.16			
At FB5		1.30	3.729	924.74	185.22	897.91	74.17	16.12	78.14	8636.13	---	6.37	2278.00	---	21.48			
Tall End of Taper at FB 5		1.30	3.729	755.42	154.12	747.14	32.28	5.70	27.63	8636.13	---	7.88	2278.00	---	62.25			
Short End of Taper at FB 5		1.30	3.729	675.86	139.87	678.05	31.41	5.70	27.63	3658.16	---	3.15	863.91	---	22.91			
Forward End Span		1.30	3.729	675.86	139.87	678.05	31.41	5.70	27.63	3039.00	---	2.45	603.40	---	15.66			
Beam Seat At FB6	1.30	3.729	13.89	3.33	16.12	23.87	5.70	27.63	3039.00	---	144.16	603.40	---	15.94				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - Frame Girder Ratings

Calculated: CTG 3/1/2012

Checked: SFH 3/2/2012

*capacities taken from spreadsheet or hand calculations

4F1	Girder	Location	Impact	LLDF	Service Moment from STAAD Model		Total Moment		Service Shear from STAAD Model		Total Shear		RF - Moment			RF - Shear		
					D	L	Total L+I	D	L	Total L+I	C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating		
North Girder	Beam Seat at FB1	1.30	3.729	13.31	3.54	17.15	22.88	6.06	29.4	916.83	---	40.35	301.97	---	7.12			
	Rear End Span	1.30	3.729	654.58	149.36	724.06	30.45	6.06	29.4	3039.00	---	2.32	603.40	---	14.75			
	Short End of Taper at FB 2	1.30	3.729	654.58	149.36	724.06	30.45	6.06	29.4	3658.16	---	2.98	863.91	---	21.57			
	Tall End of Taper at FB 2	1.30	3.729	731.75	164.52	797.55	31.33	6.06	29.4	8636.13	---	7.41	2278.00	---	58.54			
	At FB2	1.30	3.729	896.54	198.83	963.85	69.92	16.71	81	8636.13	---	5.96	2278.00	---	20.77			
	Tall End of Taper at FB 2	1.26	3.729	850.79	188.05	883.55	69.49	16.71	78.51	8636.13	---	6.56	2278.00	---	21.43			
	Short End of Taper at FB 2	1.26	3.729	678.22	147.00	690.7	68.61	16.71	78.51	3658.16	---	3.09	863.91	---	7.59			
	Center Span	1.26	3.729	728.94	200.22	940.76	70.52	17.05	80.09	3039.00	---	1.71	603.40	---	4.91			
	Short End of Taper at FB 5	1.26	3.729	728.94	165.35	776.89	70.52	17.05	80.09	3658.16	---	2.68	863.91	---	7.42			
	Tall End of Taper at FB 5	1.26	3.729	906.29	207.65	975.66	71.40	17.05	80.09	8636.13	---	5.88	2278.00	---	20.99			
	At FB5	1.30	3.729	953.29	218.78	1060.57	71.83	17.05	82.63	8636.13	---	5.36	2278.00	---	20.34			
	Tall End of Taper at FB 5	1.30	3.729	780.02	181.97	882.13	36.65	7.66	37.12	8636.13	---	6.65	2278.00	---	46.22			
	Short End of Taper at FB 5	1.30	3.729	689.55	162.83	789.33	35.77	7.66	37.12	3658.16	---	2.69	863.91	---	16.94			
	Forward End Span	1.30	3.729	689.55	162.83	789.33	35.77	7.66	37.12	3039.00	---	2.09	603.40	---	11.54			
	Beam Seat At FB6	1.30	3.729	17.03	4.47	21.64	29.26	7.66	37.12	3039.00	---	107.24	603.40	---	11.72			
	South Girder	Beam Seat at FB1	1.30	3.729	15.97	4.13	20.03	27.44	7.08	34.34	916.83	---	34.41	301.97	---	5.97		
		Rear End Span	1.30	3.729	653.83	151.26	733.24	33.98	7.08	34.34	3039.00	---	2.30	603.40	---	12.53		
		Short End of Taper at FB 2	1.30	3.729	653.83	151.26	733.24	33.98	7.08	34.34	3658.16	---	2.95	863.91	---	18.36		
		Tall End of Taper at FB 2	1.30	3.729	739.82	168.96	819.09	34.86	7.08	34.34	8636.13	---	7.21	2278.00	---	50.01		
		At FB2	1.30	3.729	905.90	203.69	987.4	66.97	15.65	75.85	8636.13	---	5.81	2278.00	---	22.22		
		Tall End of Taper at FB 2	1.26	3.729	862.08	193.73	910.26	66.54	15.65	73.51	8636.13	---	6.35	2278.00	---	22.93		
		Short End of Taper at FB 2	1.26	3.729	696.88	155.82	732.12	65.66	15.65	73.51	3658.16	---	2.89	863.91	---	8.15		
		Center Span	1.26	3.729	696.88	181.25	851.59	72.86	18.48	86.82	3039.00	---	1.93	603.40	---	4.51		
		Short End of Taper at FB 5	1.26	3.729	693.01	156.10	733.42	72.86	18.48	86.82	3658.16	---	2.89	863.91	---	6.82		
Tall End of Taper at FB 5		1.26	3.729	876.20	201.60	947.23	73.73	18.48	86.82	8636.13	---	6.09	2278.00	---	19.33			
At FB5		1.30	3.729	924.74	213.61	1035.51	74.17	18.48	89.58	8636.13	---	5.52	2278.00	---	18.73			
Tall End of Taper at FB 5		1.30	3.729	755.42	177.46	860.25	32.28	6.56	31.82	8636.13	---	6.84	2278.00	---	54.05			
Short End of Taper at FB 5		1.30	3.729	675.86	161.05	780.71	31.41	6.56	31.82	3658.16	---	2.74	863.91	---	19.90			
Forward End Span		1.30	3.729	675.86	161.05	780.71	31.41	6.56	31.82	3039.00	---	2.13	603.40	---	13.60			
Beam Seat At FB6		1.30	3.729	13.89	3.83	18.56	23.87	6.56	31.82	3039.00	---	125.20	603.40	---	13.84			

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - Frame Girder Ratings

Calculated: CTG 3/1/2012

Checked: SFH 3/2/2012

*capacities taken from spreadsheet or hand calculations

5C1	Girder	Location	Impact	LLDF	Service Moment from STAAD Model		Total Moment		Service Shear from STAAD Model		Total Shear		RF - Moment			RF - Shear		
					D	L	Total L+I	D	L	Total L+I	C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating		
5C1	North Girder	Beam Seat at FB1	1.30	3.729	13.31	3.38	16.4	22.88	5.80	28.11	916.83	---	42.19	301.97	---	7.45		
		Rear End Span	1.30	3.729	654.58	142.85	692.47	30.45	5.80	28.11	3039.00	---	2.43	603.40	---	15.43		
		Short End of Taper at FB 2	1.30	3.729	654.58	142.85	692.47	30.45	5.80	28.11	3658.16	---	3.12	863.91	---	22.56		
		Tall End of Taper at FB 2	1.30	3.729	731.75	157.34	762.76	31.33	5.80	28.11	8636.13	---	7.75	2278.00	---	61.22		
		At FB2	1.30	3.729	896.54	191.30	927.37	69.92	15.48	75.03	8636.13	---	6.20	2278.00	---	22.42		
		Tall End of Taper at FB 2	1.26	3.729	850.79	181.14	851.1	69.49	15.48	72.72	8636.13	---	6.81	2278.00	---	23.14		
		Short End of Taper at FB 2	1.26	3.729	678.22	142.45	669.28	68.61	15.48	72.72	3658.16	---	3.19	863.91	---	8.19		
		Center Span	1.26	3.729	728.94	174.73	820.99	70.52	15.48	72.72	3039.00	---	1.96	603.40	---	5.41		
		Short End of Taper at FB 5	1.26	3.729	728.94	150.99	709.45	70.52	15.26	71.69	3658.16	---	2.94	863.91	---	8.29		
		Tall End of Taper at FB 5	1.26	3.729	906.29	189.07	888.33	71.40	15.26	71.69	8636.13	---	6.46	2278.00	---	23.45		
	South Girder	At FB5	1.30	3.729	953.29	199.07	965.02	71.83	15.26	73.96	8636.13	---	5.90	2278.00	---	22.72		
		Tall End of Taper at FB 5	1.30	3.729	780.02	164.66	798.21	36.65	6.93	33.58	8636.13	---	7.35	2278.00	---	51.09		
		Short End of Taper at FB 5	1.30	3.729	689.55	147.34	714.25	35.77	6.93	33.58	3658.16	---	2.97	863.91	---	18.72		
		Forward End Span	1.30	3.729	689.55	147.34	714.25	35.77	6.93	33.58	3039.00	---	2.31	603.40	---	12.76		
		Beam Seat At FB6	1.30	3.729	17.03	4.04	19.59	29.26	6.93	33.58	3039.00	---	118.46	603.40	---	12.95		
		Beam Seat at FB1	1.30	3.729	15.97	3.86	18.73	27.44	6.63	32.12	916.83	---	36.80	301.97	---	6.38		
		Rear End Span	1.30	3.729	653.83	141.47	685.82	33.98	6.63	32.12	3039.00	---	2.46	603.40	---	13.39		
		Short End of Taper at FB 2	1.30	3.729	653.83	141.47	685.82	33.98	6.63	32.12	3658.16	---	3.15	863.91	---	19.63		
		Tall End of Taper at FB 2	1.30	3.729	739.82	158.04	766.12	34.86	6.63	32.12	8636.13	---	7.71	2278.00	---	53.47		
		At FB2	1.30	3.729	905.90	191.95	930.49	66.97	14.29	69.27	8636.13	---	6.17	2278.00	---	24.33		
Tall End of Taper at FB 2	1.26	3.729	862.08	182.57	857.79	66.54	14.29	67.14	8636.13	---	6.74	2278.00	---	25.11				
Short End of Taper at FB 2	1.26	3.729	696.88	146.84	689.93	65.66	14.29	67.14	3658.16	---	3.07	863.91	---	8.92				
Center Span	1.26	3.729	696.88	157.16	738.42	72.86	16.69	78.44	3039.00	---	2.22	603.40	---	4.99				
Short End of Taper at FB 5	1.26	3.729	693.01	144.40	678.46	72.86	16.69	78.44	3658.16	---	3.13	863.91	---	7.54				
Tall End of Taper at FB 5	1.26	3.729	876.20	186.09	874.37	73.73	16.69	78.44	8636.13	---	6.60	2278.00	---	21.40				
At FB5	1.30	3.729	924.74	197.04	955.21	74.17	16.69	80.93	8636.13	---	5.99	2278.00	---	20.74				
Tall End of Taper at FB 5	1.30	3.729	755.42	162.96	789.99	32.28	6.03	29.22	8636.13	---	7.45	2278.00	---	58.86				
Short End of Taper at FB 5	1.30	3.729	675.86	147.89	716.94	31.41	6.03	29.22	3658.16	---	2.98	863.91	---	21.67				
Forward End Span	1.30	3.729	675.86	147.89	716.94	31.41	6.03	29.22	3039.00	---	2.32	603.40	---	14.81				
Beam Seat At FB6	1.30	3.729	13.89	3.52	17.04	23.87	6.03	29.22	3039.00	---	136.37	603.40	---	15.07				

West Approach - Section C - Columns

End Columns - WF10x41
 Interior Columns - WF14x211

End Columns

WF10x41

$h = 10"$
 $b_f = 8"$
 $t_f = 0.558"$
 $t_w = 0.328"$

$A = 12.06 \text{ in}^2$
 $I_x = 222.4 \text{ in}^4$
 $I_y = 47.7 \text{ in}^4$

$r_x = 4.29"$
 $r_y = 1.99"$
 $S_x = 44.5 \text{ in}^3$
 $S_y = 11.9 \text{ in}^3$

→ Strong axis parallel to girders

Capacity - AASHTO 10.54 - Concentrically Loaded Columns

$$P_u = 0.85 A_s F_{cr}$$

Check: $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$E = 29,000 \text{ ksi}$ $F_y = 33 \text{ ksi}$
 $K = 1.0$ (Pin-Pin) (AASHTO App. C)
 $L_c = \approx 165.5" @ \text{FB6} \leftarrow \text{controls}$
 $= \approx 155.4" @ \text{FB1}$

$r_y: 83.2 < 131.7$
 $r_x: 38.6 < 131.7$

$$F_{cr} = F_y \left[1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right] \Rightarrow 33 \text{ ksi} \left[1 - \frac{33 \text{ ksi} (83.2)^2}{4\pi^2 (29,000 \text{ ksi})} \right] = 26.42 \text{ ksi}$$

$$P_u = 0.85 (12.06 \text{ in}^2) (26.42 \text{ ksi}) = 270.8 \text{ k} \leftarrow$$

Combined Axial + Bending

$$\frac{P}{0.85 A_s F_{cr}} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c} \right)} \leq 1.0$$

$M_{small} = 0$
 $C = 0.6 + 0.4 \frac{M_{small}}{M} = 0.6$
 $F_{cr} = 26.42 \text{ ksi}$

West App. Sect. C Columns

$$F_c = \frac{E\pi^2}{\left(\frac{KL_c}{r}\right)^2} \Rightarrow F_{cx} = \frac{29,000 \text{ ksi } \pi^2}{(38.6)^2} = 192.1 \text{ ksi}$$

$$F_{cy} = \frac{29,000 \text{ ksi } \pi^2}{(83.2)^2} = 41.3 \text{ ksi}$$

Interior Columns

WF 14 x 211

h = 15.75"

A = 62.07 in²

r_x = 6.56 in

b_f = 15.8"

I_x = 2671.4 in⁴

r_y = 4.07 in

t_f = 1.563"

I_y = 1028.6 in⁴

S_x = 339.2 in³

t_w = 0.980"

S_y = 130.2 in³

Capacity - AASHTO 10.54 - Concentrically Loaded Column

$$P_n = 0.85 A_s F_{cr}$$

Check $\frac{KL_c}{r} < \sqrt{\frac{2\pi^2 E}{F_y}}$

E, F_y same

K = 0.8 (Pin-Fixed) (AASHTO App. C)

L_c = 133.9" @ FB 6 (N) ← governs

= 127.4" @ FB 1

r_y: 26.3
r_x: 16.33

$$\therefore F_{cr} = 33 \text{ ksi} \left[1 - \frac{33 \text{ ksi} (26.3)^2}{4\pi^2 (29,000 \text{ ksi})} \right] = 32.3 \text{ ksi}$$

$$\therefore P_n = 0.85 (62.07 \text{ in}^2) (32.3 \text{ ksi}) = 1704.1 \text{ k} \leftarrow$$

Combined Axial & Bending

$$\frac{P}{0.85 A_s F_{cr}} + \frac{MC}{M_n \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$$

C = 0.6

F_{cr} = 32.3 ksi

West App. Sect. C Columns

$$F_{cx} = \frac{E \pi^2}{\left(\frac{K L_c}{r}\right)^2} \Rightarrow F_{cx} = \frac{29,000 \text{ ksi } \pi^2}{(16.33)^2} = 1073.3 \text{ ksi}$$

$$F_{cy} = \frac{29,000 \text{ ksi } \pi^2}{(26.3)^2} = 413.8 \text{ ksi}$$

Column Compactness Check:

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}} = 22.62$$

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}} = 105.86$$

$$\frac{L_b}{r_y} \leq \frac{(3.6 - 2.2 \frac{M_1}{M_2}) \times 10^6}{F_y} = 109.1$$

WF 10x41: $\frac{b}{t} = 14.34 < 22.62 \checkmark$

$\frac{D}{t_w} = 27.09 < 105.86 \checkmark$

$\frac{L_b}{r_y} = 83.2 < 109.1 \checkmark$

\therefore WF 10x41 Columns Are Compact

$M_n = F_y Z$

WF 14x211: $\frac{b}{t} = 10.1 < 22.62 \checkmark$

$\frac{D}{t_w} = 12.9 < 105.86 \checkmark$

$\frac{L_b}{r_y} = 32.9 < 109.1 \checkmark$

\therefore WF 14x211 Columns Are Compact

$M_n = F_y Z$

\therefore Column Capacities:

WF 10x41: $M_n = (33 \text{ ksi}) (46.8 \text{ in}^3) = 1544 \text{ k-in} = 128.7 \text{ k-ft}$

WF 14x211: $M_n = (33 \text{ ksi}) (390 \text{ in}^3) = 12870 \text{ k-in} = 1072.5 \text{ k-ft}$

West App. Sect. C Columns

To Determine Rating Factor for the Combined Axial & Bending, Solve for the β in the Following Equation:

$$\text{Inventory: } \frac{2.17\beta P_{LL} + 1.3 P_{DL}}{0.85 A_s F_c} + \frac{(2.17\beta M_{LL} + 1.3 M_{DL}) 0.6}{M_n \left(1 - \frac{2.17\beta P_{LL} + 1.3 P_{DL}}{A_s F_c}\right)} = 1.0$$

→ For Operating Replace 2.17 with 1.3

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Columns 5 & 8 Ratings



Calculated: CTG 3/1/2012
 Checked: NRF 3/2/2012

DL Factor 1.30

LL Factor 2.17 INV 1.30 OPER

Impact 1.3

Member	LLDF	Axial Forces From STAAD						Capacity	Rating Factors					
		Dead Load	HS20 LL	2F1 LL	3F1 LL	4F1 LL	5C1	P _u	HS20	HS20	2F1	3F1	4F1	5C1
		kips	kips	kips	kips	kips	kips	kips	RF _{INV}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}
COL C5	3.729	11.44	22.65	12.8	17.97	19.01	17.50	270.8	1.08	1.79	3.17	2.26	2.14	2.32
COL C8	3.729	1.079	21.59	12.5	17.36	18.1	16.90	270.8	1.19	1.98	3.42	2.46	2.36	2.53

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - North Frame Column 6 Ratings



Calculated:
 Checked:

CTG
 NRF

3/1/2012
 3/2/2012

DL Factor	LL Factor	Impact	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _c		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER								
				kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 INV	COL C6	3.73	246.35	280.97	187.33	409.24	1704.10	1072.50	66619.73	1.00	1.89
HS20 INV	COL C6	3.73	246.35	288.10	187.33	408.22	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	294.21	187.33	407.21	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	295.22	187.33	405.17	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	296.24	187.33	404.15	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	297.26	187.33	402.12	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	298.28	187.33	401.10	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	299.30	187.33	399.06	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	300.32	187.33	397.03	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	301.33	187.33	396.01	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	302.35	187.33	393.97	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	303.37	187.33	392.95	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	304.39	187.33	390.92	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	305.41	187.33	388.88	1704.10	1072.50	66619.73	1.00	1.88
HS20 INV	COL C6	3.73	246.35	306.42	187.33	387.86	1704.10	1072.50	66619.73	1.00	1.88
HS20 INV	COL C6	3.73	246.35	308.46	187.33	386.85	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	309.48	187.33	385.83	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	311.51	187.33	384.81	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	312.53	187.33	383.79	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	314.57	187.33	382.77	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	316.60	187.33	381.76	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	317.62	187.33	380.74	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	319.66	187.33	379.72	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	320.68	187.33	378.70	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	321.69	187.33	377.68	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	322.71	187.33	375.65	1704.10	1072.50	66619.73	1.00	1.86
HS20 INV	COL C6	3.73	246.35	323.73	187.33	373.61	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	315.59	187.33	371.58	1704.10	1072.50	66619.73	1.00	1.89
HS20 INV	COL C6	3.73	246.35	324.75	187.33	369.54	1704.10	1072.50	66619.73	1.00	1.87
HS20 INV	COL C6	3.73	246.35	325.77	187.33	367.50	1704.10	1072.50	66619.73	1.00	1.88
HS20 INV	COL C6	3.73	246.35	318.64	187.33	365.47	1704.10	1072.50	66619.73	1.00	1.90
HS20 INV	COL C6	3.73	246.35	326.78	187.33	364.45	1704.10	1072.50	66619.73	1.00	1.88
HS20 INV	COL C6	3.73	246.35	327.80	187.33	362.41	1704.10	1072.50	66619.73	1.00	1.88
HS20 INV	COL C6	3.73	246.35	328.82	187.33	358.34	1704.10	1072.50	66619.73	1.00	1.89
HS20 INV	COL C6	3.73	246.35	329.84	187.33	356.31	1704.10	1072.50	66619.73	1.00	1.89
HS20 INV	COL C6	3.73	246.35	330.86	187.33	354.27	1704.10	1072.50	66619.73	1.00	1.90
HS20 INV	COL C6	3.73	246.35	331.87	187.33	350.20	1704.10	1072.50	66619.73	1.00	1.91
HS20 INV	COL C6	3.73	246.35	332.89	187.33	348.16	1704.10	1072.50	66619.73	1.00	1.91
HS20 INV	COL C6	3.73	246.35	333.91	187.33	345.11	1704.10	1072.50	66619.73	1.00	1.91
HS20 INV	COL C6	3.73	246.35	334.93	187.33	342.05	1704.10	1072.50	66619.73	1.00	1.92
HS20 INV	COL C6	3.73	246.35	335.95	187.33	339.00	1704.10	1072.50	66619.73	1.00	1.92
HS20 INV	COL C6	3.73	246.35	336.96	187.33	336.96	1704.10	1072.50	66619.73	1.00	1.93
HS20 INV	COL C6	3.73	246.35	337.98	187.33	332.89	1704.10	1072.50	66619.73	1.00	1.94
HS20 INV	COL C6	3.73	246.35	339.00	187.33	329.84	1704.10	1072.50	66619.73	1.00	1.94
HS20 INV	COL C6	3.73	246.35	340.02	187.33	326.78	1704.10	1072.50	66619.73	1.00	1.95
HS20 INV	COL C6	3.73	246.35	341.04	187.33	323.73	1704.10	1072.50	66619.73	1.00	1.95
HS20 INV	COL C6	3.73	246.35	342.05	187.33	321.69	1704.10	1072.50	66619.73	1.00	1.96
HS20 INV	COL C6	3.73	246.35	343.07	187.33	317.62	1704.10	1072.50	66619.73	1.00	1.96
HS20 INV	COL C6	3.73	246.35	344.09	187.33	315.59	1704.10	1072.50	66619.73	1.00	1.97
HS20 INV	COL C6	3.73	246.35	345.11	187.33	312.53	1704.10	1072.50	66619.73	1.00	1.97
HS20 INV	COL C6	3.73	246.35	346.13	187.33	309.48	1704.10	1072.50	66619.73	1.00	1.98
HS20 INV	COL C6	3.73	246.35	347.14	187.33	307.44	1704.10	1072.50	66619.73	1.00	1.98
HS20 INV	COL C6	3.73	246.35	348.16	187.33	305.41	1704.10	1072.50	66619.73	1.00	1.98
HS20 INV	COL C6	3.73	246.35	349.18	187.33	303.37	1704.10	1072.50	66619.73	1.00	1.99
HS20 INV	COL C6	3.73	246.35	350.20	187.33	301.33	1704.10	1072.50	66619.73	1.00	1.99
HS20 INV	COL C6	3.73	246.35	351.22	187.33	299.30	1704.10	1072.50	66619.73	1.00	1.99
HS20 INV	COL C6	3.73	246.35	352.23	187.33	296.24	1704.10	1072.50	66619.73	1.00	2.00
HS20 INV	COL C6	3.73	246.35	353.25	187.33	294.21	1704.10	1072.50	66619.73	1.00	2.00

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 6 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor LL Factor Impact	Member	LLDF	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c} \right)} \leq 1.0$	Condition Equation	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}			
			Dead Load	Max. LL + I	Dead Load	Max LL + I						
			kips	kips	k-ft	k-ft	kips	k-ft	kips			
1.30												
2.17 INV		1.30 OPER										
1.26												
HS20 INV	COL C6	3.73	246.35	354.27	187.33	291.15	1704.10	1072.50	66619.73	1.00	2.01	
HS20 INV	COL C6	3.73	246.35	355.29	187.33	289.12	1704.10	1072.50	66619.73	1.00	2.01	
HS20 INV	COL C6	3.73	246.35	356.31	187.33	287.08	1704.10	1072.50	66619.73	1.00	2.01	
HS20 INV	COL C6	3.73	246.35	357.32	187.33	285.04	1704.10	1072.50	66619.73	1.00	2.02	
HS20 INV	COL C6	3.73	246.35	358.34	187.33	281.99	1704.10	1072.50	66619.73	1.00	2.02	
HS20 INV	COL C6	3.73	246.35	359.36	187.33	279.95	1704.10	1072.50	66619.73	1.00	2.03	
HS20 INV	COL C6	3.73	246.35	360.38	187.33	277.92	1704.10	1072.50	66619.73	1.00	2.03	
HS20 INV	COL C6	3.73	246.35	361.40	187.33	273.85	1704.10	1072.50	66619.73	1.00	2.04	
HS20 INV	COL C6	3.73	246.35	362.41	187.33	271.81	1704.10	1072.50	66619.73	1.00	2.04	
HS20 INV	COL C6	3.73	246.35	363.43	187.33	269.77	1704.10	1072.50	66619.73	1.00	2.04	
HS20 INV	COL C6	3.73	246.35	364.45	187.33	266.72	1704.10	1072.50	66619.73	1.00	2.05	
HS20 INV	COL C6	3.73	246.35	365.47	187.33	264.68	1704.10	1072.50	66619.73	1.00	2.05	
HS20 INV	COL C6	3.73	246.35	366.49	187.33	259.59	1704.10	1072.50	66619.73	1.00	2.07	
HS20 INV	COL C6	3.73	246.35	367.50	187.33	245.34	1704.10	1072.50	66619.73	1.00	2.11	
HS20 INV	COL C6	3.73	246.35	368.52	187.33	229.05	1704.10	1072.50	66619.73	1.00	2.16	
HS20 INV	COL C6	3.73	246.35	369.54	187.33	220.91	1704.10	1072.50	66619.73	1.00	2.19	
HS20 INV	COL C6	3.73	246.35	370.56	187.33	214.80	1704.10	1072.50	66619.73	1.00	2.21	
HS20 INV	COL C6	3.73	246.35	371.58	187.33	210.73	1704.10	1072.50	66619.73	1.00	2.22	
HS20 OPER	COL C6	3.73	246.35	168.58	187.33	245.55	1704.10	1072.50	66619.73	1.00	3.15	
HS20 OPER	COL C6	3.73	246.35	172.86	187.33	244.93	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	176.52	187.33	244.32	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	177.13	187.33	243.10	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	177.75	187.33	242.49	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	178.36	187.33	241.27	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	178.97	187.33	240.66	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	179.58	187.33	239.44	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	180.19	187.33	238.22	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	180.80	187.33	237.61	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	181.41	187.33	236.38	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	182.02	187.33	235.77	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	182.63	187.33	234.55	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	183.24	187.33	233.33	1704.10	1072.50	66619.73	1.00	3.13	
HS20 OPER	COL C6	3.73	246.35	183.85	187.33	232.72	1704.10	1072.50	66619.73	1.00	3.13	
HS20 OPER	COL C6	3.73	246.35	185.08	187.33	232.11	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	185.69	187.33	231.50	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	186.91	187.33	230.89	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	187.52	187.33	230.28	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	188.74	187.33	229.66	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	189.96	187.33	229.05	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	190.57	187.33	228.44	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	191.79	187.33	227.83	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	192.41	187.33	227.22	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	193.02	187.33	226.61	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	193.63	187.33	225.39	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C6	3.73	246.35	194.24	187.33	224.17	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C6	3.73	246.35	189.35	187.33	222.95	1704.10	1072.50	66619.73	1.00	3.16	
HS20 OPER	COL C6	3.73	246.35	194.85	187.33	221.72	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C6	3.73	246.35	195.46	187.33	220.50	1704.10	1072.50	66619.73	1.00	3.13	
HS20 OPER	COL C6	3.73	246.35	191.18	187.33	219.28	1704.10	1072.50	66619.73	1.00	3.17	
HS20 OPER	COL C6	3.73	246.35	196.07	187.33	218.67	1704.10	1072.50	66619.73	1.00	3.14	
HS20 OPER	COL C6	3.73	246.35	196.68	187.33	217.45	1704.10	1072.50	66619.73	1.00	3.14	
HS20 OPER	COL C6	3.73	246.35	197.29	187.33	215.01	1704.10	1072.50	66619.73	1.00	3.15	
HS20 OPER	COL C6	3.73	246.35	197.90	187.33	213.78	1704.10	1072.50	66619.73	1.00	3.16	
HS20 OPER	COL C6	3.73	246.35	198.51	187.33	212.56	1704.10	1072.50	66619.73	1.00	3.16	
HS20 OPER	COL C6	3.73	246.35	199.12	187.33	210.12	1704.10	1072.50	66619.73	1.00	3.18	
HS20 OPER	COL C6	3.73	246.35	199.73	187.33	208.90	1704.10	1072.50	66619.73	1.00	3.18	
HS20 OPER	COL C6	3.73	246.35	200.35	187.33	207.06	1704.10	1072.50	66619.73	1.00	3.19	
HS20 OPER	COL C6	3.73	246.35	200.96	187.33	205.23	1704.10	1072.50	66619.73	1.00	3.20	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 6 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	Condition Equation	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}			
			Dead Load	Max. LL + I	Dead Load	Max LL + I						
			Load Case	Member	LLDF	kips	kips	k-ft	k-ft			
HS20 OPER	COL C6	3.73	246.35	201.57	187.33	203.40	1704.10	1072.50	66619.73	1.00	3.21	
HS20 OPER	COL C6	3.73	246.35	202.18	187.33	202.18	1704.10	1072.50	66619.73	1.00	3.21	
HS20 OPER	COL C6	3.73	246.35	202.79	187.33	199.73	1704.10	1072.50	66619.73	1.00	3.23	
HS20 OPER	COL C6	3.73	246.35	203.40	187.33	197.90	1704.10	1072.50	66619.73	1.00	3.23	
HS20 OPER	COL C6	3.73	246.35	204.01	187.33	196.07	1704.10	1072.50	66619.73	1.00	3.24	
HS20 OPER	COL C6	3.73	246.35	204.62	187.33	194.24	1704.10	1072.50	66619.73	1.00	3.25	
HS20 OPER	COL C6	3.73	246.35	205.23	187.33	193.02	1704.10	1072.50	66619.73	1.00	3.26	
HS20 OPER	COL C6	3.73	246.35	205.84	187.33	190.57	1704.10	1072.50	66619.73	1.00	3.27	
HS20 OPER	COL C6	3.73	246.35	206.45	187.33	189.35	1704.10	1072.50	66619.73	1.00	3.28	
HS20 OPER	COL C6	3.73	246.35	207.06	187.33	187.52	1704.10	1072.50	66619.73	1.00	3.29	
HS20 OPER	COL C6	3.73	246.35	207.68	187.33	185.69	1704.10	1072.50	66619.73	1.00	3.30	
HS20 OPER	COL C6	3.73	246.35	208.29	187.33	184.46	1704.10	1072.50	66619.73	1.00	3.30	
HS20 OPER	COL C6	3.73	246.35	208.90	187.33	183.24	1704.10	1072.50	66619.73	1.00	3.31	
HS20 OPER	COL C6	3.73	246.35	209.51	187.33	182.02	1704.10	1072.50	66619.73	1.00	3.31	
HS20 OPER	COL C6	3.73	246.35	210.12	187.33	180.80	1704.10	1072.50	66619.73	1.00	3.32	
HS20 OPER	COL C6	3.73	246.35	210.73	187.33	179.58	1704.10	1072.50	66619.73	1.00	3.32	
HS20 OPER	COL C6	3.73	246.35	211.34	187.33	177.75	1704.10	1072.50	66619.73	1.00	3.33	
HS20 OPER	COL C6	3.73	246.35	211.95	187.33	176.52	1704.10	1072.50	66619.73	1.00	3.34	
HS20 OPER	COL C6	3.73	246.35	212.56	187.33	174.69	1704.10	1072.50	66619.73	1.00	3.35	
HS20 OPER	COL C6	3.73	246.35	213.17	187.33	173.47	1704.10	1072.50	66619.73	1.00	3.35	
HS20 OPER	COL C6	3.73	246.35	213.78	187.33	172.25	1704.10	1072.50	66619.73	1.00	3.36	
HS20 OPER	COL C6	3.73	246.35	214.39	187.33	171.03	1704.10	1072.50	66619.73	1.00	3.36	
HS20 OPER	COL C6	3.73	246.35	215.01	187.33	169.19	1704.10	1072.50	66619.73	1.00	3.37	
HS20 OPER	COL C6	3.73	246.35	215.62	187.33	167.97	1704.10	1072.50	66619.73	1.00	3.38	
HS20 OPER	COL C6	3.73	246.35	216.23	187.33	166.75	1704.10	1072.50	66619.73	1.00	3.38	
HS20 OPER	COL C6	3.73	246.35	216.84	187.33	164.31	1704.10	1072.50	66619.73	1.00	3.40	
HS20 OPER	COL C6	3.73	246.35	217.45	187.33	163.09	1704.10	1072.50	66619.73	1.00	3.40	
HS20 OPER	COL C6	3.73	246.35	218.06	187.33	161.86	1704.10	1072.50	66619.73	1.00	3.41	
HS20 OPER	COL C6	3.73	246.35	218.67	187.33	160.03	1704.10	1072.50	66619.73	1.00	3.42	
HS20 OPER	COL C6	3.73	246.35	219.28	187.33	158.81	1704.10	1072.50	66619.73	1.00	3.42	
HS20 OPER	COL C6	3.73	246.35	219.89	187.33	155.76	1704.10	1072.50	66619.73	1.00	3.44	
HS20 OPER	COL C6	3.73	246.35	220.50	187.33	147.21	1704.10	1072.50	66619.73	1.00	3.52	
HS20 OPER	COL C6	3.73	246.35	221.11	187.33	137.43	1704.10	1072.50	66619.73	1.00	3.60	
HS20 OPER	COL C6	3.73	246.35	221.72	187.33	132.55	1704.10	1072.50	66619.73	1.00	3.65	
HS20 OPER	COL C6	3.73	246.35	222.33	187.33	128.88	1704.10	1072.50	66619.73	1.00	3.68	
HS20 OPER	COL C6	3.73	246.35	222.95	187.33	126.44	1704.10	1072.50	66619.73	1.00	3.69	
2F1	COL C6	3.73	246.35	63.52	187.33	109.34	1704.10	1072.50	66619.73	1.00	7.56	
2F1	COL C6	3.73	246.35	67.80	187.33	108.72	1704.10	1072.50	66619.73	1.00	7.40	
2F1	COL C6	3.73	246.35	70.24	187.33	108.11	1704.10	1072.50	66619.73	1.00	7.32	
2F1	COL C6	3.73	246.35	72.08	187.33	107.50	1704.10	1072.50	66619.73	1.00	7.27	
2F1	COL C6	3.73	246.35	73.91	187.33	106.89	1704.10	1072.50	66619.73	1.00	7.21	
2F1	COL C6	3.73	246.35	75.13	187.33	106.28	1704.10	1072.50	66619.73	1.00	7.19	
2F1	COL C6	3.73	246.35	76.35	187.33	105.67	1704.10	1072.50	66619.73	1.00	7.16	
2F1	COL C6	3.73	246.35	77.57	187.33	105.06	1704.10	1072.50	66619.73	1.00	7.14	
2F1	COL C6	3.73	246.35	78.79	187.33	104.45	1704.10	1072.50	66619.73	1.00	7.11	
2F1	COL C6	3.73	246.35	79.41	187.33	103.84	1704.10	1072.50	66619.73	1.00	7.11	
2F1	COL C6	3.73	246.35	80.02	187.33	103.23	1704.10	1072.50	66619.73	1.00	7.11	
2F1	COL C6	3.73	246.35	81.24	187.33	102.62	1704.10	1072.50	66619.73	1.00	7.08	
2F1	COL C6	3.73	246.35	82.46	187.33	102.01	1704.10	1072.50	66619.73	1.00	7.05	
2F1	COL C6	3.73	246.35	83.07	187.33	101.39	1704.10	1072.50	66619.73	1.00	7.06	
2F1	COL C6	3.73	246.35	84.29	187.33	100.78	1704.10	1072.50	66619.73	1.00	7.03	
2F1	COL C6	3.73	246.35	85.51	187.33	100.17	1704.10	1072.50	66619.73	1.00	7.01	
2F1	COL C6	3.73	246.35	86.12	187.33	99.56	1704.10	1072.50	66619.73	1.00	7.01	
2F1	COL C6	3.73	246.35	86.74	187.33	97.73	1704.10	1072.50	66619.73	1.00	7.05	
2F1	COL C6	3.73	246.35	87.35	187.33	95.29	1704.10	1072.50	66619.73	1.00	7.12	
2F1	COL C6	3.73	246.35	87.96	187.33	92.84	1704.10	1072.50	66619.73	1.00	7.19	
2F1	COL C6	3.73	246.35	88.57	187.33	91.01	1704.10	1072.50	66619.73	1.00	7.23	
2F1	COL C6	3.73	246.35	89.18	187.33	88.57	1704.10	1072.50	66619.73	1.00	7.31	

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - North Frame Column 6 Ratings



Calculated:
 Checked:

CTG
 NRF

3/1/2012
 3/2/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e} \right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
2F1	COL C6	3.73	246.35	89.79	187.33	86.12	1704.10	1072.50	66619.73	1.00	7.38
2F1	COL C6	3.73	246.35	90.40	187.33	84.90	1704.10	1072.50	66619.73	1.00	7.40
2F1	COL C6	3.73	246.35	91.01	187.33	84.29	1704.10	1072.50	66619.73	1.00	7.40
2F1	COL C6	3.73	246.35	91.62	187.33	83.07	1704.10	1072.50	66619.73	1.00	7.43
2F1	COL C6	3.73	246.35	92.23	187.33	81.85	1704.10	1072.50	66619.73	1.00	7.45
2F1	COL C6	3.73	246.35	92.84	187.33	80.63	1704.10	1072.50	66619.73	1.00	7.47
2F1	COL C6	3.73	246.35	93.45	187.33	79.41	1704.10	1072.50	66619.73	1.00	7.50
2F1	COL C6	3.73	246.35	94.06	187.33	78.79	1704.10	1072.50	66619.73	1.00	7.50
2F1	COL C6	3.73	246.35	94.68	187.33	75.74	1704.10	1072.50	66619.73	1.00	7.60
2F1	COL C6	3.73	246.35	95.29	187.33	67.80	1704.10	1072.50	66619.73	1.00	7.93
2F1	COL C6	3.73	246.35	95.90	187.33	61.08	1704.10	1072.50	66619.73	1.00	8.23
2F1	COL C6	3.73	246.35	96.51	187.33	48.86	1704.10	1072.50	66619.73	1.00	8.87
3F1	COL C6	3.73	246.35	102.01	187.33	166.14	1704.10	1072.50	66619.73	1.00	4.87
3F1	COL C6	3.73	246.35	105.06	187.33	165.53	1704.10	1072.50	66619.73	1.00	4.83
3F1	COL C6	3.73	246.35	107.50	187.33	164.92	1704.10	1072.50	66619.73	1.00	4.79
3F1	COL C6	3.73	246.35	109.95	187.33	164.31	1704.10	1072.50	66619.73	1.00	4.76
3F1	COL C6	3.73	246.35	111.17	187.33	163.70	1704.10	1072.50	66619.73	1.00	4.75
3F1	COL C6	3.73	246.35	113.00	187.33	163.09	1704.10	1072.50	66619.73	1.00	4.72
3F1	COL C6	3.73	246.35	114.22	187.33	162.48	1704.10	1072.50	66619.73	1.00	4.71
3F1	COL C6	3.73	246.35	114.83	187.33	161.86	1704.10	1072.50	66619.73	1.00	4.71
3F1	COL C6	3.73	246.35	115.44	187.33	161.25	1704.10	1072.50	66619.73	1.00	4.71
3F1	COL C6	3.73	246.35	116.66	187.33	160.64	1704.10	1072.50	66619.73	1.00	4.70
3F1	COL C6	3.73	246.35	117.89	187.33	160.03	1704.10	1072.50	66619.73	1.00	4.69
3F1	COL C6	3.73	246.35	119.11	187.33	159.42	1704.10	1072.50	66619.73	1.00	4.68
3F1	COL C6	3.73	246.35	120.33	187.33	158.81	1704.10	1072.50	66619.73	1.00	4.66
3F1	COL C6	3.73	246.35	121.55	187.33	158.20	1704.10	1072.50	66619.73	1.00	4.65
3F1	COL C6	3.73	246.35	122.77	187.33	157.59	1704.10	1072.50	66619.73	1.00	4.65
3F1	COL C6	3.73	246.35	123.99	187.33	156.98	1704.10	1072.50	66619.73	1.00	4.63
3F1	COL C6	3.73	246.35	124.61	187.33	156.37	1704.10	1072.50	66619.73	1.00	4.63
3F1	COL C6	3.73	246.35	125.83	187.33	155.76	1704.10	1072.50	66619.73	1.00	4.62
3F1	COL C6	3.73	246.35	126.44	187.33	155.15	1704.10	1072.50	66619.73	1.00	4.62
3F1	COL C6	3.73	246.35	127.05	187.33	153.92	1704.10	1072.50	66619.73	1.00	4.63
3F1	COL C6	3.73	246.35	127.66	187.33	152.70	1704.10	1072.50	66619.73	1.00	4.64
3F1	COL C6	3.73	246.35	128.27	187.33	151.48	1704.10	1072.50	66619.73	1.00	4.65
3F1	COL C6	3.73	246.35	128.88	187.33	150.87	1704.10	1072.50	66619.73	1.00	4.65
3F1	COL C6	3.73	246.35	129.49	187.33	149.65	1704.10	1072.50	66619.73	1.00	4.66
3F1	COL C6	3.73	246.35	130.10	187.33	149.04	1704.10	1072.50	66619.73	1.00	4.66
3F1	COL C6	3.73	246.35	130.71	187.33	147.82	1704.10	1072.50	66619.73	1.00	4.67
3F1	COL C6	3.73	246.35	131.32	187.33	146.59	1704.10	1072.50	66619.73	1.00	4.68
3F1	COL C6	3.73	246.35	131.94	187.33	145.37	1704.10	1072.50	66619.73	1.00	4.69
3F1	COL C6	3.73	246.35	132.55	187.33	144.15	1704.10	1072.50	66619.73	1.00	4.70
3F1	COL C6	3.73	246.35	133.16	187.33	142.93	1704.10	1072.50	66619.73	1.00	4.71
3F1	COL C6	3.73	246.35	133.77	187.33	142.32	1704.10	1072.50	66619.73	1.00	4.71
3F1	COL C6	3.73	246.35	134.38	187.33	141.10	1704.10	1072.50	66619.73	1.00	4.72
3F1	COL C6	3.73	246.35	134.99	187.33	139.88	1704.10	1072.50	66619.73	1.00	4.73
3F1	COL C6	3.73	246.35	135.60	187.33	138.04	1704.10	1072.50	66619.73	1.00	4.75
3F1	COL C6	3.73	246.35	136.21	187.33	135.60	1704.10	1072.50	66619.73	1.00	4.78
3F1	COL C6	3.73	246.35	136.82	187.33	133.16	1704.10	1072.50	66619.73	1.00	4.81
3F1	COL C6	3.73	246.35	137.43	187.33	131.32	1704.10	1072.50	66619.73	1.00	4.83
3F1	COL C6	3.73	246.35	138.04	187.33	130.71	1704.10	1072.50	66619.73	1.00	4.83
3F1	COL C6	3.73	246.35	138.65	187.33	130.10	1704.10	1072.50	66619.73	1.00	4.83
3F1	COL C6	3.73	246.35	139.26	187.33	128.88	1704.10	1072.50	66619.73	1.00	4.84
3F1	COL C6	3.73	246.35	139.88	187.33	127.05	1704.10	1072.50	66619.73	1.00	4.86
3F1	COL C6	3.73	246.35	140.49	187.33	124.61	1704.10	1072.50	66619.73	1.00	4.89
3F1	COL C6	3.73	246.35	141.10	187.33	122.77	1704.10	1072.50	66619.73	1.00	4.91
3F1	COL C6	3.73	246.35	141.71	187.33	120.33	1704.10	1072.50	66619.73	1.00	4.95
3F1	COL C6	3.73	246.35	142.32	187.33	117.89	1704.10	1072.50	66619.73	1.00	4.98
3F1	COL C6	3.73	246.35	142.93	187.33	115.44	1704.10	1072.50	66619.73	1.00	5.01

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 6 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

Impact	DL Factor	LL Factor	LLDF	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{cx}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member		kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
3F1	COL C6	3.73	246.35	143.54	187.33	113.61	1704.10	1072.50	66619.73	1.00	5.04	
3F1	COL C6	3.73	246.35	144.15	187.33	110.56	1704.10	1072.50	66619.73	1.00	5.08	
3F1	COL C6	3.73	246.35	144.76	187.33	108.11	1704.10	1072.50	66619.73	1.00	5.12	
3F1	COL C6	3.73	246.35	145.37	187.33	105.67	1704.10	1072.50	66619.73	1.00	5.15	
3F1	COL C6	3.73	246.35	145.98	187.33	96.51	1704.10	1072.50	66619.73	1.00	5.33	
3F1	COL C6	3.73	246.35	146.59	187.33	83.68	1704.10	1072.50	66619.73	1.00	5.61	
3F1	COL C6	3.73	246.35	147.21	187.33	78.18	1704.10	1072.50	66619.73	1.00	5.72	
4F1	COL C6	3.73	246.35	141.10	187.33	185.08	1704.10	1072.50	66619.73	1.00	3.99	
4F1	COL C6	3.73	246.35	141.71	187.33	184.46	1704.10	1072.50	66619.73	1.00	3.99	
4F1	COL C6	3.73	246.35	142.32	187.33	183.24	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C6	3.73	246.35	142.93	187.33	182.63	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C6	3.73	246.35	143.54	187.33	182.02	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C6	3.73	246.35	144.15	187.33	181.41	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C6	3.73	246.35	144.76	187.33	180.80	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C6	3.73	246.35	145.37	187.33	179.58	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	145.98	187.33	178.97	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	146.59	187.33	178.36	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	147.21	187.33	177.75	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	147.82	187.33	176.52	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	148.43	187.33	175.91	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	149.04	187.33	175.30	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	149.65	187.33	174.69	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C6	3.73	246.35	150.26	187.33	173.47	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C6	3.73	246.35	150.87	187.33	172.86	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C6	3.73	246.35	151.48	187.33	172.25	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C6	3.73	246.35	152.09	187.33	171.64	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C6	3.73	246.35	152.70	187.33	170.42	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C6	3.73	246.35	153.31	187.33	169.19	1704.10	1072.50	66619.73	1.00	4.03	
4F1	COL C6	3.73	246.35	153.92	187.33	167.97	1704.10	1072.50	66619.73	1.00	4.04	
4F1	COL C6	3.73	246.35	154.53	187.33	166.14	1704.10	1072.50	66619.73	1.00	4.05	
4F1	COL C6	3.73	246.35	155.15	187.33	164.31	1704.10	1072.50	66619.73	1.00	4.07	
4F1	COL C6	3.73	246.35	155.76	187.33	162.48	1704.10	1072.50	66619.73	1.00	4.08	
4F1	COL C6	3.73	246.35	156.37	187.33	161.25	1704.10	1072.50	66619.73	1.00	4.09	
4F1	COL C6	3.73	246.35	156.98	187.33	159.42	1704.10	1072.50	66619.73	1.00	4.11	
4F1	COL C6	3.73	246.35	157.59	187.33	157.59	1704.10	1072.50	66619.73	1.00	4.12	
4F1	COL C6	3.73	246.35	158.20	187.33	156.98	1704.10	1072.50	66619.73	1.00	4.12	
4F1	COL C6	3.73	246.35	158.81	187.33	155.15	1704.10	1072.50	66619.73	1.00	4.14	
4F1	COL C6	3.73	246.35	159.42	187.33	153.31	1704.10	1072.50	66619.73	1.00	4.15	
4F1	COL C6	3.73	246.35	160.03	187.33	151.48	1704.10	1072.50	66619.73	1.00	4.17	
4F1	COL C6	3.73	246.35	160.64	187.33	150.26	1704.10	1072.50	66619.73	1.00	4.17	
4F1	COL C6	3.73	246.35	161.25	187.33	148.43	1704.10	1072.50	66619.73	1.00	4.19	
4F1	COL C6	3.73	246.35	161.86	187.33	147.21	1704.10	1072.50	66619.73	1.00	4.20	
4F1	COL C6	3.73	246.35	162.48	187.33	145.37	1704.10	1072.50	66619.73	1.00	4.21	
4F1	COL C6	3.73	246.35	163.09	187.33	143.54	1704.10	1072.50	66619.73	1.00	4.23	
4F1	COL C6	3.73	246.35	163.70	187.33	142.32	1704.10	1072.50	66619.73	1.00	4.24	
4F1	COL C6	3.73	246.35	164.31	187.33	141.10	1704.10	1072.50	66619.73	1.00	4.24	
4F1	COL C6	3.73	246.35	164.92	187.33	139.26	1704.10	1072.50	66619.73	1.00	4.26	
4F1	COL C6	3.73	246.35	165.53	187.33	137.43	1704.10	1072.50	66619.73	1.00	4.28	
4F1	COL C6	3.73	246.35	166.14	187.33	135.60	1704.10	1072.50	66619.73	1.00	4.29	
4F1	COL C6	3.73	246.35	166.75	187.33	131.94	1704.10	1072.50	66619.73	1.00	4.34	
4F1	COL C6	3.73	246.35	167.36	187.33	128.27	1704.10	1072.50	66619.73	1.00	4.38	
4F1	COL C6	3.73	246.35	167.97	187.33	125.83	1704.10	1072.50	66619.73	1.00	4.41	
4F1	COL C6	3.73	246.35	168.58	187.33	122.16	1704.10	1072.50	66619.73	1.00	4.45	
4F1	COL C6	3.73	246.35	169.19	187.33	118.50	1704.10	1072.50	66619.73	1.00	4.50	
4F1	COL C6	3.73	246.35	169.81	187.33	114.22	1704.10	1072.50	66619.73	1.00	4.55	
4F1	COL C6	3.73	246.35	170.42	187.33	110.56	1704.10	1072.50	66619.73	1.00	4.60	
4F1	COL C6	3.73	246.35	171.03	187.33	103.23	1704.10	1072.50	66619.73	1.00	4.71	
4F1	COL C6	3.73	246.35	171.64	187.33	82.46	1704.10	1072.50	66619.73	1.00	5.07	

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - North Frame Column 6 Ratings



Calculated: CTG
 Checked: NRF
 3/1/2012
 3/2/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _c			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
5C1	COL C6	3.73	246.35	159.42	187.33	184.46	1704.10	1072.50	66619.73	1.00	3.78				
5C1	COL C6	3.73	246.35	164.92	187.33	183.85	1704.10	1072.50	66619.73	1.00	3.73				
5C1	COL C6	3.73	246.35	170.42	187.33	183.24	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	173.47	187.33	182.63	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	174.08	187.33	182.02	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	174.69	187.33	181.41	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	175.30	187.33	180.80	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	175.91	187.33	180.19	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	176.52	187.33	179.58	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	177.13	187.33	178.97	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	177.75	187.33	178.36	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	178.36	187.33	177.75	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	178.97	187.33	177.13	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	179.58	187.33	176.52	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	180.19	187.33	175.30	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	180.80	187.33	174.69	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	181.41	187.33	174.08	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	182.02	187.33	173.47	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	182.63	187.33	172.86	1704.10	1072.50	66619.73	1.00	3.65				
5C1	COL C6	3.73	246.35	183.24	187.33	171.64	1704.10	1072.50	66619.73	1.00	3.66				
5C1	COL C6	3.73	246.35	183.85	187.33	171.03	1704.10	1072.50	66619.73	1.00	3.66				
5C1	COL C6	3.73	246.35	184.46	187.33	170.42	1704.10	1072.50	66619.73	1.00	3.66				
5C1	COL C6	3.73	246.35	185.08	187.33	169.81	1704.10	1072.50	66619.73	1.00	3.66				
5C1	COL C6	3.73	246.35	185.69	187.33	168.58	1704.10	1072.50	66619.73	1.00	3.66				
5C1	COL C6	3.73	246.35	186.30	187.33	167.97	1704.10	1072.50	66619.73	1.00	3.66				
5C1	COL C6	3.73	246.35	186.91	187.33	167.36	1704.10	1072.50	66619.73	1.00	3.66				
5C1	COL C6	3.73	246.35	187.52	187.33	166.14	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	188.13	187.33	165.53	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	188.74	187.33	164.92	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	189.35	187.33	164.31	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	189.96	187.33	163.09	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	190.57	187.33	162.48	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	191.18	187.33	161.86	1704.10	1072.50	66619.73	1.00	3.67				
5C1	COL C6	3.73	246.35	191.79	187.33	160.64	1704.10	1072.50	66619.73	1.00	3.68				
5C1	COL C6	3.73	246.35	192.41	187.33	160.03	1704.10	1072.50	66619.73	1.00	3.68				
5C1	COL C6	3.73	246.35	193.02	187.33	158.81	1704.10	1072.50	66619.73	1.00	3.68				
5C1	COL C6	3.73	246.35	193.63	187.33	157.59	1704.10	1072.50	66619.73	1.00	3.69				
5C1	COL C6	3.73	246.35	194.24	187.33	156.37	1704.10	1072.50	66619.73	1.00	3.69				
5C1	COL C6	3.73	246.35	194.85	187.33	155.53	1704.10	1072.50	66619.73	1.00	3.71				
5C1	COL C6	3.73	246.35	195.46	187.33	151.48	1704.10	1072.50	66619.73	1.00	3.73				
5C1	COL C6	3.73	246.35	196.07	187.33	148.43	1704.10	1072.50	66619.73	1.00	3.76				
5C1	COL C6	3.73	246.35	196.68	187.33	146.59	1704.10	1072.50	66619.73	1.00	3.77				
5C1	COL C6	3.73	246.35	197.29	187.33	144.15	1704.10	1072.50	66619.73	1.00	3.79				
5C1	COL C6	3.73	246.35	197.90	187.33	141.10	1704.10	1072.50	66619.73	1.00	3.82				
5C1	COL C6	3.73	246.35	198.51	187.33	138.04	1704.10	1072.50	66619.73	1.00	3.84				

Load Case	Controlling RF
HS20 INV	1.86
HS20 OPER	3.10
2F1	7.01
3F1	4.62
4F1	3.99
5C1	3.65

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 7 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF	
			Axial Force		Moment		P _u	M _u	A _s F _e			
			Dead Load	Max. LL + I	Dead Load	Max LL + I						
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
HS20 INV	COL C7	3.73	245.31	278.94	193.83	409.24	1704.10	1072.50	66619.73	1.00	1.89	
HS20 INV	COL C7	3.73	245.31	285.04	193.83	408.22	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C7	3.73	245.31	294.21	193.83	407.21	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C7	3.73	245.31	300.32	193.83	406.19	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C7	3.73	245.31	303.37	193.83	405.17	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C7	3.73	245.31	306.42	193.83	404.15	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	309.48	193.83	403.13	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	312.53	193.83	402.12	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	314.57	193.83	401.10	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	316.60	193.83	400.08	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	318.64	193.83	398.04	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	319.66	193.83	397.03	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	321.69	193.83	396.01	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	322.71	193.83	394.99	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	323.73	193.83	393.97	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	324.75	193.83	392.95	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	325.77	193.83	391.94	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	326.78	193.83	390.92	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	327.80	193.83	389.90	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	329.84	193.83	388.88	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	331.87	193.83	386.85	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	332.89	193.83	384.81	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	333.91	193.83	383.79	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	334.93	193.83	382.77	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	335.95	193.83	381.76	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	336.96	193.83	380.74	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	339.00	193.83	378.70	1704.10	1072.50	66619.73	1.00	1.80	
HS20 INV	COL C7	3.73	245.31	340.02	193.83	376.67	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	341.04	193.83	375.65	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	342.05	193.83	374.63	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	343.07	193.83	372.59	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	344.09	193.83	371.58	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	345.11	193.83	369.54	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	346.13	193.83	368.52	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	347.14	193.83	366.49	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	348.16	193.83	365.47	1704.10	1072.50	66619.73	1.00	1.81	
HS20 INV	COL C7	3.73	245.31	349.18	193.83	363.43	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	350.20	193.83	362.41	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	351.22	193.83	360.38	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	352.23	193.83	359.36	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	353.25	193.83	357.32	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	354.27	193.83	355.29	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	355.29	193.83	353.25	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C7	3.73	245.31	356.31	193.83	351.22	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C7	3.73	245.31	357.32	193.83	350.20	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C7	3.73	245.31	358.34	193.83	348.16	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C7	3.73	245.31	359.36	193.83	345.11	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C7	3.73	245.31	360.38	193.83	343.07	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C7	3.73	245.31	361.40	193.83	341.04	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C7	3.73	245.31	362.41	193.83	339.00	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C7	3.73	245.31	363.43	193.83	336.96	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C7	3.73	245.31	364.45	193.83	334.93	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C7	3.73	245.31	365.47	193.83	331.87	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C7	3.73	245.31	366.49	193.83	328.82	1704.10	1072.50	66619.73	1.00	1.86	
HS20 INV	COL C7	3.73	245.31	367.50	193.83	326.78	1704.10	1072.50	66619.73	1.00	1.86	
HS20 INV	COL C7	3.73	245.31	368.52	193.83	323.73	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C7	3.73	245.31	369.54	193.83	321.69	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C7	3.73	245.31	370.56	193.83	317.62	1704.10	1072.50	66619.73	1.00	1.88	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 7 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 INV	COL C7	3.73	245.31	371.58	193.83	314.57	1704.10	1072.50	66619.73	1.00	1.88
HS20 INV	COL C7	3.73	245.31	372.59	193.83	311.51	1704.10	1072.50	66619.73	1.00	1.89
HS20 INV	COL C7	3.73	245.31	373.61	193.83	308.46	1704.10	1072.50	66619.73	1.00	1.89
HS20 INV	COL C7	3.73	245.31	374.63	193.83	304.39	1704.10	1072.50	66619.73	1.00	1.90
HS20 INV	COL C7	3.73	245.31	375.65	193.83	300.32	1704.10	1072.50	66619.73	1.00	1.91
HS20 INV	COL C7	3.73	245.31	376.67	193.83	297.26	1704.10	1072.50	66619.73	1.00	1.91
HS20 INV	COL C7	3.73	245.31	377.68	193.83	293.19	1704.10	1072.50	66619.73	1.00	1.92
HS20 INV	COL C7	3.73	245.31	378.70	193.83	288.10	1704.10	1072.50	66619.73	1.00	1.93
HS20 INV	COL C7	3.73	245.31	379.72	193.83	281.99	1704.10	1072.50	66619.73	1.00	1.95
HS20 INV	COL C7	3.73	245.31	380.74	193.83	276.90	1704.10	1072.50	66619.73	1.00	1.96
HS20 INV	COL C7	3.73	245.31	381.76	193.83	271.81	1704.10	1072.50	66619.73	1.00	1.97
HS20 INV	COL C7	3.73	245.31	382.77	193.83	264.68	1704.10	1072.50	66619.73	1.00	1.99
HS20 INV	COL C7	3.73	245.31	383.79	193.83	257.56	1704.10	1072.50	66619.73	1.00	2.01
HS20 INV	COL C7	3.73	245.31	384.81	193.83	249.41	1704.10	1072.50	66619.73	1.00	2.03
HS20 INV	COL C7	3.73	245.31	385.83	193.83	238.22	1704.10	1072.50	66619.73	1.00	2.06
HS20 INV	COL C7	3.73	245.31	386.85	193.83	210.73	1704.10	1072.50	66619.73	1.00	2.15
HS20 OPER	COL C7	3.73	245.31	167.36	193.83	245.55	1704.10	1072.50	66619.73	1.00	3.14
HS20 OPER	COL C7	3.73	245.31	171.03	193.83	244.93	1704.10	1072.50	66619.73	1.00	3.12
HS20 OPER	COL C7	3.73	245.31	176.52	193.83	244.32	1704.10	1072.50	66619.73	1.00	3.08
HS20 OPER	COL C7	3.73	245.31	180.19	193.83	243.71	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C7	3.73	245.31	182.02	193.83	243.10	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C7	3.73	245.31	183.85	193.83	242.49	1704.10	1072.50	66619.73	1.00	3.04
HS20 OPER	COL C7	3.73	245.31	185.69	193.83	241.88	1704.10	1072.50	66619.73	1.00	3.03
HS20 OPER	COL C7	3.73	245.31	187.52	193.83	241.27	1704.10	1072.50	66619.73	1.00	3.03
HS20 OPER	COL C7	3.73	245.31	188.74	193.83	240.66	1704.10	1072.50	66619.73	1.00	3.02
HS20 OPER	COL C7	3.73	245.31	189.96	193.83	240.05	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	191.18	193.83	238.83	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	191.79	193.83	238.22	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	193.02	193.83	237.61	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	193.63	193.83	236.99	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	194.24	193.83	236.38	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	194.85	193.83	235.77	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	195.46	193.83	235.16	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	196.07	193.83	234.55	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	196.68	193.83	233.94	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	197.90	193.83	233.33	1704.10	1072.50	66619.73	1.00	3.00
HS20 OPER	COL C7	3.73	245.31	199.12	193.83	232.11	1704.10	1072.50	66619.73	1.00	3.00
HS20 OPER	COL C7	3.73	245.31	199.73	193.83	230.89	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	200.35	193.83	230.28	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	200.96	193.83	229.66	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	201.57	193.83	229.05	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	202.18	193.83	228.44	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	203.40	193.83	227.22	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	204.01	193.83	226.00	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	204.62	193.83	225.39	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	205.23	193.83	224.78	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	205.84	193.83	223.56	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	206.45	193.83	222.95	1704.10	1072.50	66619.73	1.00	3.01
HS20 OPER	COL C7	3.73	245.31	207.06	193.83	221.72	1704.10	1072.50	66619.73	1.00	3.02
HS20 OPER	COL C7	3.73	245.31	207.68	193.83	221.11	1704.10	1072.50	66619.73	1.00	3.02
HS20 OPER	COL C7	3.73	245.31	208.29	193.83	219.89	1704.10	1072.50	66619.73	1.00	3.02
HS20 OPER	COL C7	3.73	245.31	208.90	193.83	219.28	1704.10	1072.50	66619.73	1.00	3.02
HS20 OPER	COL C7	3.73	245.31	209.51	193.83	218.06	1704.10	1072.50	66619.73	1.00	3.03
HS20 OPER	COL C7	3.73	245.31	210.12	193.83	217.45	1704.10	1072.50	66619.73	1.00	3.03
HS20 OPER	COL C7	3.73	245.31	210.73	193.83	216.23	1704.10	1072.50	66619.73	1.00	3.03
HS20 OPER	COL C7	3.73	245.31	211.34	193.83	215.62	1704.10	1072.50	66619.73	1.00	3.03
HS20 OPER	COL C7	3.73	245.31	211.95	193.83	214.39	1704.10	1072.50	66619.73	1.00	3.03
HS20 OPER	COL C7	3.73	245.31	212.56	193.83	213.17	1704.10	1072.50	66619.73	1.00	3.04

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 7 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
HS20 OPER	COL C7	3.73	245.31	213.17	193.83	211.95	1704.10	1072.50	66619.73	1.00	3.04
HS20 OPER	COL C7	3.73	245.31	213.78	193.83	210.73	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C7	3.73	245.31	214.39	193.83	210.12	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C7	3.73	245.31	215.01	193.83	208.90	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C7	3.73	245.31	215.62	193.83	207.06	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C7	3.73	245.31	216.23	193.83	205.84	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C7	3.73	245.31	216.84	193.83	204.62	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C7	3.73	245.31	217.45	193.83	203.40	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C7	3.73	245.31	218.06	193.83	202.18	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C7	3.73	245.31	218.67	193.83	200.96	1704.10	1072.50	66619.73	1.00	3.08
HS20 OPER	COL C7	3.73	245.31	219.28	193.83	199.12	1704.10	1072.50	66619.73	1.00	3.09
HS20 OPER	COL C7	3.73	245.31	219.89	193.83	197.29	1704.10	1072.50	66619.73	1.00	3.10
HS20 OPER	COL C7	3.73	245.31	220.50	193.83	196.07	1704.10	1072.50	66619.73	1.00	3.10
HS20 OPER	COL C7	3.73	245.31	221.11	193.83	194.24	1704.10	1072.50	66619.73	1.00	3.11
HS20 OPER	COL C7	3.73	245.31	221.72	193.83	193.02	1704.10	1072.50	66619.73	1.00	3.11
HS20 OPER	COL C7	3.73	245.31	222.33	193.83	190.57	1704.10	1072.50	66619.73	1.00	3.13
HS20 OPER	COL C7	3.73	245.31	222.95	193.83	188.74	1704.10	1072.50	66619.73	1.00	3.14
HS20 OPER	COL C7	3.73	245.31	223.56	193.83	186.91	1704.10	1072.50	66619.73	1.00	3.15
HS20 OPER	COL C7	3.73	245.31	224.17	193.83	185.08	1704.10	1072.50	66619.73	1.00	3.15
HS20 OPER	COL C7	3.73	245.31	224.78	193.83	182.63	1704.10	1072.50	66619.73	1.00	3.17
HS20 OPER	COL C7	3.73	245.31	225.39	193.83	180.19	1704.10	1072.50	66619.73	1.00	3.18
HS20 OPER	COL C7	3.73	245.31	226.00	193.83	178.36	1704.10	1072.50	66619.73	1.00	3.19
HS20 OPER	COL C7	3.73	245.31	226.61	193.83	175.91	1704.10	1072.50	66619.73	1.00	3.20
HS20 OPER	COL C7	3.73	245.31	227.22	193.83	172.86	1704.10	1072.50	66619.73	1.00	3.22
HS20 OPER	COL C7	3.73	245.31	227.83	193.83	169.19	1704.10	1072.50	66619.73	1.00	3.25
HS20 OPER	COL C7	3.73	245.31	228.44	193.83	166.14	1704.10	1072.50	66619.73	1.00	3.27
HS20 OPER	COL C7	3.73	245.31	229.05	193.83	163.09	1704.10	1072.50	66619.73	1.00	3.29
HS20 OPER	COL C7	3.73	245.31	229.66	193.83	158.81	1704.10	1072.50	66619.73	1.00	3.32
HS20 OPER	COL C7	3.73	245.31	230.28	193.83	154.53	1704.10	1072.50	66619.73	1.00	3.35
HS20 OPER	COL C7	3.73	245.31	230.89	193.83	149.65	1704.10	1072.50	66619.73	1.00	3.38
HS20 OPER	COL C7	3.73	245.31	231.50	193.83	142.93	1704.10	1072.50	66619.73	1.00	3.44
HS20 OPER	COL C7	3.73	245.31	232.11	193.83	126.44	1704.10	1072.50	66619.73	1.00	3.59
2F1	COL C7	3.73	245.31	73.91	193.83	109.34	1704.10	1072.50	66619.73	1.00	7.08
2F1	COL C7	3.73	245.31	77.57	193.83	108.72	1704.10	1072.50	66619.73	1.00	6.96
2F1	COL C7	3.73	245.31	79.41	193.83	108.11	1704.10	1072.50	66619.73	1.00	6.92
2F1	COL C7	3.73	245.31	80.63	193.83	107.50	1704.10	1072.50	66619.73	1.00	6.89
2F1	COL C7	3.73	245.31	82.46	193.83	106.89	1704.10	1072.50	66619.73	1.00	6.85
2F1	COL C7	3.73	245.31	83.07	193.83	106.28	1704.10	1072.50	66619.73	1.00	6.85
2F1	COL C7	3.73	245.31	84.29	193.83	105.67	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	84.90	193.83	105.06	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	85.51	193.83	104.45	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	86.12	193.83	103.84	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	86.74	193.83	103.23	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	87.35	193.83	102.62	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	87.96	193.83	102.01	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	88.57	193.83	101.39	1704.10	1072.50	66619.73	1.00	6.82
2F1	COL C7	3.73	245.31	89.18	193.83	100.17	1704.10	1072.50	66619.73	1.00	6.84
2F1	COL C7	3.73	245.31	89.79	193.83	99.56	1704.10	1072.50	66619.73	1.00	6.84
2F1	COL C7	3.73	245.31	90.40	193.83	98.95	1704.10	1072.50	66619.73	1.00	6.84
2F1	COL C7	3.73	245.31	91.01	193.83	97.73	1704.10	1072.50	66619.73	1.00	6.85
2F1	COL C7	3.73	245.31	91.62	193.83	96.51	1704.10	1072.50	66619.73	1.00	6.88
2F1	COL C7	3.73	245.31	92.23	193.83	95.29	1704.10	1072.50	66619.73	1.00	6.90
2F1	COL C7	3.73	245.31	92.84	193.83	94.68	1704.10	1072.50	66619.73	1.00	6.90
2F1	COL C7	3.73	245.31	93.45	193.83	92.84	1704.10	1072.50	66619.73	1.00	6.94
2F1	COL C7	3.73	245.31	94.06	193.83	91.62	1704.10	1072.50	66619.73	1.00	6.96
2F1	COL C7	3.73	245.31	94.68	193.83	90.40	1704.10	1072.50	66619.73	1.00	6.98
2F1	COL C7	3.73	245.31	95.29	193.83	88.57	1704.10	1072.50	66619.73	1.00	7.03
2F1	COL C7	3.73	245.31	95.90	193.83	86.74	1704.10	1072.50	66619.73	1.00	7.07

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 7 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$
					Axial Force		Moment		P _u	M _u	A _s F _e	
					Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
2F1	COL C7	3.73	245.31	96.51	193.83	84.90	1704.10	1072.50	66619.73	1.00	7.12	
2F1	COL C7	3.73	245.31	97.12	193.83	83.07	1704.10	1072.50	66619.73	1.00	7.17	
2F1	COL C7	3.73	245.31	97.73	193.83	80.63	1704.10	1072.50	66619.73	1.00	7.24	
2F1	COL C7	3.73	245.31	98.34	193.83	78.18	1704.10	1072.50	66619.73	1.00	7.31	
2F1	COL C7	3.73	245.31	98.95	193.83	75.13	1704.10	1072.50	66619.73	1.00	7.41	
2F1	COL C7	3.73	245.31	99.56	193.83	71.46	1704.10	1072.50	66619.73	1.00	7.54	
2F1	COL C7	3.73	245.31	100.17	193.83	67.19	1704.10	1072.50	66619.73	1.00	7.70	
2F1	COL C7	3.73	245.31	100.78	193.83	61.69	1704.10	1072.50	66619.73	1.00	7.92	
3F1	COL C7	3.73	245.31	114.83	193.83	166.14	1704.10	1072.50	66619.73	1.00	4.62	
3F1	COL C7	3.73	245.31	117.89	193.83	165.53	1704.10	1072.50	66619.73	1.00	4.58	
3F1	COL C7	3.73	245.31	119.72	193.83	164.92	1704.10	1072.50	66619.73	1.00	4.56	
3F1	COL C7	3.73	245.31	121.55	193.83	164.31	1704.10	1072.50	66619.73	1.00	4.54	
3F1	COL C7	3.73	245.31	122.77	193.83	163.70	1704.10	1072.50	66619.73	1.00	4.53	
3F1	COL C7	3.73	245.31	123.99	193.83	163.09	1704.10	1072.50	66619.73	1.00	4.52	
3F1	COL C7	3.73	245.31	125.22	193.83	162.48	1704.10	1072.50	66619.73	1.00	4.51	
3F1	COL C7	3.73	245.31	126.44	193.83	161.86	1704.10	1072.50	66619.73	1.00	4.50	
3F1	COL C7	3.73	245.31	127.05	193.83	161.25	1704.10	1072.50	66619.73	1.00	4.49	
3F1	COL C7	3.73	245.31	127.66	193.83	160.64	1704.10	1072.50	66619.73	1.00	4.50	
3F1	COL C7	3.73	245.31	128.88	193.83	160.03	1704.10	1072.50	66619.73	1.00	4.49	
3F1	COL C7	3.73	245.31	129.49	193.83	159.42	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	130.10	193.83	158.81	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	130.71	193.83	158.20	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	131.32	193.83	157.59	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	131.94	193.83	156.98	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	132.55	193.83	156.37	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	133.16	193.83	155.76	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	133.77	193.83	155.15	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	134.38	193.83	154.53	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	134.99	193.83	153.92	1704.10	1072.50	66619.73	1.00	4.48	
3F1	COL C7	3.73	245.31	135.60	193.83	152.70	1704.10	1072.50	66619.73	1.00	4.49	
3F1	COL C7	3.73	245.31	136.21	193.83	152.09	1704.10	1072.50	66619.73	1.00	4.49	
3F1	COL C7	3.73	245.31	136.82	193.83	150.87	1704.10	1072.50	66619.73	1.00	4.50	
3F1	COL C7	3.73	245.31	137.43	193.83	150.26	1704.10	1072.50	66619.73	1.00	4.50	
3F1	COL C7	3.73	245.31	138.04	193.83	149.04	1704.10	1072.50	66619.73	1.00	4.51	
3F1	COL C7	3.73	245.31	138.65	193.83	148.43	1704.10	1072.50	66619.73	1.00	4.51	
3F1	COL C7	3.73	245.31	139.26	193.83	147.21	1704.10	1072.50	66619.73	1.00	4.52	
3F1	COL C7	3.73	245.31	139.88	193.83	145.98	1704.10	1072.50	66619.73	1.00	4.53	
3F1	COL C7	3.73	245.31	140.49	193.83	145.37	1704.10	1072.50	66619.73	1.00	4.52	
3F1	COL C7	3.73	245.31	141.10	193.83	144.15	1704.10	1072.50	66619.73	1.00	4.53	
3F1	COL C7	3.73	245.31	141.71	193.83	142.93	1704.10	1072.50	66619.73	1.00	4.54	
3F1	COL C7	3.73	245.31	142.32	193.83	141.71	1704.10	1072.50	66619.73	1.00	4.55	
3F1	COL C7	3.73	245.31	142.93	193.83	140.49	1704.10	1072.50	66619.73	1.00	4.56	
3F1	COL C7	3.73	245.31	143.54	193.83	138.65	1704.10	1072.50	66619.73	1.00	4.58	
3F1	COL C7	3.73	245.31	144.15	193.83	137.43	1704.10	1072.50	66619.73	1.00	4.59	
3F1	COL C7	3.73	245.31	144.76	193.83	136.21	1704.10	1072.50	66619.73	1.00	4.60	
3F1	COL C7	3.73	245.31	145.37	193.83	134.38	1704.10	1072.50	66619.73	1.00	4.62	
3F1	COL C7	3.73	245.31	145.98	193.83	132.55	1704.10	1072.50	66619.73	1.00	4.64	
3F1	COL C7	3.73	245.31	146.59	193.83	130.71	1704.10	1072.50	66619.73	1.00	4.66	
3F1	COL C7	3.73	245.31	147.21	193.83	128.88	1704.10	1072.50	66619.73	1.00	4.68	
3F1	COL C7	3.73	245.31	147.82	193.83	126.44	1704.10	1072.50	66619.73	1.00	4.71	
3F1	COL C7	3.73	245.31	148.43	193.83	124.61	1704.10	1072.50	66619.73	1.00	4.73	
3F1	COL C7	3.73	245.31	149.04	193.83	122.16	1704.10	1072.50	66619.73	1.00	4.76	
3F1	COL C7	3.73	245.31	149.65	193.83	119.72	1704.10	1072.50	66619.73	1.00	4.79	
3F1	COL C7	3.73	245.31	150.26	193.83	116.66	1704.10	1072.50	66619.73	1.00	4.83	
3F1	COL C7	3.73	245.31	150.87	193.83	113.61	1704.10	1072.50	66619.73	1.00	4.88	
3F1	COL C7	3.73	245.31	151.48	193.83	110.56	1704.10	1072.50	66619.73	1.00	4.92	
3F1	COL C7	3.73	245.31	152.09	193.83	106.28	1704.10	1072.50	66619.73	1.00	4.99	
3F1	COL C7	3.73	245.31	152.70	193.83	102.01	1704.10	1072.50	66619.73	1.00	5.06	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 7 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
3F1	COL C7	3.73	245.31	153.31	193.83	96.51	1704.10	1072.50	66619.73	1.00	5.15		
3F1	COL C7	3.73	245.31	153.92	193.83	88.57	1704.10	1072.50	66619.73	1.00	5.31		
4F1	COL C7	3.73	245.31	129.49	193.83	193.63	1704.10	1072.50	66619.73	1.00	4.02		
4F1	COL C7	3.73	245.31	134.38	193.83	193.02	1704.10	1072.50	66619.73	1.00	3.96		
4F1	COL C7	3.73	245.31	136.82	193.83	192.41	1704.10	1072.50	66619.73	1.00	3.94		
4F1	COL C7	3.73	245.31	138.65	193.83	191.79	1704.10	1072.50	66619.73	1.00	3.93		
4F1	COL C7	3.73	245.31	140.49	193.83	191.18	1704.10	1072.50	66619.73	1.00	3.91		
4F1	COL C7	3.73	245.31	141.71	193.83	190.57	1704.10	1072.50	66619.73	1.00	3.90		
4F1	COL C7	3.73	245.31	142.93	193.83	189.96	1704.10	1072.50	66619.73	1.00	3.90		
4F1	COL C7	3.73	245.31	144.76	193.83	189.35	1704.10	1072.50	66619.73	1.00	3.88		
4F1	COL C7	3.73	245.31	145.37	193.83	188.74	1704.10	1072.50	66619.73	1.00	3.88		
4F1	COL C7	3.73	245.31	146.59	193.83	188.13	1704.10	1072.50	66619.73	1.00	3.88		
4F1	COL C7	3.73	245.31	147.21	193.83	187.52	1704.10	1072.50	66619.73	1.00	3.87		
4F1	COL C7	3.73	245.31	148.43	193.83	186.91	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	149.04	193.83	186.30	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	149.65	193.83	185.69	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	150.26	193.83	185.08	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	150.87	193.83	184.46	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	152.09	193.83	183.85	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	152.70	193.83	183.24	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	153.31	193.83	182.63	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	153.92	193.83	182.02	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	154.53	193.83	181.41	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	155.15	193.83	180.19	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	155.76	193.83	179.58	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	156.37	193.83	178.97	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	156.98	193.83	178.36	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	157.59	193.83	177.75	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	158.20	193.83	177.13	1704.10	1072.50	66619.73	1.00	3.86		
4F1	COL C7	3.73	245.31	158.81	193.83	175.91	1704.10	1072.50	66619.73	1.00	3.87		
4F1	COL C7	3.73	245.31	159.42	193.83	175.30	1704.10	1072.50	66619.73	1.00	3.87		
4F1	COL C7	3.73	245.31	160.03	193.83	174.08	1704.10	1072.50	66619.73	1.00	3.87		
4F1	COL C7	3.73	245.31	160.64	193.83	173.47	1704.10	1072.50	66619.73	1.00	3.87		
4F1	COL C7	3.73	245.31	161.25	193.83	172.25	1704.10	1072.50	66619.73	1.00	3.88		
4F1	COL C7	3.73	245.31	161.86	193.83	171.64	1704.10	1072.50	66619.73	1.00	3.88		
4F1	COL C7	3.73	245.31	162.48	193.83	170.42	1704.10	1072.50	66619.73	1.00	3.89		
4F1	COL C7	3.73	245.31	163.09	193.83	169.19	1704.10	1072.50	66619.73	1.00	3.89		
4F1	COL C7	3.73	245.31	163.70	193.83	167.97	1704.10	1072.50	66619.73	1.00	3.90		
4F1	COL C7	3.73	245.31	164.31	193.83	166.75	1704.10	1072.50	66619.73	1.00	3.91		
4F1	COL C7	3.73	245.31	164.92	193.83	166.14	1704.10	1072.50	66619.73	1.00	3.91		
4F1	COL C7	3.73	245.31	165.53	193.83	164.31	1704.10	1072.50	66619.73	1.00	3.92		
4F1	COL C7	3.73	245.31	166.14	193.83	163.70	1704.10	1072.50	66619.73	1.00	3.92		
4F1	COL C7	3.73	245.31	166.75	193.83	162.48	1704.10	1072.50	66619.73	1.00	3.93		
4F1	COL C7	3.73	245.31	167.36	193.83	160.64	1704.10	1072.50	66619.73	1.00	3.94		
4F1	COL C7	3.73	245.31	167.97	193.83	159.42	1704.10	1072.50	66619.73	1.00	3.95		
4F1	COL C7	3.73	245.31	168.58	193.83	157.59	1704.10	1072.50	66619.73	1.00	3.96		
4F1	COL C7	3.73	245.31	169.19	193.83	156.37	1704.10	1072.50	66619.73	1.00	3.97		
4F1	COL C7	3.73	245.31	169.81	193.83	154.53	1704.10	1072.50	66619.73	1.00	3.98		
4F1	COL C7	3.73	245.31	170.42	193.83	152.70	1704.10	1072.50	66619.73	1.00	4.00		
4F1	COL C7	3.73	245.31	171.03	193.83	150.87	1704.10	1072.50	66619.73	1.00	4.01		
4F1	COL C7	3.73	245.31	171.64	193.83	149.65	1704.10	1072.50	66619.73	1.00	4.02		
4F1	COL C7	3.73	245.31	172.25	193.83	147.21	1704.10	1072.50	66619.73	1.00	4.04		
4F1	COL C7	3.73	245.31	172.86	193.83	145.37	1704.10	1072.50	66619.73	1.00	4.06		
4F1	COL C7	3.73	245.31	173.47	193.83	142.93	1704.10	1072.50	66619.73	1.00	4.08		
4F1	COL C7	3.73	245.31	174.08	193.83	140.49	1704.10	1072.50	66619.73	1.00	4.10		
4F1	COL C7	3.73	245.31	174.69	193.83	138.04	1704.10	1072.50	66619.73	1.00	4.13		
4F1	COL C7	3.73	245.31	175.30	193.83	134.38	1704.10	1072.50	66619.73	1.00	4.17		
4F1	COL C7	3.73	245.31	175.91	193.83	131.32	1704.10	1072.50	66619.73	1.00	4.20		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - North Frame Column 7 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _c		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
4F1	COL C7	3.73	245.31	176.52	193.83	127.66	1704.10	1072.50	66619.73	1.00	4.24
4F1	COL C7	3.73	245.31	177.13	193.83	124.61	1704.10	1072.50	66619.73	1.00	4.27
4F1	COL C7	3.73	245.31	177.75	193.83	120.33	1704.10	1072.50	66619.73	1.00	4.32
4F1	COL C7	3.73	245.31	178.36	193.83	114.83	1704.10	1072.50	66619.73	1.00	4.39
4F1	COL C7	3.73	245.31	178.97	193.83	108.11	1704.10	1072.50	66619.73	1.00	4.48
4F1	COL C7	3.73	245.31	179.58	193.83	94.06	1704.10	1072.50	66619.73	1.00	4.70
5C1	COL C7	3.73	245.31	167.97	193.83	184.46	1704.10	1072.50	66619.73	1.00	3.67
5C1	COL C7	3.73	245.31	169.19	193.83	183.85	1704.10	1072.50	66619.73	1.00	3.67
5C1	COL C7	3.73	245.31	170.42	193.83	183.24	1704.10	1072.50	66619.73	1.00	3.66
5C1	COL C7	3.73	245.31	171.64	193.83	182.63	1704.10	1072.50	66619.73	1.00	3.65
5C1	COL C7	3.73	245.31	172.86	193.83	182.02	1704.10	1072.50	66619.73	1.00	3.65
5C1	COL C7	3.73	245.31	174.08	193.83	181.41	1704.10	1072.50	66619.73	1.00	3.64
5C1	COL C7	3.73	245.31	175.30	193.83	180.80	1704.10	1072.50	66619.73	1.00	3.63
5C1	COL C7	3.73	245.31	183.85	193.83	180.19	1704.10	1072.50	66619.73	1.00	3.55
5C1	COL C7	3.73	245.31	188.74	193.83	179.58	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	189.35	193.83	178.97	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	189.96	193.83	178.36	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	190.57	193.83	177.75	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	191.18	193.83	177.13	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	191.79	193.83	176.52	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	192.41	193.83	175.91	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	193.02	193.83	175.30	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	193.63	193.83	174.69	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	194.24	193.83	174.08	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	194.85	193.83	173.47	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	195.46	193.83	172.86	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	196.07	193.83	172.25	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	196.68	193.83	171.64	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	197.29	193.83	170.42	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	197.90	193.83	169.81	1704.10	1072.50	66619.73	1.00	3.51
5C1	COL C7	3.73	245.31	198.51	193.83	168.58	1704.10	1072.50	66619.73	1.00	3.52
5C1	COL C7	3.73	245.31	199.12	193.83	167.36	1704.10	1072.50	66619.73	1.00	3.52
5C1	COL C7	3.73	245.31	199.73	193.83	166.14	1704.10	1072.50	66619.73	1.00	3.53
5C1	COL C7	3.73	245.31	200.35	193.83	164.92	1704.10	1072.50	66619.73	1.00	3.53
5C1	COL C7	3.73	245.31	200.96	193.83	163.70	1704.10	1072.50	66619.73	1.00	3.54
5C1	COL C7	3.73	245.31	201.57	193.83	162.48	1704.10	1072.50	66619.73	1.00	3.55
5C1	COL C7	3.73	245.31	202.18	193.83	160.64	1704.10	1072.50	66619.73	1.00	3.56
5C1	COL C7	3.73	245.31	202.79	193.83	158.20	1704.10	1072.50	66619.73	1.00	3.57
5C1	COL C7	3.73	245.31	203.40	193.83	156.37	1704.10	1072.50	66619.73	1.00	3.59
5C1	COL C7	3.73	245.31	204.01	193.83	154.53	1704.10	1072.50	66619.73	1.00	3.60
5C1	COL C7	3.73	245.31	204.62	193.83	152.09	1704.10	1072.50	66619.73	1.00	3.62
5C1	COL C7	3.73	245.31	205.23	193.83	149.65	1704.10	1072.50	66619.73	1.00	3.63
5C1	COL C7	3.73	245.31	205.84	193.83	147.21	1704.10	1072.50	66619.73	1.00	3.65
5C1	COL C7	3.73	245.31	206.45	193.83	142.93	1704.10	1072.50	66619.73	1.00	3.69

Load Case	Controlling RF
HS20 INV	1.80
HS20 OPER	3.00
2F1	6.82
3F1	4.48
4F1	3.86
5C1	3.51

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Columns 1 & 4 Ratings



Calculated: CTG 3/1/2012
 Checked: NRF 3/2/2012

DL Factor 1.30

LL Factor 2.17 INV 1.30 OPER

Impact 1.3

Member	LLDF	Axial Forces From STAAD						Capacity	Rating Factors					
		Dead Load	HS20 LL	2F1 LL	3F1 LL	4F1 LL	5C1	P _u	HS20	HS20	2F1	3F1	4F1	5C1
		kips	kips	kips	kips	kips	kips	kips	RF _{INV}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}
COL C1	3.729	1.92	22.65	12.53	17.38	18.11	16.90	270.80	1.13	1.88	3.40	2.45	2.35	2.52
COL C4	3.729	10.63	21.59	12.79	17.97	19.02	17.53	270.80	1.13	1.89	3.19	2.27	2.14	2.33

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - South Frame Column 2 Ratings



Calculated: CTG
 Checked: NRF
 3/1/2012
 3/2/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _c			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
LLDF	3.73		kips	kips	k-ft	k-ft	kips	k-ft	kips						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF				
HS20 INV	COL C2	3.73	245.44	289.12	186.03	413.31	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	290.13	186.03	412.30	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	292.17	186.03	410.26	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	293.19	186.03	408.22	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	294.21	186.03	407.21	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	295.22	186.03	406.19	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	296.24	186.03	405.17	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	297.26	186.03	404.15	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	299.30	186.03	402.12	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	300.32	186.03	400.08	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	302.35	186.03	399.06	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	305.41	186.03	398.04	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	307.44	186.03	397.03	1704.10	1072.50	66619.73	1.00	1.85				
HS20 INV	COL C2	3.73	245.44	310.50	186.03	396.01	1704.10	1072.50	66619.73	1.00	1.85				
HS20 INV	COL C2	3.73	245.44	312.53	186.03	394.99	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	314.57	186.03	393.97	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	316.60	186.03	392.95	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	318.64	186.03	391.94	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	319.66	186.03	390.92	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	320.68	186.03	389.90	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	321.69	186.03	387.86	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	322.71	186.03	385.83	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	323.73	186.03	383.79	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	324.75	186.03	381.76	1704.10	1072.50	66619.73	1.00	1.84				
HS20 INV	COL C2	3.73	245.44	315.59	186.03	379.72	1704.10	1072.50	66619.73	1.00	1.88				
HS20 INV	COL C2	3.73	245.44	325.77	186.03	378.70	1704.10	1072.50	66619.73	1.00	1.85				
HS20 INV	COL C2	3.73	245.44	326.78	186.03	376.67	1704.10	1072.50	66619.73	1.00	1.85				
HS20 INV	COL C2	3.73	245.44	327.80	186.03	374.63	1704.10	1072.50	66619.73	1.00	1.85				
HS20 INV	COL C2	3.73	245.44	328.82	186.03	372.59	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	329.84	186.03	370.56	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	330.86	186.03	368.52	1704.10	1072.50	66619.73	1.00	1.86				
HS20 INV	COL C2	3.73	245.44	331.87	186.03	366.49	1704.10	1072.50	66619.73	1.00	1.87				
HS20 INV	COL C2	3.73	245.44	332.89	186.03	363.43	1704.10	1072.50	66619.73	1.00	1.87				
HS20 INV	COL C2	3.73	245.44	333.91	186.03	361.40	1704.10	1072.50	66619.73	1.00	1.87				
HS20 INV	COL C2	3.73	245.44	334.93	186.03	359.36	1704.10	1072.50	66619.73	1.00	1.88				
HS20 INV	COL C2	3.73	245.44	335.95	186.03	357.32	1704.10	1072.50	66619.73	1.00	1.88				
HS20 INV	COL C2	3.73	245.44	336.96	186.03	355.29	1704.10	1072.50	66619.73	1.00	1.88				
HS20 INV	COL C2	3.73	245.44	337.98	186.03	352.23	1704.10	1072.50	66619.73	1.00	1.89				
HS20 INV	COL C2	3.73	245.44	339.00	186.03	350.20	1704.10	1072.50	66619.73	1.00	1.89				
HS20 INV	COL C2	3.73	245.44	340.02	186.03	348.16	1704.10	1072.50	66619.73	1.00	1.89				
HS20 INV	COL C2	3.73	245.44	341.04	186.03	346.13	1704.10	1072.50	66619.73	1.00	1.89				
HS20 INV	COL C2	3.73	245.44	342.05	186.03	343.07	1704.10	1072.50	66619.73	1.00	1.90				
HS20 INV	COL C2	3.73	245.44	343.07	186.03	341.04	1704.10	1072.50	66619.73	1.00	1.90				
HS20 INV	COL C2	3.73	245.44	344.09	186.03	339.00	1704.10	1072.50	66619.73	1.00	1.90				
HS20 INV	COL C2	3.73	245.44	345.11	186.03	336.96	1704.10	1072.50	66619.73	1.00	1.91				
HS20 INV	COL C2	3.73	245.44	346.13	186.03	334.93	1704.10	1072.50	66619.73	1.00	1.91				
HS20 INV	COL C2	3.73	245.44	347.14	186.03	332.89	1704.10	1072.50	66619.73	1.00	1.91				
HS20 INV	COL C2	3.73	245.44	348.16	186.03	330.86	1704.10	1072.50	66619.73	1.00	1.91				
HS20 INV	COL C2	3.73	245.44	349.18	186.03	328.82	1704.10	1072.50	66619.73	1.00	1.92				
HS20 INV	COL C2	3.73	245.44	350.20	186.03	326.78	1704.10	1072.50	66619.73	1.00	1.92				
HS20 INV	COL C2	3.73	245.44	351.22	186.03	325.77	1704.10	1072.50	66619.73	1.00	1.92				
HS20 INV	COL C2	3.73	245.44	352.23	186.03	323.73	1704.10	1072.50	66619.73	1.00	1.92				
HS20 INV	COL C2	3.73	245.44	353.25	186.03	321.69	1704.10	1072.50	66619.73	1.00	1.93				
HS20 INV	COL C2	3.73	245.44	354.27	186.03	319.66	1704.10	1072.50	66619.73	1.00	1.93				
HS20 INV	COL C2	3.73	245.44	355.29	186.03	317.62	1704.10	1072.50	66619.73	1.00	1.93				
HS20 INV	COL C2	3.73	245.44	356.31	186.03	316.60	1704.10	1072.50	66619.73	1.00	1.93				
HS20 INV	COL C2	3.73	245.44	357.32	186.03	315.59	1704.10	1072.50	66619.73	1.00	1.93				
HS20 INV	COL C2	3.73	245.44	358.34	186.03	313.55	1704.10	1072.50	66619.73	1.00	1.93				

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - South Frame Column 2 Ratings



Calculated: CTG
 Checked: NRF
 3/1/2012
 3/2/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL C2	3.73	245.44	359.36	186.03	311.51	1704.10	1072.50	66619.73	1.00	1.94		
HS20 INV	COL C2	3.73	245.44	360.38	186.03	309.48	1704.10	1072.50	66619.73	1.00	1.94		
HS20 INV	COL C2	3.73	245.44	361.40	186.03	307.44	1704.10	1072.50	66619.73	1.00	1.94		
HS20 INV	COL C2	3.73	245.44	362.41	186.03	305.41	1704.10	1072.50	66619.73	1.00	1.94		
HS20 INV	COL C2	3.73	245.44	363.43	186.03	303.37	1704.10	1072.50	66619.73	1.00	1.95		
HS20 INV	COL C2	3.73	245.44	364.45	186.03	301.33	1704.10	1072.50	66619.73	1.00	1.95		
HS20 INV	COL C2	3.73	245.44	366.49	186.03	299.30	1704.10	1072.50	66619.73	1.00	1.95		
HS20 INV	COL C2	3.73	245.44	367.50	186.03	297.26	1704.10	1072.50	66619.73	1.00	1.95		
HS20 INV	COL C2	3.73	245.44	368.52	186.03	295.22	1704.10	1072.50	66619.73	1.00	1.96		
HS20 INV	COL C2	3.73	245.44	369.54	186.03	293.19	1704.10	1072.50	66619.73	1.00	1.96		
HS20 INV	COL C2	3.73	245.44	370.56	186.03	291.15	1704.10	1072.50	66619.73	1.00	1.96		
HS20 INV	COL C2	3.73	245.44	371.58	186.03	289.12	1704.10	1072.50	66619.73	1.00	1.96		
HS20 INV	COL C2	3.73	245.44	365.47	186.03	284.03	1704.10	1072.50	66619.73	1.00	2.00		
HS20 INV	COL C2	3.73	245.44	372.59	186.03	283.01	1704.10	1072.50	66619.73	1.00	1.98		
HS20 INV	COL C2	3.73	245.44	373.61	186.03	274.86	1704.10	1072.50	66619.73	1.00	2.00		
HS20 INV	COL C2	3.73	245.44	374.63	186.03	267.74	1704.10	1072.50	66619.73	1.00	2.02		
HS20 INV	COL C2	3.73	245.44	375.65	186.03	257.56	1704.10	1072.50	66619.73	1.00	2.05		
HS20 INV	COL C2	3.73	245.44	376.67	186.03	253.49	1704.10	1072.50	66619.73	1.00	2.06		
HS20 INV	COL C2	3.73	245.44	377.68	186.03	249.41	1704.10	1072.50	66619.73	1.00	2.07		
HS20 INV	COL C2	3.73	245.44	378.70	186.03	245.34	1704.10	1072.50	66619.73	1.00	2.08		
HS20 INV	COL C2	3.73	245.44	379.72	186.03	242.29	1704.10	1072.50	66619.73	1.00	2.08		
HS20 INV	COL C2	3.73	245.44	380.74	186.03	238.22	1704.10	1072.50	66619.73	1.00	2.09		
HS20 OPER	COL C2	3.73	245.44	173.47	186.03	247.99	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	174.08	186.03	247.38	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	175.30	186.03	246.16	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	175.91	186.03	244.93	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	176.52	186.03	244.32	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	177.13	186.03	243.71	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	177.75	186.03	243.10	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	178.36	186.03	242.49	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	179.58	186.03	241.27	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	180.19	186.03	240.05	1704.10	1072.50	66619.73	1.00	3.11		
HS20 OPER	COL C2	3.73	245.44	181.41	186.03	239.44	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	183.24	186.03	238.83	1704.10	1072.50	66619.73	1.00	3.09		
HS20 OPER	COL C2	3.73	245.44	184.46	186.03	238.22	1704.10	1072.50	66619.73	1.00	3.09		
HS20 OPER	COL C2	3.73	245.44	186.30	186.03	237.61	1704.10	1072.50	66619.73	1.00	3.08		
HS20 OPER	COL C2	3.73	245.44	187.52	186.03	236.99	1704.10	1072.50	66619.73	1.00	3.07		
HS20 OPER	COL C2	3.73	245.44	188.74	186.03	236.38	1704.10	1072.50	66619.73	1.00	3.07		
HS20 OPER	COL C2	3.73	245.44	189.96	186.03	235.77	1704.10	1072.50	66619.73	1.00	3.06		
HS20 OPER	COL C2	3.73	245.44	191.18	186.03	235.16	1704.10	1072.50	66619.73	1.00	3.06		
HS20 OPER	COL C2	3.73	245.44	191.79	186.03	234.55	1704.10	1072.50	66619.73	1.00	3.06		
HS20 OPER	COL C2	3.73	245.44	192.41	186.03	233.94	1704.10	1072.50	66619.73	1.00	3.06		
HS20 OPER	COL C2	3.73	245.44	193.02	186.03	232.72	1704.10	1072.50	66619.73	1.00	3.06		
HS20 OPER	COL C2	3.73	245.44	193.63	186.03	231.50	1704.10	1072.50	66619.73	1.00	3.07		
HS20 OPER	COL C2	3.73	245.44	194.24	186.03	230.28	1704.10	1072.50	66619.73	1.00	3.07		
HS20 OPER	COL C2	3.73	245.44	194.85	186.03	229.05	1704.10	1072.50	66619.73	1.00	3.08		
HS20 OPER	COL C2	3.73	245.44	189.35	186.03	227.83	1704.10	1072.50	66619.73	1.00	3.13		
HS20 OPER	COL C2	3.73	245.44	195.46	186.03	227.22	1704.10	1072.50	66619.73	1.00	3.08		
HS20 OPER	COL C2	3.73	245.44	196.07	186.03	226.00	1704.10	1072.50	66619.73	1.00	3.09		
HS20 OPER	COL C2	3.73	245.44	196.68	186.03	224.78	1704.10	1072.50	66619.73	1.00	3.09		
HS20 OPER	COL C2	3.73	245.44	197.29	186.03	223.56	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	197.90	186.03	222.33	1704.10	1072.50	66619.73	1.00	3.10		
HS20 OPER	COL C2	3.73	245.44	198.51	186.03	221.11	1704.10	1072.50	66619.73	1.00	3.11		
HS20 OPER	COL C2	3.73	245.44	199.12	186.03	219.89	1704.10	1072.50	66619.73	1.00	3.11		
HS20 OPER	COL C2	3.73	245.44	199.73	186.03	218.06	1704.10	1072.50	66619.73	1.00	3.12		
HS20 OPER	COL C2	3.73	245.44	200.35	186.03	216.84	1704.10	1072.50	66619.73	1.00	3.12		
HS20 OPER	COL C2	3.73	245.44	200.96	186.03	215.62	1704.10	1072.50	66619.73	1.00	3.13		
HS20 OPER	COL C2	3.73	245.44	201.57	186.03	214.39	1704.10	1072.50	66619.73	1.00	3.13		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 2 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
HS20 OPER	COL C2	3.73	245.44	202.18	186.03	213.17	1704.10	1072.50	66619.73	1.00	3.14		
HS20 OPER	COL C2	3.73	245.44	202.79	186.03	211.34	1704.10	1072.50	66619.73	1.00	3.14		
HS20 OPER	COL C2	3.73	245.44	203.40	186.03	210.12	1704.10	1072.50	66619.73	1.00	3.15		
HS20 OPER	COL C2	3.73	245.44	204.01	186.03	208.90	1704.10	1072.50	66619.73	1.00	3.15		
HS20 OPER	COL C2	3.73	245.44	204.62	186.03	207.68	1704.10	1072.50	66619.73	1.00	3.16		
HS20 OPER	COL C2	3.73	245.44	205.23	186.03	205.84	1704.10	1072.50	66619.73	1.00	3.17		
HS20 OPER	COL C2	3.73	245.44	205.84	186.03	204.62	1704.10	1072.50	66619.73	1.00	3.17		
HS20 OPER	COL C2	3.73	245.44	206.45	186.03	203.40	1704.10	1072.50	66619.73	1.00	3.17		
HS20 OPER	COL C2	3.73	245.44	207.06	186.03	202.18	1704.10	1072.50	66619.73	1.00	3.18		
HS20 OPER	COL C2	3.73	245.44	207.68	186.03	200.96	1704.10	1072.50	66619.73	1.00	3.18		
HS20 OPER	COL C2	3.73	245.44	208.29	186.03	199.73	1704.10	1072.50	66619.73	1.00	3.19		
HS20 OPER	COL C2	3.73	245.44	208.90	186.03	198.51	1704.10	1072.50	66619.73	1.00	3.19		
HS20 OPER	COL C2	3.73	245.44	209.51	186.03	197.29	1704.10	1072.50	66619.73	1.00	3.20		
HS20 OPER	COL C2	3.73	245.44	210.12	186.03	196.07	1704.10	1072.50	66619.73	1.00	3.20		
HS20 OPER	COL C2	3.73	245.44	210.73	186.03	195.46	1704.10	1072.50	66619.73	1.00	3.20		
HS20 OPER	COL C2	3.73	245.44	211.34	186.03	194.24	1704.10	1072.50	66619.73	1.00	3.21		
HS20 OPER	COL C2	3.73	245.44	211.95	186.03	193.02	1704.10	1072.50	66619.73	1.00	3.21		
HS20 OPER	COL C2	3.73	245.44	212.56	186.03	191.79	1704.10	1072.50	66619.73	1.00	3.21		
HS20 OPER	COL C2	3.73	245.44	213.17	186.03	190.57	1704.10	1072.50	66619.73	1.00	3.22		
HS20 OPER	COL C2	3.73	245.44	213.78	186.03	189.96	1704.10	1072.50	66619.73	1.00	3.22		
HS20 OPER	COL C2	3.73	245.44	214.39	186.03	189.35	1704.10	1072.50	66619.73	1.00	3.22		
HS20 OPER	COL C2	3.73	245.44	215.01	186.03	188.13	1704.10	1072.50	66619.73	1.00	3.22		
HS20 OPER	COL C2	3.73	245.44	215.62	186.03	186.91	1704.10	1072.50	66619.73	1.00	3.23		
HS20 OPER	COL C2	3.73	245.44	216.23	186.03	185.69	1704.10	1072.50	66619.73	1.00	3.23		
HS20 OPER	COL C2	3.73	245.44	216.84	186.03	184.46	1704.10	1072.50	66619.73	1.00	3.24		
HS20 OPER	COL C2	3.73	245.44	217.45	186.03	183.24	1704.10	1072.50	66619.73	1.00	3.24		
HS20 OPER	COL C2	3.73	245.44	218.06	186.03	182.02	1704.10	1072.50	66619.73	1.00	3.25		
HS20 OPER	COL C2	3.73	245.44	218.67	186.03	180.80	1704.10	1072.50	66619.73	1.00	3.25		
HS20 OPER	COL C2	3.73	245.44	219.89	186.03	179.58	1704.10	1072.50	66619.73	1.00	3.25		
HS20 OPER	COL C2	3.73	245.44	220.50	186.03	178.36	1704.10	1072.50	66619.73	1.00	3.26		
HS20 OPER	COL C2	3.73	245.44	221.11	186.03	177.13	1704.10	1072.50	66619.73	1.00	3.26		
HS20 OPER	COL C2	3.73	245.44	221.72	186.03	175.91	1704.10	1072.50	66619.73	1.00	3.26		
HS20 OPER	COL C2	3.73	245.44	222.33	186.03	174.69	1704.10	1072.50	66619.73	1.00	3.27		
HS20 OPER	COL C2	3.73	245.44	222.95	186.03	173.47	1704.10	1072.50	66619.73	1.00	3.27		
HS20 OPER	COL C2	3.73	245.44	219.28	186.03	170.42	1704.10	1072.50	66619.73	1.00	3.33		
HS20 OPER	COL C2	3.73	245.44	223.56	186.03	169.81	1704.10	1072.50	66619.73	1.00	3.30		
HS20 OPER	COL C2	3.73	245.44	224.17	186.03	164.92	1704.10	1072.50	66619.73	1.00	3.33		
HS20 OPER	COL C2	3.73	245.44	224.78	186.03	160.64	1704.10	1072.50	66619.73	1.00	3.36		
HS20 OPER	COL C2	3.73	245.44	225.39	186.03	154.53	1704.10	1072.50	66619.73	1.00	3.41		
HS20 OPER	COL C2	3.73	245.44	226.00	186.03	152.09	1704.10	1072.50	66619.73	1.00	3.43		
HS20 OPER	COL C2	3.73	245.44	226.61	186.03	149.65	1704.10	1072.50	66619.73	1.00	3.44		
HS20 OPER	COL C2	3.73	245.44	227.22	186.03	147.21	1704.10	1072.50	66619.73	1.00	3.46		
HS20 OPER	COL C2	3.73	245.44	227.83	186.03	145.37	1704.10	1072.50	66619.73	1.00	3.47		
HS20 OPER	COL C2	3.73	245.44	228.44	186.03	142.93	1704.10	1072.50	66619.73	1.00	3.49		
2F1	COL C2	3.73	245.44	69.63	186.03	109.34	1704.10	1072.50	66619.73	1.00	7.31		
2F1	COL C2	3.73	245.44	72.69	186.03	108.72	1704.10	1072.50	66619.73	1.00	7.21		
2F1	COL C2	3.73	245.44	75.13	186.03	108.11	1704.10	1072.50	66619.73	1.00	7.14		
2F1	COL C2	3.73	245.44	76.96	186.03	107.50	1704.10	1072.50	66619.73	1.00	7.09		
2F1	COL C2	3.73	245.44	78.18	186.03	106.89	1704.10	1072.50	66619.73	1.00	7.06		
2F1	COL C2	3.73	245.44	79.41	186.03	106.28	1704.10	1072.50	66619.73	1.00	7.04		
2F1	COL C2	3.73	245.44	81.24	186.03	105.67	1704.10	1072.50	66619.73	1.00	6.99		
2F1	COL C2	3.73	245.44	83.07	186.03	105.06	1704.10	1072.50	66619.73	1.00	6.94		
2F1	COL C2	3.73	245.44	84.29	186.03	104.45	1704.10	1072.50	66619.73	1.00	6.92		
2F1	COL C2	3.73	245.44	85.51	186.03	103.84	1704.10	1072.50	66619.73	1.00	6.89		
2F1	COL C2	3.73	245.44	86.12	186.03	103.23	1704.10	1072.50	66619.73	1.00	6.89		
2F1	COL C2	3.73	245.44	86.74	186.03	101.39	1704.10	1072.50	66619.73	1.00	6.94		
2F1	COL C2	3.73	245.44	87.35	186.03	99.56	1704.10	1072.50	66619.73	1.00	6.98		
2F1	COL C2	3.73	245.44	87.96	186.03	97.73	1704.10	1072.50	66619.73	1.00	7.02		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - South Frame Column 2 Ratings



Calculated:
Checked:

CTG
NRF

3/1/2012
3/2/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$
					Axial Force		Moment		P _u	M _u	A _s F _e	
					Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
2F1	COL C2	3.73	245.44	88.57	186.03	95.90	1704.10	1072.50	66619.73	1.00	7.07	
2F1	COL C2	3.73	245.44	89.18	186.03	94.68	1704.10	1072.50	66619.73	1.00	7.09	
2F1	COL C2	3.73	245.44	89.79	186.03	92.84	1704.10	1072.50	66619.73	1.00	7.13	
2F1	COL C2	3.73	245.44	90.40	186.03	91.01	1704.10	1072.50	66619.73	1.00	7.17	
2F1	COL C2	3.73	245.44	91.01	186.03	90.40	1704.10	1072.50	66619.73	1.00	7.17	
2F1	COL C2	3.73	245.44	91.62	186.03	89.79	1704.10	1072.50	66619.73	1.00	7.17	
2F1	COL C2	3.73	245.44	92.23	186.03	89.18	1704.10	1072.50	66619.73	1.00	7.17	
2F1	COL C2	3.73	245.44	92.84	186.03	87.96	1704.10	1072.50	66619.73	1.00	7.19	
2F1	COL C2	3.73	245.44	93.45	186.03	87.35	1704.10	1072.50	66619.73	1.00	7.19	
2F1	COL C2	3.73	245.44	94.06	186.03	86.12	1704.10	1072.50	66619.73	1.00	7.21	
2F1	COL C2	3.73	245.44	94.68	186.03	85.51	1704.10	1072.50	66619.73	1.00	7.21	
2F1	COL C2	3.73	245.44	95.29	186.03	84.90	1704.10	1072.50	66619.73	1.00	7.21	
2F1	COL C2	3.73	245.44	95.90	186.03	82.46	1704.10	1072.50	66619.73	1.00	7.28	
2F1	COL C2	3.73	245.44	96.51	186.03	77.57	1704.10	1072.50	66619.73	1.00	7.45	
2F1	COL C2	3.73	245.44	97.12	186.03	72.08	1704.10	1072.50	66619.73	1.00	7.66	
2F1	COL C2	3.73	245.44	97.73	186.03	67.80	1704.10	1072.50	66619.73	1.00	7.83	
2F1	COL C2	3.73	245.44	98.34	186.03	62.30	1704.10	1072.50	66619.73	1.00	8.06	
2F1	COL C2	3.73	245.44	98.95	186.03	54.97	1704.10	1072.50	66619.73	1.00	8.40	
3F1	COL C2	3.73	245.44	107.50	186.03	166.75	1704.10	1072.50	66619.73	1.00	4.77	
3F1	COL C2	3.73	245.44	111.17	186.03	166.14	1704.10	1072.50	66619.73	1.00	4.71	
3F1	COL C2	3.73	245.44	112.39	186.03	165.53	1704.10	1072.50	66619.73	1.00	4.70	
3F1	COL C2	3.73	245.44	113.00	186.03	164.92	1704.10	1072.50	66619.73	1.00	4.70	
3F1	COL C2	3.73	245.44	114.83	186.03	164.31	1704.10	1072.50	66619.73	1.00	4.68	
3F1	COL C2	3.73	245.44	117.28	186.03	163.70	1704.10	1072.50	66619.73	1.00	4.65	
3F1	COL C2	3.73	245.44	119.11	186.03	163.09	1704.10	1072.50	66619.73	1.00	4.63	
3F1	COL C2	3.73	245.44	120.94	186.03	162.48	1704.10	1072.50	66619.73	1.00	4.61	
3F1	COL C2	3.73	245.44	122.77	186.03	161.86	1704.10	1072.50	66619.73	1.00	4.59	
3F1	COL C2	3.73	245.44	124.61	186.03	161.25	1704.10	1072.50	66619.73	1.00	4.57	
3F1	COL C2	3.73	245.44	125.22	186.03	160.64	1704.10	1072.50	66619.73	1.00	4.56	
3F1	COL C2	3.73	245.44	125.83	186.03	160.03	1704.10	1072.50	66619.73	1.00	4.56	
3F1	COL C2	3.73	245.44	126.44	186.03	159.42	1704.10	1072.50	66619.73	1.00	4.56	
3F1	COL C2	3.73	245.44	127.05	186.03	158.81	1704.10	1072.50	66619.73	1.00	4.56	
3F1	COL C2	3.73	245.44	127.66	186.03	157.59	1704.10	1072.50	66619.73	1.00	4.57	
3F1	COL C2	3.73	245.44	128.27	186.03	156.98	1704.10	1072.50	66619.73	1.00	4.57	
3F1	COL C2	3.73	245.44	128.88	186.03	156.37	1704.10	1072.50	66619.73	1.00	4.57	
3F1	COL C2	3.73	245.44	129.49	186.03	155.15	1704.10	1072.50	66619.73	1.00	4.58	
3F1	COL C2	3.73	245.44	130.10	186.03	154.53	1704.10	1072.50	66619.73	1.00	4.58	
3F1	COL C2	3.73	245.44	130.71	186.03	153.92	1704.10	1072.50	66619.73	1.00	4.58	
3F1	COL C2	3.73	245.44	131.32	186.03	152.70	1704.10	1072.50	66619.73	1.00	4.59	
3F1	COL C2	3.73	245.44	131.94	186.03	152.09	1704.10	1072.50	66619.73	1.00	4.59	
3F1	COL C2	3.73	245.44	132.55	186.03	150.87	1704.10	1072.50	66619.73	1.00	4.60	
3F1	COL C2	3.73	245.44	133.16	186.03	150.26	1704.10	1072.50	66619.73	1.00	4.60	
3F1	COL C2	3.73	245.44	133.77	186.03	149.04	1704.10	1072.50	66619.73	1.00	4.61	
3F1	COL C2	3.73	245.44	134.38	186.03	148.43	1704.10	1072.50	66619.73	1.00	4.61	
3F1	COL C2	3.73	245.44	134.99	186.03	147.21	1704.10	1072.50	66619.73	1.00	4.62	
3F1	COL C2	3.73	245.44	135.60	186.03	146.59	1704.10	1072.50	66619.73	1.00	4.61	
3F1	COL C2	3.73	245.44	136.21	186.03	144.76	1704.10	1072.50	66619.73	1.00	4.63	
3F1	COL C2	3.73	245.44	136.82	186.03	143.54	1704.10	1072.50	66619.73	1.00	4.64	
3F1	COL C2	3.73	245.44	137.43	186.03	141.10	1704.10	1072.50	66619.73	1.00	4.67	
3F1	COL C2	3.73	245.44	138.04	186.03	139.88	1704.10	1072.50	66619.73	1.00	4.68	
3F1	COL C2	3.73	245.44	138.65	186.03	139.26	1704.10	1072.50	66619.73	1.00	4.68	
3F1	COL C2	3.73	245.44	139.26	186.03	138.65	1704.10	1072.50	66619.73	1.00	4.68	
3F1	COL C2	3.73	245.44	139.88	186.03	138.04	1704.10	1072.50	66619.73	1.00	4.68	
3F1	COL C2	3.73	245.44	140.49	186.03	137.43	1704.10	1072.50	66619.73	1.00	4.68	
3F1	COL C2	3.73	245.44	141.10	186.03	135.60	1704.10	1072.50	66619.73	1.00	4.70	
3F1	COL C2	3.73	245.44	141.71	186.03	134.38	1704.10	1072.50	66619.73	1.00	4.71	
3F1	COL C2	3.73	245.44	142.32	186.03	131.94	1704.10	1072.50	66619.73	1.00	4.74	
3F1	COL C2	3.73	245.44	142.93	186.03	130.71	1704.10	1072.50	66619.73	1.00	4.75	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 2 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

Impact	DL Factor	LL Factor	LLDF	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
3F1	COL C2	3.73	245.44	143.54	186.03	128.88	1704.10	1072.50	66619.73	1.00	4.77	
3F1	COL C2	3.73	245.44	144.15	186.03	127.05	1704.10	1072.50	66619.73	1.00	4.79	
3F1	COL C2	3.73	245.44	144.76	186.03	125.22	1704.10	1072.50	66619.73	1.00	4.81	
3F1	COL C2	3.73	245.44	145.37	186.03	123.38	1704.10	1072.50	66619.73	1.00	4.83	
3F1	COL C2	3.73	245.44	145.98	186.03	121.55	1704.10	1072.50	66619.73	1.00	4.85	
3F1	COL C2	3.73	245.44	146.59	186.03	119.72	1704.10	1072.50	66619.73	1.00	4.88	
3F1	COL C2	3.73	245.44	147.21	186.03	117.89	1704.10	1072.50	66619.73	1.00	4.90	
3F1	COL C2	3.73	245.44	147.82	186.03	116.05	1704.10	1072.50	66619.73	1.00	4.92	
3F1	COL C2	3.73	245.44	148.43	186.03	110.56	1704.10	1072.50	66619.73	1.00	5.01	
3F1	COL C2	3.73	245.44	149.04	186.03	104.45	1704.10	1072.50	66619.73	1.00	5.11	
3F1	COL C2	3.73	245.44	149.65	186.03	97.73	1704.10	1072.50	66619.73	1.00	5.24	
3F1	COL C2	3.73	245.44	150.26	186.03	91.62	1704.10	1072.50	66619.73	1.00	5.35	
3F1	COL C2	3.73	245.44	150.87	186.03	88.57	1704.10	1072.50	66619.73	1.00	5.40	
3F1	COL C2	3.73	245.44	151.48	186.03	77.57	1704.10	1072.50	66619.73	1.00	5.64	
4F1	COL C2	3.73	245.44	143.54	186.03	186.30	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	144.15	186.03	185.69	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	144.76	186.03	185.08	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	145.37	186.03	184.46	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	145.98	186.03	183.85	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	146.59	186.03	183.24	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	147.21	186.03	182.63	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	147.82	186.03	182.02	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	148.43	186.03	181.41	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	149.65	186.03	180.80	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C2	3.73	245.44	150.26	186.03	180.19	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C2	3.73	245.44	150.87	186.03	179.58	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C2	3.73	245.44	151.48	186.03	178.97	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C2	3.73	245.44	152.09	186.03	177.75	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C2	3.73	245.44	152.70	186.03	177.13	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C2	3.73	245.44	153.31	186.03	175.91	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	153.92	186.03	175.30	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C2	3.73	245.44	154.53	186.03	173.47	1704.10	1072.50	66619.73	1.00	3.98	
4F1	COL C2	3.73	245.44	155.15	186.03	172.25	1704.10	1072.50	66619.73	1.00	3.98	
4F1	COL C2	3.73	245.44	155.76	186.03	171.64	1704.10	1072.50	66619.73	1.00	3.98	
4F1	COL C2	3.73	245.44	156.37	186.03	170.42	1704.10	1072.50	66619.73	1.00	3.99	
4F1	COL C2	3.73	245.44	156.98	186.03	168.58	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C2	3.73	245.44	157.59	186.03	167.97	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C2	3.73	245.44	158.20	186.03	166.75	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C2	3.73	245.44	158.81	186.03	165.53	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C2	3.73	245.44	159.42	186.03	164.31	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C2	3.73	245.44	160.03	186.03	163.09	1704.10	1072.50	66619.73	1.00	4.03	
4F1	COL C2	3.73	245.44	160.64	186.03	161.86	1704.10	1072.50	66619.73	1.00	4.04	
4F1	COL C2	3.73	245.44	161.25	186.03	160.64	1704.10	1072.50	66619.73	1.00	4.05	
4F1	COL C2	3.73	245.44	161.86	186.03	159.42	1704.10	1072.50	66619.73	1.00	4.05	
4F1	COL C2	3.73	245.44	162.48	186.03	158.20	1704.10	1072.50	66619.73	1.00	4.06	
4F1	COL C2	3.73	245.44	163.09	186.03	156.98	1704.10	1072.50	66619.73	1.00	4.07	
4F1	COL C2	3.73	245.44	163.70	186.03	155.76	1704.10	1072.50	66619.73	1.00	4.07	
4F1	COL C2	3.73	245.44	164.31	186.03	154.53	1704.10	1072.50	66619.73	1.00	4.08	
4F1	COL C2	3.73	245.44	164.92	186.03	153.31	1704.10	1072.50	66619.73	1.00	4.09	
4F1	COL C2	3.73	245.44	165.53	186.03	152.09	1704.10	1072.50	66619.73	1.00	4.10	
4F1	COL C2	3.73	245.44	166.14	186.03	150.87	1704.10	1072.50	66619.73	1.00	4.10	
4F1	COL C2	3.73	245.44	166.75	186.03	149.65	1704.10	1072.50	66619.73	1.00	4.11	
4F1	COL C2	3.73	245.44	167.36	186.03	148.43	1704.10	1072.50	66619.73	1.00	4.11	
4F1	COL C2	3.73	245.44	167.97	186.03	147.21	1704.10	1072.50	66619.73	1.00	4.12	
4F1	COL C2	3.73	245.44	168.58	186.03	144.76	1704.10	1072.50	66619.73	1.00	4.14	
4F1	COL C2	3.73	245.44	169.19	186.03	142.93	1704.10	1072.50	66619.73	1.00	4.16	
4F1	COL C2	3.73	245.44	169.81	186.03	139.88	1704.10	1072.50	66619.73	1.00	4.19	
4F1	COL C2	3.73	245.44	170.42	186.03	137.43	1704.10	1072.50	66619.73	1.00	4.22	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 2 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _e	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
4F1	COL C2	3.73	245.44	171.03	186.03	134.99	1704.10	1072.50	66619.73	1.00	4.24		
4F1	COL C2	3.73	245.44	171.64	186.03	132.55	1704.10	1072.50	66619.73	1.00	4.26		
4F1	COL C2	3.73	245.44	172.25	186.03	130.10	1704.10	1072.50	66619.73	1.00	4.29		
4F1	COL C2	3.73	245.44	172.86	186.03	127.05	1704.10	1072.50	66619.73	1.00	4.32		
4F1	COL C2	3.73	245.44	173.47	186.03	124.61	1704.10	1072.50	66619.73	1.00	4.35		
4F1	COL C2	3.73	245.44	174.08	186.03	121.55	1704.10	1072.50	66619.73	1.00	4.38		
4F1	COL C2	3.73	245.44	174.69	186.03	116.66	1704.10	1072.50	66619.73	1.00	4.45		
4F1	COL C2	3.73	245.44	175.30	186.03	108.11	1704.10	1072.50	66619.73	1.00	4.57		
4F1	COL C2	3.73	245.44	175.91	186.03	97.12	1704.10	1072.50	66619.73	1.00	4.74		
4F1	COL C2	3.73	245.44	176.52	186.03	93.45	1704.10	1072.50	66619.73	1.00	4.79		
5C1	COL C2	3.73	245.44	171.03	186.03	182.63	1704.10	1072.50	66619.73	1.00	3.68		
5C1	COL C2	3.73	245.44	172.25	186.03	182.02	1704.10	1072.50	66619.73	1.00	3.68		
5C1	COL C2	3.73	245.44	172.86	186.03	181.41	1704.10	1072.50	66619.73	1.00	3.68		
5C1	COL C2	3.73	245.44	174.08	186.03	180.80	1704.10	1072.50	66619.73	1.00	3.67		
5C1	COL C2	3.73	245.44	175.30	186.03	180.19	1704.10	1072.50	66619.73	1.00	3.66		
5C1	COL C2	3.73	245.44	175.91	186.03	179.58	1704.10	1072.50	66619.73	1.00	3.66		
5C1	COL C2	3.73	245.44	177.13	186.03	178.97	1704.10	1072.50	66619.73	1.00	3.66		
5C1	COL C2	3.73	245.44	178.36	186.03	178.36	1704.10	1072.50	66619.73	1.00	3.65		
5C1	COL C2	3.73	245.44	178.97	186.03	177.75	1704.10	1072.50	66619.73	1.00	3.65		
5C1	COL C2	3.73	245.44	180.19	186.03	177.13	1704.10	1072.50	66619.73	1.00	3.64		
5C1	COL C2	3.73	245.44	180.80	186.03	176.52	1704.10	1072.50	66619.73	1.00	3.64		
5C1	COL C2	3.73	245.44	181.41	186.03	175.91	1704.10	1072.50	66619.73	1.00	3.64		
5C1	COL C2	3.73	245.44	182.63	186.03	175.30	1704.10	1072.50	66619.73	1.00	3.64		
5C1	COL C2	3.73	245.44	184.46	186.03	174.69	1704.10	1072.50	66619.73	1.00	3.62		
5C1	COL C2	3.73	245.44	185.69	186.03	174.08	1704.10	1072.50	66619.73	1.00	3.62		
5C1	COL C2	3.73	245.44	186.91	186.03	173.47	1704.10	1072.50	66619.73	1.00	3.61		
5C1	COL C2	3.73	245.44	187.52	186.03	172.86	1704.10	1072.50	66619.73	1.00	3.61		
5C1	COL C2	3.73	245.44	188.74	186.03	172.25	1704.10	1072.50	66619.73	1.00	3.60		
5C1	COL C2	3.73	245.44	189.35	186.03	171.64	1704.10	1072.50	66619.73	1.00	3.60		
5C1	COL C2	3.73	245.44	190.57	186.03	171.03	1704.10	1072.50	66619.73	1.00	3.60		
5C1	COL C2	3.73	245.44	191.18	186.03	170.42	1704.10	1072.50	66619.73	1.00	3.60		
5C1	COL C2	3.73	245.44	191.79	186.03	169.81	1704.10	1072.50	66619.73	1.00	3.60		
5C1	COL C2	3.73	245.44	192.41	186.03	169.19	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	193.02	186.03	168.58	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	193.63	186.03	167.97	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	194.24	186.03	167.36	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	194.85	186.03	166.75	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	195.46	186.03	166.14	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	196.07	186.03	165.53	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	196.68	186.03	164.92	1704.10	1072.50	66619.73	1.00	3.59		
5C1	COL C2	3.73	245.44	197.29	186.03	163.70	1704.10	1072.50	66619.73	1.00	3.60		
5C1	COL C2	3.73	245.44	197.90	186.03	162.48	1704.10	1072.50	66619.73	1.00	3.60		
5C1	COL C2	3.73	245.44	198.51	186.03	161.25	1704.10	1072.50	66619.73	1.00	3.61		
5C1	COL C2	3.73	245.44	199.12	186.03	160.03	1704.10	1072.50	66619.73	1.00	3.62		
5C1	COL C2	3.73	245.44	199.73	186.03	158.20	1704.10	1072.50	66619.73	1.00	3.63		
5C1	COL C2	3.73	245.44	200.35	186.03	150.87	1704.10	1072.50	66619.73	1.00	3.69		
5C1	COL C2	3.73	245.44	200.96	186.03	148.43	1704.10	1072.50	66619.73	1.00	3.71		
5C1	COL C2	3.73	245.44	201.57	186.03	146.59	1704.10	1072.50	66619.73	1.00	3.73		
5C1	COL C2	3.73	245.44	202.18	186.03	142.93	1704.10	1072.50	66619.73	1.00	3.76		

Load Case	Controlling RF
HS20 INV	1.84
HS20 OPER	3.06
2F1	6.89
3F1	4.56
4F1	3.95
5C1	3.59

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
			Axial Force		Moment		P _u	M _u	A _s F _{ex}			
			Dead Load	Max. LL + I	Dead Load	Max LL + I						
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
HS20 INV	COL C3	3.73	245.83	263.67	192.40	413.31	1704.10	1072.50	66619.73	1.00	1.92	
HS20 INV	COL C3	3.73	245.83	269.77	192.40	412.30	1704.10	1072.50	66619.73	1.00	1.91	
HS20 INV	COL C3	3.73	245.83	275.88	192.40	411.28	1704.10	1072.50	66619.73	1.00	1.89	
HS20 INV	COL C3	3.73	245.83	278.94	192.40	410.26	1704.10	1072.50	66619.73	1.00	1.88	
HS20 INV	COL C3	3.73	245.83	283.01	192.40	409.24	1704.10	1072.50	66619.73	1.00	1.88	
HS20 INV	COL C3	3.73	245.83	286.06	192.40	408.22	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C3	3.73	245.83	288.10	192.40	407.21	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C3	3.73	245.83	293.19	192.40	406.19	1704.10	1072.50	66619.73	1.00	1.86	
HS20 INV	COL C3	3.73	245.83	295.22	192.40	405.17	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C3	3.73	245.83	298.28	192.40	404.15	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C3	3.73	245.83	301.33	192.40	403.13	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	303.37	192.40	402.12	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	305.41	192.40	401.10	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	307.44	192.40	400.08	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	308.46	192.40	399.06	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	310.50	192.40	398.04	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	312.53	192.40	397.03	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	313.55	192.40	396.01	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	314.57	192.40	394.99	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	315.59	192.40	393.97	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	317.62	192.40	392.95	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C3	3.73	245.83	318.64	192.40	391.94	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C3	3.73	245.83	320.68	192.40	389.90	1704.10	1072.50	66619.73	1.00	1.82	
HS20 INV	COL C3	3.73	245.83	321.69	192.40	387.86	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	322.71	192.40	386.85	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	323.73	192.40	385.83	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	325.77	192.40	383.79	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	326.78	192.40	381.76	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	328.82	192.40	379.72	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	329.84	192.40	377.68	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	330.86	192.40	375.65	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	331.87	192.40	374.63	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	332.89	192.40	373.61	1704.10	1072.50	66619.73	1.00	1.83	
HS20 INV	COL C3	3.73	245.83	333.91	192.40	371.58	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	334.93	192.40	369.54	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	335.95	192.40	368.52	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	336.96	192.40	366.49	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	337.98	192.40	364.45	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	339.00	192.40	363.43	1704.10	1072.50	66619.73	1.00	1.84	
HS20 INV	COL C3	3.73	245.83	340.02	192.40	361.40	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C3	3.73	245.83	341.04	192.40	359.36	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C3	3.73	245.83	342.05	192.40	357.32	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C3	3.73	245.83	343.07	192.40	355.29	1704.10	1072.50	66619.73	1.00	1.85	
HS20 INV	COL C3	3.73	245.83	344.09	192.40	353.25	1704.10	1072.50	66619.73	1.00	1.86	
HS20 INV	COL C3	3.73	245.83	345.11	192.40	351.22	1704.10	1072.50	66619.73	1.00	1.86	
HS20 INV	COL C3	3.73	245.83	346.13	192.40	349.18	1704.10	1072.50	66619.73	1.00	1.86	
HS20 INV	COL C3	3.73	245.83	347.14	192.40	347.14	1704.10	1072.50	66619.73	1.00	1.86	
HS20 INV	COL C3	3.73	245.83	348.16	192.40	344.09	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C3	3.73	245.83	349.18	192.40	342.05	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C3	3.73	245.83	350.20	192.40	340.02	1704.10	1072.50	66619.73	1.00	1.87	
HS20 INV	COL C3	3.73	245.83	351.22	192.40	336.96	1704.10	1072.50	66619.73	1.00	1.88	
HS20 INV	COL C3	3.73	245.83	352.23	192.40	333.91	1704.10	1072.50	66619.73	1.00	1.89	
HS20 INV	COL C3	3.73	245.83	353.25	192.40	331.87	1704.10	1072.50	66619.73	1.00	1.89	
HS20 INV	COL C3	3.73	245.83	354.27	192.40	329.84	1704.10	1072.50	66619.73	1.00	1.89	
HS20 INV	COL C3	3.73	245.83	355.29	192.40	326.78	1704.10	1072.50	66619.73	1.00	1.90	
HS20 INV	COL C3	3.73	245.83	356.31	192.40	323.73	1704.10	1072.50	66619.73	1.00	1.90	
HS20 INV	COL C3	3.73	245.83	357.32	192.40	319.66	1704.10	1072.50	66619.73	1.00	1.91	
HS20 INV	COL C3	3.73	245.83	358.34	192.40	317.62	1704.10	1072.50	66619.73	1.00	1.91	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
		LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
1.30											
2.17 INV	1.30 OPER										
1.26											
HS20 INV	COL C3	3.73	245.83	359.36	192.40	313.55	1704.10	1072.50	66619.73	1.00	1.92
HS20 INV	COL C3	3.73	245.83	360.38	192.40	310.50	1704.10	1072.50	66619.73	1.00	1.93
HS20 INV	COL C3	3.73	245.83	361.40	192.40	306.42	1704.10	1072.50	66619.73	1.00	1.93
HS20 INV	COL C3	3.73	245.83	362.41	192.40	302.35	1704.10	1072.50	66619.73	1.00	1.94
HS20 INV	COL C3	3.73	245.83	363.43	192.40	298.28	1704.10	1072.50	66619.73	1.00	1.95
HS20 INV	COL C3	3.73	245.83	364.45	192.40	294.21	1704.10	1072.50	66619.73	1.00	1.96
HS20 INV	COL C3	3.73	245.83	365.47	192.40	290.13	1704.10	1072.50	66619.73	1.00	1.97
HS20 INV	COL C3	3.73	245.83	366.49	192.40	285.04	1704.10	1072.50	66619.73	1.00	1.98
HS20 INV	COL C3	3.73	245.83	367.50	192.40	278.94	1704.10	1072.50	66619.73	1.00	2.00
HS20 INV	COL C3	3.73	245.83	368.52	192.40	273.85	1704.10	1072.50	66619.73	1.00	2.01
HS20 INV	COL C3	3.73	245.83	369.54	192.40	267.74	1704.10	1072.50	66619.73	1.00	2.02
HS20 INV	COL C3	3.73	245.83	370.56	192.40	260.61	1704.10	1072.50	66619.73	1.00	2.04
HS20 INV	COL C3	3.73	245.83	371.58	192.40	252.47	1704.10	1072.50	66619.73	1.00	2.07
HS20 INV	COL C3	3.73	245.83	372.59	192.40	243.31	1704.10	1072.50	66619.73	1.00	2.09
HS20 INV	COL C3	3.73	245.83	373.61	192.40	231.09	1704.10	1072.50	66619.73	1.00	2.13
HS20 INV	COL C3	3.73	245.83	374.63	192.40	208.69	1704.10	1072.50	66619.73	1.00	2.21
HS20 OPER	COL C3	3.73	245.83	158.20	192.40	247.99	1704.10	1072.50	66619.73	1.00	3.20
HS20 OPER	COL C3	3.73	245.83	161.86	192.40	247.38	1704.10	1072.50	66619.73	1.00	3.18
HS20 OPER	COL C3	3.73	245.83	165.53	192.40	246.77	1704.10	1072.50	66619.73	1.00	3.15
HS20 OPER	COL C3	3.73	245.83	167.36	192.40	246.16	1704.10	1072.50	66619.73	1.00	3.14
HS20 OPER	COL C3	3.73	245.83	169.81	192.40	245.55	1704.10	1072.50	66619.73	1.00	3.13
HS20 OPER	COL C3	3.73	245.83	171.64	192.40	244.93	1704.10	1072.50	66619.73	1.00	3.12
HS20 OPER	COL C3	3.73	245.83	172.86	192.40	244.32	1704.10	1072.50	66619.73	1.00	3.11
HS20 OPER	COL C3	3.73	245.83	175.91	192.40	243.71	1704.10	1072.50	66619.73	1.00	3.09
HS20 OPER	COL C3	3.73	245.83	177.13	192.40	243.10	1704.10	1072.50	66619.73	1.00	3.09
HS20 OPER	COL C3	3.73	245.83	178.97	192.40	242.49	1704.10	1072.50	66619.73	1.00	3.08
HS20 OPER	COL C3	3.73	245.83	180.80	192.40	241.88	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C3	3.73	245.83	182.02	192.40	241.27	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C3	3.73	245.83	183.24	192.40	240.66	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	184.46	192.40	240.05	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	185.08	192.40	239.44	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	186.30	192.40	238.83	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	187.52	192.40	238.22	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	188.13	192.40	237.61	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	188.74	192.40	236.99	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	189.35	192.40	236.38	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	190.57	192.40	235.77	1704.10	1072.50	66619.73	1.00	3.04
HS20 OPER	COL C3	3.73	245.83	191.18	192.40	235.16	1704.10	1072.50	66619.73	1.00	3.04
HS20 OPER	COL C3	3.73	245.83	192.41	192.40	233.94	1704.10	1072.50	66619.73	1.00	3.04
HS20 OPER	COL C3	3.73	245.83	193.02	192.40	232.72	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	193.63	192.40	232.11	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	194.24	192.40	231.50	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	195.46	192.40	230.28	1704.10	1072.50	66619.73	1.00	3.04
HS20 OPER	COL C3	3.73	245.83	196.07	192.40	229.05	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	197.29	192.40	227.83	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	197.90	192.40	226.61	1704.10	1072.50	66619.73	1.00	3.05
HS20 OPER	COL C3	3.73	245.83	198.51	192.40	225.39	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	199.12	192.40	224.78	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	199.73	192.40	224.17	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	200.35	192.40	222.95	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	200.96	192.40	221.72	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	201.57	192.40	221.11	1704.10	1072.50	66619.73	1.00	3.06
HS20 OPER	COL C3	3.73	245.83	202.18	192.40	219.89	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C3	3.73	245.83	202.79	192.40	218.67	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C3	3.73	245.83	203.40	192.40	218.06	1704.10	1072.50	66619.73	1.00	3.07
HS20 OPER	COL C3	3.73	245.83	204.01	192.40	216.84	1704.10	1072.50	66619.73	1.00	3.08
HS20 OPER	COL C3	3.73	245.83	204.62	192.40	215.62	1704.10	1072.50	66619.73	1.00	3.08
HS20 OPER	COL C3	3.73	245.83	205.23	192.40	214.39	1704.10	1072.50	66619.73	1.00	3.09

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

Impact	Load Case	Member	LLDF	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
				kips	kips	k-ft	k-ft	kips	k-ft	kips		
HS20 OPER	COL C3	3.73	245.83	205.84	192.40	213.17	1704.10	1072.50	66619.73	1.00	3.09	
HS20 OPER	COL C3	3.73	245.83	206.45	192.40	211.95	1704.10	1072.50	66619.73	1.00	3.09	
HS20 OPER	COL C3	3.73	245.83	207.06	192.40	210.73	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C3	3.73	245.83	207.68	192.40	209.51	1704.10	1072.50	66619.73	1.00	3.10	
HS20 OPER	COL C3	3.73	245.83	208.29	192.40	208.29	1704.10	1072.50	66619.73	1.00	3.11	
HS20 OPER	COL C3	3.73	245.83	208.90	192.40	206.45	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C3	3.73	245.83	209.51	192.40	205.23	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C3	3.73	245.83	210.12	192.40	204.01	1704.10	1072.50	66619.73	1.00	3.12	
HS20 OPER	COL C3	3.73	245.83	210.73	192.40	202.18	1704.10	1072.50	66619.73	1.00	3.13	
HS20 OPER	COL C3	3.73	245.83	211.34	192.40	200.35	1704.10	1072.50	66619.73	1.00	3.14	
HS20 OPER	COL C3	3.73	245.83	211.95	192.40	199.12	1704.10	1072.50	66619.73	1.00	3.15	
HS20 OPER	COL C3	3.73	245.83	212.56	192.40	197.90	1704.10	1072.50	66619.73	1.00	3.15	
HS20 OPER	COL C3	3.73	245.83	213.17	192.40	196.07	1704.10	1072.50	66619.73	1.00	3.16	
HS20 OPER	COL C3	3.73	245.83	213.78	192.40	194.24	1704.10	1072.50	66619.73	1.00	3.17	
HS20 OPER	COL C3	3.73	245.83	214.39	192.40	191.79	1704.10	1072.50	66619.73	1.00	3.18	
HS20 OPER	COL C3	3.73	245.83	215.01	192.40	190.57	1704.10	1072.50	66619.73	1.00	3.19	
HS20 OPER	COL C3	3.73	245.83	215.62	192.40	188.13	1704.10	1072.50	66619.73	1.00	3.20	
HS20 OPER	COL C3	3.73	245.83	216.23	192.40	186.30	1704.10	1072.50	66619.73	1.00	3.21	
HS20 OPER	COL C3	3.73	245.83	216.84	192.40	183.85	1704.10	1072.50	66619.73	1.00	3.23	
HS20 OPER	COL C3	3.73	245.83	217.45	192.40	181.41	1704.10	1072.50	66619.73	1.00	3.24	
HS20 OPER	COL C3	3.73	245.83	218.06	192.40	178.97	1704.10	1072.50	66619.73	1.00	3.25	
HS20 OPER	COL C3	3.73	245.83	218.67	192.40	176.52	1704.10	1072.50	66619.73	1.00	3.27	
HS20 OPER	COL C3	3.73	245.83	219.28	192.40	174.08	1704.10	1072.50	66619.73	1.00	3.28	
HS20 OPER	COL C3	3.73	245.83	219.89	192.40	171.03	1704.10	1072.50	66619.73	1.00	3.30	
HS20 OPER	COL C3	3.73	245.83	220.50	192.40	167.36	1704.10	1072.50	66619.73	1.00	3.33	
HS20 OPER	COL C3	3.73	245.83	221.11	192.40	164.31	1704.10	1072.50	66619.73	1.00	3.35	
HS20 OPER	COL C3	3.73	245.83	221.72	192.40	160.64	1704.10	1072.50	66619.73	1.00	3.38	
HS20 OPER	COL C3	3.73	245.83	222.33	192.40	156.37	1704.10	1072.50	66619.73	1.00	3.41	
HS20 OPER	COL C3	3.73	245.83	222.95	192.40	151.48	1704.10	1072.50	66619.73	1.00	3.45	
HS20 OPER	COL C3	3.73	245.83	223.56	192.40	145.98	1704.10	1072.50	66619.73	1.00	3.49	
HS20 OPER	COL C3	3.73	245.83	224.17	192.40	138.65	1704.10	1072.50	66619.73	1.00	3.55	
HS20 OPER	COL C3	3.73	245.83	224.78	192.40	125.22	1704.10	1072.50	66619.73	1.00	3.67	
2F1	COL C3	3.73	245.83	74.52	192.40	109.34	1704.10	1072.50	66619.73	1.00	7.07	
2F1	COL C3	3.73	245.83	76.35	192.40	108.72	1704.10	1072.50	66619.73	1.00	7.02	
2F1	COL C3	3.73	245.83	78.18	192.40	108.11	1704.10	1072.50	66619.73	1.00	6.97	
2F1	COL C3	3.73	245.83	79.41	192.40	107.50	1704.10	1072.50	66619.73	1.00	6.95	
2F1	COL C3	3.73	245.83	80.02	192.40	106.89	1704.10	1072.50	66619.73	1.00	6.95	
2F1	COL C3	3.73	245.83	81.24	192.40	106.28	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	81.85	192.40	105.67	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	82.46	192.40	105.06	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	83.07	192.40	104.45	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	83.68	192.40	103.84	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	84.29	192.40	103.23	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	84.90	192.40	102.62	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	85.51	192.40	102.01	1704.10	1072.50	66619.73	1.00	6.92	
2F1	COL C3	3.73	245.83	86.12	192.40	100.78	1704.10	1072.50	66619.73	1.00	6.94	
2F1	COL C3	3.73	245.83	86.74	192.40	100.17	1704.10	1072.50	66619.73	1.00	6.94	
2F1	COL C3	3.73	245.83	87.35	192.40	99.56	1704.10	1072.50	66619.73	1.00	6.94	
2F1	COL C3	3.73	245.83	87.96	192.40	98.34	1704.10	1072.50	66619.73	1.00	6.96	
2F1	COL C3	3.73	245.83	88.57	192.40	97.12	1704.10	1072.50	66619.73	1.00	6.98	
2F1	COL C3	3.73	245.83	89.18	192.40	95.90	1704.10	1072.50	66619.73	1.00	7.00	
2F1	COL C3	3.73	245.83	89.79	192.40	94.68	1704.10	1072.50	66619.73	1.00	7.02	
2F1	COL C3	3.73	245.83	90.40	192.40	93.45	1704.10	1072.50	66619.73	1.00	7.05	
2F1	COL C3	3.73	245.83	91.01	192.40	92.23	1704.10	1072.50	66619.73	1.00	7.07	
2F1	COL C3	3.73	245.83	91.62	192.40	90.40	1704.10	1072.50	66619.73	1.00	7.11	
2F1	COL C3	3.73	245.83	92.23	192.40	88.57	1704.10	1072.50	66619.73	1.00	7.16	
2F1	COL C3	3.73	245.83	92.84	192.40	86.74	1704.10	1072.50	66619.73	1.00	7.21	
2F1	COL C3	3.73	245.83	93.45	192.40	84.90	1704.10	1072.50	66619.73	1.00	7.25	

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - South Frame Column 3 Ratings



Calculated:
 Checked:

CTG
 NRF

3/1/2012
 3/2/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$
				Axial Force		Moment		P _u	M _u	A _s F _e	
				Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF
2F1	COL C3	3.73	245.83	94.06	192.40	82.46	1704.10	1072.50	66619.73	1.00	7.32
2F1	COL C3	3.73	245.83	94.68	192.40	80.02	1704.10	1072.50	66619.73	1.00	7.40
2F1	COL C3	3.73	245.83	95.29	192.40	76.96	1704.10	1072.50	66619.73	1.00	7.50
2F1	COL C3	3.73	245.83	95.90	192.40	73.91	1704.10	1072.50	66619.73	1.00	7.60
2F1	COL C3	3.73	245.83	96.51	192.40	69.63	1704.10	1072.50	66619.73	1.00	7.77
2F1	COL C3	3.73	245.83	97.12	192.40	64.75	1704.10	1072.50	66619.73	1.00	7.97
2F1	COL C3	3.73	245.83	97.73	192.40	56.81	1704.10	1072.50	66619.73	1.00	8.33
3F1	COL C3	3.73	245.83	111.78	192.40	166.75	1704.10	1072.50	66619.73	1.00	4.66
3F1	COL C3	3.73	245.83	114.22	192.40	166.14	1704.10	1072.50	66619.73	1.00	4.63
3F1	COL C3	3.73	245.83	116.05	192.40	165.53	1704.10	1072.50	66619.73	1.00	4.61
3F1	COL C3	3.73	245.83	117.89	192.40	164.92	1704.10	1072.50	66619.73	1.00	4.59
3F1	COL C3	3.73	245.83	119.11	192.40	164.31	1704.10	1072.50	66619.73	1.00	4.58
3F1	COL C3	3.73	245.83	120.33	192.40	163.70	1704.10	1072.50	66619.73	1.00	4.57
3F1	COL C3	3.73	245.83	121.55	192.40	163.09	1704.10	1072.50	66619.73	1.00	4.56
3F1	COL C3	3.73	245.83	122.16	192.40	162.48	1704.10	1072.50	66619.73	1.00	4.56
3F1	COL C3	3.73	245.83	123.38	192.40	161.86	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	123.99	192.40	161.25	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	124.61	192.40	160.64	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	125.22	192.40	160.03	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	126.44	192.40	159.42	1704.10	1072.50	66619.73	1.00	4.54
3F1	COL C3	3.73	245.83	127.66	192.40	158.20	1704.10	1072.50	66619.73	1.00	4.54
3F1	COL C3	3.73	245.83	128.27	192.40	157.59	1704.10	1072.50	66619.73	1.00	4.54
3F1	COL C3	3.73	245.83	128.88	192.40	156.37	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	129.49	192.40	155.76	1704.10	1072.50	66619.73	1.00	4.54
3F1	COL C3	3.73	245.83	130.10	192.40	155.15	1704.10	1072.50	66619.73	1.00	4.54
3F1	COL C3	3.73	245.83	130.71	192.40	153.92	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	131.32	192.40	153.31	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	131.94	192.40	152.70	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	132.55	192.40	152.09	1704.10	1072.50	66619.73	1.00	4.55
3F1	COL C3	3.73	245.83	133.16	192.40	150.87	1704.10	1072.50	66619.73	1.00	4.56
3F1	COL C3	3.73	245.83	133.77	192.40	149.65	1704.10	1072.50	66619.73	1.00	4.57
3F1	COL C3	3.73	245.83	134.38	192.40	148.43	1704.10	1072.50	66619.73	1.00	4.58
3F1	COL C3	3.73	245.83	134.99	192.40	147.21	1704.10	1072.50	66619.73	1.00	4.59
3F1	COL C3	3.73	245.83	135.60	192.40	145.98	1704.10	1072.50	66619.73	1.00	4.60
3F1	COL C3	3.73	245.83	136.21	192.40	145.37	1704.10	1072.50	66619.73	1.00	4.60
3F1	COL C3	3.73	245.83	136.82	192.40	143.54	1704.10	1072.50	66619.73	1.00	4.62
3F1	COL C3	3.73	245.83	137.43	192.40	142.32	1704.10	1072.50	66619.73	1.00	4.63
3F1	COL C3	3.73	245.83	138.04	192.40	141.10	1704.10	1072.50	66619.73	1.00	4.64
3F1	COL C3	3.73	245.83	138.65	192.40	139.88	1704.10	1072.50	66619.73	1.00	4.65
3F1	COL C3	3.73	245.83	139.26	192.40	138.04	1704.10	1072.50	66619.73	1.00	4.67
3F1	COL C3	3.73	245.83	139.88	192.40	136.82	1704.10	1072.50	66619.73	1.00	4.68
3F1	COL C3	3.73	245.83	140.49	192.40	134.99	1704.10	1072.50	66619.73	1.00	4.70
3F1	COL C3	3.73	245.83	141.10	192.40	133.16	1704.10	1072.50	66619.73	1.00	4.72
3F1	COL C3	3.73	245.83	141.71	192.40	131.32	1704.10	1072.50	66619.73	1.00	4.74
3F1	COL C3	3.73	245.83	142.32	192.40	129.49	1704.10	1072.50	66619.73	1.00	4.76
3F1	COL C3	3.73	245.83	142.93	192.40	127.05	1704.10	1072.50	66619.73	1.00	4.79
3F1	COL C3	3.73	245.83	143.54	192.40	124.61	1704.10	1072.50	66619.73	1.00	4.82
3F1	COL C3	3.73	245.83	144.15	192.40	122.16	1704.10	1072.50	66619.73	1.00	4.85
3F1	COL C3	3.73	245.83	144.76	192.40	119.72	1704.10	1072.50	66619.73	1.00	4.88
3F1	COL C3	3.73	245.83	145.37	192.40	116.66	1704.10	1072.50	66619.73	1.00	4.93
3F1	COL C3	3.73	245.83	145.98	192.40	113.00	1704.10	1072.50	66619.73	1.00	4.99
3F1	COL C3	3.73	245.83	146.59	192.40	109.34	1704.10	1072.50	66619.73	1.00	5.04
3F1	COL C3	3.73	245.83	147.21	192.40	105.06	1704.10	1072.50	66619.73	1.00	5.12
3F1	COL C3	3.73	245.83	147.82	192.40	99.56	1704.10	1072.50	66619.73	1.00	5.21
3F1	COL C3	3.73	245.83	148.43	192.40	92.84	1704.10	1072.50	66619.73	1.00	5.34
3F1	COL C3	3.73	245.83	149.04	192.40	83.68	1704.10	1072.50	66619.73	1.00	5.53
4F1	COL C3	3.73	245.83	123.38	192.40	194.85	1704.10	1072.50	66619.73	1.00	4.08
4F1	COL C3	3.73	245.83	128.88	192.40	194.24	1704.10	1072.50	66619.73	1.00	4.02

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section C - South Frame Column 3 Ratings



Calculated: CTG 3/1/2012
 Checked: NRF 3/2/2012

DL Factor	LL Factor	Impact	LLDF	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _e		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
4F1	COL C3	3.73	245.83	131.94	192.40	193.63	1704.10	1072.50	66619.73	1.00	3.99	
4F1	COL C3	3.73	245.83	133.77	192.40	193.02	1704.10	1072.50	66619.73	1.00	3.98	
4F1	COL C3	3.73	245.83	135.60	192.40	192.41	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C3	3.73	245.83	136.82	192.40	191.79	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C3	3.73	245.83	138.65	192.40	191.18	1704.10	1072.50	66619.73	1.00	3.94	
4F1	COL C3	3.73	245.83	139.26	192.40	190.57	1704.10	1072.50	66619.73	1.00	3.94	
4F1	COL C3	3.73	245.83	140.49	192.40	189.96	1704.10	1072.50	66619.73	1.00	3.93	
4F1	COL C3	3.73	245.83	141.10	192.40	189.35	1704.10	1072.50	66619.73	1.00	3.93	
4F1	COL C3	3.73	245.83	142.32	192.40	188.74	1704.10	1072.50	66619.73	1.00	3.92	
4F1	COL C3	3.73	245.83	143.54	192.40	188.13	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	144.15	192.40	187.52	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	144.76	192.40	186.91	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	145.37	192.40	186.30	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	146.59	192.40	185.69	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	147.21	192.40	185.08	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	147.82	192.40	184.46	1704.10	1072.50	66619.73	1.00	3.90	
4F1	COL C3	3.73	245.83	148.43	192.40	183.24	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	149.04	192.40	182.63	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	149.65	192.40	182.02	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	150.26	192.40	181.41	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	150.87	192.40	180.80	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	151.48	192.40	180.19	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	152.09	192.40	179.58	1704.10	1072.50	66619.73	1.00	3.91	
4F1	COL C3	3.73	245.83	152.70	192.40	178.36	1704.10	1072.50	66619.73	1.00	3.92	
4F1	COL C3	3.73	245.83	153.31	192.40	177.75	1704.10	1072.50	66619.73	1.00	3.92	
4F1	COL C3	3.73	245.83	153.92	192.40	176.52	1704.10	1072.50	66619.73	1.00	3.92	
4F1	COL C3	3.73	245.83	154.53	192.40	175.91	1704.10	1072.50	66619.73	1.00	3.92	
4F1	COL C3	3.73	245.83	155.15	192.40	174.69	1704.10	1072.50	66619.73	1.00	3.93	
4F1	COL C3	3.73	245.83	155.76	192.40	174.08	1704.10	1072.50	66619.73	1.00	3.93	
4F1	COL C3	3.73	245.83	156.37	192.40	172.25	1704.10	1072.50	66619.73	1.00	3.94	
4F1	COL C3	3.73	245.83	156.98	192.40	171.64	1704.10	1072.50	66619.73	1.00	3.94	
4F1	COL C3	3.73	245.83	157.59	192.40	170.42	1704.10	1072.50	66619.73	1.00	3.95	
4F1	COL C3	3.73	245.83	158.20	192.40	169.19	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C3	3.73	245.83	158.81	192.40	167.97	1704.10	1072.50	66619.73	1.00	3.96	
4F1	COL C3	3.73	245.83	159.42	192.40	166.75	1704.10	1072.50	66619.73	1.00	3.97	
4F1	COL C3	3.73	245.83	160.03	192.40	165.53	1704.10	1072.50	66619.73	1.00	3.98	
4F1	COL C3	3.73	245.83	160.64	192.40	164.31	1704.10	1072.50	66619.73	1.00	3.99	
4F1	COL C3	3.73	245.83	161.25	192.40	162.48	1704.10	1072.50	66619.73	1.00	4.00	
4F1	COL C3	3.73	245.83	161.86	192.40	161.25	1704.10	1072.50	66619.73	1.00	4.01	
4F1	COL C3	3.73	245.83	162.48	192.40	159.42	1704.10	1072.50	66619.73	1.00	4.02	
4F1	COL C3	3.73	245.83	163.09	192.40	157.59	1704.10	1072.50	66619.73	1.00	4.04	
4F1	COL C3	3.73	245.83	163.70	192.40	156.37	1704.10	1072.50	66619.73	1.00	4.04	
4F1	COL C3	3.73	245.83	164.31	192.40	154.53	1704.10	1072.50	66619.73	1.00	4.06	
4F1	COL C3	3.73	245.83	164.92	192.40	152.70	1704.10	1072.50	66619.73	1.00	4.07	
4F1	COL C3	3.73	245.83	165.53	192.40	150.87	1704.10	1072.50	66619.73	1.00	4.09	
4F1	COL C3	3.73	245.83	166.14	192.40	148.43	1704.10	1072.50	66619.73	1.00	4.11	
4F1	COL C3	3.73	245.83	166.75	192.40	146.59	1704.10	1072.50	66619.73	1.00	4.12	
4F1	COL C3	3.73	245.83	167.36	192.40	144.76	1704.10	1072.50	66619.73	1.00	4.14	
4F1	COL C3	3.73	245.83	167.97	192.40	141.71	1704.10	1072.50	66619.73	1.00	4.17	
4F1	COL C3	3.73	245.83	168.58	192.40	138.65	1704.10	1072.50	66619.73	1.00	4.20	
4F1	COL C3	3.73	245.83	169.19	192.40	136.21	1704.10	1072.50	66619.73	1.00	4.23	
4F1	COL C3	3.73	245.83	169.81	192.40	132.55	1704.10	1072.50	66619.73	1.00	4.27	
4F1	COL C3	3.73	245.83	170.42	192.40	129.49	1704.10	1072.50	66619.73	1.00	4.30	
4F1	COL C3	3.73	245.83	171.03	192.40	125.22	1704.10	1072.50	66619.73	1.00	4.36	
4F1	COL C3	3.73	245.83	171.64	192.40	120.94	1704.10	1072.50	66619.73	1.00	4.41	
4F1	COL C3	3.73	245.83	172.25	192.40	116.05	1704.10	1072.50	66619.73	1.00	4.47	
4F1	COL C3	3.73	245.83	172.86	192.40	109.95	1704.10	1072.50	66619.73	1.00	4.56	
4F1	COL C3	3.73	245.83	173.47	192.40	100.78	1704.10	1072.50	66619.73	1.00	4.70	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

CTG

3/1/2012

Checked:

NRF

3/2/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _c		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
5C1	COL C3	3.73	245.83	158.81	192.40	182.63	1704.10	1072.50	66619.73	1.00	3.80
5C1	COL C3	3.73	245.83	163.09	192.40	182.02	1704.10	1072.50	66619.73	1.00	3.76
5C1	COL C3	3.73	245.83	166.75	192.40	181.41	1704.10	1072.50	66619.73	1.00	3.72
5C1	COL C3	3.73	245.83	170.42	192.40	180.80	1704.10	1072.50	66619.73	1.00	3.69
5C1	COL C3	3.73	245.83	171.03	192.40	180.19	1704.10	1072.50	66619.73	1.00	3.69
5C1	COL C3	3.73	245.83	172.25	192.40	179.58	1704.10	1072.50	66619.73	1.00	3.68
5C1	COL C3	3.73	245.83	172.86	192.40	178.97	1704.10	1072.50	66619.73	1.00	3.68
5C1	COL C3	3.73	245.83	173.47	192.40	178.36	1704.10	1072.50	66619.73	1.00	3.68
5C1	COL C3	3.73	245.83	174.08	192.40	177.75	1704.10	1072.50	66619.73	1.00	3.68
5C1	COL C3	3.73	245.83	175.91	192.40	177.13	1704.10	1072.50	66619.73	1.00	3.67
5C1	COL C3	3.73	245.83	177.75	192.40	176.52	1704.10	1072.50	66619.73	1.00	3.65
5C1	COL C3	3.73	245.83	179.58	192.40	175.91	1704.10	1072.50	66619.73	1.00	3.64
5C1	COL C3	3.73	245.83	181.41	192.40	175.30	1704.10	1072.50	66619.73	1.00	3.63
5C1	COL C3	3.73	245.83	182.63	192.40	174.69	1704.10	1072.50	66619.73	1.00	3.62
5C1	COL C3	3.73	245.83	183.85	192.40	174.08	1704.10	1072.50	66619.73	1.00	3.61
5C1	COL C3	3.73	245.83	185.08	192.40	173.47	1704.10	1072.50	66619.73	1.00	3.61
5C1	COL C3	3.73	245.83	186.91	192.40	172.86	1704.10	1072.50	66619.73	1.00	3.60
5C1	COL C3	3.73	245.83	187.52	192.40	172.25	1704.10	1072.50	66619.73	1.00	3.60
5C1	COL C3	3.73	245.83	188.74	192.40	171.64	1704.10	1072.50	66619.73	1.00	3.59
5C1	COL C3	3.73	245.83	189.35	192.40	171.03	1704.10	1072.50	66619.73	1.00	3.59
5C1	COL C3	3.73	245.83	189.96	192.40	170.42	1704.10	1072.50	66619.73	1.00	3.59
5C1	COL C3	3.73	245.83	190.57	192.40	169.19	1704.10	1072.50	66619.73	1.00	3.59
5C1	COL C3	3.73	245.83	191.18	192.40	168.58	1704.10	1072.50	66619.73	1.00	3.59
5C1	COL C3	3.73	245.83	191.79	192.40	167.36	1704.10	1072.50	66619.73	1.00	3.60
5C1	COL C3	3.73	245.83	192.41	192.40	166.14	1704.10	1072.50	66619.73	1.00	3.61
5C1	COL C3	3.73	245.83	193.02	192.40	165.53	1704.10	1072.50	66619.73	1.00	3.61
5C1	COL C3	3.73	245.83	193.63	192.40	164.31	1704.10	1072.50	66619.73	1.00	3.61
5C1	COL C3	3.73	245.83	194.24	192.40	163.09	1704.10	1072.50	66619.73	1.00	3.62
5C1	COL C3	3.73	245.83	194.85	192.40	161.86	1704.10	1072.50	66619.73	1.00	3.62
5C1	COL C3	3.73	245.83	195.46	192.40	160.64	1704.10	1072.50	66619.73	1.00	3.63
5C1	COL C3	3.73	245.83	196.07	192.40	159.42	1704.10	1072.50	66619.73	1.00	3.63
5C1	COL C3	3.73	245.83	196.68	192.40	158.20	1704.10	1072.50	66619.73	1.00	3.64
5C1	COL C3	3.73	245.83	197.29	192.40	156.37	1704.10	1072.50	66619.73	1.00	3.65
5C1	COL C3	3.73	245.83	197.90	192.40	154.53	1704.10	1072.50	66619.73	1.00	3.66
5C1	COL C3	3.73	245.83	198.51	192.40	152.09	1704.10	1072.50	66619.73	1.00	3.68
5C1	COL C3	3.73	245.83	199.12	192.40	149.65	1704.10	1072.50	66619.73	1.00	3.70
5C1	COL C3	3.73	245.83	199.73	192.40	147.21	1704.10	1072.50	66619.73	1.00	3.72
5C1	COL C3	3.73	245.83	200.35	192.40	144.15	1704.10	1072.50	66619.73	1.00	3.75
5C1	COL C3	3.73	245.83	200.96	192.40	140.49	1704.10	1072.50	66619.73	1.00	3.78
5C1	COL C3	3.73	245.83	201.57	192.40	136.21	1704.10	1072.50	66619.73	1.00	3.82

Load Case	Controlling RF
HS20 INV	1.82
HS20 OPER	3.04
2F1	6.92
3F1	4.54
4F1	3.90
5C1	3.59



FATIGUE RATINGS



SECTION C



Made By: DWC
Checked By: CTG

Date: 3/3/2012
Date: 3/4/2012

Job No.: P402110046
Sheet No.: _____

Section C - Stringer Fatigue Summary

Redundant? Yes → $f = 2.0$ (Calculate MEAN Life per ODOT BDM 402.2.6)
 $R_s = 1.00$
 Past ADTT (T_p) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of %1/year)
 Weight Ratios = 1.0 ($W_p/W, W_N/W$)
 $C = 1.50$ (Cycles per truck passage)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_p = 18$ (Present age of the bridge in years) $Y_{f,MIN} = 250$ years

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

STRINGERS:	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	Y_1	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)			(years)	(years)	(years)
F1-1	60.94	214.66	3.92	C	12	2558.56	1133.43	1125.46
S1-1	41.34	155	3.68	C	12	3085.55	1366.89	1358.92
	23.48	64.85	5.00	B	33	3391.70	1502.51	1494.54
S2-1	60.18	155	5.36	C	12	1000.20	443.09	435.11
	34.43	75.16	6.32	B	33	1674.68	741.88	733.90
S3-1	63.83	155	5.68	C	12	838.24	371.34	363.37
	35.98	84.31	5.89	B	33	2071.27	917.56	909.59
S4-1	58.06	134	5.98	C	12	719.67	318.81	310.84
	34.69	82.31	5.82	B	33	2150.44	952.64	944.66
S5-1	62.34	134	6.42	C	12	581.38	257.55	249.58
	38.39	89.94	5.89	B	33	2070.08	917.04	909.06
S6-1	35.24	92.1	5.28	C	12	1045.01	462.94	454.96
F2-1	59.59	294.53	2.79	C	12	7068.35	3131.26	3123.28
F1-2	58.74	214.66	3.78	C	12	2856.94	1265.62	1257.64
S1-2	38.65	155	3.44	C	12	3775.69	1672.62	1664.64
	26.66	51.85	7.10	B	33	1184.26	524.62	516.65
	25.95	49.32	7.26	B	33	1105.20	489.60	481.62
S2-2	56.56	155	5.04	C	12	1204.80	533.72	525.75
	35.81	64.85	7.62	B	33	956.09	423.55	415.57
	35.92	64.85	7.64	B	33	947.33	419.67	411.69
S3-2	62.09	155	5.53	C	12	910.71	403.44	395.47
	38.77	71.93	7.44	B	33	1028.08	455.43	447.46
	39.67	71.93	7.61	B	33	959.68	425.13	417.16
S4-2	56.84	134	5.85	C	12	767.01	339.78	331.81
	36.47	84.14	5.98	B	33	1976.89	875.76	867.78
	38.47	82.31	6.45	B	33	1576.79	698.51	690.54

SECTION C



Made By: DWC Date: 3/3/2012
 Checked By: CTG Date: 3/4/2012

Job No.: P402110046
 Sheet No.: _____

Section C - Stringer Fatigue Summary

Redundant? Yes → $f = 2.0$ (Calculate MEAN Life per ODOT BDM 402.2.6)
 $R_s = 1.00$
 Past ADTT (T_p) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of %1/year)
 Weight Ratios = 1.0 ($W_p/W, W_N/W$)
 $C = 1.50$ (Cycles per truck passage)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_p = 18$ (Present age of the bridge in years) $Y_{f,MIN} = 250$ years

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

S5-2	57.44	134	5.92	C	12	743.23	329.25	321.27
	38.19	85.8	6.14	B	33	1825.56	808.72	800.74
	40.59	88.3	6.34	B	33	1657.32	734.19	726.21
S6-2	41.03	134	4.23	C	12	2039.20	903.36	895.38
	30.33	97.93	4.27	B	33	5418.91	2400.56	2392.59
	33.00	102.04	4.46	B	33	4759.39	2108.40	2100.42
F2-2	61.56	294.53	2.88	C	12	6411.24	2840.16	2832.19

SECTION C



Made By: DWC Date: 3/5/2012
 Checked By: NRF Date: 3/5/2012

Job No.: P402110046
 Sheet No.: _____

Section C - Floorbeam Fatigue Summary

Redundant? No → $f = 1.0$ (Calculate SAFE Life per ODOT BDM 402.2.6)
 $R_s = 1.75$
 Present ADTT (T_p) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of 1%/year)
 Weight Ratios = 1.0 ($W_P/W, W_N/W$ equal to unity per ODOT BDM 402.2.6)
 $C = 1.00$ (Cycles per truck passage)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_p^{**} = \text{Varies}$ (Present age of the bridge in years) $Y_{f,MIN} = -6 \text{ years}$

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

** Rehabbed floorbeams have a Y_p of 18 years.

GIRDER LOCATION	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	C	Y_p	Y_1	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)				(years)	(years)	(years)	(years)
Floorbeam 2 Top Cover Plate Weld	84.20	379.87	3.06	E	2.9	1.0	74	181.82	80.54	47.76
Floorbeam 2 North Bracket Top Cover Plate Weld	84.20	262.12	4.43	E	2.9	1.0	74	59.74	26.46	-6.32
Floorbeam 2 South Bracket Top Cover Plate Weld	79.73	262.12	4.20	E	2.9	1.0	74	70.34	31.16	-1.62
Floorbeam 3 Top Cover Plate Weld	71.60	379.87	2.60	E	2.9	1.0	74	295.69	130.99	98.21
Floorbeam 3 North Bracket Top Cover Plate Weld	69.93	268.51	3.59	E	2.9	1.0	74	112.07	49.65	16.86
Floorbeam 3 South Bracket Top Cover Plate Weld	71.60	268.51	3.68	E	2.9	1.0	74	104.43	46.26	13.48
Floorbeam 4 Top Cover Plate Weld	81.22	379.87	2.95	E	2.9	1.0	74	202.52	89.72	56.94
Floorbeam 4 North Bracket Top Cover Plate Weld	81.22	268.51	4.17	E	2.9	1.0	74	71.52	31.69	-1.10
Floorbeam 4 South Bracket Top Cover Plate Weld	81.02	268.51	4.16	E	2.9	1.0	74	72.07	31.93	-0.86
Floorbeam 5 Top Cover Plate Weld	82.25	379.87	2.99	E	2.9	1.0	74	195.03	86.40	53.62
Floorbeam 5 North Bracket Top Cover Plate Weld	82.25	262.12	4.33	E	2.9	1.0	74	64.08	28.39	-4.40
Floorbeam 5 South Bracket Top Cover Plate Weld	81.44	262.12	4.29	E	2.9	1.0	74	66.01	29.24	-3.54
Floorbeam 1** Bottom Flange to Web Fillet Weld	147.41	353.87	5.75	B	33	1.0	18	311.65	138.06	130.09
Floorbeam 6** Bottom Flange to Web Fillet Weld	160.77	367.53	6.04	B	33	1.0	18	269.16	119.24	111.26

SECTION C



Made By CTG
 Checked By DWC

Date 3/3/2012
 Date 3/4/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Fatigue Distribution Factors - Section C

Ref: AASHTO Guide Specification for Fatigue Evaluation of Existing Steel Bridges 1990
 *2.6.1

For Exterior: $DF_e = DF_i$ For Interior: $DF_i = \frac{S}{D} \leq \frac{S-3}{S}$
 since curb is less than 1 foot outside centerline of member

Unit 1:	Stringer	MDX Gir.	S _{left} (ft.)	S _{right} (ft.)	Avg S (ft.)	D factor*	Axle DF _i	Wheel DF _i
	F1-1	8	---	4.9115	4.91	17	0.289	0.578
	S1-1	7	4.91	6	5.46	17	0.321	0.642
	S2-1	6	6.00	6.08	6.04	17	0.355	0.71
	S3-1	5	6.08	6.08	6.08	17	0.358	0.716
	S4-1	4	6.08	6.08	6.08	17	0.358	0.716
	S5-1	3	6.08	6	6.04	17	0.355	0.71
	S6-1	2	6.00	4.91	5.46	17	0.321	0.642
	F2-1	1	4.91	---	4.91	17	0.289	0.578
Unit 2:	F1-2	8	---	4.9115	4.91	17	0.289	0.578
	S1-2	7	4.91	6	5.46	17	0.321	0.642
	S2-2	6	6.00	6.08	6.04	17	0.355	0.71
	S3-2	5	6.08	6.08	6.08	17	0.358	0.716
	S4-2	4	6.08	6.08	6.08	17	0.358	0.716
	S5-2	3	6.08	6	6.04	17	0.355	0.71
	S6-2	2	6.00	4.91	5.46	17	0.321	0.642
	F2-2	1	4.91	---	4.91	17	0.289	0.578

SECTION C UNIT 1
Girder System : Input File : Layout/Slab/Loading Definition
Mon Mar 05 17:45:29 2012

ID: SECTION C UNIT 1

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
IGNORE IMPACT
LFD METHOD
NO BRACING ALONG PIERS
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BR-1 11.9288 24.529
BSK-1 86.4378 86.4406
DELMEM 27 29 29 31 31 33 33 35 35 37 37 39 39 40
FPC 4.5
GDSPC 4.875 6. 6.0833 6.0833 6.0833 6. 4.875
SKEW-1 90. 82.9028 90.
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SPN-1 23.8576 25.2004
WAC-1 0.125
WAC-2 0.138
WAC-3 0.141
WAC-4 0.141
WAC-5 0.141
WAC-6 0.141
WAC-7 0.138
WAC-8 0.125
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WDD-1 0.578
WDD-2 0.642
WDD-3 0.71
WDD-4 0.716
WDD-5 0.716
WDD-6 0.71
WDD-7 0.642
WDD-8 0.578
WDF-1 0.578
WDF-2 0.642
WDF-3 0.71
WDF-4 0.716
WDF-5 0.716
WDF-6 0.71
WDF-7 0.642
WDF-8 0.578
WDR-1 0.578
WDR-2 0.642
WDR-3 0.71
WDR-4 0.716
WDR-5 0.716
WDR-6 0.71
WDR-7 0.642
WDR-8 0.578
WDS-1 0.578
WDS-2 0.642
WDS-3 0.71
WDS-4 0.716
WDS-5 0.716
WDS-6 0.71
WDS-7 0.642
WDS-8 0.578
WHLSPC 6.
WS-1 0.0001
WS-2 0.0001

WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001

GO

ID: SECTION C UNIT 2 FATIGUE
CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
IGNORE IMPACT
LFD METHOD
NO BRACING ALONG PIERS
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BR-1 12.5 22.6706 24.6116
BSK-1 90. 86.4406 86.4378
DELMEM 43 45 45 47 47 49 49 51 51 53 53 55 55 56
FPC 4.5
GDSPC 4.875 6. 6.0833 6.0833 6.0833 6. 4.875
SKEW-1 90. 90. 82.9028 90.
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SPN-1 25. 20.3413 28.882
WAC-1 0.125
WAC-2 0.138
WAC-3 0.141
WAC-4 0.141
WAC-5 0.141
WAC-6 0.141
WAC-7 0.138
WAC-8 0.125
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WDD-1 0.578
WDD-2 0.642
WDD-3 0.71
WDD-4 0.716
WDD-5 0.716
WDD-6 0.71
WDD-7 0.642
WDD-8 0.578
WDF-1 0.578
WDF-2 0.642
WDF-3 0.71
WDF-4 0.716
WDF-5 0.716
WDF-6 0.71
WDF-7 0.642
WDF-8 0.578
WDR-1 0.578
WDR-2 0.642
WDR-3 0.71
WDR-4 0.716
WDR-5 0.716
WDR-6 0.71
WDR-7 0.642
WDR-8 0.578
WDS-1 0.578
WDS-2 0.642
WDS-3 0.71
WDS-4 0.716
WDS-5 0.716
WDS-6 0.71
WDS-7 0.642
WDS-8 0.578
WHLSPC 6.
WS-1 0.0001
WS-2 0.0001

WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001

GO

STAAD SPACE
 START JOB INFORMATION
 ENGINEER DATE 29-Feb-12
 ENGINEER NAME DWC

*Section C
 *FLOORBEAM 1 FATIGUE
 END JOB INFORMATION

INPUT WIDTH 79
 UNIT FEET KIP
 JOINT COORDINATES
 1 0.0000 0 0 ;
 2 4.8750 0 0 ;
 3 6.8750 0 0 ;
 4 10.875 0 0 ;
 5 16.9583 0 0 ;
 6 23.0417 0 0 ;
 7 29.125 0 0 ;
 8 33.125 0 0 ;
 9 35.125 0 0 ;
 10 40.00 0 0 ;

***FICTITIOUS DECK
 101 0 10 0 ;
 102 4.8750 10 0 ;
 104 10.875 10 0 ;
 105 16.9583 10 0 ;
 106 23.0417 10 0 ;
 107 29.125 10 0 ;
 109 35.125 10 0 ;
 110 40.00 10 0 ;

MEMBER INCIDENCES
 1 1 2 ;
 2 2 3 ;
 3 3 4 ;
 4 4 5 ;
 5 5 6 ;
 6 6 7 ;
 7 7 8 ;
 8 8 9 ;
 9 9 10 ;

***FICTITIOUS DECK
 101 101 102;
 102 102 104;
 104 104 105;
 105 105 106;
 106 106 107;
 107 107 109;
 109 109 110;

DEFINE MATERIAL START
 ISOTROPIC STEEL
 E 4.176e+006
 POISSON 0.3
 DENSITY 0.489024
 ALPHA 6e-006
 DAMP 0.03
 END DEFINE MATERIAL

UNIT INCHES KIP
 MEMBER PROPERTY AMERICAN

1 TAPERED 22.4375 .75 23.4568 11.5 1 11.5 1
 2 TAPERED 23.4568 .75 23.875 11.5 1 11.5 1
 3 TAPERED 23.875 .75 24.7131 11.5 1 11.5 1
 4 TAPERED 24.7131 .75 25.9877 11.5 1 11.5 1
 5 TAPERED 25.9877 .75 27.2623 11.5 1 11.5 1
 6 TAPERED 27.2623 .75 28.5369 11.5 1 11.5 1
 7 TAPERED 28.5369 .75 29.375 11.5 1 11.5 1
 8 TAPERED 29.375 .75 26.0659 11.5 1 11.5 1
 9 TAPERED 26.0659 .75 18 11.5 1 11.5 1

101 102 104 105 106 107 109 TABLE ST W33x130
 CONSTANTS
 MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS
3 8 PINNED

***MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD
*UNIT LOADS
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 3000
TYPE 1 2 10 0 XINC 0.01

PERFORM ANALYSIS
PRINT ALL
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 29-Feb-12
ENGINEER NAME DWC
*Section C
*FLOORBEAMS 2 and 5 FATIGUE
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.9126 0 0 ;
3 6.9281 0 0 ;
4 10.959 0 0 ;
5 17.0893 0 0 ;
6 23.2196 0 0 ;
7 29.3499 0 0 ;
8 33.3808 0 0 ;
9 35.3962 0 0 ;
10 40.3088 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.9126 10 0 ;
104 10.959 10 0 ;
105 17.0893 10 0 ;
106 23.2196 10 0 ;
107 29.3499 10 0 ;
109 35.3962 10 0 ;
110 40.3088 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 109 ;
109 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

UNIT INCHES KIP
MEMBER PROPERTY AMERICAN
3 4 5 6 7 TABLE ST W33x130

1 TAPERED 18.75 .375 29.298 12.5 .5 12.5 .5
2 TAPERED 29.298 .375 33.625 12.5 .5 12.5 .5
8 TAPERED 33.625 .375 29.298 12.5 .5 12.5 .5
9 TAPERED 29.298 .375 18.75 12.5 .5 12.5 .5

101 102 104 105 106 107 109 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS
3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD

*UNIT LOADS

TYPE 1 LOAD 1 1

DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***

LOAD GENERATION 3016

TYPE 1 2 10 0 XINC 0.01

PERFORM ANALYSIS

PRINT ALL

FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 29-Feb-12
ENGINEER NAME DWC
*Section C
*FLOORBEAMS 3 AND 4
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.8750 0 0 ;
3 6.8750 0 0 ;
4 10.875 0 0 ;
5 16.9583 0 0 ;
6 23.0417 0 0 ;
7 29.125 0 0 ;
8 33.125 0 0 ;
9 35.125 0 0 ;
10 40.00 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.8750 10 0 ;
104 10.875 10 0 ;
105 16.9583 10 0 ;
106 23.0417 10 0 ;
107 29.125 10 0 ;
109 35.125 10 0 ;
110 40.00 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102;
102 102 104;
104 104 105;
105 105 106;
106 106 107;
107 107 109;
109 109 110;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

UNIT INCHES KIP
MEMBER PROPERTY AMERICAN
3 4 5 6 7 TABLE ST W33x130

1 TAPERED 18.75 .375 29.298 12.5 .5 12.5 .5
2 TAPERED 29.298 .375 33.625 12.5 .5 12.5 .5
8 TAPERED 33.625 .375 29.298 12.5 .5 12.5 .5
9 TAPERED 29.298 .375 18.75 12.5 .5 12.5 .5

101 102 104 105 106 107 109 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS
3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE
101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD

*UNIT LOADS

TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***

LOAD GENERATION 3000

TYPE 1 2 10 0 XINC 0.01

PERFORM ANALYSIS

PRINT ALL

FINISH

STAAD SPACE
 START JOB INFORMATION
 ENGINEER DATE 29-Feb-12
 ENGINEER NAME DWC
 *Section C
 *FLOORBEAMS 1
 END JOB INFORMATION
 INPUT WIDTH 79
 UNIT FEET KIP
 JOINT COORDINATES
 1 0.0000 0 0 ;
 2 4.8750 0 0 ;
 3 6.8750 0 0 ;
 4 10.875 0 0 ;
 5 16.9583 0 0 ;
 6 23.0417 0 0 ;
 7 29.125 0 0 ;
 8 33.125 0 0 ;
 9 35.125 0 0 ;
 10 40.00 0 0 ;

***FICTITIOUS DECK
 101 0 10 0 ;
 102 4.8750 10 0 ;
 104 10.875 10 0 ;
 105 16.9583 10 0 ;
 106 23.0417 10 0 ;
 107 29.125 10 0 ;
 109 35.125 10 0 ;
 110 40.00 10 0 ;

MEMBER INCIDENCES
 1 1 2 ;
 2 2 3 ;
 3 3 4 ;
 4 4 5 ;
 5 5 6 ;
 6 6 7 ;
 7 7 8 ;
 8 8 9 ;
 9 9 10 ;

***FICTITIOUS DECK
 101 101 102;
 102 102 104;
 104 104 105;
 105 105 106;
 106 106 107;
 107 107 109;
 109 109 110;

DEFINE MATERIAL START
 ISOTROPIC STEEL
 E 4.176e+006
 POISSON 0.3
 DENSITY 0.489024
 ALPHA 6e-006
 DAMP 0.03
 END DEFINE MATERIAL

UNIT INCHES KIP
 MEMBER PROPERTY AMERICAN

1 TAPERED 22.125 .75 23.4368 11.5 1 11.5 1
 2 TAPERED 23.4368 .75 23.975 11.5 1 11.5 1
 3 TAPERED 23.975 .75 25.0266 11.5 1 11.5 1
 4 TAPERED 25.0266 .75 26.6260 11.5 1 11.5 1
 5 TAPERED 26.6260 .75 28.2253 11.5 1 11.5 1
 6 TAPERED 28.2253 .75 29.8247 11.5 1 11.5 1
 7 TAPERED 29.8247 .75 30.875 11.5 1 11.5 1
 8 TAPERED 30.875 .75 27.1295 11.5 1 11.5 1
 9 TAPERED 27.1295 .75 18 11.5 1 11.5 1

101 102 104 105 106 107 109 TABLE ST W33x130
 CONSTANTS
 MATERIAL STEEL ALL

UNIT FEET KIP

SUPPORTS
3 8 PINNED

***MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 102 104 105 106 107 109 BOTH MZ

DEFINE MOVING LOAD
*UNIT LOADS
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 3000
TYPE 1 2 10 0 XINC 0.01

PERFORM ANALYSIS
PRINT ALL
FINISH

```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 29-Feb-12
ENGINEER NAME DWC
END JOB INFORMATION
*Section C
*Stringer Fatigue Longitudinal LLDF
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
*ALONG NORTH GIRDER
1 0 0 0; 2 27.9818 0 0; 3 49.0547 0 0;
4 74.0547 0 0; 5 98.5235 0 0; 6 123.2813 0 0;

***ALONG SOUTH GIRDER
**1 0 0 0; 2 24.7135 0 0; 3 49.0573 0 0;
**4 74.0573 0 0; 5 95.2552 0 0; 6 123.2813 0 0;

MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4; 4 4 5; 5 5 6
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 4 5 TABLE ST W16X89
CONSTANTS
BETA 0 MEMB 2
MATERIAL STEEL ALL
SUPPORTS
1 2 3 4 5 6 PINNED
MEMBER RELEASE
1 START MZ
2 END MZ
3 START MZ
5 END MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 12 12 3
DIST 30 14
TYPE 2 LOAD 3 12 12
DIST 14 30

**HS15
LOAD GENERATION 1513
TYPE 1 -28 0 0 XINC 0.1
LOAD GENERATION 1513
TYPE 2 -28 0 0 XINC 0.1

PERFORM ANALYSIS
PRINT MAXREACTION
FINISH
```

BRIDGE LOAD RATING SUMMARY REPORT

CUY-2-1441

SECTION K

SFN	BRIDGE NUMBER	DISTRICT
1800035	CUY-2-1441	12
ORIGINAL CONSTRUCTION YEAR	REHABILITATION YEAR	OVERALL STRUCTURE LENGTH (FT)
1938 - 1940	1991 - 1992	6580
FEATURE INTERSECTED:	NUMEROUS LOCAL STREETS, RTA RAILROAD TRACKS AND THE CUYAHOGA RIVER	
SPECIAL ASSUMPTIONS & COMMENTS		
RATING & ANALYSIS OPTION:		
LOAD RATING PURPOSE:	LOAD RATING FOR FUTURE REHABILITATION RECOMMENDATIONS	
RATING SOFTWARE:	STAAD, MDX	
BASIS OF ANALYSIS:	EXISTING PLANS AND FIELD MEASUREMENTS	
METHOD OF ANALYSIS:	LOAD FACTOR	
DESIGN LOADING (ORIGINAL):	H20-33	
STRUCTURE RATING SUMMARY		
LOADING & RATING TYPE	RATING FACTOR - RF (ROUNDED TO 2 DECIMAL POINTS)	RATING LOAD
INVENTORY CURRENT DESIGN	0.85	HS17.0
OPERATING CURRENT DESIGN	1.42	
OHIO LEGAL - 2F1	2.25	OHIO LEGAL LOADS OVERALL MINIMUM RATING FACTOR
OHIO LEGAL - 3F1	1.71	1.61
OHIO LEGAL - 4F1	1.61	OHIO LEGAL LOADS OVERALL CONTROLLING TRUCK
OHIO LEGAL - 5C1	1.77	4F1
RATED BY, PE#	REVIEWED BY, PE#	REPORT DATE
Carolyn Guion, PE	Don Cartwright, EI	3/5/2012
AGENCY/FIRM	PHONE NUMBER	EMAIL
TranSystems	216-861-1780	ctguion@transystems.com

SFN: 1800035 BRIDGE NO.: CUY-2-1441

West Approach - Section K

CUY-2-1441 Load Rating Analysis
Main Ave Bridge

Calculated: CTG 2/29/2012
 Checked: DMP 3/5/2012
 Revised: DWC 6/20/2012

As-Built Controlling Rating Factor Summary								
Item	Location/Member	HS20 Inventory	HS20 Operating	2F1 Operating	3F1 Operating	4F1 Operating	5C1 Operating	Fatigue**
Deck	Deck	1.18	1.97	3.16	3.71	4.51	3.71	N/A
Stringers	Unit 2 Stringer S2-2	0.88	1.46	2.25	1.71	1.61	1.77	326 Years
Floorbeam	Floorbeam 2	0.89	1.48	2.82	1.93	1.72	1.98	9 Years
	Floorbeam 5	0.89	1.48	2.86	1.96	1.74	2.01	-7 Years
Girder	South Girder	0.85	1.42	2.94	1.95	1.71	1.96	61 Years
	North Girder	0.89	1.48	3.08	2.05	1.79	2.05	61 Years
Column	North Column K5	0.96	1.60	2.81	2.01	1.91	2.06	-

As-Inspected Controlling Rating Factor Summary*								
Item	Location/Member	HS20 Inventory	HS20 Operating	2F1 Operating	3F1 Operating	4F1 Operating	5C1 Operating	Fatigue**
Deck	Deck	1.18	1.97	3.16	3.71	4.51	3.71	N/A
Stringers	Unit 2 Stringer S2-2	0.88	1.46	2.25	1.71	1.61	1.77	326 Years
Floorbeam	Floorbeam 2	0.89	1.48	2.82	1.93	1.72	1.98	9 Years
	Floorbeam 5	0.89	1.48	2.86	1.96	1.74	2.01	-7 Years
Girder	South Girder	0.85	1.42	2.94	1.95	1.71	1.96	61 Years
	North Girder	0.89	1.48	3.08	2.05	1.79	2.05	61 Years
Column	North Column K5	0.96	1.60	2.81	2.01	1.91	2.06	-

*No significant section loss was noted that affected the rating

**Remaining Fatigue Life for Column was not calculated because it was deemed not to govern

Overall Summary			
Case	Rating Factor	Tonnage	HS equivalent or Ohio Legal Load %
HS20 Inventory	0.85	30.60	HS17.0
HS20 Operating	1.42	51.12	HS28.4
2F1	2.25	33.75	160%
3F1	1.71	39.33	
4F1	1.61	43.47	
5C1	1.77	70.80	
Fatigue	-7 Years Remaining		



DECK RATING



DECK - WEST APPROACH - SECTION K

1. MATERIAL PROPERTIES :
- | | | |
|----------|-------------------|-------------------|
| CONCRETE | $f'_c = 4500$ psi | (A.B. Plan G7/93) |
| | $w_c = 113$ pcf | (" " G9/93) |
| REBAR | $f'_s = 24$ ksi | |
| | $f_y = 60$ ksi | (AB Plan G7/93) |

2. DECK GEOMETRY :

BEAM SPACING = 6.125'
 STRINGERS : USE W18x60 (smallest flange $\rightarrow b_f = 7.56"$) (160/99I)
 EFFECTIVE SPAN LENGTH = $6.125' - \frac{1}{2} \times \frac{7.56"}{12} = 5.81'$
 DECK THICKNESS = 6.75" (LIGHTWEIGHT CONCRETE) (175/99I)
 WEARING SURFACE = 1.25" (LATEX CONCRETE)

REBAR COVER : TOP = 3" - 1.25" = 1.75" CLR.

BOTTOM = 1" CLR

TRANSVERSE REBAR : TOP = #6 @ 8" , BOTTOM = #5 @ 8"

3. DEAD LOAD : \rightarrow ASSUME WT. OF BARRIERS CARRIED BY FASCIA STRINGERS + WILL NOT IMPACT DECK RATING AT THIS LOCATION

$$\left. \begin{aligned} \text{SLAB} &= \frac{6.75}{12} \times 1.0' \times 0.113 \text{ kef} = 0.064 \text{ k/ft} \\ \text{WS} &= \frac{1.25}{12} \times 1.0 \times 0.15 \text{ kef} = 0.016 \text{ k/ft} \end{aligned} \right\} g_{DL} = .080 \text{ k/ft}$$

$$\text{DL MOMENT} = \frac{1}{8} \times .080 \text{ k/ft} \times (5.81')^2 \times 0.8 = 0.270 \text{ k-ft}$$

\swarrow CONTINUITY FACTOR PER AASHTO 3.24.3.1

4. LIVE LOADS

HS20 : $P = 16$ k	$M_{HS20} = \left(\frac{5+2}{32}\right) P (1+I) \times 0.8$
	$= \left(\frac{5.81+2}{32}\right) \times 16 \times 1.30 \times 0.8 = 4.061 \text{ k-ft}$
2F1 : $P = 10$ k	$M_{2F1} = 2.538 \text{ k-ft}$
3F1 : $P = 8.5$ k	$M_{3F1} = 2.158 \text{ k-ft}$
4F1 : $P = 7.0$ k	$M_{4F1} = 1.777 \text{ k-ft}$
5C1 : $P = 8.5$ k	$M_{5C1} = 2.158 \text{ k-ft}$

5. MOMENT CAPACITY

$$\beta_1 = 1.05 - 0.05 f'_c / 1000 = 1.05 - .05 (4500 / 1000) = 0.825$$

(AASHTO 8.16.2.7)

CHECK REINFORCEMENT RATIO:

BALANCED RATIO:

$$\rho_b = \frac{0.85 \beta_1 f'_c}{f_y} \left(\frac{87000}{87000 + f_y} \right) = \frac{0.85 (0.825) 4.5}{60} \left(\frac{87}{87 + 60} \right) = .0311$$

(AASHTO 8.16.3.1.1)

$$\therefore 0.75 \rho_b = .0233$$

ACTUAL RATIO:

TOP: $A_s = 0.44 \text{ m}^2 \times 12 \frac{1}{8} = 0.66 \text{ m}^2/\text{ft}$

$$d_t = 6.75" - 1.75" - 4 \frac{1}{8} - 0.75 \frac{1}{2} = 4.125"$$

$$\therefore \rho_1 = \frac{A_s}{bd_t} = \frac{0.66}{12 \times 4.125} = 0.0133 < .0233$$

REBAR CONTROLS

BOTTOM: $A_s = 0.31 \text{ m}^2 \times 12 \frac{1}{8} = 0.465 \text{ m}^2/\text{ft}$

$$d_t = 6.75" - 1.0" - 0.625 \frac{1}{2} = 5.438"$$

$$\therefore \rho_2 = \frac{A_s}{bd_t} = \frac{0.465}{12 \times 5.438} = 0.0071 < .0233$$

REBAR CONTROLS

NEGATIVE MOMENT CAPACITY:

$$a = \frac{A_s f_y}{0.85 f'_c b} = \frac{0.66 \times 60}{0.85 \times 4.5 \times 12} = 0.863"$$

$$\phi M_n^- = \phi A_s f_y \left(d - \frac{a}{2} \right) = 0.9 (0.66) (60) \left(4.125 - \frac{0.863}{2} \right) \times \frac{1}{12}$$

$$= \underline{10.97 \text{ k-ft}}$$

POSITIVE MOMENT CAPACITY:

$$a = \frac{A_s f_y}{0.85 f'_c b} = \frac{0.465 \times 60}{0.85 \times 4.5 \times 12} = 0.608"$$

$$\phi M_n^+ = \phi A_s f_y \left(d - \frac{a}{2} \right) = 0.9 (.465) (60) \left(5.438 - \frac{0.608}{2} \right) \times \frac{1}{12}$$

$$= \underline{10.74 \text{ k-ft}} \quad \leftarrow \text{CONTROLS}$$

6. RATING FACTORS:

→ USE CONTROLLING MOMENT CAPACITY OF 10.74 K-FT

$$\begin{aligned} \text{HS20: INVENTORY: RF} &= \frac{C - 1.3D}{2.17(L+I)} \\ &= \frac{10.74 - 1.3(.270)}{2.17(4.061)} = \underline{\underline{1.18}} \end{aligned}$$

$$\text{OPERATING: RF} = \frac{C - 1.3D}{1.3(L+I)} = \underline{\underline{1.97}}$$

$$\text{2F1: RF} = \frac{C - 1.3D}{1.3(L+I)} = \frac{10.74 - 1.3(.270)}{1.3(2.538)} = \underline{\underline{3.16}}$$

$$\text{3F1: RF} = \frac{10.74 - 1.3(.270)}{1.3(2.158)} = \underline{\underline{3.71}}$$

$$\text{4F1: RF} = \frac{10.74 - 1.3(.270)}{1.3(1.777)} = \underline{\underline{4.51}}$$

$$\text{5C1: RF} = \underline{\underline{3.71}}$$

STRINGER RATINGS

Section K (West Approach)

Unit 1 - MDX Input

- Draft geometry in Microstation and import to MDX with a text file
- Model fascia stringers as hinged at the intermediate FB, interior stringers are 2-span continuous (1' away)
- Section properties

Lightweight Concrete Class 5 $f'_c = 4.5 \text{ ksi}$ per Rehab plans G7/93 (000003.pdf 7/638)
 $E_c = 113 \text{ pcf}$ G9/93
 Structural Steel A36 G7/93

AASHTO 8.7.1 $E_c = (113 \text{ pcf})^{1.5} (33) (\sqrt{14500 \text{ psi}}) = 2.659 \times 10^6 \Rightarrow n = 10.9$

Stringer Section properties

- Interior stringers \rightarrow W sections and partial W with angles
- Fascia stringers \rightarrow Welded FE girders (curved)

$$FE = t_f \times 8''$$

$$Web = t_w \times (A \text{ or } B - 2t_f) \quad \left. \begin{array}{l} \\ \uparrow d \end{array} \right\} \text{Rehab 158/160/99I (158/638)}$$

MDX Girder 1: F2A-1 and F2B-1

$$d = 3.96' - 2(3/4'')/12 = 3.835' = 46.02'' \quad \checkmark \text{ OK } 46'' \text{ per shop dwg}$$

MDX Girder 8: F1A-1 and F1B-1

$$d = 2.46' - 2(3/4'')/12 = 2.335' = 28.02'' \quad \checkmark \text{ OK } 28'' \text{ per shop dwg}$$

- End diaphragms for interior stringers have connection FE's Full depth (6" x 1/2") model as int. stiffeners
- There are "bearing stiffeners" on the fascia stringers, model the angles as stiffeners

Stiff \rightarrow 2 L's 6 x 4 x 1/2 \therefore use 4" x 1" Rehab 113/99I
 use corner clip = 1"

Bracing

Group 1 \rightarrow Type D1 in plans (intermediate) C10 x 30 with 1/2" x 7" conn. FE \swarrow 7 1/2" per shop dwg Rehab 113/99I

Group 2 \rightarrow Type D2 in plans (end) MC10 x 41.1 with 1/2" x 6" conn. FE Rehab 147/99I

Group 1: connection distance

Assume $2(3/4'') + 3/2 = 4 1/4''$ per shop dwg

Group 2: connection distance

Assume $2(3/4'') + 3/2 = 4 1/4''$ per shop dwg

Distance to diaphragm connection R_L 's (int. transverse stiff) along girder

Girder	Left Brg to Loc 1	Loc 1 to Loc 2
1	11.9958' = 143.946"	24.1146' = 289.3752"
2	12.1380' = 145.656"	24.1380'
3	12.4135' = 148.962"	24.1380'
4	12.6891' = 152.2692"	24.1380'
5	12.9646' = 155.5752"	24.1380'
6	13.2401' = 158.8812"	24.1380'
7	13.5156' = 162.1872"	24.1380'
8	13.7958' = 165.5496"	24.1468' = 289.7616"

} = 289.656"

Non Composite DL

Wearing surface → MDX will account for .113 kcf, but WS actually .150 kcf, so add weight → .037 kcf

S2-1 to 55-1 $.037 \text{ kcf} \times 6.125' \times 1\frac{1}{4}"/2 = 0.024 \text{ k/ft}$

S1-1 $.037 \text{ kcf} \times \frac{1}{2}(6.51' + 4.96') \times .1042' = 0.021 \text{ k/ft}$

S6-1 $.037 \text{ kcf} \times \frac{1}{2}(2.91' + 4.79') \times .1042' = 0.015 \text{ k/ft}$

Barriers

$$A \approx (1'2\frac{1}{4}")(1'9") - \frac{1}{2} \frac{(7")(11.25")}{144} + (2'5")(1') - \frac{1}{2} \frac{(3")(2'5")}{12} = 3.92 \text{ SF}$$

Weight = $3.92 \text{ SF} \times .113 \text{ kcf} \times 2' = 0.89 \text{ k/ft} / 8 = 0.11 \text{ k/ft}$ per Girder

Add 5% for miscellaneous

∴ G1 = 0.131 k/ft G2-G7 = 0.141 k/ft G8 = 0.138 k/ft

Steel weight

Assume 5% of stringer weight

Use W16x77 → $.05 \times 77 \text{ lb/ft} = .004 \text{ k/ft}$ per Girder

⇒ Round up to .01 k/ft

Roadway Width

Girder 1 Fascia (Right curb) Span 1 = 23.9363' Span 2 = 24.3806'

$R = 1020.484$

10th point
 $\theta = 0.134392011^\circ$
 $\theta = 0.136886564^\circ$

Draft in Microstation

Girder 8 Fascia (Left curb) Span 1 = 27.5274' Span 2 = 20.7929'

$R = 980.516'$

$\theta = 0.160854473^\circ$
 $\theta = 0.121501884^\circ$

Haunches

6" wider than R_L 113/99I
 $h = 1" + t_f$

UNIT 1 - SECTION K

Superelevation

See spreadsheet (next page)

Tributary Slab Width (for DL)

if MSX does not calculate correctly, input this data as needed

S51 to S2-1 → G3 to G6

TSLABW = 73.5"

← prints 15-20

Other girders will require input @ the tenth points, assume linear btwn supports

Girder 1

@ FB1 $(1'7" + \frac{2'10\frac{15}{16}" }{2}) \times 12 = 36.47"$

@ FB2 $(1'7" + \frac{4'1\frac{1}{16}" }{2}) \times 12 = 43.84"$

Area is 1, but close enough

@ FB3 $(1'7" + \frac{4'9\frac{7}{16}" }{2}) \times 12 = 47.72"$

Girder 2

@ FB1 $(\frac{6'1\frac{1}{2}" + 2'10\frac{15}{16}" }{2}) \times 12 = 54.22"$

@ FB2 $(\frac{6'1\frac{1}{2}" + 4'1\frac{1}{16}" }{2}) \times 12 = 61.59"$

@ FB3 $(\frac{6'1\frac{1}{2}" + 4'9\frac{7}{16}" }{2}) \times 12 = 65.47"$

← input 15-20

incr. $\frac{65.47 - 63.42}{6} = 0.34$

Girder 7

@ FB1 $(\frac{6'1\frac{1}{2}" + 6'6\frac{1}{8}" }{2}) \times 12 = 75.81"$

@ FB2 $(\frac{6'1\frac{1}{2}" + 5'1\frac{1}{2}" }{2}) \times 12 = 67.5"$

@ FB3 $(\frac{6'1\frac{1}{2}" + 4'6\frac{3}{4}" }{2}) \times 12 = 64.13"$

← prints 15-20

incr. $\frac{65.98 - 64.13}{6} = 0.31$

Girder 8

@ FB1 $(\frac{6'6\frac{1}{8}" + 1'7" }{2}) \times 12 = 58.06"$

@ FB2 $(\frac{5'1\frac{1}{2}" + 1'7" }{2}) \times 12 = 49.75"$

@ FB3 $(\frac{4'6\frac{3}{4}" + 1'7" }{2}) \times 12 = 46.38"$

← 15-20

incr. $\frac{50.18 - 46.38}{6} = 0.63$



Made By CTG
Checked By DWC

Date 2/8/2012
Date 2/8/2012

Job No. P402110046
Sheet No. 3A OF 8

Calculations For: **CUY-2-1441, Superelevation**

	Station	Slope
Given in Rehab Plans	8+22.	-3.50%
	12+66.	4.00%
	18+29.	4.00%
	12+26.16	3.33%

Distance along CL

1.6284	12+27.79	3.35%
2.5777	12+30.37	3.40%
2.5777	12+32.94	3.44%
2.5777	12+35.52	3.49%
2.5777	12+38.1	3.53%
2.4037	12+40.5	3.57%
2.7516	12+43.25	3.62%
2.5777	12+45.83	3.66%
2.5777	12+48.41	3.70%
2.5777	12+50.99	3.75%
2.5776	12+53.57	3.79%
2.2542	12+55.82	3.83%
2.2542	12+58.07	3.87%
2.2542	12+60.33	3.90%
2.2542	12+62.58	3.94%
2.2542	12+64.84	3.98%
2.2542	12+67.09	4.00%

Values interpolated based on given superelevation

UNIT 1 - SECTION 16

Effective Slab Width

Interior Girders Min $\left\{ \begin{array}{l} 1/4 \text{ span} = \text{controls when span} < 24'6'' \\ \text{Beam Spa.} = 6'1\frac{1}{2}'' = 73.5'' \\ 12 \times \text{slab } t = 12 \times 6\frac{3}{4}'' = 81'' \end{array} \right.$

Fascia Girders Min $\left\{ \begin{array}{l} 1/4 \text{ Span} \\ \frac{1}{2} \text{ Beam Spa.} + \text{Overhang} \\ 12 \times \text{slab } t \end{array} \right.$

Girder	Span	\approx Span L	\rightarrow Weff
3	1	24.8'	73.5"
3	2	★ 23.4'	70.2"
4	1	25.4'	73.5"
4	2	★ 22.9'	68.7"
5	1	25.9'	73.5"
5	2	★ 22.3'	66.9"
6	1	26.5'	73.5"
6	2	★ 21.8'	65.4"

If MDX is not close, input calculated values

\leftarrow Input points 15-20, G3, G5, G6
16-20, G4

\swarrow see Page 3

Girder	Location	Avg Spa.	\approx Span L	\rightarrow Weff
1	FB1	36.47"	23.9'	36.5"
1	FB2	43.84"	23.9'	43.8"
1	FB3	47.72"	24.4'	47.7"
2	FB1	54.22"	24.3'	54.2"
2	FB2	61.59"	24'	61.6"
2	FB3	65.47"	24'	65.5"
7	FB1	75.81"	27'	75.81"
7	FB2	67.5"	21.2'★	63.6"
7	FB3	64.13"	21.2'★	63.6"
8	FB1	58.06"	27.5'	58.06"
8	FB2	49.75"	20.8'	49.8"
8	FB3	46.38"	20.8'	46.4"

$$\frac{1}{4}(24') = 72''$$

$$\frac{1}{4}(27') = 81''$$

$$\frac{1}{4}(21') = 63''$$

\leftarrow Input points 15-20 into MDX, G2
incr = $\frac{65.5'' - 63.42''}{6} = 0.35''$

\leftarrow Input 15-20, G7
incr = $\frac{63.98'' - 63.6''}{6} = 0.40''$

\leftarrow 15-20, G8
incr = $\frac{50.18'' - 46.4''}{6} = 0.63''$

Coped Stringers

	bf	tf	h	tw	dw	Cope @ FB1	cope @ FB2	Cope @ FB3 = h - d _{cope} - tf
G7 S1-1 W16x89	10.4"	.875"	16.8"	.525"	15.05"	—	6.99"	7.11"
G6 S2-1 W16x77	10.3"	.760"	16.5"	.455"	14.98"	—	4.05"	4.05"
G5 S3-1 W16x67	10.2"	.665"	16.3"	.395"	14.97"	—	1.20"	0.95"
G3 S5-1 W18x60	7.56"	.695"	18.2"	.415"	16.81"	0.82"	—	—

Define as plate girders and use a web cutout @ supports

Unit 2 - MDX Input

→ Same assumptions as Unit 1

hinges @ G1: 24.6', 21.9'
G8: 24.6', 24.5'

Stringers

- Interior stringers → W sections
- Fascia stringers → curved welded PL girders

• $PL = t \times 8"$
• $Web = t_w \times (A - 2t_f)$ } Rehab 158-140/99I

MDX Girder 1: F2A, B, C-2

$d = 3.96' - 2(\frac{3}{4}"/12) = 3.835' = 46.02"$, 46" shop dwg ✓

MDX Girder 8: F1A, B, C-1

$d = 2.46' - 2(\frac{3}{4}"/12) = 2.335' = 28.02"$, 28" shop dwg ✓

• Same stiff assumptions as Unit 1

Bracing

Same as Unit 1

Distance to Conn. PL's for Diaphragms

Girder	Dist 1	Dist 2	Dist 3	Dist 4
1	150.79"	275.73"	301.91"	—
2	150.78"	278.25"	301.31"	173.84"
3	"	281.56"	"	170.54"
4	"	284.86"	"	167.23"
5	"	288.17"	"	163.92"
6	"	291.48"	"	160.62"
7	"	294.78"	"	157.31"
8	150.79"	297.33"	301.96"	—

Non-Composite DL

Wearing surface (see Unit 1)

S2-1 to S5-1 0.024 k/ft

S6-1 $(4'10\frac{1}{4}" + 3'1\frac{1}{16}") \frac{1}{2} \times 0.037 \text{ kcf} \times 1.042' = 0.015 \text{ k/ft}$

S1-1 $(6'3\frac{1}{4}" + 4.438') \frac{1}{2} \times 0.037 \text{ kcf} \times 1.042' = 0.021 \text{ k/ft}$
↑ measured microstation

+5% Misc

$G1 = 0.1131 \text{ k/ft}$

$G2-G7 = 0.141 \text{ k/ft}$

$G8 = 0.138 \text{ k/ft}$

Barriers (see unit 1)

0.11 k/ft/girder

Unit 2 section k

Steel Weight

Same as Unit 1 → .0042/ft

Bracing

Same as Unit 1

Roadway Width

Girder 1 Fascia
(Right Curb)

Span 1 = 25.1309'

Span 2 = 20.8494'

Span 3 = 29.4037'

R = 1020.484'

10th Pt

$\theta = 0.141099175^\circ$

$\theta = 0.117060903^\circ$

$\theta = 0.165089106^\circ$

Girder 8 Fascia
(Left Curb)

Span 1 = 25.1310'

Span 2 = 24.4596'

Span 3 = 25.7964'

R = 980.516'

$\theta = 0.146851274^\circ$

$\theta = 0.142927994^\circ$

$\theta = 0.150739493^\circ$

Superelevation

4% throughout

Tributary Slab Width (For DL)

G3-G6 TSLABW = 73.5"

For other Girders will need to input @ 10th points

Use Avg for each span (Decimal #'s taken from microstation)

0-10

11-20

↙ 10th Pts
21-30

G1: $1'7" + \frac{1}{4}(4'9\frac{7}{16}" + 4'10\frac{1}{4}") \times 12 = 47.92"$

$\frac{1}{4}(4'10\frac{1}{4}" + 4.4442) + 1'7" = 46.90"$

$\frac{1}{4}(4.4442 + 3'1\frac{1}{16}") + 1'7" = 41.75"$

G2: $\frac{1}{4}(2 \times 6'1\frac{1}{2}" + 4'9\frac{7}{16}" + 4'10\frac{1}{4}") \times 12 = 65.67"$

$\frac{1}{4}(2 \times 6'1\frac{1}{2}" + 4'10\frac{1}{4}" + 4.4442) = 64.77"$

$\frac{1}{4}(2 \times 6'1\frac{1}{2}" + 4.4442 + 3'1\frac{1}{16}") = 59.50"$

G7: $\frac{1}{4}(2 \times 6'1\frac{1}{2}" + 4.4385' + 4'6\frac{3}{4}") \times 12 = 63.75"$

$\frac{1}{4}(2 \times 6'1\frac{1}{2}" + 4'5\frac{7}{8}" + 5.0334') = 65.32"$

$\frac{1}{4}(2 \times 6'1\frac{1}{2}" + 5.0334' + 6'3\frac{1}{4}") = 70.66"$

G8: $1'7" + \frac{1}{4}(4.4385' + 4'6\frac{3}{4}") \times 12 = 46"$

$\frac{1}{4}(4'5\frac{7}{8}" + 5.0334') + 1'7" = 47.57"$

$\frac{1}{4}(5.0334' + 6'3\frac{1}{4}") + 1'7" = 52.91"$

Check Effective Slab Width

Interior min $\begin{cases} 1/4 \text{ Span (use smallest)} \\ \text{Beam Spa.} \\ 12 \times \text{slab } t \end{cases}$

Fascia min $\begin{cases} 1/4 \text{ Span} \\ 1/2 \text{ beam spa. + overhang} \\ 12 \times \text{slab } t \end{cases}$

Interior Girders $1/4 (\text{span}) = \text{controls when span} \leq 24'6''$
 $6'1 1/2'' = 73.5'' \leftarrow \text{controls when span} > 24'6''$
 $12 \times 6.75'' = 81''$

Girder	Span #	Span L	W _{eff}
3-6	1	25.1302'	73.5''
3	2	21.7958' *	65.4''
4	2	22.3469' *	67.0''
5	2	22.8979' *	68.7''
6	2	23.449' *	70.3''
3-6	3	> 26'	73.5''

Girder	Span #	Avg. Spa.	Span L	W _{eff}
G1	1	* 47.92''	25.1309'	47.9''
G1	2	* 46.90''	20.8494'	46.9''
G1	3	* 41.75''	29.4037'	41.8''
G2	1	* 65.67''	25.1302'	65.7''
G2	2	64.77''	21.2448' *	63.7''
G2	3	* 59.50''	28.9740'	59.5''
G7	1	* 63.75''	25.1302'	63.8''
G7	2	* 65.32''	24'	65.3''
G7	3	* 70.66''	26.2187'	70.7''
G8	1	* 46''	25.1310'	46''
G8	2	* 47.57''	24.4596'	47.6''
G8	3	* 52.91''	25.7964'	52.9''

MDX calculated

G1 → OK From PT6-PT 30, hand input 0-5 (was 19'')
 G2 " " " " (0'')

All girders similar 0-5 are incorrect

Coped Stringers

			<u>Cope @ FB3</u>	<u>Cope @ FB4</u>	<u>Cope @ FB5</u>	<u>Cope @ FB6</u>
G5	S3-2	W16x77	7.05"	2.37"	2.12"	—
G6	S2-2	W16x77	4.05"	5.37"	4.99"	—
G7	S1-2	W16x89	7.11"	8.43"	8.18"	—

↑ for section dimensions see unit 1 sheet 4

Define as IR girders with web cutouts

ID: SECTION K - UNIT 1

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
FLOAT LANES
HS20 LOADING
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

BRINCD 1 6 2 7 4 9 6 11 7 12 9 14 11 16 12 17 14 19 16 21 17 22 19 24
21 26 22 27 24 29 26 31 27 32 29 34 31 36 32 37 34 39
FPC 4.5
GCD-1 0. 0. 11.9765 -0.6784 23.9049 -1.2139 36.0724 -1.616 48.276
-1.8735
GCD-2 0. 2.9115 12.138 2.9115 24.276 2.9115 36.276 2.9115 48.276
2.9115
GCD-3 0. 9.0365 12.4135 9.0365 24.8271 9.0365 36.5516 9.0365 48.276
9.0365
GCD-4 0. 15.1615 12.6891 15.1615 25.3781 15.1615 36.8271 15.1615
48.276 15.1615
GCD-5 0. 21.2865 12.9646 21.2865 25.9292 21.2865 37.1026 21.2865
48.276 21.2865
GCD-6 0. 27.4115 13.2401 27.4115 26.4802 27.4115 37.3781 27.4115
48.276 27.4115
GCD-7 0. 33.5365 13.5156 33.5365 27.0312 33.5365 37.6536 33.5365
48.276 33.5365
GCD-8 0. 40.0469 13.7725 39.2474 27.4908 38.6441 37.8686 38.3155
48.276 38.0964
HNG-1 22.9
HNG-5 25.929
HNG-6 26.48
HNG-7 27.031
HNG-8 26.5
LANWID 12.
LCD-1 -1. 0.063 3. -0.1832 7. -0.4137 11. -0.6284 15. -0.8274 19.
-1.0106 23. -1.1781 27. -1.3299 31. -1.466 35. -1.5864 39. -1.6911 43.
-1.7801 47.276 -1.8579 51.276 -1.9145
LCD-2 -1. 12.0875 3. 11.8383 7. 11.6051 11. 11.3878 15. 11.1865 19.
11.0011 23. 10.8315 27. 10.6779 31. 10.5402 35. 10.4184 39. 10.3124
43. 10.2224 47.276 10.1437 51.276 10.0864
LCD-3 -1. 24.1126 3. 23.8604 7. 23.6244 11. 23.4045 15. 23.2007 19.
23.013 23. 22.8414 27. 22.686 31. 22.5466 35. 22.4233 39. 22.3161 43.
22.2249 47.276 22.1453 51.276 22.0874
RAD-1 -1020.484
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
ROADWG 40.047 40.02 39.999 39.982 39.972 39.966 39.966 39.971 39.982
39.998 40.018 40.006 39.995 39.985 39.978 39.972 39.968 39.966 39.965
39.967 39.97
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SPEED 50
SUP-1 1 3 5
SUP-2 1 3 5
SUP-3 1 3 5
SUP-4 1 3 5
SUP-5 1 3 5
SUP-6 1 3 5
SUP-7 1 3 5
SUP-8 1 3 5
SUPER 0.0335 0.034 0.0344 0.0349 0.0353 0.0357 0.0362 0.0366
0.037 0.0375 0.0379 0.0383 0.0387 0.039 0.0394 0.0398 0.04
0.04 0.04 0.04 0.04
WAC-1 0.131
WAC-2 0.141
WAC-3 0.141
WAC-4 0.141

WAC-5 0.141
WAC-6 0.141
WAC-7 0.141
WAC-8 0.138
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001
GO

SECTION K - UNIT 1
Girder 1 : Input File : Definition
Wed Jun 20 08:37:12 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 11.9957 24.1147
ESLABW 38.469 39.2856 40.1021 40.9187 41.7352 42.5518 43.1137 43.6727
44.2316 44.7906 45.3495 45.9189 46.4882 47.0575 47.6269 48.1962
48.7656 49.3349 49.9042 50.4736 51.0429
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 22.9
IGIRD 1
RAD -1020.484
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 46.
SPLWT 0.375
SPN 23.9362 24.3806
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 38.469 39.2856 40.1021 40.9187 41.7352 42.5518 43.1137 43.6727
44.2316 44.7906 45.3495 45.9189 46.4882 47.0575 47.6269 48.1962
48.7656 49.3349 49.9042 50.4736 51.0429
TSSP 143.946 289.3752
WCONC 113.

GO

SECTION K - UNIT 1
Girder 2 : Input File : Definition
Wed Jun 20 08:37:28 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W18X60

DATA

BR 12.138 24.138
ESLABW 54.219 55.0451 55.8709 56.6968 57.5227 58.3485 58.9148 59.4809
60.0475 60.6139 61.1801 61.7401 62.3 62.86 63.4199 63.77 64.12 64.47
64.82 65.17 65.5
FILLET 1.
FPC 4.5
HAUNCW 13.56
IGIRD 2
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 24.276 24.
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 54.219 55.0451 55.8709 56.6968 57.5227 58.3485 58.9148 59.4809
60.0475 60.6139 61.1801 61.7401 62.3 62.86 63.4199 63.76 64.1 64.44
64.78 65.12 65.47
TSSP 0.001 145.656 289.656
WCONC 113.

GO

SECTION K - UNIT 1
Girder 3 : Input File : Definition
Wed Jun 20 08:37:39 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0.82 0. 0.
BR 12.4135 24.1381
ESLABW 73.5 73.5149 73.5297 73.5446 73.5595 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5 73.5 73.5
73.5 73.5 73.5
FILLET 1.
FPC 4.5
HAUNCW 13.56
IGIRD 3
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.695
SPLBFW 7.56
SPLTFT 0.695
SPLTFW 7.56
SPLTST 0.5
SPLTSW 7.5
SPLWD 16.81
SPLWT 0.415
SPN 24.8271 23.4489
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5 73.5149 73.5297 73.5446 73.5595 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5 73.5 73.5
73.5 73.5 73.5
TSSP 0.001 148.962 289.656
WCONC 113.

GO

SECTION K - UNIT 1
Girder 4 : Input File : Definition
Wed Jun 20 08:37:47 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 12.6891 24.138
ESLABW 73.5 73.5149 73.5297 73.5446 73.5595 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5
73.5 73.5 73.5
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 4
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 25.3781 22.8979
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5 73.5149 73.5297 73.5446 73.5595 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5
73.5 73.5 73.5 73.5
TSSP 0.001 152.2692 289.656
WCONC 113.

GO

SECTION K - UNIT 1
Girder 5 : Input File : Definition
Wed Jun 20 08:38:10 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 1.2 0.95
BR 12.9646 24.138
ESLABW 73.5 73.5149 73.5297 73.5446 73.5595 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5 73.5 73.5
73.5 73.5 73.5
FILLET 1.
FPC 4.5
HAUNCW 16.2
HINGE 25.929
IGIRD 5
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.665
SPLBFW 10.2
SPLTFT 0.665
SPLTFW 10.2
SPLTST 0.5
SPLTSW 7.5
SPLWD 14.97
SPLWT 0.395
SPN 25.9292 22.3468
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5 73.5149 73.5297 73.5446 73.5595 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5 73.5 73.5
73.5 73.5 73.5
TSSP 0.001 155.5752 289.656
WCONC 113.

GO

SECTION K - UNIT 1
Girder 6 : Input File : Definition
Wed Jun 20 08:38:18 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 4.05 4.05
BR 13.2401 24.138
ESLABW 73.5 73.5149 73.5297 73.5446 73.5594 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5 73.5 73.5
73.5 73.5 73.
FILLET 1.
FPC 4.5
HAUNCW 16.33
HINGE 26.48
IGIRD 6
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.5
SPLWD 14.98
SPLWT 0.455
SPN 26.4802 21.7958
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5 73.5149 73.5297 73.5446 73.5594 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5 73.5 73.5
73.5 73.5 73.5
TSSP 0.001 158.8812 289.656
WCONC 113.

GO

SECTION K - UNIT 1
Girder 7 : Input File : Definition
Wed Jun 20 08:38:25 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0. 6.99 7.11
BR 13.5156 24.138
ESLABW 75.8124 74.8674 73.9223 72.9773 72.0322 71.0872 70.4604 69.8336
69.2068 68.58 67.9532 67.4606 66.968 66.4754 65.9828 65.58 65.18 64.78
64.38 63.98 63.6
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 27.031
IGIRD 7
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.5
SPLWD 15.05
SPLWT 0.525
SPN 27.0312 21.2448
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 75.8124 74.8674 73.9223 72.9773 72.0322 71.0872 70.4604 69.8336
69.2068 68.58 67.9532 67.4606 66.968 66.4754 65.9828 65.67 65.36 65.05
64.74 64.43 64.13
TSSP 0.001 162.1872 289.656
WCONC 113.

GO

SECTION K - UNIT 1
Girder 8 : Input File : Definition
Wed Jun 20 08:38:33 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 13.7957 24.1147
ESLABW 60.0624 59.1123 58.162 57.2116 56.2613 55.311 54.6685 54.0297
53.3908 52.7519 52.1129 51.6302 51.1476 50.6651 50.1825 49.55 48.92
48.29 47.66 47.03 46.4
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 26.5
IGIRD 8
RAD -980.516
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 28.
SPLWT 0.375
SPN 27.5274 20.7928
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 60.0624 59.1123 58.162 57.2116 56.2613 55.311 54.6685 54.0297
53.3908 52.7519 52.1129 51.6302 51.1476 50.6651 50.1825 49.55 48.92
48.29 47.66 47.03 46.38
TSSP 165.5496 289.7616
WCONC 113.

GO

SECTION K - UNIT 1
Bracing : Input File : Definition
Wed Jun 20 08:38:41 2012

ID: SECTION K - UNIT 1

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

DIAPHRAGM MC10X41.1 FOR GROUP 2

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

TYPE D BRACING FOR GROUP 2

DATA

BRL-1 2.9115 3.5935 4.5321

BRL-2 6.125 6.1312 6.1312

BRL-3 6.125 6.1312 6.1312

BRL-4 6.125 6.1312 6.1312

BRL-5 6.125 6.1312 6.1312

BRL-6 6.125 6.1312 6.1312

BRL-7 6.5104 5.7167 4.7838

GCONNDST 4.25 4.25

GRP-1 2 1 1

GRP-2 2 1 1

GRP-3 2 1 1

GRP-4 2 1 1

GRP-5 2 1 1

GRP-6 2 1 1

GRP-7 2 1 1

GRPHT 0. 0.

GO

ID: SECTION K - UNIT 2

CONDITIONS

APPLY IMPACT AT AXLE LOCATION

ENGLISH INPUT

ENGLISH OUTPUT

FLOAT LANES

GRID MODEL

HS20 LOADING

LFD METHOD

LOW RESOLUTION MESH

RATE MODE

RATING PROJECT

SELF WEIGHT FOR DEAD LOAD 1

DATA

BRINCD 2 9 4 11 6 13 7 14 9 16 11 18 13 20 14 21 16 23 18 25 20 27 21
28 23 30 25 32 27 34 28 35 30 37 32 39 34 41 35 42 37 44 39 46 41 48
42 49 44 51 46 53 48 55 49 56

FPC 4.5

GCD-1 48.276 -1.8735 60.8411 -1.9861 73.4062 -1.944 83.8171 -1.7918

94.2512 -1.5327 108.9627 -0.9858 123.625 -0.2292

GCD-2 48.276 2.9115 60.8411 2.9115 73.4062 2.9115 84.0286 2.9115

94.651 2.9115 109.138 2.9115 123.625 2.9115

GCD-3 48.276 9.0365 60.8411 9.0365 73.4062 9.0365 84.3042 9.0365

95.2021 9.0365 109.4135 9.0365 123.625 9.0365

GCD-4 48.276 15.1615 60.8411 15.1615 73.4062 15.1615 84.5797 15.1615

95.7531 15.1615 109.6891 15.1615 123.625 15.1615

GCD-5 48.276 21.2865 60.8411 21.2865 73.4062 21.2865 84.8552 21.2865

96.3042 21.2865 109.9646 21.2865 123.625 21.2865

GCD-6 48.276 27.4115 60.8411 27.4115 73.4062 27.4115 85.1307 27.4115

96.8552 27.4115 110.2401 27.4115 123.625 27.4115

GCD-7 48.276 33.5365 60.8411 33.5365 73.4062 33.5365 85.4062 33.5365

97.4062 33.5365 110.5156 33.5365 123.625 33.5365

GCD-8 48.276 38.0964 60.8411 37.9791 73.4062 38.0229 85.6169 38.2197

97.8591 38.5698 110.7661 39.1048 123.625 39.8073

HNG-1 24.6 20.9

HNG-5 25.13 22.898

HNG-6 25.13 23.449

HNG-7 25.13 24.

HNG-8 24.6 24.5

LANWID 12.

LCD-1 43.9505 -1.799 49.9505 -1.8975 55.9505 -1.9607 61.9505 -1.9886

67.9505 -1.9813 73.9505 -1.9386 79.9505 -1.8607 85.9505 -1.7475

91.9505 -1.599 97.9505 -1.4152 103.9505 -1.196 109.9505 -0.9415

115.9505 -0.6516 121.9505 -0.3263 127.9505 0.0345

LCD-2 43.9505 10.2033 49.9505 10.1036 55.9505 10.0397 61.9505 10.0114

67.9505 10.0188 73.9505 10.062 79.9505 10.1408 85.9505 10.2554 91.9505

10.4056 97.9505 10.5917 103.9505 10.8134 109.9505 11.071 115.9505

11.3643 121.9505 11.6935 127.9505 12.0586

LCD-3 43.9505 22.2056 49.9505 22.1048 55.9505 22.04 61.9505 22.0114

67.9505 22.019 73.9505 22.0626 79.9505 22.1424 85.9505 22.2583 91.9505

22.4104 97.9505 22.5987 103.9505 22.8231 109.9505 23.0838 115.9505

23.3807 121.9505 23.7139 127.9505 24.0834

RAD-1 -1020.484

RAD-2 0.

RAD-3 0.

RAD-4 0.

RAD-5 0.

RAD-6 0.

RAD-7 0.

RAD-8 -980.516

ROADWG 39.97 39.968 39.967 39.966 39.966 39.965 39.965 39.965 39.965

39.966 39.967 39.974 39.986 40.003 40.025 40.052 40.085 40.122 40.165

40.212 40.264 40.235 40.206 40.18 40.155 40.131 40.109 40.089 40.07

40.052 40.036

SLABEXT 1.5833 1.5833

SLABT 8.

SLABWEAR 1.25

SPEED 50

SUP-1 1 3 5 7

SUP-2 1 3 5 7

SUP-3 1 3 5 7

SUP-4 1 3 5 7

SUP-5 1 3 5 7

SUP-6 1 3 5 7

SUP-7 1 3 5 7

SUP-8 1 3 5 7

SUPER 0.04
WAC-1 0.131
WAC-2 0.141
WAC-3 0.141
WAC-4 0.141
WAC-5 0.141
WAC-6 0.141
WAC-7 0.141
WAC-8 0.138
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001
GO

SECTION K - UNIT 2
Girder 1 : Input File : Definition
Wed Jun 20 08:39:41 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 12.5656 22.9773 25.1592 14.6819
ESLABW 47.9 47.9 47.9 47.9 47.9 47.9 48.2608 48.1364 48.012 47.8877
47.7633 47.6601 47.5569 47.4537 47.3505 47.2455 46.8443 46.4432 46.042
45.6408 45.2397 44.6739 44.1082 43.5424 42.9766 42.4109 41.4994
40.5855 39.6716 38.7577 37.8438
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 24.6 20.9
IGIRD 1
RAD -1020.484
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 46.
SPLWT 0.375
SPN 25.1309 20.8494 29.4037
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 47.92 47.92 47.92 47.92 47.92 47.92 47.92 47.92 47.92 47.92
47.92 46.9 46.9 46.9 46.9 46.9 46.9 46.9 46.9 46.9 46.9 41.75 41.75
41.75 41.75 41.75 41.75 41.75 41.75 41.75 41.75
TSSP 150.79 275.73 301.91
WCONC 113.

GO

SECTION K - UNIT 2
Girder 2 : Input File : Definition
Wed Jun 20 08:39:49 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W18X76

DATA

BR 12.5651 23.1875 25.1094 14.487
ESLABW 65.7 65.7 65.7 65.7 65.7 65.7 66.0163 65.8971 65.7779 65.6587
65.5395 65.4387 65.3379 65.2371 65.1363 65.0354 64.6258 64.2162
63.8066 63.3971 62.9876 62.4288 61.8703 61.3117 60.7531 60.1944
59.2747 58.3542 57.4346 56.5141 55.5942
FILLET 1.
FPC 4.5
HAUNCW 17.
IGIRD 2
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 25.1302 21.2448 28.974
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 65.67 65.67 65.67 65.67 65.67 65.67 65.67 65.67 65.67 65.67
65.67 64.77 64.77 64.77 64.77 64.77 64.77 64.77 64.77 64.77 64.77 59.5
59.5 59.5 59.5 59.5 59.5 59.5 59.5 59.5
TSSP 150.78 278.25 301.31 173.84
WCONC 113.

GO

SECTION K - UNIT 2
Girder 3 : Input File : Definition
Wed Jun 20 08:40:00 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W18X76

DATA

BR 12.5651 23.4631 25.1093 14.2115
ESLABW 73.5 73.5 73.5 73.5 73.5 73.5 73.508 73.5159 73.5239 73.5319
73.5398 73.5467 73.5536 73.5605 73.5674 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743
73.5595 73.5446 73.5297 73.5149 73.5
FILLET 1.
FPC 4.5
HAUNCW 17.
IGIRD 3
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 25.1302 21.7959 28.4229
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5
TSSP 150.78 281.56 301.31 170.54
WCONC 113.

GO

SECTION K - UNIT 2
Girder 4 : Input File : Definition
Wed Jun 20 08:40:07 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X77

DATA

BR 12.5651 23.7386 25.1094 13.9359
ESLABW 73.5 73.5 73.5 73.5 73.5 73.5 73.5079 73.5157 73.5236 73.5315
73.5393 73.5463 73.5533 73.5603 73.5673 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5744
73.5595 73.5446 73.5297 73.5149 73.5
FILLET 1.
FPC 4.5
HAUNCW 16.3
IGIRD 4
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 25.1302 22.3469 27.8719
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5
TSSP 150.78 284.86 301.31 167.23
WCONC 113.

GO

SECTION K - UNIT 2
Girder 5 : Input File : Definition
Wed Jun 20 08:40:16 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 1.05 2.37 2.12 0.
BR 12.5651 24.0141 25.1094 13.6604
ESLABW 73.5 73.5 73.5 73.5 73.5 73.5 73.5 73.5078 73.5156 73.5233 73.5311
73.5389 73.546 73.5531 73.5601 73.5672 73.5743 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5595
73.5446 73.5297 73.5149 73.5
FILLET 1.
FPC 4.5
HAUNCW 16.3
HINGE 25.13 22.898
IGIRD 5
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.5
SPLWD 14.98
SPLWT 0.455
SPN 25.1302 22.898 27.3208
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5
TSSP 150.78 288.17 301.31 163.92
WCONC 113.

GO

SECTION K - UNIT 2
Girder 6 : Input File : Definition
Wed Jun 20 08:40:23 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 4.05 5.37 4.99 0.
BR 12.5651 24.2896 25.1094 13.3849
ESLABW 73.5 73.5 73.5 73.5 73.5 73.5 73.5 73.5077 73.5154 73.5231 73.5307
73.5384 73.5456 73.5528 73.56 73.5671 73.5743 73.5743 73.5743 73.5743
73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5743 73.5594
73.5446 73.5297 73.5149 73.5
FILLET 1.
FPC 4.5
HAUNCW 16.3
HINGE 25.13 23.449
IGIRD 6
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.76
SPLBFW 10.3
SPLTFT 0.76
SPLTFW 10.3
SPLTST 0.5
SPLTSW 7.5
SPLWD 14.98
SPLWT 0.455
SPN 25.1302 23.449 26.7698
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 73.5
TSSP 150.78 291.48 301.31 160.62
WCONC 113.

GO

SECTION K - UNIT 2
Girder 7 : Input File : Definition
Wed Jun 20 08:40:30 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 7.11 8.43 8.18 0.
BR 12.5651 24.5651 25.1094 13.1094
ESLABW 63.8 63.8 63.8 63.8 63. 63.8 63.56 63.7144 63.8688 64.0232
64.1775 64.325 64.4724 64.6199 64.7673 64.9148 65.4229 65.931 66.4391
66.9472 67.4553 68.0104 68.5655 69.1206 69.6757 70.2307 71.0596
71.8884 72.7172 73.546 74.3748
FILLET 1.
FPC 4.5
HAUNCW 16.4
HINGE 25.13 24.
IGIRD 7
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.875
SPLBFW 10.4
SPLTFT 0.875
SPLTFW 10.4
SPLTST 0.5
SPLTSW 7.5
SPLWD 15.05
SPLWT 0.525
SPN 25.1302 24. 26.2188
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 63.75 63.75 63.75 63.75 63.75 63.75 63.75 63.75 63.75 63.75
63.75 65.32 65.32 65.32 65.32 65.32 65.32 65.32 65.32 65.32 65.32
70.66 70.66 70.66 70.66 70.66 70.66 70.66 70.66 70.66 70.66
TSSP 150.78 294.78 301.31 157.31
WCONC 113.

GO

SECTION K - UNIT 2
Girder 8 : Input File : Definition
Wed Jun 20 08:40:39 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 12.5656 24.7776 25.1655 12.8782
ESLABW 46. 46. 46. 46. 46. 46. 45.8045 45.9537 46.1031 46.2523 46.4016
46.5469 46.6923 46.8376 46.9829 47.131 47.6478 48.1645 48.6812 49.198
49.7146 50.2595 50.8045 51.3493 51.8941 52.4389 53.2743 54.112 54.9496
55.7869 56.6244
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 24.6 24.5
IGIRD 8
RAD -980.516
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 28.
SPLWT 0.375
SPN 25.1309 24.4597 25.7963
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 46. 46. 46. 46. 46. 46. 46. 46. 46. 46. 46. 47.57 47.57 47.57
47.57 47.57 47.57 47.57 47.57 47.57 47.57 47.57 52.91 52.91 52.91 52.91
52.91 52.91 52.91 52.91 52.91 52.91
TSSP 150.79 297.33 301.96
WCONC 113.

GO

SECTION K - UNIT 2
Bracing : Input File : Definition
Wed Jun 20 08:40:47 2012

ID: SECTION K - UNIT 2

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

DIAPHRAGM MC10X41.1 FOR GROUP 2

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

TYPE D BRACING FOR GROUP 2

DATA

BRL-1 4.8976 4.7081 3.9012 3.1407

BRL-2 6.125 6.1312 6.1312 6.125

BRL-3 6.125 6.1312 6.1312 6.125

BRL-4 6.125 6.1312 6.1312 6.125

BRL-5 6.125 6.1312 6.1312 6.125

BRL-6 6.125 6.1312 6.1312 6.125

BRL-7 4.4426 4.6879 5.5739 6.2708

GCONNDST 4.25 4.25

GRP-1 1 1 1 2

GRP-2 1 1 1 2

GRP-3 1 1 1 2

GRP-4 1 1 1 2

GRP-5 1 1 1 2

GRP-6 1 1 1 2

GRP-7 1 1 1 2

GRPHT 0. 0.

GO

SECTION K



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

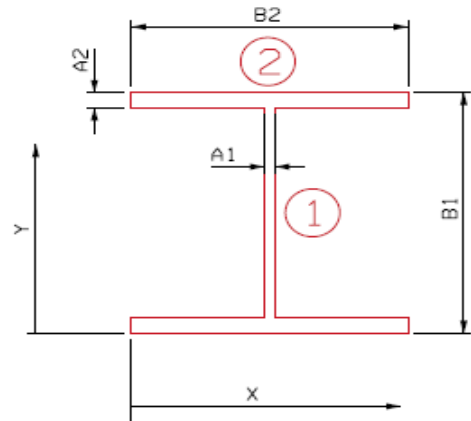
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.3750$ in
- $A_2 = t_f = 0.7500$ in
- $B_1 = d = 29.5000$ in
- $B_2 = b_f = 8.0000$ in

- * Girder 8 in MDX
- * Use Non-compact section properties regardless of criteria because fascia beams are curved



North Fascia Stringer
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		10.5000	14.7500	154.8750	686.0000	0.0000	0.0000	686.0000
2	Top Flange		6.0000	29.1250	174.7500	0.2813	14.3750	1239.8438	1240.1250
	Bottom Flange		6.0000	0.3750	2.2500	0.2813	14.3750	1239.8438	1240.1250
Total			22.50		331.88	686.56		2479.69	3166.25
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	14.7500	in	S _{top} = 214.66 in ³	y-bar =	14.7500	in	S _{top} = 214.66 in ³
I _x =	3166.25	in ⁴	S _{bott.} = 214.66 in ³	I _x =	3166.25	in ⁴	S _{bott.} = 214.66 in ³
c _{top} =	14.7500	in	A = 22.5000 in ²	c _{top} =	14.7500	in	A = 22.5000 in ²
c _{bottom} =	14.7500	in	r _x = 11.8626 in	c _{bottom} =	14.7500	in	r _x = 11.8626 in
			Z = 246.00 in ³				Z = 246.00 in ³

SECTION K



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Stringer Rating Factors

Non-composite Capacities*		
	AB	AI
M	643.98 k-ft	643.98 k-ft
V	207.62 k	207.62 k

*Noncompact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION K



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

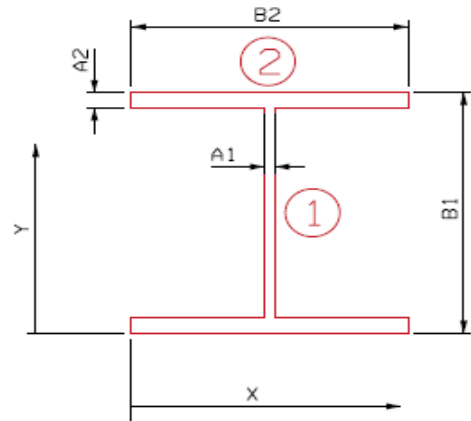
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.3750$ in
 $A_2 = t_f = 0.7500$ in
 $B_1 = d = 47.5000$ in
 $B_2 = b_f = 8.0000$ in

- * Girder 1 in MDX
- * Use Non-compact section properties regardless of criteria because fascia beams are curved



South Fascia Stringer
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.2500	23.7500	409.6875	3041.7500	0.0000	0.0000	3041.7500
2	Top Flange		6.0000	47.1250	282.7500	0.2813	23.3750	3278.3438	3278.6250
	Bottom Flange		6.0000	0.3750	2.2500	0.2813	23.3750	3278.3438	3278.6250
Total			29.25		694.69	3042.31		6556.69	9599.00
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	23.7500	in	S _{top} =	404.17	in ³	y-bar =	23.7500	in	S _{top} =	404.17	in ³
I _x =	9599.00	in ⁴	S _{bott.} =	404.17	in ³	I _x =	9599.00	in ⁴	S _{bott.} =	404.17	in ³
c _{top} =	23.7500	in	A =	29.2500	in ²	c _{top} =	23.7500	in	A =	29.2500	in ²
c _{bottom} =	23.7500	in	r _x =	18.1155	in	c _{bottom} =	23.7500	in	r _x =	18.1155	in
			Z =	478.88	in ³				Z =	478.88	in ³

SECTION K



Made By DWC
Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Stringer Rating Factors

Non-composite Capacities*		
	AB	AI
M	1212.51 k-ft	1212.51 k-ft
V	149.61 k	149.61 k

*Noncompact Section

$F_y =$	36.00 ksi
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AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Coped Stringer End S1-1 @ FB2



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/17/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.5000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

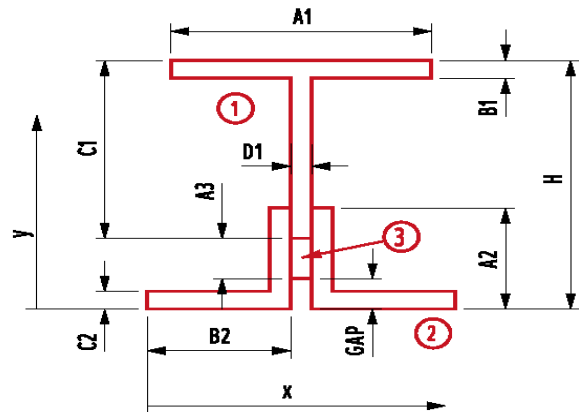
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 8.9375$ in
Gap = 0.4375 in



Coped Stringer End S1-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	9.1000	8.5000	77.3500	0.5806	3.9337	140.8102	141.3908
	Web	4.0031	4.2500	17.0133	19.3953	0.3163	0.4006	19.7960
2	Horizontal Legs	4.8750	0.3750	1.8281	0.2285	4.1913	85.6409	85.8694
	Vertical Legs	9.0000	3.0000	27.0000	27.0000	1.5663	22.0809	49.0809
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	4.1288	0.0000	0.0000
Total		26.98		123.19	47.20		248.93	296.14
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/17/2012

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Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.5663	in	S _{top} =	67.75	in ³	y-bar =	4.5663	in	S _{top} =	67.75	in ³
I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³	I _x =	296.14	in ⁴	S _{bott.} =	64.85	in ³
C _{top} =	4.3712	in	A =	26.9781	in ²	C _{top} =	4.3712	in	A =	26.9781	in ²
C _{bottom} =	4.5663	in	r _x =	3.3131	in	C _{bottom} =	4.5663	in	r _x =	3.3131	in
			Z =	81.01	in ³				Z =	81.01	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		4.0031	4.2625	17.0633	0.0919	0.9375	3.5184	3.6103
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5750	31.1528	33.2983
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5750	11.1628	11.3738
2 (Right)	Horizontal Leg		2.4375	6.9000	16.8188	2.1455	1.7000	7.0444	9.1899
	Vertical Leg		4.5000	4.9000	22.0500	0.2109	0.3000	0.4050	0.6159
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			26.98		114.99	86.83		61.28	148.11
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	28.48	in ³	x-bar =	5.2000	in	S _{right} =	28.48	in ³
I _y =	148.11	in ⁴	S _{left} =	28.48	in ³	I _y =	148.11	in ⁴	S _{left} =	28.48	in ³
C _{right} =	5.2000	in	A =	26.9781	in ²	C _{right} =	5.2000	in	A =	26.9781	in ²
C _{left} =	5.2000	in	r _y =	2.3431	in	C _{left} =	5.2000	in	r _y =	2.3431	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	243.03 k-ft	243.03 k-ft
V	248.02 k	248.02 k

F_y =	36.00 ksi
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*Compact Section

Coped Stringer End S1-1 @ FB3



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/17/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.2500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

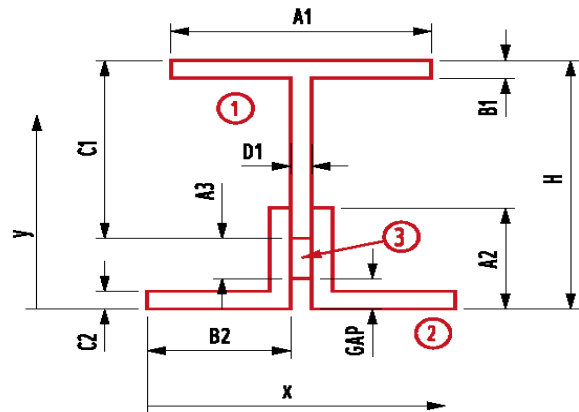
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 8.8125$ in
Gap = 0.5625 in



Coped Stringer End S1-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	9.1000	8.3750	76.2125	0.5806	3.4113	105.8983	106.4789
	Web	3.8719	4.2500	16.4555	17.5495	0.7137	1.9720	19.5215
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	4.7137	77.7654	77.8383
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	1.9637	23.1360	41.1360
3	Additional Plate	0.0000	0.5625	0.0000	0.0000	4.4012	0.0000	0.0000
Total		22.47		111.54	36.20		208.77	244.97
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total				0.00	0.00	0.00		0.00



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Date 2/14/2012
Date 2/17/2012

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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.9637	in	S _{top} =	63.65	in ³	y-bar =	4.9637	in	S _{top} =	63.65	in ³
I _x =	244.97	in ⁴	S _{bott.} =	49.35	in ³	I _x =	244.97	in ⁴	S _{bott.} =	49.35	in ³
C _{top} =	3.8488	in	A =	22.4719	in ²	C _{top} =	3.8488	in	A =	22.4719	in ²
C _{bottom} =	4.9637	in	r _x =	3.3017	in	C _{bottom} =	4.9637	in	r _x =	3.3017	in
			Z =	67.66	in ³				Z =	67.66	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		3.8719	4.2625	16.5039	0.0889	0.9375	3.4030	3.4919
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			22.47		95.79	85.81		43.42	129.23
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	24.85	in ³	x-bar =	5.2000	in	S _{right} =	24.85	in ³
I _y =	129.23	in ⁴	S _{left} =	24.85	in ³	I _y =	129.23	in ⁴	S _{left} =	24.85	in ³
C _{right} =	5.2000	in	A =	22.4719	in ²	C _{right} =	5.2000	in	A =	22.4719	in ²
C _{left} =	5.2000	in	r _y =	2.3981	in	C _{left} =	5.2000	in	r _y =	2.3981	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	202.98 k-ft	202.98 k-ft
V	195.68 k	195.68 k

F_y =	36.00 ksi
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*Compact Section

Coped Stringer End S2-1 @ FB2



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/17/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 11.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

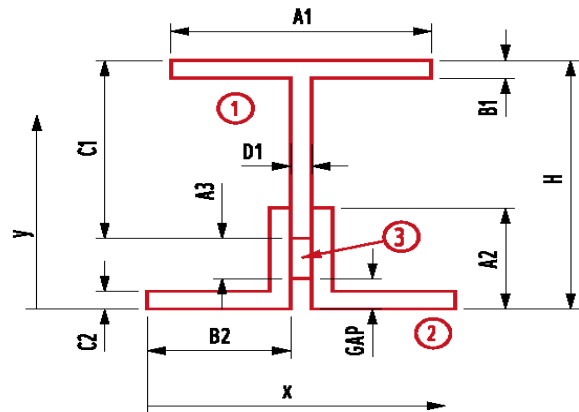
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 11.6875$ in
Gap = 0.4375 in



Coped Stringer End S2-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	11.3075	88.5151	0.3768	5.8510	267.9870	268.3638
	Web	4.7730	5.6825	27.1223	43.7680	0.2260	0.2438	44.0118
2	Horizontal Legs	4.8750	0.3750	1.8281	0.2285	5.0815	125.8796	126.1081
	Vertical Legs	9.0000	3.0000	27.0000	27.0000	2.4565	54.3087	81.3087
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	5.0190	0.0000	0.0000
Total		26.48		144.47	71.37		448.42	519.79
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
Date 2/17/2012

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Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.4565	in	S _{top} =	83.42	in ³	y-bar =	5.4565	in	S _{top} =	83.42	in ³
I _x =	519.79	in ⁴	S _{bott.} =	95.26	in ³	I _x =	519.79	in ⁴	S _{bott.} =	95.26	in ³
C _{top} =	6.2310	in	A =	26.4760	in ²	C _{top} =	6.2310	in	A =	26.4760	in ²
C _{bottom} =	5.4565	in	r _x =	4.4309	in	C _{bottom} =	5.4565	in	r _x =	4.4309	in
			Z =	103.40	in ³				Z =	103.40	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.7730	4.2275	20.1776	0.0823	0.9225	4.0618	4.1442
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	3.5250	30.2875	32.4330
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	1.5250	10.4653	10.6763
2 (Right)	Horizontal Leg		2.4375	6.8300	16.6481	2.1455	1.6800	6.8796	9.0251
	Vertical Leg		4.5000	4.8300	21.7350	0.2109	0.3200	0.4608	0.6717
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			26.48		111.93	74.00		58.82	132.82
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	25.79	in ³	x-bar =	5.1500	in	S _{right} =	25.79	in ³
I _y =	132.82	in ⁴	S _{left} =	25.79	in ³	I _y =	132.82	in ⁴	S _{left} =	25.79	in ³
C _{right} =	5.1500	in	A =	26.4760	in ²	C _{right} =	5.1500	in	A =	26.4760	in ²
C _{left} =	5.1500	in	r _y =	2.2398	in	C _{left} =	5.1500	in	r _y =	2.2398	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	310.20 k-ft	310.20 k-ft
V	264.09 k	264.09 k

F_y =	36.00 ksi
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*Compact Section



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 11.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

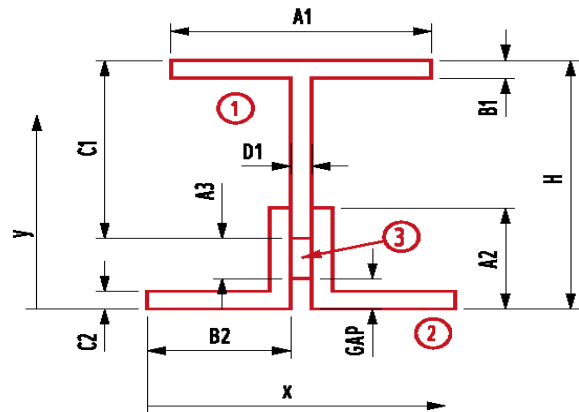
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 11.6875$ in
Gap = 0.4375 in



Coped Stringer End S2-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	11.3075	88.5151	0.3768	5.2212	213.4008	213.7776
	Web	4.7730	5.6825	27.1223	43.7680	0.4038	0.7781	44.5461
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	5.8363	119.2173	119.2902
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	3.0863	57.1505	75.1505
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	5.6488	0.0000	0.0000
Total		22.10		134.51	62.22		390.55	452.76
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.0863	in	S _{top} =	80.83	in ³	y-bar =	6.0863	in	S _{top} =	80.83	in ³
I _x =	452.76	in ⁴	S _{bott.} =	74.39	in ³	I _x =	452.76	in ⁴	S _{bott.} =	74.39	in ³
C _{top} =	5.6012	in	A =	22.1010	in ²	C _{top} =	5.6012	in	A =	22.1010	in ²
C _{bottom} =	6.0863	in	r _x =	4.5262	in	C _{bottom} =	6.0863	in	r _x =	4.5262	in
			Z =	91.57	in ³				Z =	91.57	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.7730	4.2275	20.1776	0.0823	0.9225	4.0618	4.1442
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			22.10		93.43	72.99		41.66	114.65
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.26	in ³	x-bar =	5.1500	in	S _{right} =	22.26	in ³
I _y =	114.65	in ⁴	S _{left} =	22.26	in ³	I _y =	114.65	in ⁴	S _{left} =	22.26	in ³
C _{right} =	5.1500	in	A =	22.1010	in ²	C _{right} =	5.1500	in	A =	22.1010	in ²
C _{left} =	5.1500	in	r _y =	2.2776	in	C _{left} =	5.1500	in	r _y =	2.2776	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	274.71 k-ft	274.71 k-ft
V	214.50 k	214.50 k

F_y =	36.00 ksi
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*Compact Section



Made By CTG
Checked By DWC

Date 2/14/2012
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 14.0000$ in
 $D_1 = t_w = 0.3950$ in

Bottom Angles:

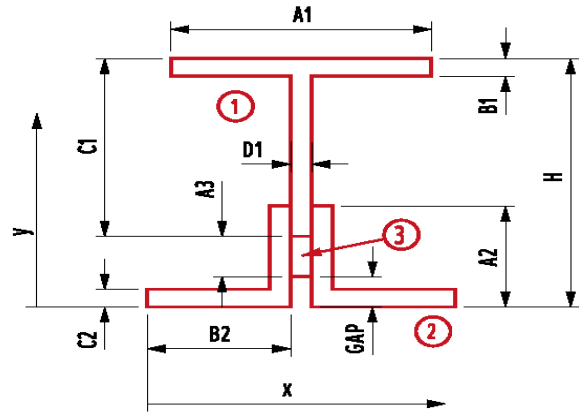
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.3950$ in

Miscellaneous:

$H = 14.4375$ in
Gap = 0.4375 in



Coped Stringer End S3-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	6.7830	14.1050	95.6742	0.2500	7.0530	337.4161	337.6660
	Web	5.2673	7.1050	37.4243	78.0540	0.0530	0.0148	78.0687
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	6.8020	161.9367	162.0096
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	4.0520	98.5137	116.5137
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	6.6145	0.0000	0.0000
Total		21.55		151.97	96.38		597.88	694.26
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	7.0520	in	S _{top} =	94.00	in ³	y-bar =	7.0520	in	S _{top} =	94.00	in ³
I _x =	694.26	in ⁴	S _{bott.} =	98.45	in ³	I _x =	694.26	in ⁴	S _{bott.} =	98.45	in ³
C _{top} =	7.3855	in	A =	21.5503	in ²	C _{top} =	7.3855	in	A =	21.5503	in ²
C _{bottom} =	7.0520	in	r _x =	5.6759	in	C _{bottom} =	7.0520	in	r _x =	5.6759	in
			Z =	110.53	in ³				Z =	110.53	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	4.1975	28.4716	58.8086	0.9025	5.5248	64.3334
	Web		5.2673	4.1975	22.1096	0.0685	0.9025	4.2903	4.3588
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.3500	19.6394	21.4258
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.3500	5.4675	5.5300
2 (Right)	Horizontal Leg		1.7500	6.6450	11.6288	1.7865	1.5450	4.1773	5.9638
	Vertical Leg		3.0000	4.6450	13.9350	0.0625	0.4550	0.6211	0.6836
3	Additional Plate		0.0000	4.1975	0.0000	0.0000	0.9025	0.0000	0.0000
Total			21.55		90.46	62.58		39.72	102.30
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1000	in	S _{right} =	20.06	in ³	x-bar =	5.1000	in	S _{right} =	20.06	in ³
I _y =	102.30	in ⁴	S _{left} =	20.06	in ³	I _y =	102.30	in ⁴	S _{left} =	20.06	in ³
C _{right} =	5.1000	in	A =	21.5503	in ²	C _{right} =	5.1000	in	A =	21.5503	in ²
C _{left} =	5.1000	in	r _y =	2.1787	in	C _{left} =	5.1000	in	r _y =	2.1787	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	331.59 k-ft	331.59 k-ft
V	224.82 k	224.82 k

F_y =	36.00 ksi
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*Compact Section



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Date 2/14/2012
Date 2/17/2012

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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 14.2500$ in
 $D_1 = t_w = 0.3950$ in

Bottom Angles:

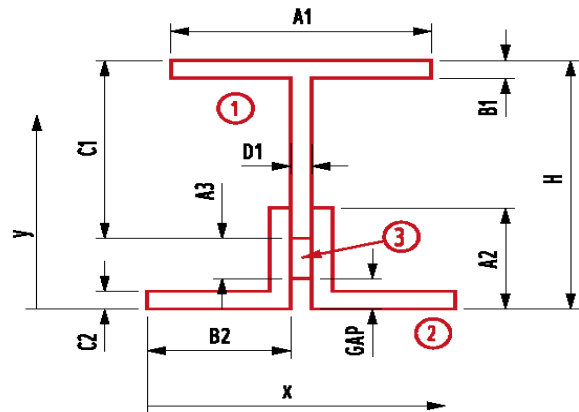
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.3950$ in

Miscellaneous:

$H = 14.6875$ in
Gap = 0.4375 in



Coped Stringer End S3-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	6.7830	14.3550	97.3700	0.2500	7.1934	350.9878	351.2378
	Web	5.3661	7.2300	38.7967	82.5268	0.0684	0.0251	82.5519
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	6.9116	167.1950	167.2679
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	4.1616	103.9127	121.9127
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	6.7241	0.0000	0.0000
Total		21.65		155.04	100.85		622.12	722.97
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	7.1616	in	S _{top} =	96.06	in ³	y-bar =	7.1616	in	S _{top} =	96.06	in ³
I _x =	722.97	in ⁴	S _{bott.} =	100.95	in ³	I _x =	722.97	in ⁴	S _{bott.} =	100.95	in ³
C _{top} =	7.5259	in	A =	21.6491	in ²	C _{top} =	7.5259	in	A =	21.6491	in ²
C _{bottom} =	7.1616	in	r _x =	5.7788	in	C _{bottom} =	7.1616	in	r _x =	5.7788	in
			Z =	113.07	in ³				Z =	113.07	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	4.1975	28.4716	58.8086	0.9025	5.5248	64.3334
	Web		5.3661	4.1975	22.5241	0.0698	0.9025	4.3707	4.4405
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.3500	19.6394	21.4258
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.3500	5.4675	5.5300
2 (Right)	Horizontal Leg		1.7500	6.6450	11.6288	1.7865	1.5450	4.1773	5.9638
	Vertical Leg		3.0000	4.6450	13.9350	0.0625	0.4550	0.6211	0.6836
3	Additional Plate		0.0000	4.1975	0.0000	0.0000	0.9025	0.0000	0.0000
Total			21.65		90.87	62.58		39.80	102.38
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1000	in	S _{right} =	20.07	in ³	x-bar =	5.1000	in	S _{right} =	20.07	in ³
I _y =	102.38	in ⁴	S _{left} =	20.07	in ³	I _y =	102.38	in ⁴	S _{left} =	20.07	in ³
C _{right} =	5.1000	in	A =	21.6491	in ²	C _{right} =	5.1000	in	A =	21.6491	in ²
C _{left} =	5.1000	in	r _y =	2.1746	in	C _{left} =	5.1000	in	r _y =	2.1746	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	339.21 k-ft	339.21 k-ft
V	226.88 k	226.88 k

F_y =	36.00 ksi
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*Compact Section



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/17/2012

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Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 7.5600$ in
 $B_1 = t_f = 0.6950$ in
 $C_1 = d = 16.2500$ in
 $D_1 = t_w = 0.4150$ in

Bottom Angles:

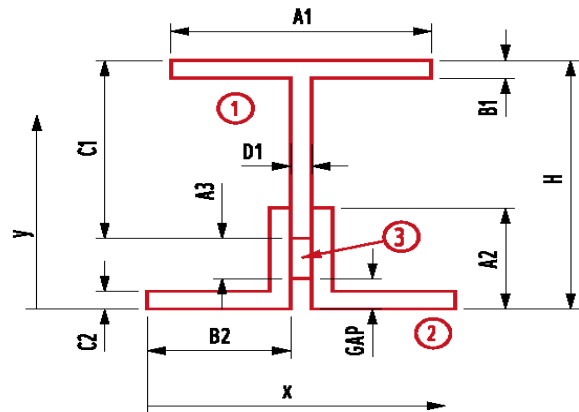
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.7500$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4150$ in

Miscellaneous:

$H = 16.6875$ in
Gap = 0.4375 in



Coped Stringer End S5-1 @ FB1

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	5.2542	16.3400	85.8536	0.2115	9.7848	503.0470	503.2585
	Web	6.4553	8.2150	53.0305	130.1598	1.6598	17.7835	147.9433
2	Horizontal Legs	4.8750	0.3750	1.8281	0.2285	6.1802	186.2013	186.4299
	Vertical Legs	9.0000	3.0000	27.0000	27.0000	3.5552	113.7564	140.7564
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	6.1177	0.0000	0.0000
Total		25.58		167.71	157.60		820.79	978.39
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
Date 2/17/2012

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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.5552	in	S _{top} =	96.56	in ³	y-bar =	6.5552	in	S _{top} =	96.56	in ³
I _x =	978.39	in ⁴	S _{bott.} =	149.25	in ³	I _x =	978.39	in ⁴	S _{bott.} =	149.25	in ³
C _{top} =	10.1323	in	A =	25.5845	in ²	C _{top} =	10.1323	in	A =	25.5845	in ²
C _{bottom} =	6.5552	in	r _x =	6.1840	in	C _{bottom} =	6.5552	in	r _x =	6.1840	in
			Z =	129.88	in ³				Z =	129.88	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		5.2542	4.2075	22.1070	25.0247	0.0000	0.0000	25.0247
	Web		6.4553	4.2075	27.1608	0.0926	0.0000	0.0000	0.0926
2 (Left)	Horizontal Leg		2.4375	1.6250	3.9609	2.1455	2.5825	16.2564	18.4019
	Vertical Leg		4.5000	3.6250	16.3125	0.2109	0.5825	1.5269	1.7378
2 (Right)	Horizontal Leg		2.4375	6.7900	16.5506	2.1455	2.5825	16.2564	18.4019
	Vertical Leg		4.5000	4.7900	21.5550	0.2109	0.5825	1.5269	1.7378
3	Additional Plate		0.0000	4.2075	0.0000	0.0000	0.0000	0.0000	0.0000
Total			25.58		107.65	29.83		35.57	65.40
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	4.2075	in	S _{right} =	15.54	in ³	x-bar =	4.2075	in	S _{right} =	15.54	in ³
I _y =	65.40	in ⁴	S _{left} =	15.54	in ³	I _y =	65.40	in ⁴	S _{left} =	15.54	in ³
C _{right} =	4.2075	in	A =	25.5845	in ²	C _{right} =	4.2075	in	A =	25.5845	in ²
C _{left} =	4.2075	in	r _y =	1.5988	in	C _{left} =	4.2075	in	r _y =	1.5988	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	389.64 k-ft	389.64 k-ft
V	299.22 k	299.22 k

F_y = **36.00 ksi**

*Compact Section



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 8.2500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

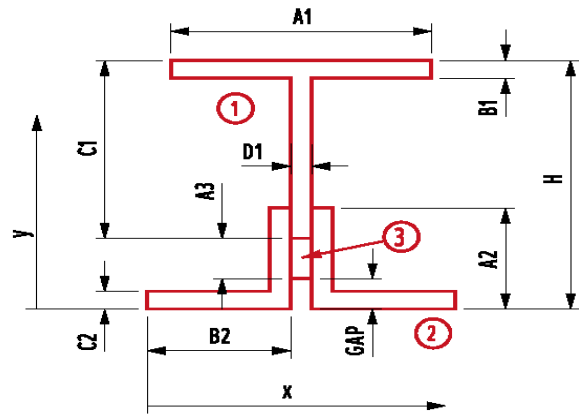
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 8.8125$ in
Gap = 0.5625 in



Coped Stringer End S1-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	9.1000	8.3750	76.2125	0.5806	3.4113	105.8983	106.4789
	Web	3.8719	4.2500	16.4555	17.5495	0.7137	1.9720	19.5215
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	4.7137	77.7654	77.8383
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	1.9637	23.1360	41.1360
3	Additional Plate	0.0000	0.5625	0.0000	0.0000	4.4012	0.0000	0.0000
Total		22.47		111.54	36.20		208.77	244.97
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	4.9637	in	S _{top} =	63.65	in ³	y-bar =	4.9637	in	S _{top} =	63.65	in ³
I _x =	244.97	in ⁴	S _{bott.} =	49.35	in ³	I _x =	244.97	in ⁴	S _{bott.} =	49.35	in ³
C _{top} =	3.8488	in	A =	22.4719	in ²	C _{top} =	3.8488	in	A =	22.4719	in ²
C _{bottom} =	4.9637	in	r _x =	3.3017	in	C _{bottom} =	4.9637	in	r _x =	3.3017	in
			Z =	67.66	in ³				Z =	67.66	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		3.8719	4.2625	16.5039	0.0889	0.9375	3.4030	3.4919
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4500	20.8294	22.6158
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4500	6.3075	6.3700
2 (Right)	Horizontal Leg		1.7500	6.7750	11.8563	1.7865	1.5750	4.3411	6.1276
	Vertical Leg		3.0000	4.7750	14.3250	0.0625	0.4250	0.5419	0.6044
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			22.47		95.79	85.81		43.42	129.23
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	24.85	in ³	x-bar =	5.2000	in	S _{right} =	24.85	in ³
I _y =	129.23	in ⁴	S _{left} =	24.85	in ³	I _y =	129.23	in ⁴	S _{left} =	24.85	in ³
C _{right} =	5.2000	in	A =	22.4719	in ²	C _{right} =	5.2000	in	A =	22.4719	in ²
C _{left} =	5.2000	in	r _y =	2.3981	in	C _{left} =	5.2000	in	r _y =	2.3981	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	202.98 k-ft	202.98 k-ft
V	195.68 k	195.68 k

F_y = **36.00 ksi**

*Compact Section



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 7.0000$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

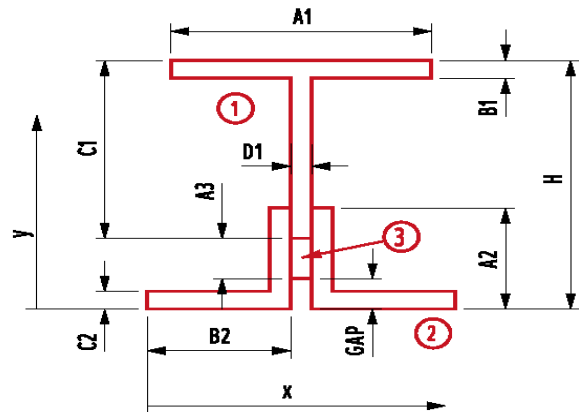
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.8750$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 7.5000$ in
Gap = 0.5000 in



Coped Stringer End S1-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	7.0625	64.2688	0.5806	3.1870	92.4266	93.0072
	Web		3.2156	3.5625	11.4557	10.0530	0.3130	0.3151	10.3681
2	Horizontal Legs		5.4688	0.4375	2.3926	0.3489	3.4380	64.6410	64.9899
	Vertical Legs		10.5000	3.0000	31.5000	31.5000	0.8755	8.0488	39.5488
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	3.3755	0.0000	0.0000
Total			28.28		109.62	42.48		165.43	207.91
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	3.8755	in	S _{top} =	57.36	in ³	y-bar =	3.8755	in	S _{top} =	57.36	in ³
I _x =	207.91	in ⁴	S _{bott.} =	53.65	in ³	I _x =	207.91	in ⁴	S _{bott.} =	53.65	in ³
C _{top} =	3.6245	in	A =	28.2844	in ²	C _{top} =	3.6245	in	A =	28.2844	in ²
C _{bottom} =	3.8755	in	r _x =	2.7112	in	C _{bottom} =	3.8755	in	r _x =	2.7112	in
			Z =	69.86	in ³				Z =	69.86	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		3.2156	4.2625	13.7066	0.0739	0.9375	2.8262	2.9001
2 (Left)	Horizontal Leg		2.7344	1.5625	4.2725	2.2252	3.6375	36.1796	38.4049
	Vertical Leg		5.2500	3.5625	18.7031	0.3350	1.6375	14.0774	14.4123
2 (Right)	Horizontal Leg		2.7344	6.9625	19.0381	2.2252	1.7625	8.4941	10.7193
	Vertical Leg		5.2500	4.9625	26.0531	0.3350	0.2375	0.2961	0.6311
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			28.28		120.56	87.22		69.87	157.09
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	30.21	in ³	x-bar =	5.2000	in	S _{right} =	30.21	in ³
I _y =	157.09	in ⁴	S _{left} =	30.21	in ³	I _y =	157.09	in ⁴	S _{left} =	30.21	in ³
C _{right} =	5.2000	in	A =	28.2844	in ²	C _{right} =	5.2000	in	A =	28.2844	in ²
C _{left} =	5.2000	in	r _y =	2.3567	in	C _{left} =	5.2000	in	r _y =	2.3567	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	209.58 k-ft	209.58 k-ft
V	254.41 k	254.41 k

F_y = **36.00 ksi**

*Compact Section



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.4000$ in
 $B_1 = t_f = 0.8750$ in
 $C_1 = d = 7.2500$ in
 $D_1 = t_w = 0.5250$ in

Bottom Angles:

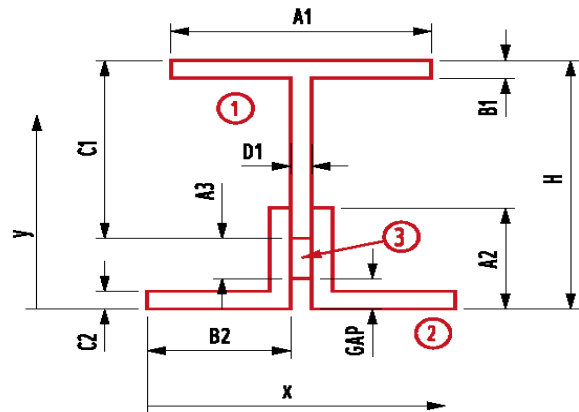
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.8750$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.5250$ in

Miscellaneous:

$H = 7.7500$ in
Gap = 0.5000 in



Coped Stringer End S1-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	7.3125	66.5438	0.5806	3.3436	101.7367	102.3173
	Web		3.3469	3.6875	12.3416	11.3349	0.2814	0.2650	11.5999
2	Horizontal Legs		5.4688	0.4375	2.3926	0.3489	3.5314	68.1985	68.5474
	Vertical Legs		10.5000	3.0000	31.5000	31.5000	0.9689	9.8565	41.3565
3	Additional Plate		0.0000	0.5000	0.0000	0.0000	3.4689	0.0000	0.0000
Total			28.42		112.78	43.76		180.06	223.82
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	3.9689	in	S _{top} =	59.19	in ³	y-bar =	3.9689	in	S _{top} =	59.19	in ³
I _x =	223.82	in ⁴	S _{bott.} =	56.39	in ³	I _x =	223.82	in ⁴	S _{bott.} =	56.39	in ³
C _{top} =	3.7811	in	A =	28.4156	in ²	C _{top} =	3.7811	in	A =	28.4156	in ²
C _{bottom} =	3.9689	in	r _x =	2.8065	in	C _{bottom} =	3.9689	in	r _x =	2.8065	in
			Z =	72.51	in ³				Z =	72.51	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		9.1000	4.2625	38.7888	82.0213	0.9375	7.9980	90.0194
	Web		3.3469	4.2625	14.2661	0.0769	0.9375	2.9416	3.0185
2 (Left)	Horizontal Leg		2.7344	1.5625	4.2725	2.2252	3.6375	36.1796	38.4049
	Vertical Leg		5.2500	3.5625	18.7031	0.3350	1.6375	14.0774	14.4123
2 (Right)	Horizontal Leg		2.7344	6.9625	19.0381	2.2252	1.7625	8.4941	10.7193
	Vertical Leg		5.2500	4.9625	26.0531	0.3350	0.2375	0.2961	0.6311
3	Additional Plate		0.0000	4.2625	0.0000	0.0000	0.9375	0.0000	0.0000
Total			28.42		121.12	87.22		69.99	157.21
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.2000	in	S _{right} =	30.23	in ³	x-bar =	5.2000	in	S _{right} =	30.23	in ³
I _y =	157.21	in ⁴	S _{left} =	30.23	in ³	I _y =	157.21	in ⁴	S _{left} =	30.23	in ³
C _{right} =	5.2000	in	A =	28.4156	in ²	C _{right} =	5.2000	in	A =	28.4156	in ²
C _{left} =	5.2000	in	r _y =	2.3521	in	C _{left} =	5.2000	in	r _y =	2.3521	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	217.53 k-ft	217.53 k-ft
V	257.15 k	257.15 k

F_y =	36.00 ksi
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*Compact Section



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 11.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

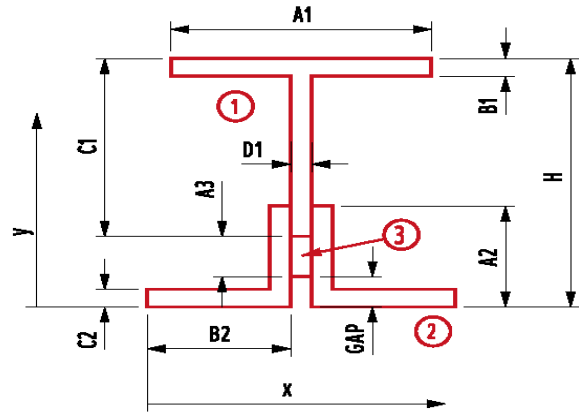
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 11.6875$ in
Gap = 0.4375 in



Coped Stringer End S2-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	11.3075	88.5151	0.3768	5.2212	213.4008	213.7776
	Web	4.7730	5.6825	27.1223	43.7680	0.4038	0.7781	44.5461
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	5.8363	119.2173	119.2902
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	3.0863	57.1505	75.1505
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	5.6488	0.0000	0.0000
Total		22.10		134.51	62.22		390.55	452.76
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total				0.00	0.00	0.00		0.00



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Date 2/14/2012
Date 2/17/2012

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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.0863	in	S _{top} =	80.83	in ³	y-bar =	6.0863	in	S _{top} =	80.83	in ³
I _x =	452.76	in ⁴	S _{bott.} =	74.39	in ³	I _x =	452.76	in ⁴	S _{bott.} =	74.39	in ³
C _{top} =	5.6012	in	A =	22.1010	in ²	C _{top} =	5.6012	in	A =	22.1010	in ²
C _{bottom} =	6.0863	in	r _x =	4.5262	in	C _{bottom} =	6.0863	in	r _x =	4.5262	in
			Z =	91.57	in ³				Z =	91.57	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.7730	4.2275	20.1776	0.0823	0.9225	4.0618	4.1442
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			22.10		93.43	72.99		41.66	114.65
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	22.26	in ³	x-bar =	5.1500	in	S _{right} =	22.26	in ³
I _y =	114.65	in ⁴	S _{left} =	22.26	in ³	I _y =	114.65	in ⁴	S _{left} =	22.26	in ³
C _{right} =	5.1500	in	A =	22.1010	in ²	C _{right} =	5.1500	in	A =	22.1010	in ²
C _{left} =	5.1500	in	r _y =	2.2776	in	C _{left} =	5.1500	in	r _y =	2.2776	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	274.71 k-ft	274.71 k-ft
V	214.50 k	214.50 k

F_y = **36.00 ksi**

*Compact Section



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 9.7500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

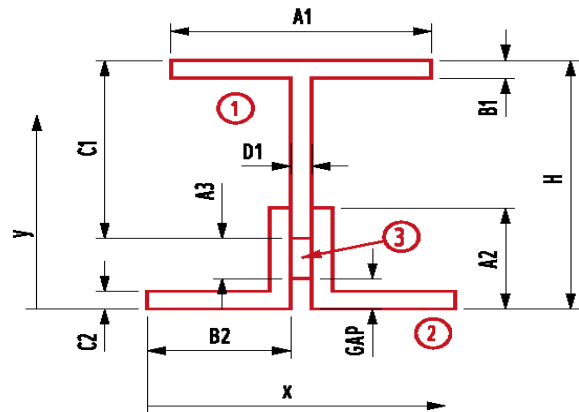
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 10.3750$ in
Gap = 0.6250 in



Coped Stringer End S2-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	9.9950	78.2409	0.3768	4.7912	179.6994	180.0762
	Web	4.0905	5.1200	20.9431	27.5492	0.0838	0.0287	27.5779
2	Horizontal Legs	4.2188	0.3125	1.3184	0.1373	4.8913	100.9312	101.0685
	Vertical Legs	7.5000	3.0000	22.5000	22.5000	2.2038	36.4242	58.9242
3	Additional Plate	0.0000	0.6250	0.0000	0.0000	4.5788	0.0000	0.0000
Total		23.64		123.00	50.56		317.08	367.65
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
Date 2/17/2012

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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.2038	in	S _{top} =	71.09	in ³	y-bar =	5.2038	in	S _{top} =	71.09	in ³
I _x =	367.65	in ⁴	S _{bott.} =	70.65	in ³	I _x =	367.65	in ⁴	S _{bott.} =	70.65	in ³
C _{top} =	5.1712	in	A =	23.6372	in ²	C _{top} =	5.1712	in	A =	23.6372	in ²
C _{bottom} =	5.2038	in	r _x =	3.9438	in	C _{bottom} =	5.2038	in	r _x =	3.9438	in
			Z =	84.09	in ³				Z =	84.09	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.0905	4.2275	17.2924	0.0706	0.9225	3.4810	3.5516
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.64		99.93	73.53		49.52	123.05
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	23.89	in ³	x-bar =	5.1500	in	S _{right} =	23.89	in ³
I _y =	123.05	in ⁴	S _{left} =	23.89	in ³	I _y =	123.05	in ⁴	S _{left} =	23.89	in ³
C _{right} =	5.1500	in	A =	23.6372	in ²	C _{right} =	5.1500	in	A =	23.6372	in ²
C _{left} =	5.1500	in	r _y =	2.2816	in	C _{left} =	5.1500	in	r _y =	2.2816	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	252.27 k-ft	252.27 k-ft
V	225.70 k	225.70 k

F_y =	36.00 ksi
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*Compact Section



Made By CTG
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Date 2/14/2012
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 10.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

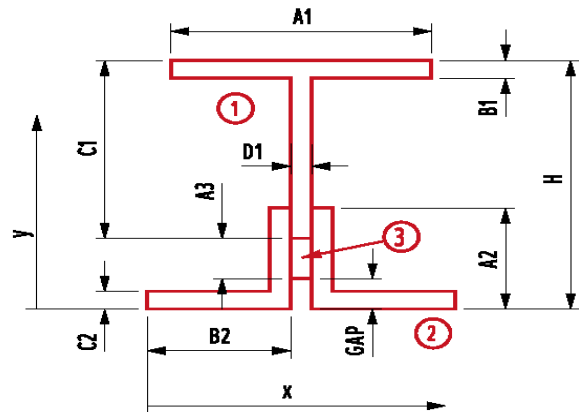
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 10.7500$ in
Gap = 0.5000 in



Coped Stringer End S2-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	10.3700	81.1764	0.3768	5.0214	197.3800	197.7568
	Web	4.3180	5.2450	22.6476	32.4063	0.1036	0.0463	32.4526
2	Horizontal Legs	4.2188	0.3125	1.3184	0.1373	5.0361	106.9966	107.1339
	Vertical Legs	7.5000	3.0000	22.5000	22.5000	2.3486	41.3689	63.8689
3	Additional Plate	0.0000	0.5000	0.0000	0.0000	4.8486	0.0000	0.0000
Total		23.86		127.64	55.42		345.79	401.21
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
Date 2/17/2012

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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	5.3486	in	S _{top} =	74.28	in ³	y-bar =	5.3486	in	S _{top} =	74.28	in ³
I _x =	401.21	in ⁴	S _{bott.} =	75.01	in ³	I _x =	401.21	in ⁴	S _{bott.} =	75.01	in ³
C _{top} =	5.4014	in	A =	23.8647	in ²	C _{top} =	5.4014	in	A =	23.8647	in ²
C _{bottom} =	5.3486	in	r _x =	4.1002	in	C _{bottom} =	5.3486	in	r _x =	4.1002	in
			Z =	88.13	in ³				Z =	88.13	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		4.3180	4.2275	18.2541	0.0745	0.9225	3.6746	3.7491
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.86		100.89	73.53		49.71	123.24
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	23.93	in ³	x-bar =	5.1500	in	S _{right} =	23.93	in ³
I _y =	123.24	in ⁴	S _{left} =	23.93	in ³	I _y =	123.24	in ⁴	S _{left} =	23.93	in ³
C _{right} =	5.1500	in	A =	23.8647	in ²	C _{right} =	5.1500	in	A =	23.8647	in ²
C _{left} =	5.1500	in	r _y =	2.2725	in	C _{left} =	5.1500	in	r _y =	2.2725	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	264.39 k-ft	264.39 k-ft
V	230.45 k	230.45 k

F_y = **36.00 ksi**

*Compact Section



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 14.2500$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

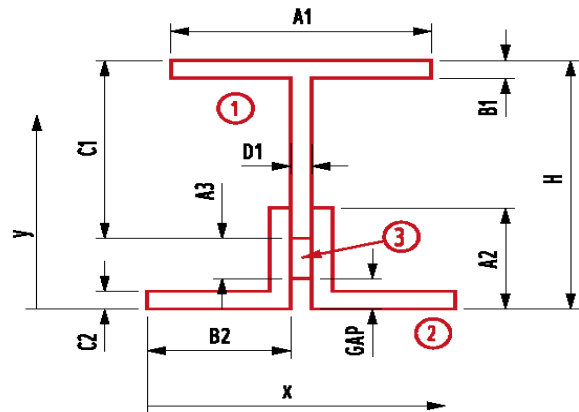
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 14.6875$ in
Gap = 0.4375 in



Coped Stringer End S3-2 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	14.3075	111.9991	0.3768	6.8516	367.4802	367.8570
	Web	6.1380	7.1825	44.0858	93.0821	0.2734	0.4588	93.5409
2	Horizontal Legs	3.5000	0.2500	0.8750	0.0729	7.2059	181.7378	181.8107
	Vertical Legs	6.0000	3.0000	18.0000	18.0000	4.4559	119.1306	137.1306
3	Additional Plate	0.0000	0.4375	0.0000	0.0000	7.0184	0.0000	0.0000
Total		23.47		174.96	111.53		668.81	780.34
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total				0.00	0.00	0.00	0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	7.4559	in	S _{top} =	107.91	in ³	y-bar =	7.4559	in	S _{top} =	107.91	in ³
I _x =	780.34	in ⁴	S _{bott.} =	104.66	in ³	I _x =	780.34	in ⁴	S _{bott.} =	104.66	in ³
C _{top} =	7.2316	in	A =	23.4660	in ²	C _{top} =	7.2316	in	A =	23.4660	in ²
C _{bottom} =	7.4559	in	r _x =	5.7666	in	C _{bottom} =	7.4559	in	r _x =	5.7666	in
			Z =	124.43	in ³				Z =	124.43	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		6.1380	4.2275	25.9482	0.1059	0.9225	5.2234	5.3293
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	3.4000	20.2300	22.0165
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	1.4000	5.8800	5.9425
2 (Right)	Horizontal Leg		1.7500	6.7050	11.7338	1.7865	1.5550	4.2315	6.0180
	Vertical Leg		3.0000	4.7050	14.1150	0.0625	0.4450	0.5941	0.6566
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			23.47		99.20	73.01		42.82	115.83
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
x-bar =	5.1500	in	S _{right} =	22.49	in ³	x-bar =	5.1500	in	S _{right} =	22.49	in ³
I _y =	115.83	in ⁴	S _{left} =	22.49	in ³	I _y =	115.83	in ⁴	S _{left} =	22.49	in ³
C _{right} =	5.1500	in	A =	23.4660	in ²	C _{right} =	5.1500	in	A =	23.4660	in ²
C _{left} =	5.1500	in	r _y =	2.2217	in	C _{left} =	5.1500	in	r _y =	2.2217	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	373.29 k-ft	373.29 k-ft
V	243.00 k	243.00 k

F_y = **36.00 ksi**

*Compact Section



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 12.8750$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

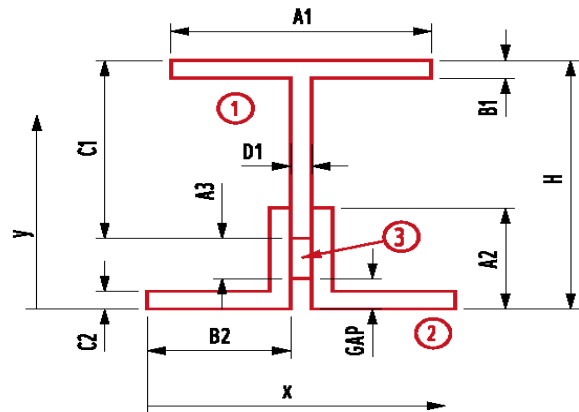
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 13.3750$ in
 $Gap = 0.5000$ in



Coped Stringer End S3-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange	7.8280	12.9950	101.7249	0.3768	6.5426	335.0860	335.4628
	Web	5.5123	6.5575	36.1471	67.4218	0.1051	0.0609	67.4827
2	Horizontal Legs	4.2188	0.3125	1.3184	0.1373	6.1399	159.0382	159.1755
	Vertical Legs	7.5000	3.0000	22.5000	22.5000	3.4524	89.3912	111.8912
3	Additional Plate	0.0000	0.5000	0.0000	0.0000	5.9524	0.0000	0.0000
Total		25.06		161.69	90.44		583.58	674.01
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.4524	in	S _{top} =	97.36	in ³	y-bar =	6.4524	in	S _{top} =	97.36	in ³
I _x =	674.01	in ⁴	S _{bott.} =	104.46	in ³	I _x =	674.01	in ⁴	S _{bott.} =	104.46	in ³
C _{top} =	6.9226	in	A =	25.0591	in ²	C _{top} =	6.9226	in	A =	25.0591	in ²
C _{bottom} =	6.4524	in	r _x =	5.1862	in	C _{bottom} =	6.4524	in	r _x =	5.1862	in
			Z =	116.41	in ³				Z =	116.41	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.5123	4.2275	23.3034	0.0951	0.9225	4.6910	4.7861
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			25.06		105.94	73.55		50.73	124.28
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	24.13	in ³	x-bar =	5.1500	in	S _{right} =	24.13	in ³
I _y =	124.28	in ⁴	S _{left} =	24.13	in ³	I _y =	124.28	in ⁴	S _{left} =	24.13	in ³
C _{right} =	5.1500	in	A =	25.0591	in ²	C _{right} =	5.1500	in	A =	25.0591	in ²
C _{left} =	5.1500	in	r _y =	2.2270	in	C _{left} =	5.1500	in	r _y =	2.2270	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	349.23 k-ft	349.23 k-ft
V	255.38 k	255.38 k

F_y =	36.00 ksi
------------------------	------------------

*Compact Section



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 13.0000$ in
 $D_1 = t_w = 0.4550$ in

Bottom Angles:

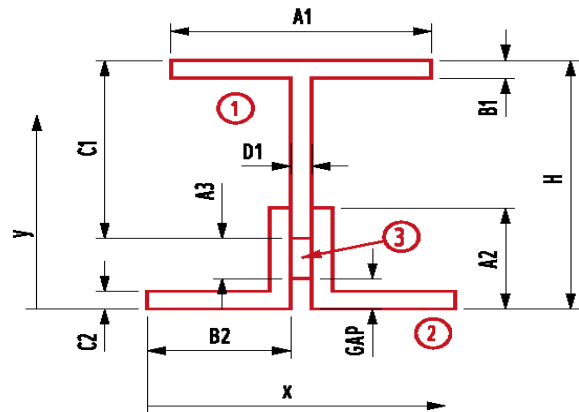
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Additional Plate:

$A_3 = d = 0.0000$ in
 $B_3 = t = 0.4550$ in

Miscellaneous:

$H = 13.6250$ in
Gap = 0.6250 in



Coped Stringer End S3-2 @ FB5

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	13.2450	103.6819	0.3768	6.6729	348.5623	348.9391
	Web		5.5692	6.7450	37.5643	69.5303	0.1729	0.1665	69.6968
2	Horizontal Legs		4.2188	0.3125	1.3184	0.1373	6.2596	165.3014	165.4388
	Vertical Legs		7.5000	3.0000	22.5000	22.5000	3.5721	95.6991	118.1991
3	Additional Plate		0.0000	0.6250	0.0000	0.0000	5.9471	0.0000	0.0000
Total			25.12		165.06	92.54		609.73	702.27
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Date 2/14/2012
Date 2/17/2012

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Calculations For: **CUY-2-1441**

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	6.5721	in	S _{top} =	99.57	in ³	y-bar =	6.5721	in	S _{top} =	99.57	in ³
I _x =	702.27	in ⁴	S _{bott.} =	106.86	in ³	I _x =	702.27	in ⁴	S _{bott.} =	106.86	in ³
C _{top} =	7.0529	in	A =	25.1160	in ²	C _{top} =	7.0529	in	A =	25.1160	in ²
C _{bottom} =	6.5721	in	r _x =	5.2878	in	C _{bottom} =	6.5721	in	r _x =	5.2878	in
			Z =	118.99	in ³				Z =	118.99	in ³

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.9225	6.6617	75.8677
	Web		5.5692	4.2275	23.5438	0.0961	0.9225	4.7394	4.8355
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	3.4625	25.2891	27.2914
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	1.4625	8.0209	8.1430
2 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	1.6175	5.5188	7.5210
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.3825	0.5486	0.6707
3	Additional Plate		0.0000	4.2275	0.0000	0.0000	0.9225	0.0000	0.0000
Total			25.12		106.18	73.55		50.78	124.33
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	5.1500	in	S _{right} =	24.14	in ³	x-bar =	5.1500	in	S _{right} =	24.14	in ³
I _y =	124.33	in ⁴	S _{left} =	24.14	in ³	I _y =	124.33	in ⁴	S _{left} =	24.14	in ³
C _{right} =	5.1500	in	A =	25.1160	in ²	C _{right} =	5.1500	in	A =	25.1160	in ²
C _{left} =	5.1500	in	r _y =	2.2249	in	C _{left} =	5.1500	in	r _y =	2.2249	in

Stringer Capacity

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Non-composite Capacities*		
	AB	AI
M	356.97 k-ft	356.97 k-ft
V	256.57 k	256.57 k

F_y = **36.00 ksi**

*Compact Section



Made By DWC
Checked By CTG

Date 6/20/2012
Date 6/20/2012

Job No. P402110046

Calculations For **CUY-2-1441**

Revisions to Stringer Analysis

- ◆ Isolated continuous stringers have copes over intermediate supports. Because the stringers are not full depth in these locations, the full negative moment cannot develop.
- ◆ Per discussion with ODOT May 29, 2012, any continuous stringer that is coped over intermediate supports should be re-analyzed as simply supported.
- ◆ Because of the large volume of stringers that fit this condition, the results of the original analysis were evaluated in order to determine which stringers could potentially govern the stringer ratings. Calculations were performed for select stringers in order to determine governing load ratings for each section.
- ◆ Calculations for the revised stringers are included on the following page(s). Any data in the original rating calculations that has now been superceded remains in the volume for informational purposes, but has been crossed out.



Made By DWC
Checked By CTG

Date 5/30/2012
Date 6/6/2012

Job No. P402110046

Calculations For **CUY-2-1441**

Section K Stringers

- ◆ Changing from continuous to simple span will increase moment, Shear will increase at end supports, but decrease at interior supports
- ◆ The stringers in Section K will be controlled by moment, not shear

- ◆ S1 through S3 are coped at FB's 2, 3, 4, and 5
- ◆ S5 is coped at FB 1 (does not affect analysis)
- ◆ S1-1 is W16x89, S2-1 is W16x77, and S3-1 is W16x67.
S1-2 is W16x89, S2-2 is W16x77, and S3-2 is W16x77.
- ◆ Stringers S4 through S6 will not change, as these are continuous but not coped.

- ◆ The stringers have the same interior transverse spacing
- ◆ Due to varying sections and comparable live loads and rating factors, check all coped stringers (S1 through S3)
- ◆ Input hinges near supports in MDX models to simulate simple spans

Revised Forces

Stringer 1-1 (MDX Girder 7)

Load Case	Positive Moment		Capacity (k-ft)	Rating Factor	
	DL (k-ft)	LL+I (k-ft)		Inventory	Operating
HS20	41.23	117.14	531	1.88	3.13
2F1	41.23	76.41	531	---	4.81
3F1	41.23	103.8	531	---	3.54
4F1	41.23	111.51	531	---	3.29
5C1	41.23	101.18	531	---	3.63

Governing Rating Factor	
Inventory	Operating
0.88	1.46
---	2.25
---	1.71
---	1.61
---	1.77

Stringer 2-1 (MDX Girder 6)

	Positive Moment			Inventory	Operating
	DL (k-ft)	LL+I (k-ft)			
HS20	57.14	169.34	456	1.04	1.73
2F1	57.14	115.42	456	---	2.54
3F1	57.14	154.64	456	---	1.90
4F1	57.14	163.85	456	---	1.79
5C1	57.14	150.37	456	---	1.95



Made By DWC
Checked By CTG

Date 5/30/2012
Date 6/6/2012

Job No. P402110046

Calculations For **CUY-2-1441**

Stringer 3-1 (MDX Girder 5)

	Positive Moment		(k-ft)	Inventory	Operating
	DL	LL+I			
	(k-ft)	(k-ft)			
HS20	46.16	154.61	390	0.98	1.64
2F1	46.16	105.08	390	---	2.42
3F1	46.16	138.14	390	---	1.84
4F1	46.16	147.56	390	---	1.72
5C1	46.16	133.87	390	---	1.90

Stringer 1-2 (MDX Girder 7)

Load Case	Positive Moment		Capacity (k-ft)	Rating Factor	
	DL	LL+I		Inventory	Operating
	(k-ft)	(k-ft)			
HS20	46.69	132.06	531	1.64	2.74
2F1	46.69	84.69	531	---	4.27
3F1	46.69	109.57	531	---	3.30
4F1	46.69	114.5	531	---	3.16
5C1	46.69	104.59	531	---	3.46

Stringer 2-2 (MDX Girder 6)

	Positive Moment		(k-ft)	Inventory	Operating
	DL	LL+I			
	(k-ft)	(k-ft)			
HS20	62.95	196.78	456	0.88	1.46
2F1	62.95	127.97	456	---	2.25
3F1	62.95	168.3	456	---	1.71
4F1	62.95	178.5	456	---	1.61
5C1	62.95	162.66	456	---	1.77

Stringer 3-2 (MDX Girder 5)

	Positive Moment		(k-ft)	Inventory	Operating
	DL	LL+I			
	(k-ft)	(k-ft)			
HS20	61.1	197.02	456	0.88	1.47
2F1	61.1	128.02	456	---	2.26
3F1	61.1	167.46	456	---	1.73
4F1	61.1	177.95	456	---	1.63
5C1	61.1	162.09	456	---	1.79

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear					
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF			
	From Rear (Ft)	D	M+	M-	V									
					D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating		
HS20-44	Stringer F1A-1	0	0.00	0.09	0.02	7.85	23.42	643.98	3297.39	5496.75	207.62	3.88	6.48	
		0.75	5.26	14.41	0.93	7.39	22.61	643.98	20.38	33.98	207.62	4.04	6.73	
		2.75	19.30	52.58	3.35	6.17	20.46	643.98	5.42	9.04	207.62	4.50	7.49	
		5.51	33.98	88.73	6.71	4.51	17.36	643.98	3.12	5.19	207.62	5.36	8.93	
		8.26	44.12	108.87	10.08	2.86	14.32	643.98	2.48	4.14	207.62	6.56	10.94	
		11.01	49.75	115.68	13.44	1.23	12.11	643.98	2.31	3.85	207.62	7.84	13.07	
		13.76	50.89	113.47	16.83	0.40	9.38	643.98	2.35	3.91	207.62	10.17	16.96	
		16.52	47.10	116.25	13.50	2.18	12.19	643.98	2.31	3.85	207.62	7.74	12.91	
		19.27	38.91	101.03	10.12	3.77	15.09	643.98	2.71	4.51	207.62	6.19	10.32	
		22.02	26.36	69.78	6.75	5.35	19.22	643.98	4.03	6.71	207.62	4.81	8.02	
		24.77	9.49	31.46	3.37	6.91	21.60	643.98	9.25	15.42	207.62	4.24	7.06	
		26.78	2.58	8.55	0.92	8.05	22.00	643.98	34.53	57.57	207.62	4.13	6.88	
		27.53	0.00	0.00	0.00	8.47	22.15	643.98	N/A	N/A	207.62	4.09	6.82	
		28.28	2.70	11.55	9.23	7.08	20.35	643.98	25.56	42.61	207.62	4.49	7.49	
		29.61	7.49	32.02	25.61	4.62	17.16	643.98	9.13	15.22	207.62	5.41	9.03	
	31.69	15.88	52.31	26.09	3.46	14.22	643.98	5.49	9.15	207.62	6.58	10.97		
	33.77	21.88	62.82	26.58	2.30	10.52	643.98	4.52	7.53	207.62	8.96	14.94		
	35.84	25.47	70.93	27.06	1.16	9.99	643.98	3.97	6.62	207.62	9.51	15.85		
	37.92	26.70	78.78	27.50	0.24	8.49	643.98	3.56	5.94	207.62	11.25	18.76		
	40	26.02	72.94	22.00	0.89	10.35	643.98	3.85	6.43	207.62	9.19	15.32		
	42.08	22.99	64.18	16.50	2.02	10.73	643.98	4.41	7.35	207.62	8.80	14.68		
	44.16	17.63	52.93	11.00	3.13	13.56	643.98	5.41	9.01	207.62	6.92	11.53		
	46.24	9.97	30.75	5.50	4.24	15.63	643.98	9.46	15.76	207.62	5.96	9.93		
	47.57	3.59	11.09	1.98	4.94	16.92	643.98	26.57	44.29	207.62	5.48	9.14		
	48.32	0.00	0.00	0.00	5.34	17.64	643.98	N/A	N/A	207.62	5.24	8.74		
	HS20-44	Stringer S1-1	0	0.00	0.05	0.09	7.58	28.99	531.00	2718.89	4532.40	165.00	2.47	4.11
			0.75	4.95	16.36	0.81	7.04	27.36	531.00	14.77	24.63	165.00	2.63	4.38
2.7			17.83	58.77	2.68	5.62	23.12	531.00	3.98	6.64	165.00	3.14	5.24	
5.41			30.39	93.24	5.37	3.67	18.21	531.00	2.43	4.05	165.00	4.05	6.76	
8.11			37.69	111.74	8.05	1.74	14.31	531.00	1.99	3.31	165.00	5.24	8.74	
10.81			35.80	114.81	10.74	0.18	14.21	531.00	1.92	3.21	165.00	5.34	8.91	
13.52			36.73	99.98	13.40	1.95	12.73	531.00	2.23	3.71	165.00	5.88	9.80	
16.22			28.90	81.43	17.52	3.84	14.18	531.00	2.80	4.67	165.00	5.20	8.67	
18.92			15.98	69.28	22.62	5.72	23.09	531.00	3.35	5.66	165.00	3.14	5.24	
21.62			-2.00	56.50	28.29	7.58	21.29	531.00	4.31	7.18	165.00	3.36	5.60	
24.33			-25.01	42.41	64.55	9.44	24.03	531.00	3.56	5.93	165.00	2.93	4.88	
26.28			-45.26	12.29	70.50	10.77	27.93	243.03	1.20	2.01	248.02	3.86	6.44	
27.03			-53.05	0.71	72.79	11.28	27.43	243.03	1.10	1.84	248.02	3.65	6.09	
27.78			-46.17	5.27	64.73	10.29	26.32	243.03	1.30	2.17	248.02	4.11	6.85	
29.16			-33.52	13.65	49.90	8.47	20.59	531.00	4.50	7.50	165.00	3.45	5.75	
31.28			-17.04	32.00	39.82	7.04	18.40	531.00	5.89	9.82	165.00	3.90	6.51	
33.4			-3.61	51.02	31.75	5.61	19.05	531.00	4.75	7.92	165.00	3.82	6.36	
35.53			6.80	63.55	23.68	4.19	13.60	531.00	3.78	6.31	165.00	5.41	9.01	
37.65			14.16	53.03	15.62	2.77	19.19	531.00	4.45	7.48	165.00	3.88	6.46	
39.78			17.00	60.26	12.49	0.78	13.42	531.00	3.89	6.48	165.00	5.63	9.39	
41.9			17.45	62.85	9.37	0.63	10.11	531.00	3.73	6.21	165.00	7.48	12.48	
44.03			14.61	55.92	6.25	2.04	13.87	531.00	4.22	7.03	165.00	5.39	8.99	
46.15			8.80	35.08	3.13	3.44	17.36	531.00	6.83	11.38	165.00	4.26	7.10	
47.53			3.10	12.35	1.10	4.34	19.78	202.98	7.42	12.37	195.68	4.43	7.38	
48.28			0.00	0.00	0.00	4.83	21.09	202.98	N/A	N/A	195.68	4.14	6.90	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
		D	L+I	L+I	D							L+I
0	0.00	0.04	0.09	7.45	37.68	456.00	2334.87	3892.23	142.30	1.62	2.70	
0.75	4.88	22.00	1.63	6.92	35.69	456.00	9.42	15.70	142.30	1.72	2.87	
2.65	17.25	77.62	5.52	5.58	30.65	456.00	2.57	4.29	142.30	2.03	3.38	
5.98	29.57	128.13	11.06	3.72	25.11	456.00	1.50	2.50	142.30	2.52	4.21	
7.94	36.96	157.77	16.60	1.86	19.44	456.00	1.19	1.99	142.30	3.32	5.53	
10.59	39.42	161.30	22.14	0.00	19.00	456.00	1.16	1.93	142.30	3.45	5.75	
13.24	36.95	138.42	27.69	2.19	27.83	456.00	1.36	2.26	142.30	2.31	3.85	
15.89	28.69	114.42	35.16	4.05	21.30	456.00	1.69	2.82	142.30	2.96	4.94	
18.54	15.50	101.17	42.63	5.91	31.95	456.00	1.99	3.31	142.30	1.94	3.24	
21.18	-2.62	80.96	50.16	7.78	31.81	456.00	2.58	4.29	142.30	1.91	3.19	
23.83	-25.67	56.33	97.23	9.64	36.09	456.00	2.00	3.34	142.30	1.66	2.76	
25.73	-45.74	17.47	111.57	10.97	41.19	310.20	1.04	1.73	264.09	2.79	4.66	
26.48	-53.66	2.13	117.23	11.50	40.21	310.20	0.95	1.58	264.09	2.66	4.43	
27.23	-46.62	10.37	105.47	10.54	40.80	310.20	1.09	1.82	264.09	2.83	4.72	
28.66	-33.19	26.09	83.04	8.63	36.20	456.00	2.29	3.82	142.30	1.67	2.78	
30.84	-16.05	57.77	68.96	7.09	30.73	456.00	2.92	4.87	142.30	2.00	3.33	
33.02	-2.26	85.55	59.13	5.56	23.95	456.00	2.44	4.07	142.30	2.60	4.33	
35.2	8.19	92.64	49.60	4.03	22.38	456.00	2.19	3.65	142.30	2.82	4.70	
37.38	15.30	111.02	40.09	2.49	28.51	456.00	1.81	3.02	142.30	2.25	3.75	
39.56	18.92	117.21	32.06	0.90	16.55	456.00	1.70	2.83	142.30	3.93	6.55	
41.74	19.20	116.36	24.05	0.64	18.16	456.00	1.71	2.85	142.30	3.59	5.98	
43.92	16.14	99.43	16.03	2.17	23.77	456.00	2.02	3.36	142.30	2.70	4.51	
46.1	9.74	60.87	8.02	3.70	29.09	456.00	3.36	5.60	142.30	2.18	3.63	
47.53	3.35	20.94	2.76	4.71	32.82	274.71	5.95	9.92	214.50	2.93	4.88	
48.28	0.00	0.00	0.00	5.24	34.78	274.71	N/A	N/A	214.50	2.75	4.59	
0	0.00	0.05	0.10	7.04	34.97	390.00	1797.24	2995.99	123.50	1.51	2.51	
0.75	4.61	20.95	1.74	6.52	33.24	390.00	8.45	14.08	123.50	1.59	2.66	
2.59	15.91	72.21	5.78	5.24	29.01	390.00	2.36	3.93	123.50	1.85	3.09	
5.49	27.17	120.34	11.59	3.44	24.17	390.00	1.36	2.26	123.50	2.27	3.78	
7.78	33.76	147.42	17.39	1.64	19.30	390.00	1.08	1.80	123.50	2.90	4.83	
10.37	35.69	148.84	23.19	0.15	18.18	390.00	1.06	1.77	123.50	3.13	5.21	
12.96	32.97	130.92	29.01	2.03	27.95	390.00	1.22	2.04	123.50	1.99	3.32	
15.56	25.38	111.59	36.41	3.83	21.29	390.00	1.47	2.46	123.50	2.57	4.28	
18.15	13.12	96.30	43.81	5.63	31.66	390.00	1.76	2.98	123.50	1.69	2.82	
20.74	-3.81	76.95	51.22	7.43	30.58	390.00	2.31	3.84	123.50	1.72	2.86	
23.34	-25.39	57.92	94.52	9.22	35.26	390.00	1.74	2.90	123.50	1.46	2.43	
25.18	-44.02	18.84	111.88	10.56	40.67	331.59	1.13	1.88	224.82	2.39	3.99	
25.93	-51.61	2.91	118.95	11.02	37.88	331.59	1.02	1.71	224.82	2.26	3.77	
26.68	-44.62	9.97	107.27	10.18	39.84	331.59	1.18	1.96	224.82	2.45	4.08	
28.16	-30.82	23.91	84.21	8.53	33.83	390.00	1.91	3.19	123.50	1.53	2.55	
30.4	-13.49	56.74	72.44	6.98	29.24	390.00	2.37	3.95	123.50	1.80	3.01	
32.63	0.37	97.32	62.97	5.43	30.21	390.00	1.84	3.07	123.50	1.78	2.96	
34.87	10.77	119.60	53.49	3.88	22.30	390.00	1.45	2.41	123.50	2.45	4.08	
37.1	17.73	116.79	44.00	2.33	31.55	390.00	1.45	2.44	123.50	1.76	2.93	
39.34	21.11	122.80	35.19	0.74	17.51	390.00	1.36	2.27	123.50	3.22	5.38	
41.57	21.02	124.51	26.39	0.81	18.67	390.00	1.34	2.24	123.50	3.02	5.04	
42.81	17.47	105.21	17.59	2.36	24.53	390.00	1.61	2.68	123.50	2.26	3.77	
46.04	10.46	63.47	8.78	3.91	29.58	390.00	2.73	4.56	123.50	1.84	3.08	
47.53	3.50	21.25	2.94	4.94	33.27	339.21	7.26	12.10	226.88	3.05	5.09	
48.28	0.00	0.00	0.00	5.46	35.13	339.21	N/A	N/A	226.88	2.88	4.81	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V								
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44 Stringer S4-1	0	0.00	0.04	0.07	6.91	37.21	390.00	2567.48	4279.99	123.50	1.42	2.36
	0.75	4.52	22.36	1.95	6.39	35.39	390.00	7.92	13.20	123.50	1.50	2.50
	2.54	15.30	75.63	6.42	5.15	31.03	390.00	2.26	3.76	123.50	1.73	2.89
	5.08	26.13	123.33	12.85	3.39	25.28	390.00	1.33	2.22	123.50	2.17	3.62
	7.61	32.49	145.59	19.28	1.63	19.28	390.00	1.10	1.83	123.50	2.90	4.84
	10.15	34.39	143.80	25.71	0.13	15.95	390.00	1.11	1.84	123.50	3.56	5.94
	12.69	31.83	131.60	32.15	2.24	27.59	390.00	1.22	2.04	123.50	2.01	3.36
	15.23	23.91	124.74	39.46	4.00	22.19	390.00	1.33	2.21	123.50	2.46	4.10
	17.76	11.52	107.88	46.77	5.76	25.82	390.00	1.60	2.67	123.50	2.07	3.45
	20.3	-5.34	67.48	54.08	7.52	34.21	390.00	2.62	4.36	123.50	1.53	2.55
	22.84	-26.66	30.96	76.24	9.28	39.57	390.00	2.15	3.58	123.50	1.30	2.16
	24.63	-44.83	12.08	110.45	10.52	42.08	390.00	1.38	2.31	123.50	1.20	2.00
	25.38	-52.45	4.17	124.79	11.04	43.13	390.00	1.19	1.98	123.50	1.17	1.94
	26.13	-45.25	12.45	112.27	10.31	41.13	390.00	1.36	2.27	123.50	1.23	2.06
	27.67	-30.46	29.44	86.55	8.81	37.01	390.00	1.87	3.11	123.50	1.40	2.33
	29.96	-12.11	64.80	73.47	7.22	31.50	390.00	2.35	3.91	123.50	1.67	2.78
	32.25	2.61	95.39	63.68	5.63	25.43	390.00	1.87	3.11	123.50	2.11	3.51
	34.54	13.69	107.33	53.89	4.05	21.61	390.00	1.60	2.66	123.50	2.52	4.20
	36.83	21.14	120.57	44.10	2.46	30.00	390.00	1.39	2.31	123.50	1.85	3.08
	39.12	24.18	126.48	35.28	0.53	16.16	390.00	1.31	2.18	123.50	3.50	5.84
41.41	23.58	127.06	26.46	1.05	19.31	390.00	1.30	2.17	123.50	2.91	4.86	
43.7	19.35	107.81	17.64	2.64	24.73	390.00	1.56	2.60	123.50	2.24	3.73	
45.99	11.49	66.13	8.82	4.23	30.33	390.00	2.61	4.36	123.50	1.79	2.99	
47.53	3.76	21.66	2.89	5.29	34.34	390.00	8.19	13.66	123.50	1.57	2.61	
48.28	0.00	0.00	0.00	5.81	36.29	390.00	N/A	N/A	123.50	1.47	2.45	
HS20-44 Stringer S5-1	0	0.00	0.05	0.11	6.59	33.51	389.64	1632.34	2721.11	299.22	4.00	6.66
	0.75	4.31	19.02	2.08	6.08	31.28	389.64	9.30	15.51	299.22	4.29	7.15
	2.48	14.25	62.78	6.64	4.89	26.15	369.00	2.57	4.29	145.70	2.46	4.09
	4.97	24.29	107.95	13.31	3.20	22.48	369.00	1.44	2.40	145.70	2.90	4.84
	7.45	30.12	143.66	19.98	1.50	24.21	369.00	1.06	1.76	145.70	2.74	4.56
	9.93	31.74	154.43	26.65	0.20	16.19	369.00	0.98	1.63	145.70	4.14	6.90
	12.41	29.14	123.68	33.31	2.30	18.49	369.00	1.23	2.06	145.70	3.56	5.93
	14.9	21.33	108.89	40.92	3.99	23.39	369.00	1.44	2.41	145.70	2.77	4.61
	17.38	9.31	96.52	48.86	5.69	31.58	369.00	1.70	2.84	145.70	2.02	3.36
	19.86	-6.92	76.39	56.80	7.39	30.41	369.00	2.17	3.62	145.70	2.06	3.44
	22.34	-27.36	56.29	96.26	9.08	33.59	369.00	1.60	2.66	145.70	1.84	3.06
	24.08	-44.62	18.95	115.41	10.27	39.25	369.00	1.24	2.07	145.70	1.55	2.59
	24.83	-52.06	2.86	123.67	10.78	41.69	369.00	1.12	1.87	145.70	1.46	2.43
	25.58	-44.76	12.26	110.45	10.18	40.91	369.00	1.30	2.16	145.70	1.49	2.49
	27.17	-29.27	32.18	82.41	8.92	39.26	369.00	1.85	3.09	145.70	1.57	2.62
	29.52	-10.25	65.40	68.71	7.31	33.98	369.00	2.39	3.98	145.70	1.85	3.08
	31.86	5.02	99.47	59.08	5.71	28.37	369.00	1.68	2.80	145.70	2.25	3.74
	34.21	16.53	112.39	49.44	4.11	22.31	369.00	1.42	2.38	145.70	2.90	4.83
	36.55	24.25	121.12	39.83	2.51	31.03	369.00	1.28	2.14	145.70	2.12	3.53
	38.9	26.91	127.93	31.86	0.33	16.76	369.00	1.20	2.01	145.70	3.99	6.66
41.24	25.82	128.57	23.90	1.27	20.92	369.00	1.20	2.00	145.70	3.17	5.29	
43.59	20.97	109.87	15.94	2.87	26.57	369.00	1.43	2.39	145.70	2.46	4.10	
45.93	12.37	68.02	7.98	4.47	32.69	369.00	2.39	3.99	145.70	1.97	3.29	
47.53	3.95	21.71	2.55	5.56	37.03	369.00	7.72	12.88	145.70	1.72	2.87	
48.28	0.00	0.00	0.00	6.07	39.06	369.00	N/A	N/A	145.70	1.63	2.71	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44	Stringer S6-1	0	0.00	0.05	0.11	4.88	22.10	369.00	1545.87	2576.97	145.70	2.91	4.84
		0.75	3.13	12.94	0.96	4.46	20.85	369.00	13.00	21.67	145.70	3.09	5.16
		2.43	10.15	41.80	2.85	3.51	18.04	369.00	3.92	6.54	145.70	3.61	6.01
		4.86	16.98	65.88	5.73	2.12	14.23	369.00	2.43	4.05	145.70	4.63	7.72
		7.28	20.44	74.81	8.60	0.73	10.25	369.00	2.11	3.52	145.70	6.51	10.85
		9.71	20.50	71.58	11.47	0.68	11.53	369.00	2.20	3.67	145.70	5.79	9.65
		12.14	17.14	65.33	14.36	0.98	10.70	369.00	2.45	4.08	145.70	6.22	10.37
		14.57	13.02	61.47	20.82	2.42	11.79	369.00	2.64	4.40	145.70	5.57	9.29
		16.99	5.40	54.80	27.42	3.86	14.24	369.00	3.04	5.07	145.70	4.55	7.59
		19.42	-5.71	39.99	34.01	5.30	18.97	369.00	4.17	6.95	145.70	3.37	5.62
		21.85	-20.36	19.84	45.46	6.76	22.28	369.00	3.47	5.79	145.70	2.83	4.72
		23.53	-32.91	6.50	63.74	7.86	23.77	369.00	2.36	3.93	145.70	2.63	4.38
		24.28	-38.51	0.55	71.90	8.35	24.43	369.00	2.04	3.41	145.70	2.54	4.24
		25.03	-32.79	6.19	63.42	7.89	23.84	369.00	2.37	3.95	145.70	2.62	4.36
		26.68	-20.21	18.61	44.76	6.89	22.53	369.00	3.53	5.88	145.70	2.80	4.66
		29.08	-5.43	40.28	33.68	5.43	19.12	369.00	4.14	6.90	145.70	3.34	5.57
		31.48	5.83	56.00	28.41	3.95	15.54	369.00	2.97	4.96	145.70	4.17	6.95
		33.88	13.54	64.96	23.14	2.47	12.78	369.00	2.49	4.16	145.70	5.14	8.56
		36.28	17.72	69.13	17.85	2.28	19.58	369.00	2.31	3.84	145.70	3.36	5.60
		38.68	21.39	76.35	14.29	0.78	12.65	369.00	2.06	3.43	145.70	5.27	8.79
41.08	21.46	78.37	10.72	0.72	11.39	369.00	2.01	3.34	145.70	5.86	9.76		
43.48	17.93	68.56	7.14	2.22	14.93	369.00	2.32	3.87	145.70	4.41	7.35		
45.88	10.78	43.50	3.57	3.74	18.94	369.00	3.76	6.27	145.70	3.43	5.71		
47.53	3.37	13.59	1.12	4.78	21.89	369.00	12.36	20.61	145.70	2.94	4.90		
48.28	0.00	0.00	0.00	5.25	23.23	369.00	N/A	N/A	145.70	2.75	4.59		
HS20-44	Stringer F2A-1	0	0.00	0.15	0.05	6.23	16.08	1212.51	3725.07	6209.69	149.61	4.06	6.76
		0.75	4.25	10.48	1.30	5.86	15.69	1212.51	53.06	88.44	149.61	4.17	6.95
		2.39	13.54	33.08	4.02	5.05	14.84	1212.51	16.65	27.75	149.61	4.44	7.40
		4.79	24.20	58.32	8.04	3.85	13.19	1212.51	9.33	15.56	149.61	5.05	8.42
		7.18	31.96	75.20	12.06	2.64	11.41	1212.51	7.18	11.96	149.61	5.90	9.84
		9.57	36.82	86.86	16.07	1.42	9.97	1212.51	6.18	10.30	149.61	6.83	11.39
		11.97	38.72	96.57	20.13	0.17	9.51	1212.51	5.55	9.24	149.61	7.24	12.07
		14.36	35.43	87.55	16.15	2.01	10.35	1212.51	6.14	10.23	149.61	6.54	10.91
		16.76	29.13	76.46	12.11	3.26	13.72	1212.51	7.08	11.80	149.61	4.88	8.14
		19.15	19.82	52.83	8.07	4.52	17.02	1212.51	10.35	17.26	149.61	3.89	6.49
	21.54	7.48	23.70	4.04	5.79	19.69	1212.51	23.39	38.99	149.61	3.33	5.54	
	23.19	2.34	7.41	1.26	6.81	21.35	1212.51	75.26	125.45	149.61	3.04	5.07	
	23.94	0.00	0.00	0.00	7.27	22.10	1212.51	N/A	N/A	149.61	2.92	4.87	
	24.69	4.17	13.79	6.70	6.87	21.34	1212.51	40.35	67.26	149.61	3.04	5.06	
	26.37	13.50	44.67	21.71	5.96	19.64	1212.51	12.33	20.55	149.61	3.33	5.55	
	28.81	26.44	76.44	22.48	4.64	17.13	1212.51	7.10	11.84	149.61	3.86	6.44	
	31.25	36.14	94.80	23.46	3.31	14.44	1212.51	5.67	9.44	149.61	4.64	7.73	
	33.69	42.59	101.38	24.44	1.98	11.62	1212.51	5.26	8.77	149.61	5.83	9.72	
	36.13	45.79	106.02	25.39	0.34	9.80	1212.51	5.01	8.35	149.61	7.01	11.69	
	38.56	43.30	104.83	20.31	1.70	11.72	1212.51	5.08	8.47	149.61	5.80	9.66	
41	37.49	100.19	15.23	3.06	14.69	1212.51	5.35	8.92	149.61	4.57	7.62		
43.44	28.36	81.04	10.15	4.44	17.69	1212.51	6.69	11.14	149.61	3.75	6.25		
45.88	15.86	47.44	5.07	5.82	20.69	1212.51	11.58	19.30	149.61	3.16	5.27		
47.57	4.88	14.58	1.56	6.78	22.65	1212.51	38.12	63.54	149.61	2.86	4.78		
48.32	0.00	0.00	0.00	7.21	23.52	1212.51	N/A	N/A	149.61	2.75	4.58		
HS20-44	Stringer F2B-1	0	0.00	0.15	0.05	6.23	16.08	1212.51	3725.07	6209.69	149.61	4.06	6.76
		0.75	4.25	10.48	1.30	5.86	15.69	1212.51	53.06	88.44	149.61	4.17	6.95
		2.39	13.54	33.08	4.02	5.05	14.84	1212.51	16.65	27.75	149.61	4.44	7.40
		4.79	24.20	58.32	8.04	3.85	13.19	1212.51	9.33	15.56	149.61	5.05	8.42
		7.18	31.96	75.20	12.06	2.64	11.41	1212.51	7.18	11.96	149.61	5.90	9.84
		9.57	36.82	86.86	16.07	1.42	9.97	1212.51	6.18	10.30	149.61	6.83	11.39
		11.97	38.72	96.57	20.13	0.17	9.51	1212.51	5.55	9.24	149.61	7.24	12.07
		14.36	35.43	87.55	16.15	2.01	10.35	1212.51	6.14	10.23	149.61	6.54	10.91
		16.76	29.13	76.46	12.11	3.26	13.72	1212.51	7.08	11.80	149.61	4.88	8.14
		19.15	19.82	52.83	8.07	4.52	17.02	1212.51	10.35	17.26	149.61	3.89	6.49

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
HS20-44	0	0.00	0.00	0.00	6.31	19.34	643.98	N/A	N/A	207.62	4.75	7.92
	0.75	4.24	12.11	1.00	5.92	18.99	643.98	24.30	40.51	207.62	4.85	8.09
	2.51	14.20	40.52	3.34	4.99	18.17	643.98	7.11	11.86	207.62	5.10	8.50
	5.03	25.09	69.25	6.67	3.67	15.69	643.98	4.07	6.78	207.62	5.96	9.93
	7.54	32.67	85.44	10.01	2.36	11.81	643.98	3.24	5.41	207.62	7.98	13.31
	10.05	36.93	91.71	13.34	1.04	11.73	643.98	2.99	4.99	207.62	8.10	13.51
	12.57	37.89	98.05	16.68	0.48	8.69	643.98	2.80	4.66	207.62	10.98	18.30
	15.08	35.03	91.44	13.35	1.79	12.52	643.98	3.02	5.03	207.62	7.56	12.60
	17.59	28.86	80.69	10.01	3.11	13.35	643.98	3.46	5.77	207.62	7.03	11.71
	20.1	19.39	55.60	6.67	4.43	17.39	643.98	5.13	8.55	207.62	5.35	8.92
	22.62	6.60	24.86	3.33	5.75	19.36	643.98	11.78	19.63	207.62	4.76	7.94
	24.38	1.97	7.43	1.00	6.68	19.89	643.98	39.79	66.33	207.62	4.61	7.69
	25.13	0.00	0.00	0.00	7.07	20.11	643.98	N/A	N/A	207.62	4.55	7.58
	25.88	3.46	11.25	6.27	6.33	18.92	643.98	26.20	43.68	207.62	4.86	8.10
	27.58	11.29	36.74	20.49	4.64	16.21	643.98	7.89	13.16	207.62	5.73	9.55
	30.02	21.06	61.28	21.21	3.34	13.85	643.98	4.64	7.73	207.62	6.76	11.27
	32.47	27.67	74.67	22.20	2.05	10.37	643.98	3.75	6.26	207.62	9.11	15.18
	34.91	31.13	80.94	23.55	0.75	10.28	643.98	3.44	5.73	207.62	9.26	15.44
	37.36	31.13	88.17	24.98	0.03	7.99	643.98	3.15	5.26	207.62	11.97	19.96
	39.81	29.45	82.82	19.90	1.34	10.29	643.98	3.37	5.62	207.62	9.22	15.37
	42.25	24.58	74.08	14.91	2.65	11.93	643.98	3.81	6.35	207.62	7.89	13.15
	44.7	16.51	51.56	9.94	3.95	16.14	643.98	5.56	9.28	207.62	5.78	9.64
	47.14	5.25	23.00	4.96	5.26	18.50	643.98	12.77	21.28	207.62	5.00	8.34
	48.84	1.61	7.04	1.52	6.73	21.09	643.98	42.01	70.03	207.62	4.35	7.24
	49.59	0.00	0.00	0.00	7.38	22.23	643.98	N/A	N/A	207.62	4.11	6.84
	50.34	4.55	13.15	6.27	6.97	21.29	643.98	22.36	37.27	207.62	4.30	7.17
	52.17	15.64	45.24	21.56	5.96	18.98	643.98	6.35	10.59	207.62	4.85	8.09
	54.75	29.24	78.56	22.48	4.54	16.78	643.98	3.55	5.93	207.62	5.54	9.23
	57.33	39.22	98.39	23.40	3.12	14.12	643.98	2.78	4.63	207.62	6.64	11.07
	59.91	45.57	103.42	24.36	1.70	11.60	643.98	2.61	4.34	207.62	8.16	13.60
	62.49	46.97	104.38	25.39	0.09	9.24	643.98	2.57	4.29	207.62	10.35	17.25
	65.07	45.18	107.96	20.37	1.45	12.04	643.98	2.50	4.16	207.62	7.87	13.13
	67.65	39.55	102.87	15.27	2.91	14.16	643.98	2.65	4.43	207.62	6.63	11.06
	70.23	30.15	82.22	10.18	4.38	17.21	643.98	3.39	5.65	207.62	5.41	9.01
	72.81	16.97	47.86	5.08	5.84	19.80	643.98	5.99	9.98	207.62	4.66	7.76
	74.64	4.93	13.98	1.49	6.88	21.77	643.98	21.02	35.04	207.62	4.21	7.01
75.39	0.00	0.09	0.02	7.31	22.58	643.98	3297.39	5496.75	207.62	4.04	6.74	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	6.60	22.43	202.98	N/A	N/A	195.68	3.84	6.41
0.75	4.34	11.75	0.51	6.11	20.76	202.98	7.74	12.90	195.68	4.17	6.85
2.51	14.53	39.33	1.70	4.96	16.85	531.00	6.00	10.00	165.00	4.34	7.23
5.03	24.92	64.95	3.40	3.32	13.61	531.00	3.54	5.90	165.00	5.44	9.07
7.54	31.19	86.35	5.10	1.67	15.35	531.00	2.62	4.36	165.00	4.89	8.15
10.05	33.33	92.71	6.81	0.03	9.82	531.00	2.42	4.04	165.00	7.74	12.90
12.57	31.33	66.21	8.51	1.63	17.89	531.00	3.41	5.69	165.00	4.20	6.99
15.08	25.18	54.67	14.01	3.27	14.84	531.00	4.20	7.00	165.00	4.99	8.32
17.59	14.54	46.29	19.71	4.91	19.66	531.00	5.09	8.49	165.00	3.72	6.20
20.1	0.50	42.31	29.30	6.55	17.71	531.00	5.78	9.67	165.00	4.07	6.79
22.62	-18.04	39.90	61.17	8.20	20.12	531.00	3.82	6.37	165.00	3.54	5.89
24.38	-33.96	19.52	65.40	9.35	24.83	209.58	1.17	1.94	254.41	4.50	7.49
25.13	-40.75	10.83	67.20	9.84	26.84	209.58	1.07	1.79	254.41	4.15	6.92
25.88	-35.15	13.91	59.21	8.85	24.51	209.58	1.28	2.13	254.41	4.57	7.61
27.53	-22.82	20.68	41.62	6.68	19.39	531.00	5.55	9.25	165.00	3.72	6.19
29.93	-8.68	42.19	33.37	5.10	17.49	531.00	5.68	9.46	165.00	4.17	6.96
32.33	1.68	63.74	26.11	3.39	19.17	531.00	3.82	6.37	165.00	3.86	6.43
34.73	8.25	76.29	18.85	1.93	13.67	531.00	3.14	5.24	165.00	5.49	9.16
37.13	10.67	56.61	13.12	0.85	10.73	531.00	4.21	7.02	165.00	4.51	7.53
39.53	6.73	49.26	21.75	2.44	12.89	531.00	4.89	8.14	165.00	5.83	9.71
41.93	-1.03	44.40	31.43	4.05	19.02	531.00	5.50	9.16	165.00	3.87	6.45
44.33	-12.62	43.94	41.48	5.63	16.49	531.00	5.40	9.00	165.00	4.41	7.35
46.73	-28.03	39.88	67.95	7.22	18.26	531.00	3.35	5.59	165.00	3.93	6.55
48.38	-41.26	19.02	72.49	9.81	24.12	217.53	1.04	1.74	257.15	4.67	7.78
49.13	-47.28	9.54	74.56	10.99	26.78	217.53	0.96	1.61	257.15	4.18	6.97
49.88	-39.70	13.21	64.78	10.48	26.31	217.53	1.18	1.97	257.15	4.26	7.11
51.75	-20.79	22.35	40.40	9.20	25.15	531.00	5.75	9.58	165.00	2.80	4.67
54.37	1.06	47.46	26.38	7.42	22.21	531.00	5.14	8.57	165.00	3.22	5.37
57	18.27	85.69	21.78	5.63	22.44	531.00	2.73	4.55	165.00	3.24	5.40
59.62	30.84	108.51	17.19	3.85	16.32	531.00	2.08	3.48	165.00	4.52	7.53
62.24	37.41	94.83	13.42	1.89	22.69	531.00	2.34	3.91	165.00	3.30	5.50
64.85	39.51	107.91	10.74	0.11	14.78	531.00	2.05	3.41	165.00	5.14	8.57
67.48	36.81	106.74	8.05	1.94	13.29	531.00	2.09	3.48	165.00	5.63	9.39
70.11	29.33	89.15	5.36	3.77	17.93	531.00	2.55	4.25	165.00	4.11	6.86
72.73	17.05	55.69	2.67	5.60	22.26	531.00	4.21	7.02	165.00	3.27	5.44
74.6	4.88	15.98	0.83	6.91	26.29	531.00	15.13	25.23	165.00	2.73	4.56
75.35	0.00	0.05	0.09	7.43	27.91	531.00	2718.89	4532.40	165.00	2.56	4.28

HS20-44

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.22	35.86	274.71	N/A	N/A	214.50	2.64	4.39
0.75	4.76	19.80	1.39	6.69	33.60	274.71	6.25	10.42	214.50	2.82	4.71
2.51	15.92	66.27	4.64	5.45	28.29	456.00	3.03	5.05	142.30	2.20	3.67
5.03	27.40	112.53	9.29	3.68	23.44	456.00	1.72	2.87	142.30	2.70	4.51
7.54	34.43	149.12	13.93	1.92	24.30	456.00	1.27	2.12	142.30	2.85	4.42
10.05	37.03	157.55	18.57	0.15	18.20	456.00	1.19	1.99	142.30	3.60	6.00
12.57	35.18	121.56	23.21	1.59	17.28	456.00	1.56	2.59	142.30	3.74	6.23
15.08	28.96	102.81	30.55	3.36	26.86	456.00	1.88	3.13	142.30	2.37	3.94
17.59	18.50	90.69	37.89	5.13	31.11	456.00	2.20	3.66	142.30	2.01	3.35
20.1	3.20	75.68	46.18	6.89	30.62	456.00	2.75	4.50	142.30	2.01	3.35
22.62	-16.34	57.46	90.56	8.66	34.25	456.00	2.21	3.69	142.30	1.76	2.94
24.38	-33.15	34.30	101.04	9.90	40.66	252.27	0.95	1.59	225.70	2.41	4.02
25.13	-40.31	20.22	105.50	10.43	43.39	252.27	0.97	1.46	225.70	2.25	3.76
25.88	-35.03	23.59	94.42	9.09	39.59	252.27	1.01	1.68	225.70	2.49	4.15
27.48	-23.78	30.79	70.79	6.23	31.48	456.00	2.77	4.61	142.30	1.96	3.27
29.82	-11.11	55.66	57.45	4.58	26.75	456.00	3.54	5.90	142.30	2.35	3.92
32.16	-2.31	91.59	45.97	2.33	27.10	456.00	2.28	3.80	142.30	2.36	3.93
34.51	2.62	107.75	34.50	1.28	20.40	456.00	1.94	3.23	142.30	3.18	5.30
36.85	3.68	84.76	26.87	0.37	24.86	456.00	2.45	4.09	142.30	2.63	4.38
39.2	1.43	89.61	37.68	1.78	22.88	456.00	2.34	3.89	142.30	2.82	4.70
41.54	-4.68	86.67	49.51	3.45	22.79	456.00	2.39	3.99	142.30	2.79	4.65
43.89	-14.66	62.08	61.33	5.08	29.92	456.00	3.24	5.41	142.30	2.09	3.48
46.23	-28.51	37.85	76.92	6.73	35.28	456.00	2.51	4.18	142.30	1.74	2.91
47.83	-40.60	25.15	100.15	9.73	39.91	264.39	0.97	1.62	230.45	2.51	4.19
48.58	-46.26	19.20	111.04	11.14	42.08	264.39	0.95	1.41	230.45	2.37	3.94
49.33	-38.62	24.44	97.87	10.61	40.14	264.39	1.01	1.68	230.45	2.49	4.15
51.26	-18.95	37.94	63.97	9.26	35.14	456.00	3.11	5.18	142.30	1.71	2.85
53.93	3.32	72.33	45.54	7.38	31.13	456.00	2.88	4.80	142.30	1.96	3.27
56.61	20.50	125.42	38.23	5.50	30.63	456.00	1.58	2.63	142.30	2.03	3.39
59.29	32.75	158.21	30.93	3.61	23.40	456.00	1.20	2.01	142.30	2.71	4.52
61.96	39.89	134.03	23.64	1.72	16.98	456.00	1.39	2.32	142.30	3.80	6.34
64.64	41.99	145.10	18.91	0.16	19.00	456.00	1.27	2.13	142.30	3.45	5.75
67.32	39.05	145.27	14.18	2.04	25.46	456.00	1.29	2.14	142.30	2.53	4.21
70	31.07	137.83	9.44	3.92	22.03	456.00	1.39	2.32	142.30	2.87	4.78
72.67	18.05	106.18	4.71	5.80	26.52	456.00	1.88	3.13	142.30	2.34	3.90
74.6	5.05	29.74	1.40	7.16	35.10	456.00	6.96	11.61	142.30	1.75	2.91
75.35	0.00	0.04	0.11	7.69	38.43	456.00	1910.35	3184.55	142.30	1.59	2.64

HS20-44

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.41	36.91	373.29	N/A	N/A	243.00	2.91	4.86
0.75	4.90	20.69	1.58	6.88	34.70	373.29	8.17	13.63	243.00	3.11	5.15
2.51	16.41	69.23	5.30	5.65	29.53	456.00	2.89	4.82	142.30	2.11	3.51
5.03	28.39	117.91	10.60	3.88	24.69	456.00	1.64	2.73	142.30	2.56	4.27
7.54	35.92	155.70	15.90	2.11	25.36	456.00	1.21	2.02	142.30	2.84	4.23
10.05	39.01	165.74	21.20	0.35	18.81	456.00	1.13	1.88	142.30	3.48	5.79
12.57	37.66	132.74	26.50	1.82	25.81	456.00	1.41	2.36	142.30	2.50	4.16
15.08	30.86	113.80	32.35	3.59	28.36	456.00	1.68	2.81	142.30	2.24	3.73
17.59	19.33	98.94	38.21	5.35	33.16	456.00	2.01	3.34	142.30	1.88	3.14
20.1	3.95	80.21	45.24	7.12	32.68	456.00	2.59	4.32	142.30	1.88	3.13
22.62	-16.16	54.53	91.35	8.89	36.42	456.00	2.19	3.66	142.30	1.65	2.76
24.38	-33.37	37.71	108.33	10.13	42.48	349.23	1.30	2.17	255.38	2.63	4.38
25.13	-40.71	25.52	115.56	10.66	45.06	349.23	1.18	1.97	255.38	2.47	4.12
25.88	-35.48	28.23	101.68	9.19	40.86	349.23	1.33	2.22	255.38	2.75	4.58
27.42	-24.73	33.78	82.35	6.17	32.25	456.00	2.37	3.95	142.30	1.92	3.20
29.71	-12.44	58.57	68.99	4.56	27.57	456.00	2.94	4.90	142.30	2.28	3.80
32	-3.84	92.97	57.12	2.35	28.85	456.00	2.24	3.73	142.30	2.21	3.69
34.29	1.08	113.08	45.25	1.34	21.45	456.00	1.85	3.09	142.30	3.02	5.03
36.58	2.32	93.18	39.90	0.45	20.62	456.00	2.24	3.73	142.30	2.20	3.68
38.87	-0.55	96.58	51.69	2.06	21.21	456.00	2.17	3.62	142.30	3.03	5.05
41.16	-7.11	90.90	65.01	3.67	23.45	456.00	2.26	3.78	142.30	2.70	4.51
43.45	-17.36	65.09	78.32	5.28	29.61	456.00	2.55	4.25	142.30	2.11	3.51
45.74	-31.30	40.38	94.33	6.89	33.91	456.00	2.03	3.38	142.30	1.81	3.02
47.28	-43.13	28.28	113.40	10.05	38.60	356.97	1.22	2.04	256.57	2.91	4.85
48.03	-48.89	22.39	122.68	11.59	40.89	356.97	1.40	1.84	256.57	2.72	4.54
48.78	-40.91	25.82	108.80	11.06	40.09	356.97	1.29	2.15	256.57	2.78	4.64
50.76	-19.84	34.88	72.14	9.67	37.99	456.00	2.75	4.58	142.30	1.57	2.62
53.49	3.95	69.67	42.88	7.75	33.52	456.00	2.98	4.57	142.30	1.82	3.03
56.22	22.50	125.48	36.75	5.83	34.20	456.00	1.57	2.61	142.30	1.82	3.03
58.96	23.80	162.10	30.62	3.91	25.32	456.00	1.16	1.94	142.30	2.50	4.16
61.69	43.87	140.10	24.49	1.99	31.04	456.00	1.31	2.19	142.30	2.07	3.46
64.42	45.59	163.17	19.59	0.33	19.73	456.00	1.12	1.87	142.30	3.31	5.52
67.15	42.07	161.07	14.69	2.25	18.95	456.00	1.15	1.91	142.30	3.39	5.65
69.88	33.30	132.31	9.79	4.17	25.82	456.00	1.44	2.40	142.30	2.44	4.07
72.62	19.28	80.09	4.89	6.09	30.67	456.00	2.48	4.13	142.30	2.02	3.37
74.6	5.30	22.04	1.41	7.48	35.42	456.00	9.39	15.65	142.30	1.72	2.88
75.35	0.00	0.05	0.09	8.01	37.22	456.00	2334.87	3892.23	142.30	1.63	2.72

HS20-44

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.33	36.95	456.00	N/A	N/A	142.30	1.66	2.76
0.75	4.84	22.21	1.43	6.80	35.41	456.00	9.33	15.55	142.30	1.74	2.90
2.51	16.21	74.33	4.79	5.57	31.80	456.00	2.70	4.49	142.30	1.96	3.26
5.03	27.97	120.07	9.58	3.80	25.55	456.00	1.61	2.68	142.30	2.48	4.13
7.54	35.29	139.92	14.38	2.03	19.54	456.00	1.35	2.25	142.30	3.29	5.49
10.05	38.18	137.51	19.17	0.26	15.48	456.00	1.36	2.27	142.30	4.23	7.04
12.57	36.61	127.02	23.97	1.56	26.90	456.00	1.48	2.47	142.30	2.40	4.01
15.08	30.47	119.60	27.58	3.33	24.18	456.00	1.60	2.67	142.30	2.63	4.38
17.59	19.88	101.15	32.81	5.10	28.21	456.00	1.96	3.27	142.30	2.22	3.69
20.1	4.85	72.43	38.41	6.86	35.30	456.00	2.86	4.77	142.30	1.74	2.90
22.62	-14.62	44.74	70.42	8.63	40.52	456.00	2.86	4.77	142.30	1.49	2.49
24.38	-31.41	33.88	104.03	9.87	43.49	456.00	1.84	3.07	142.30	1.37	2.29
25.13	-38.57	29.25	118.35	10.40	44.76	456.00	1.58	2.63	142.30	1.33	2.21
25.88	-33.62	33.33	107.45	8.85	41.17	456.00	1.77	2.95	142.30	1.46	2.44
27.36	-23.85	41.39	85.93	5.80	34.10	456.00	2.28	3.80	142.30	1.82	3.04
29.6	-12.64	62.40	71.16	4.23	28.65	456.00	2.85	4.75	142.30	2.20	3.67
31.83	-4.94	81.31	59.23	2.66	22.92	456.00	2.55	4.25	142.30	2.79	4.65
34.07	-0.75	91.62	47.29	1.09	21.61	456.00	2.29	3.82	142.30	3.00	5.01
36.3	-0.07	91.38	43.87	0.48	28.39	456.00	2.30	3.83	142.30	2.30	3.83
38.54	-2.89	93.17	58.26	2.05	19.09	456.00	2.24	3.73	142.30	3.37	5.62
40.77	-9.23	83.34	73.08	3.62	22.74	456.00	2.46	4.09	142.30	2.79	4.65
43.01	-19.07	62.53	87.90	5.19	28.42	456.00	2.26	3.77	142.30	2.20	3.66
45.24	-32.42	40.04	104.20	6.76	33.68	456.00	1.83	3.05	142.30	1.83	3.05
46.73	-43.64	28.59	122.07	10.01	40.50	456.00	1.51	2.51	142.30	1.47	2.45
47.48	-49.29	22.82	131.07	11.65	43.93	456.00	1.38	2.30	142.30	1.33	2.22
48.23	-41.27	28.57	115.68	11.12	42.86	456.00	1.60	2.67	142.30	1.37	2.29
50.26	-19.55	44.14	74.03	9.69	39.98	456.00	2.68	4.47	142.30	1.50	2.49
53.05	4.72	72.79	38.19	7.73	34.51	456.00	2.85	4.75	142.30	1.77	2.94
55.84	23.53	111.92	30.95	5.77	27.97	456.00	1.75	2.92	142.30	2.22	3.70
58.63	36.88	136.17	25.87	3.81	22.38	456.00	1.38	2.30	142.30	2.83	4.71
61.41	44.75	137.55	21.77	1.85	30.46	456.00	1.33	2.22	142.30	2.12	3.53
64.2	46.72	158.66	17.41	0.27	15.98	456.00	1.15	1.91	142.30	4.09	6.82
66.99	43.23	158.99	13.05	2.23	19.64	456.00	1.16	1.93	142.30	3.27	5.45
69.77	34.28	135.40	8.69	4.19	25.39	456.00	1.40	2.33	142.30	2.48	4.14
72.56	19.86	83.97	4.33	6.15	31.51	456.00	2.36	3.94	142.30	1.96	3.27
74.6	5.34	22.60	1.23	7.58	36.42	456.00	9.16	15.26	142.30	1.68	2.79
75.35	0.00	0.04	0.09	8.11	38.23	456.00	2334.87	3892.23	142.30	1.59	2.65

HS20-44

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.61	37.40	489.00	N/A	N/A	149.50	1.72	2.87
0.75	5.05	22.46	1.49	7.08	35.86	489.00	9.90	16.50	149.50	1.80	3.01
2.51	16.91	75.15	4.99	5.85	32.24	489.00	2.86	4.77	149.50	2.03	3.38
5.03	29.39	121.62	9.99	4.08	26.02	489.00	1.71	2.85	149.50	2.55	4.26
7.54	37.44	142.72	14.98	2.32	20.39	489.00	1.42	2.37	149.50	3.31	5.52
10.05	41.05	142.70	19.97	0.56	15.30	489.00	1.41	2.35	149.50	4.48	7.47
12.57	40.23	131.45	24.97	1.93	26.79	489.00	1.53	2.55	149.50	2.53	4.21
15.08	33.18	123.50	27.56	3.69	23.75	489.00	1.66	2.77	149.50	2.81	4.68
17.59	21.69	102.55	31.20	5.45	30.08	489.00	2.07	3.45	149.50	2.18	3.64
20.1	5.77	71.74	37.91	7.22	35.75	489.00	3.09	5.16	149.50	1.81	3.01
22.62	-14.57	48.30	70.98	8.98	40.89	489.00	3.05	5.09	149.50	1.55	2.59
24.38	-31.94	35.24	105.52	10.21	44.00	489.00	1.95	3.26	149.50	1.43	2.38
25.13	-39.34	29.68	120.24	10.74	45.33	489.00	1.68	2.80	149.50	1.38	2.30
25.88	-34.49	33.78	109.32	9.01	41.25	489.00	1.87	3.12	149.50	1.54	2.57
27.31	-25.25	41.61	88.51	5.70	33.48	489.00	2.38	3.96	149.50	1.96	3.26
29.49	-14.50	61.82	73.81	4.17	28.53	489.00	2.94	4.89	149.50	2.33	3.88
31.67	-7.09	83.89	61.78	2.64	23.26	489.00	2.64	4.39	149.50	2.89	4.82
33.85	-3.00	90.39	49.74	1.11	19.69	489.00	2.47	4.12	149.50	3.47	5.78
36.03	-2.23	87.75	47.59	0.78	27.67	489.00	2.55	4.26	149.50	2.47	4.12
38.21	-5.60	90.61	63.71	2.31	19.32	489.00	2.45	4.08	149.50	3.49	5.83
40.39	-12.29	85.59	79.84	3.84	22.61	489.00	2.55	4.25	149.50	2.95	4.91
42.57	-22.32	63.85	95.96	5.37	28.03	489.00	2.21	3.68	149.50	2.34	3.91
44.75	-35.68	39.91	113.07	6.90	33.48	489.00	1.80	3.01	149.50	1.93	3.22
46.18	-46.61	28.31	129.66	10.35	40.39	489.00	1.52	2.54	149.50	1.55	2.59
46.93	-52.35	22.23	138.36	12.16	44.01	489.00	1.40	2.34	149.50	1.40	2.33
47.68	-43.98	27.66	122.01	11.63	43.21	489.00	1.63	2.72	149.50	1.43	2.39
49.77	-20.64	42.81	76.44	10.16	40.99	489.00	2.79	4.64	149.50	1.53	2.55
52.61	5.41	77.53	37.14	8.17	35.79	489.00	2.86	4.78	149.50	1.79	2.98
55.45	25.78	115.79	28.91	6.17	30.05	489.00	1.81	3.02	149.50	2.17	3.62
58.3	40.49	145.25	25.39	4.18	24.09	489.00	1.38	2.31	149.50	2.76	4.59
61.14	49.55	150.72	22.90	1.50	19.00	489.00	1.30	2.16	149.50	3.58	5.97
63.98	50.98	168.09	18.32	0.50	17.54	489.00	1.16	1.93	149.50	3.91	6.52
66.82	46.73	166.52	13.73	2.49	20.39	489.00	1.19	1.98	149.50	3.31	5.51
69.66	36.82	140.16	9.15	4.48	25.72	489.00	1.45	2.42	149.50	2.57	4.29
72.51	21.24	85.34	4.56	6.48	31.34	489.00	2.49	4.15	149.50	2.07	3.46
74.6	5.61	22.57	1.28	7.94	35.48	489.00	9.84	16.40	149.50	1.81	3.01
75.35	0.00	0.04	0.10	8.47	36.96	489.00	2253.46	3756.51	149.50	1.73	2.88

HS20-44

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	6.28	24.04	489.00	N/A	N/A	149.50	2.71	4.52
0.75	4.10	14.12	0.65	5.79	22.92	489.00	15.78	26.31	149.50	2.85	4.76
2.51	13.73	47.27	2.19	4.64	20.28	489.00	4.59	7.66	149.50	3.26	5.43
5.03	23.33	75.01	4.37	3.00	16.03	489.00	2.82	4.70	149.50	4.19	6.98
7.54	28.82	86.35	6.56	1.36	12.35	489.00	2.41	4.02	149.50	5.51	9.19
10.05	30.18	85.01	8.75	0.28	12.01	489.00	2.44	4.06	149.50	5.72	9.54
12.57	27.45	76.86	10.94	0.71	11.68	489.00	2.72	4.53	149.50	5.86	9.77
15.08	23.61	73.55	13.48	2.35	14.15	489.00	2.87	4.79	149.50	4.77	7.95
17.59	15.65	62.37	16.79	3.99	18.32	489.00	3.46	5.77	149.50	3.63	6.05
20.1	3.58	45.77	23.50	5.63	22.13	489.00	4.88	8.13	149.50	2.96	4.94
22.62	-12.62	28.60	42.90	7.27	25.78	489.00	5.08	8.46	149.50	2.50	4.17
24.38	-26.86	19.03	65.06	8.42	28.05	489.00	3.22	5.36	149.50	2.28	3.79
25.13	-32.93	14.95	74.51	8.91	29.02	489.00	2.76	4.60	149.50	2.19	3.65
25.88	-28.43	18.59	67.07	7.63	26.31	489.00	3.11	5.18	149.50	2.45	4.08
27.25	-20.20	25.24	53.47	5.30	21.35	489.00	3.99	6.65	149.50	3.08	5.13
29.38	-10.41	39.39	43.55	3.92	18.79	489.00	5.03	8.39	149.50	3.54	5.90
31.5	-3.55	50.65	35.52	2.54	16.39	489.00	4.41	7.35	149.50	4.11	6.85
33.63	0.37	54.05	27.50	1.16	12.36	489.00	4.17	6.94	149.50	5.52	9.20
35.75	1.51	52.65	23.55	0.39	18.18	489.00	4.26	7.11	149.50	3.78	6.30
37.88	-0.79	56.05	32.71	1.77	11.35	489.00	4.01	6.69	149.50	5.98	9.96
40	-6.00	50.73	41.91	3.14	14.25	489.00	4.37	7.29	149.50	4.70	7.84
42.13	-14.14	39.68	51.10	4.52	17.62	489.00	4.24	7.07	149.50	3.76	6.26
44.25	-25.19	25.22	61.65	5.89	20.99	489.00	3.41	5.69	149.50	3.11	5.19
45.63	-34.24	17.00	72.64	8.03	24.27	489.00	2.82	4.70	149.50	2.64	4.40
46.38	-39.16	12.54	78.62	9.20	26.05	489.00	2.57	4.28	149.50	2.43	4.06
47.13	-32.94	16.86	69.33	8.73	25.47	489.00	2.97	4.94	149.50	2.50	4.17
49.27	-15.18	29.18	42.82	7.37	23.82	489.00	5.05	8.42	149.50	2.71	4.51
52.17	3.47	46.69	22.95	5.55	20.12	489.00	4.78	7.97	149.50	3.26	5.43
55.07	16.78	63.38	14.69	3.72	16.29	489.00	3.40	5.66	149.50	4.09	6.82
57.96	24.76	76.14	11.44	1.89	12.34	489.00	2.76	4.61	149.50	5.49	9.15
60.86	29.04	76.32	8.78	2.44	19.88	489.00	2.72	4.54	149.50	3.39	5.65
63.76	33.53	87.85	7.02	0.66	11.98	489.00	2.34	3.89	149.50	5.72	9.53
66.66	32.87	91.10	5.26	1.12	11.01	489.00	2.26	3.76	149.50	6.20	10.33
69.55	27.06	80.60	3.51	2.89	14.56	489.00	2.59	4.33	149.50	4.61	7.69
72.45	16.10	51.74	1.75	4.67	18.67	489.00	4.17	6.95	149.50	3.54	5.90
74.6	4.16	13.41	0.54	5.99	22.01	489.00	16.62	27.70	149.50	2.97	4.95
75.35	0.00	0.04	0.12	6.45	23.17	489.00	1877.88	3130.43	149.50	2.81	4.68

HS20-44

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44	Stringer F2A-2	0	0.00	0.00	0.00	6.99	23.89	1212.51	N/A	N/A	149.61	2.71	4.52
		0.75	4.73	14.51	0.77	6.57	23.32	1212.51	38.31	63.86	149.61	2.79	4.65
		2.51	15.82	48.57	2.57	5.60	21.98	1212.51	11.31	18.85	149.61	2.98	4.97
		5.03	28.16	80.94	5.14	4.21	18.57	1212.51	6.69	11.16	149.61	3.58	5.96
		7.54	37.00	98.77	7.72	2.83	14.86	1212.51	5.43	9.06	149.61	4.53	7.54
		10.05	42.36	107.05	10.29	1.44	12.23	1212.51	4.98	8.31	149.61	5.57	9.28
		12.57	44.23	111.43	12.86	0.85	9.91	1212.51	4.78	7.96	149.61	6.91	11.51
		15.08	40.35	106.68	10.29	2.23	13.25	1212.51	5.01	8.35	149.61	5.10	8.51
		17.59	32.99	93.24	7.72	3.62	16.96	1212.51	5.78	9.64	149.61	3.94	6.56
		20.1	22.15	64.04	5.14	5.01	20.79	1212.51	8.52	14.20	149.61	3.17	5.29
		22.62	7.81	28.57	2.57	6.40	23.62	1212.51	19.39	32.33	149.61	2.76	4.60
	24.38	2.33	8.54	0.77	7.37	24.67	1212.51	65.29	108.84	149.61	2.62	4.36	
	Stringer F2B-2	25.13	0.00	0.00	0.00	7.79	25.12	1212.51	N/A	N/A	149.61	2.56	4.27
		25.88	3.02	12.07	9.32	6.53	22.24	1212.51	46.15	76.93	149.61	2.92	4.87
		27.22	8.41	33.63	25.96	4.29	17.10	1212.51	16.47	27.45	149.61	3.88	6.47
		29.3	16.15	54.31	25.22	3.14	14.11	1212.51	10.11	16.85	149.61	4.75	7.92
		31.39	21.50	69.09	24.48	2.00	11.94	1212.51	7.90	13.17	149.61	5.67	9.46
		33.47	24.46	79.75	23.73	0.85	10.53	1212.51	6.82	11.37	149.61	6.50	10.83
		35.56	25.20	83.96	23.00	0.22	8.73	1212.51	6.48	10.79	149.61	7.88	13.14
		37.64	23.54	75.22	18.40	1.36	10.05	1212.51	7.24	12.07	149.61	6.78	11.30
		39.73	19.51	59.80	13.80	2.50	12.45	1212.51	9.15	15.25	149.61	5.42	9.03
		41.81	13.11	41.19	9.20	3.64	15.93	1212.51	13.37	22.30	149.61	4.19	6.99
		43.9	4.34	18.06	4.60	4.78	18.69	1212.51	30.80	51.34	149.61	3.54	5.89
	45.23	1.56	6.51	1.66	7.15	21.52	1212.51	85.66	142.80	149.61	3.00	5.01	
	45.98	0.00	0.00	0.00	8.49	23.12	1212.51	N/A	N/A	149.61	2.76	4.60	
	Stringer F2C-2	46.73	5.49	14.88	5.73	8.09	22.70	1212.51	37.32	62.22	149.61	2.82	4.71
		48.92	21.51	58.34	22.45	6.94	21.47	1212.51	9.36	15.60	149.61	3.02	5.03
		51.86	39.55	100.03	24.29	5.38	18.78	1212.51	5.35	8.92	149.61	3.50	5.83
		54.8	52.95	125.18	26.17	3.82	16.07	1212.51	4.21	7.02	149.61	4.15	6.91
		57.74	61.74	137.80	28.06	2.26	13.29	1212.51	3.79	6.31	149.61	5.09	8.48
		60.68	67.58	139.10	29.96	0.89	10.06	1212.51	3.73	6.21	149.61	6.80	11.34
		63.62	63.06	136.43	24.03	2.33	13.05	1212.51	3.82	6.37	149.61	5.18	8.63
		66.56	53.97	122.86	18.02	3.85	15.17	1212.51	4.28	7.14	149.61	4.39	7.32
		69.5	40.45	92.95	12.01	5.36	17.22	1212.51	5.75	9.59	149.61	3.82	6.36
		72.44	22.48	50.45	6.00	6.87	18.56	1212.51	10.81	18.02	149.61	3.49	5.82
		74.63	5.77	12.98	1.55	7.99	18.92	1212.51	42.78	71.31	149.61	3.39	5.65
75.38		0.05	0.15	0.02	8.38	19.04	1212.51	3724.87	6209.36	149.61	3.36	5.60	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
2F1	Stringer F1A-1	0	0.00	0.05	0.01	7.85	12.63	643.98	---	9907.38	207.62	---	12.02
		0.75	5.26	8.11	0.58	7.39	12.33	643.98	---	60.40	207.62	---	12.35
		2.75	19.30	29.62	2.09	6.17	11.54	643.98	---	16.07	207.62	---	13.30
		5.51	33.98	52.75	4.20	4.51	10.31	643.98	---	8.75	207.62	---	15.05
		8.26	44.12	68.43	6.30	2.86	8.97	643.98	---	6.59	207.62	---	17.49
		11.01	49.75	76.83	8.40	1.23	7.61	643.98	---	5.80	207.62	---	20.82
		13.76	50.89	81.67	10.52	0.40	6.25	643.98	---	5.44	207.62	---	25.49
		16.52	47.10	76.12	8.44	2.18	6.54	643.98	---	5.89	207.62	---	24.09
		19.27	38.91	60.94	6.33	3.77	7.88	643.98	---	7.49	207.62	---	19.79
		22.02	26.36	39.00	4.22	5.35	9.36	643.98	---	12.03	207.62	---	16.49
	24.77	9.49	17.78	2.11	6.91	10.72	643.98	---	27.33	207.62	---	14.25	
	26.78	2.58	4.83	0.57	8.05	11.61	643.98	---	101.99	207.62	---	13.06	
	27.53	0.00	0.00	0.00	8.47	11.94	643.98	---	N/A	207.62	---	12.67	
	28.28	2.70	7.24	5.79	7.08	11.35	643.98	---	68.01	207.62	---	13.45	
	29.61	7.49	20.09	16.06	4.62	10.29	643.98	---	24.28	207.62	---	15.07	
	31.69	15.88	35.64	16.26	3.46	9.16	643.98	---	13.45	207.62	---	17.06	
	33.77	21.88	45.90	16.46	2.30	7.90	643.98	---	10.32	207.62	---	19.93	
	35.84	25.47	51.33	16.66	1.16	6.66	643.98	---	9.15	207.62	---	23.81	
	37.92	26.70	52.96	16.84	0.24	4.24	643.98	---	8.85	207.62	---	37.61	
	40	26.02	52.38	13.47	0.89	5.54	643.98	---	8.96	207.62	---	28.67	
42.08	22.99	45.48	10.11	2.02	6.79	643.98	---	10.39	207.62	---	23.22		
44.16	17.63	33.77	6.74	3.13	7.82	643.98	---	14.15	207.62	---	20.02		
46.24	9.97	18.47	3.37	4.24	8.69	643.98	---	26.28	207.62	---	17.89		
47.57	3.59	6.66	1.22	4.94	9.67	643.98	---	73.84	207.62	---	16.01		
48.32	0.00	0.00	0.00	5.34	10.22	643.98	---	N/A	207.62	---	15.10		
2F1	Stringer S1-1	0	0.00	0.03	0.05	7.58	17.70	531.00	---	8169.23	165.00	---	6.74
		0.75	4.95	10.54	0.52	7.04	16.83	531.00	---	38.28	165.00	---	7.12
		2.7	17.83	37.87	1.74	5.62	14.58	531.00	---	10.32	165.00	---	8.32
		5.41	30.39	59.78	3.48	3.67	11.51	531.00	---	6.32	165.00	---	10.71
		8.11	37.69	69.25	5.23	1.74	8.89	531.00	---	5.35	165.00	---	14.08
		10.81	39.80	70.59	6.97	0.18	7.40	531.00	---	5.22	165.00	---	17.13
		13.52	36.73	67.08	8.70	1.95	7.21	531.00	---	5.94	165.00	---	17.33
		16.22	28.90	58.41	11.41	3.84	7.21	531.00	---	7.11	165.00	---	17.07
		18.92	15.98	43.72	14.75	5.72	10.02	531.00	---	8.98	165.00	---	12.10
		21.62	-2.00	36.19	18.47	7.58	11.72	531.00	---	11.23	165.00	---	10.18
		24.33	-25.01	21.32	26.86	9.44	12.94	531.00	---	14.28	165.00	---	9.08
		26.28	-45.26	6.20	30.58	10.77	16.12	243.03	---	4.63	248.02	---	11.16
		27.03	-53.05	0.39	32.01	11.28	17.36	243.03	---	4.18	248.02	---	10.34
		27.78	-46.17	2.10	30.34	10.28	15.07	243.03	---	4.64	248.02	---	11.52
		29.16	-33.52	5.26	27.27	8.47	12.55	531.00	---	13.75	165.00	---	9.44
		31.28	-17.04	19.29	22.81	7.04	10.85	531.00	---	17.31	165.00	---	11.05
		33.4	-3.61	34.00	17.95	5.61	9.54	531.00	---	11.91	165.00	---	12.72
		35.53	6.80	43.10	13.29	4.19	7.94	531.00	---	9.32	165.00	---	15.46
		37.65	14.16	35.43	8.68	2.77	11.25	531.00	---	11.43	165.00	---	11.04
		39.78	27.30	40.74	6.94	0.78	8.05	531.00	---	9.60	165.00	---	15.67
41.9	17.45	41.12	5.21	0.63	6.40	531.00	---	9.51	165.00	---	19.73		
44.03	14.61	35.53	3.47	2.04	6.71	531.00	---	11.09	165.00	---	18.61		
46.15	8.80	22.49	1.74	3.44	8.70	531.00	---	17.77	165.00	---	14.19		
47.53	3.10	7.92	0.61	4.34	11.87	202.98	---	19.33	195.68	---	12.31		
48.28	0.00	0.00	0.00	4.83	13.60	202.98	---	N/A	195.68	---	10.71		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
2F1 Stringer S2-1	0	0.00	0.02	0.05	7.45	22.11	456.00	---	7015.38	142.30	---	4.61
	0.75	4.88	13.62	1.03	6.92	21.20	456.00	---	25.39	142.30	---	4.84
	2.65	17.25	48.09	3.53	5.58	18.90	456.00	---	6.94	142.30	---	5.50
	5.3	29.57	78.68	7.08	3.72	15.46	456.00	---	4.08	142.30	---	6.84
	7.94	36.96	95.36	10.63	1.86	12.49	456.00	---	3.29	142.30	---	8.62
	10.59	39.42	101.86	14.18	0.00	10.55	456.00	---	3.06	142.30	---	10.38
	13.24	36.95	98.02	17.73	2.19	15.14	456.00	---	3.38	142.30	---	7.09
	15.89	28.69	78.78	22.68	4.05	10.96	456.00	---	4.09	142.30	---	9.62
	18.54	15.50	64.96	27.62	5.91	14.74	456.00	---	5.16	142.30	---	7.03
	21.18	-2.62	53.24	32.57	7.78	17.18	456.00	---	6.54	142.30	---	5.92
	23.83	-25.67	29.54	38.83	9.64	18.93	456.00	---	8.37	142.30	---	5.27
	25.73	-45.74	8.93	46.72	10.57	22.51	310.20	---	4.13	264.09	---	8.54
	26.48	-53.66	0.80	49.83	11.50	23.92	310.20	---	3.71	264.09	---	8.01
	27.23	-46.62	4.55	47.91	10.51	23.07	310.20	---	4.01	264.09	---	8.37
	28.66	-33.19	11.71	44.26	8.63	21.28	456.00	---	7.18	142.30	---	4.74
	30.84	-16.05	38.32	38.98	7.09	18.83	456.00	---	8.61	142.30	---	5.44
	33.02	-2.26	57.96	33.45	5.56	15.97	456.00	---	6.01	142.30	---	6.51
	35.2	8.19	69.40	28.05	4.03	13.09	456.00	---	4.94	142.30	---	8.05
	37.38	15.30	74.87	22.66	2.49	16.92	456.00	---	4.18	142.30	---	6.32
	39.56	18.92	80.71	18.12	0.90	8.71	456.00	---	4.11	142.30	---	12.46
	41.74	19.20	76.94	13.59	0.64	9.63	456.00	---	4.31	142.30	---	11.30
	43.92	16.14	63.02	9.06	2.17	12.24	456.00	---	5.31	142.30	---	8.77
	46.1	9.74	37.94	4.53	3.70	15.03	456.00	---	8.99	142.30	---	7.04
	47.53	3.35	13.05	1.56	4.71	19.18	274.71	---	15.93	214.50	---	8.36
48.28	0.00	0.00	0.00	5.24	21.35	274.71	---	N/A	214.50	---	7.48	
2F1 Stringer S3-1	0	0.00	0.03	0.06	7.04	20.58	390.00	---	5000.00	123.50	---	4.27
	0.75	4.61	12.86	1.11	6.52	19.77	390.00	---	22.98	123.50	---	4.48
	2.59	15.91	44.32	3.67	5.24	17.79	390.00	---	6.41	123.50	---	5.05
	5.19	27.17	73.41	7.36	3.44	14.73	390.00	---	3.72	123.50	---	6.22
	7.78	33.76	90.00	11.04	1.64	12.04	390.00	---	2.96	123.50	---	7.75
	10.37	35.69	96.27	14.73	0.15	9.83	390.00	---	2.75	123.50	---	9.65
	12.96	32.97	92.02	18.43	2.03	14.93	390.00	---	2.96	123.50	---	6.23
	15.56	25.38	76.26	22.94	3.83	10.91	390.00	---	3.60	123.50	---	8.36
	18.15	13.12	63.32	27.51	5.63	14.75	390.00	---	4.53	123.50	---	6.06
	20.74	-3.81	51.11	32.91	7.43	17.04	390.00	---	5.80	123.50	---	5.14
	23.34	-25.39	28.14	39.34	9.22	18.71	390.00	---	6.98	123.50	---	4.58
	25.18	-44.02	9.07	48.42	10.59	22.41	331.59	---	4.36	224.82	---	7.25
	25.93	-51.61	1.29	52.12	11.02	23.92	331.59	---	3.90	224.82	---	6.77
	26.68	-44.62	4.10	50.30	10.18	22.55	331.59	---	4.18	224.82	---	7.20
	28.16	-30.82	9.65	46.71	8.53	19.98	390.00	---	5.76	123.50	---	4.33
	30.4	-13.49	38.02	41.29	6.98	18.23	390.00	---	6.94	123.50	---	4.83
	32.63	0.37	67.06	35.88	5.43	16.76	390.00	---	4.47	123.50	---	5.34
	34.87	10.77	87.01	30.48	3.88	14.59	390.00	---	3.32	123.50	---	6.25
	37.1	17.73	79.90	25.06	2.33	16.07	390.00	---	5.53	123.50	---	5.77
	39.34	27.11	85.62	20.04	0.74	9.03	390.00	---	3.26	123.50	---	10.44
	41.57	21.02	80.56	15.03	0.81	9.96	390.00	---	3.46	123.50	---	9.46
	43.81	17.47	65.39	10.02	2.36	12.50	390.00	---	4.32	123.50	---	7.41
	46.04	10.46	39.33	5.00	3.91	15.22	390.00	---	7.36	123.50	---	5.98
	47.53	3.50	13.17	1.67	4.94	19.42	339.21	---	19.55	226.88	---	8.73
48.28	0.00	0.00	0.00	5.46	21.54	339.21	---	N/A	226.88	---	7.85	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
2F1 Stringer S4-1	0	0.00	0.02	0.04	6.91	21.85	390.00	---	7500.00	123.50	---	4.03
	0.75	4.52	13.55	1.22	6.39	20.95	390.00	---	21.80	123.50	---	4.23
	2.54	15.30	45.85	4.02	5.15	18.80	390.00	---	6.21	123.50	---	4.78
	5.08	26.13	75.68	8.06	3.39	15.51	390.00	---	3.62	123.50	---	5.91
	7.61	32.49	91.36	12.09	1.63	12.48	390.00	---	2.93	123.50	---	7.48
	10.15	34.39	95.46	16.12	0.13	9.78	390.00	---	2.78	123.50	---	9.70
	12.69	31.83	92.02	20.16	2.24	14.77	390.00	---	2.91	123.50	---	6.28
	15.23	23.91	83.52	24.83	4.00	11.44	390.00	---	3.31	123.50	---	7.95
	17.76	11.52	68.18	29.51	5.76	13.91	390.00	---	4.23	123.50	---	6.42
	20.3	-5.34	44.10	34.19	7.52	16.71	390.00	---	6.68	123.50	---	5.24
	22.84	-26.66	12.50	38.86	9.28	19.52	390.00	---	7.03	123.50	---	4.39
	24.63	-44.83	4.95	49.62	10.52	22.24	390.00	---	5.14	123.50	---	3.80
	25.38	-52.45	1.79	54.13	11.04	23.38	390.00	---	4.57	123.50	---	3.59
	26.13	-45.25	5.89	52.24	10.31	22.71	390.00	---	4.88	123.50	---	3.73
	27.67	-30.46	14.31	48.35	8.81	21.33	390.00	---	5.57	123.50	---	4.04
	29.96	-12.11	42.68	42.57	7.22	18.98	390.00	---	6.75	123.50	---	4.62
	32.25	2.61	64.27	36.79	5.63	16.32	390.00	---	4.63	123.50	---	5.48
	34.54	13.69	77.47	31.01	4.05	13.55	390.00	---	3.70	123.50	---	6.71
	36.83	21.14	82.42	25.23	2.46	16.17	390.00	---	3.38	123.50	---	5.72
	39.12	24.18	87.46	20.18	0.53	8.66	390.00	---	3.15	123.50	---	10.91
41.41	23.58	83.17	15.14	1.05	9.93	390.00	---	3.32	123.50	---	9.46	
43.7	19.35	68.00	10.09	2.64	12.59	390.00	---	4.13	123.50	---	7.34	
45.99	11.49	40.73	5.05	4.23	15.44	390.00	---	7.08	123.50	---	5.88	
47.53	3.76	13.34	1.65	5.29	19.62	390.00	---	22.21	123.50	---	4.57	
48.28	0.00	0.00	0.00	5.81	21.66	390.00	---	N/A	123.50	---	4.12	
2F1 Stringer S5-1	0	0.00	0.03	0.07	6.59	20.45	389.64	---	4281.76	299.22	---	10.93
	0.75	4.31	11.60	1.30	6.08	19.12	389.64	---	25.47	299.22	---	11.72
	2.48	14.25	38.28	4.15	4.89	16.05	369.00	---	7.04	145.70	---	6.68
	4.97	24.29	65.77	8.32	3.20	13.79	369.00	---	3.95	145.70	---	7.90
	7.45	30.12	89.25	12.50	1.50	12.47	369.00	---	2.84	145.70	---	8.87
	9.93	31.74	102.63	16.67	0.20	10.75	369.00	---	2.46	145.70	---	10.41
	12.41	29.14	87.26	20.83	2.30	11.11	369.00	---	2.92	145.70	---	9.88
	14.9	21.33	74.34	25.59	3.99	11.11	369.00	---	3.53	145.70	---	9.73
	17.38	9.31	61.14	30.58	5.69	14.95	369.00	---	4.49	145.70	---	7.12
	19.86	-6.92	49.15	35.57	7.39	16.98	369.00	---	5.63	145.70	---	6.17
	22.34	-27.36	27.92	40.56	9.08	18.32	369.00	---	6.32	145.70	---	5.62
	24.08	-44.62	9.16	47.90	10.27	22.20	369.00	---	4.99	145.70	---	4.59
	24.83	-52.06	1.07	51.07	10.78	23.87	369.00	---	4.54	145.70	---	4.24
	25.58	-44.76	5.32	49.14	10.18	23.00	369.00	---	4.87	145.70	---	4.43
	27.17	-29.27	14.34	45.04	8.92	21.15	369.00	---	5.65	145.70	---	4.88
	29.52	-10.25	42.80	39.57	7.31	18.86	369.00	---	6.39	145.70	---	5.55
	31.86	5.02	65.04	34.10	5.71	16.35	369.00	---	4.29	145.70	---	6.51
	34.21	16.53	79.04	28.63	4.11	13.65	369.00	---	3.38	145.70	---	7.91
	36.55	24.25	83.03	23.18	2.51	16.07	369.00	---	3.13	145.70	---	6.82
	38.9	26.91	87.93	18.54	0.33	8.73	369.00	---	2.92	145.70	---	12.80
41.24	25.82	84.40	13.91	1.27	9.75	369.00	---	3.06	145.70	---	11.36	
43.59	20.97	69.46	9.28	2.87	12.48	369.00	---	3.78	145.70	---	8.75	
45.93	12.37	41.68	4.64	4.47	15.40	369.00	---	6.51	145.70	---	6.99	
47.53	3.95	13.30	1.48	5.56	19.67	369.00	---	21.04	145.70	---	5.42	
48.28	0.00	0.00	0.00	6.07	21.67	369.00	---	N/A	145.70	---	4.89	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		C* (k-ft)	Inventory	Operating	C* (kips)	Inventory	Operating	
		D	L+I	L+I	D							L+I
2F1 Stringer S6-1	0	0.00	0.03	0.07	4.88	13.65	369.00	---	4054.95	145.70	---	7.85
	0.75	3.13	8.14	0.59	4.46	12.92	369.00	---	34.48	145.70	---	8.33
	2.43	10.15	26.31	1.77	3.51	11.29	369.00	---	10.40	145.70	---	9.62
	4.86	16.98	41.65	3.56	2.12	8.93	369.00	---	6.41	145.70	---	12.31
	7.28	20.44	47.77	5.35	0.73	6.83	369.00	---	5.51	145.70	---	16.30
	9.71	20.50	47.20	7.14	0.68	5.56	369.00	---	5.58	145.70	---	20.04
	12.14	17.14	44.09	8.93	0.98	5.67	369.00	---	6.05	145.70	---	19.59
	14.57	13.02	42.31	12.94	2.42	5.67	369.00	---	6.40	145.70	---	19.34
	16.99	5.40	36.64	17.06	3.86	7.21	369.00	---	7.60	145.70	---	15.01
	19.42	-5.71	25.63	21.20	5.30	9.02	369.00	---	10.85	145.70	---	11.84
	21.85	-20.36	9.49	25.35	6.76	10.97	369.00	---	10.39	145.70	---	9.60
	23.53	-32.91	3.10	28.23	7.86	13.69	369.00	---	8.89	145.70	---	7.61
	24.28	-38.51	0.25	29.51	8.35	14.90	369.00	---	8.31	145.70	---	6.96
	25.03	-32.79	2.88	27.56	7.89	14.42	369.00	---	9.11	145.70	---	7.23
	26.68	-20.21	8.68	23.26	6.89	13.35	369.00	---	11.33	145.70	---	7.88
	29.08	-5.43	25.55	20.02	5.43	11.61	369.00	---	10.90	145.70	---	9.19
	31.48	5.83	38.10	16.78	3.95	9.76	369.00	---	7.30	145.70	---	11.08
	33.88	13.54	45.00	13.53	2.47	7.88	369.00	---	6.01	145.70	---	13.91
	36.28	17.72	46.31	10.32	2.28	10.51	369.00	---	5.75	145.70	---	10.45
	38.68	21.39	50.86	8.26	0.78	7.48	369.00	---	5.16	145.70	---	14.88
41.08	21.46	50.86	6.20	0.72	5.98	369.00	---	5.16	145.70	---	18.62	
43.48	17.93	43.65	4.13	2.22	7.35	369.00	---	6.09	145.70	---	14.95	
45.88	10.78	27.26	2.06	3.74	9.46	369.00	---	10.02	145.70	---	11.45	
47.53	3.37	8.52	0.64	4.78	12.84	369.00	---	32.92	145.70	---	8.35	
48.28	0.00	0.00	0.00	5.25	14.38	369.00	---	N/A	145.70	---	7.43	
2F1 Stringer F2A-1	0	0.00	0.09	0.03	6.23	8.61	1212.51	---	10363.33	149.61	---	12.64
	0.75	4.25	6.01	0.81	5.86	8.61	1212.51	---	154.53	149.61	---	12.69
	2.39	13.54	18.95	2.53	5.05	8.61	1212.51	---	48.50	149.61	---	12.78
	4.79	24.20	36.93	5.06	3.85	8.40	1212.51	---	24.60	149.61	---	13.24
	7.18	31.96	51.34	7.59	2.64	7.82	1212.51	---	17.54	149.61	---	14.38
	9.57	36.82	60.46	10.11	1.42	6.96	1212.51	---	14.82	149.61	---	16.33
	11.97	38.72	65.90	12.67	0.17	5.93	1212.51	---	13.57	149.61	---	19.38
	14.36	35.43	63.14	10.16	2.01	6.13	1212.51	---	14.21	149.61	---	18.45
	16.76	29.13	50.71	7.62	3.26	7.55	1212.51	---	17.82	149.61	---	14.81
	19.15	19.82	32.22	5.08	4.52	8.97	1212.51	---	28.33	149.61	---	12.33
	21.54	7.48	15.03	2.54	5.79	10.27	1212.51	---	61.56	149.61	---	10.64
	23.19	2.34	4.70	0.79	6.81	11.45	1212.51	---	198.08	149.61	---	9.45
	23.94	0.00	0.00	0.00	7.27	11.99	1212.51	---	N/A	149.61	---	8.99
	24.69	4.17	7.84	4.27	6.87	11.73	1212.51	---	118.40	149.61	---	9.22
	26.37	13.50	25.41	13.83	5.96	11.16	1212.51	---	36.17	149.61	---	9.78
	28.81	26.44	46.48	14.44	4.64	10.23	1212.51	---	19.50	149.61	---	10.80
	31.25	36.14	62.46	15.04	3.31	9.20	1212.51	---	14.35	149.61	---	12.15
	33.69	42.59	72.21	15.65	1.98	8.02	1212.51	---	12.33	149.61	---	14.10
	36.13	45.79	74.48	16.23	0.34	5.00	1212.51	---	11.91	149.61	---	22.95
	38.56	43.30	72.82	12.99	1.70	6.59	1212.51	---	12.21	149.61	---	17.21
41	37.49	64.48	9.74	3.06	8.09	1212.51	---	13.88	149.61	---	13.85	
43.44	28.36	49.13	6.49	4.44	9.49	1212.51	---	18.41	149.61	---	11.66	
45.88	15.86	27.40	3.24	5.82	10.80	1212.51	---	33.46	149.61	---	10.12	
47.57	4.88	8.42	1.00	6.78	12.41	1212.51	---	110.17	149.61	---	8.72	
48.32	0.00	0.00	0.00	7.21	13.13	1212.51	---	N/A	149.61	---	8.22	
2F1 Stringer F2B-1	0	0.00	0.09	0.03	6.23	8.61	1212.51	---	10363.33	149.61	---	12.64
	0.75	4.25	6.01	0.81	5.86	8.61	1212.51	---	154.53	149.61	---	12.69
	2.39	13.54	18.95	2.53	5.05	8.61	1212.51	---	48.50	149.61	---	12.78
	4.79	24.20	36.93	5.06	3.85	8.40	1212.51	---	24.60	149.61	---	13.24
	7.18	31.96	51.34	7.59	2.64	7.82	1212.51	---	17.54	149.61	---	14.38
	9.57	36.82	60.46	10.11	1.42	6.96	1212.51	---	14.82	149.61	---	16.33
	11.97	38.72	65.90	12.67	0.17	5.93	1212.51	---	13.57	149.61	---	19.38
	14.36	35.43	63.14	10.16	2.01	6.13	1212.51	---	14.21	149.61	---	18.45
	16.76	29.13	50.71	7.62	3.26	7.55	1212.51	---	17.82	149.61	---	14.81
	19.15	19.82	32.22	5.08	4.52	8.97	1212.51	---	28.33	149.61	---	12.33
	21.54	7.48	15.03	2.54	5.79	10.27	1212.51	---	61.56	149.61	---	10.64
	23.19	2.34	4.70	0.79	6.81	11.45	1212.51	---	198.08	149.61	---	9.45

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

2F1	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		From Rear (Ft)	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
Stringer F1A-2	0	0.00	0.00	0.00	6.31	10.44	643.98	---	N/A	207.62	---	14.69
	0.75	4.24	7.03	0.63	5.92	10.32	643.98	---	69.88	207.62	---	14.90
	2.51	14.20	23.52	2.10	4.99	10.04	643.98	---	20.46	207.62	---	15.41
	5.03	25.09	42.26	4.19	3.67	9.05	643.98	---	11.13	207.62	---	17.24
	7.54	32.67	55.00	6.29	2.36	7.89	643.98	---	8.41	207.62	---	19.94
	10.05	36.93	62.51	8.38	1.04	6.77	643.98	---	7.33	207.62	---	23.44
	12.57	37.89	70.00	10.48	0.48	5.53	643.98	---	6.54	207.62	---	28.79
	15.08	35.03	63.33	8.39	1.79	6.10	643.98	---	7.27	207.62	---	25.89
	17.59	28.86	49.91	6.29	3.11	7.14	643.98	---	9.35	207.62	---	21.93
	20.1	19.39	31.84	4.19	4.43	8.34	643.98	---	14.95	207.62	---	18.62
22.62	6.60	15.75	2.09	5.75	9.47	643.98	---	31.03	207.62	---	16.26	
	24.38	1.97	4.71	0.62	6.68	10.09	643.98	---	104.84	207.62	---	15.16
Stringer F1B-2	25.13	0.00	0.00	0.00	7.07	10.36	643.98	---	N/A	207.62	---	14.73
	25.88	3.46	6.71	3.94	6.33	10.11	643.98	---	73.34	207.62	---	15.17
	27.58	11.29	21.91	12.86	4.64	9.55	643.98	---	22.09	207.62	---	16.24
	30.02	21.06	39.08	13.28	3.34	8.55	643.98	---	12.14	207.62	---	18.29
	32.47	27.67	50.95	13.69	2.05	7.46	643.98	---	9.18	207.62	---	21.13
	34.91	31.13	58.00	14.11	0.75	6.40	643.98	---	8.00	207.62	---	24.84
	37.36	31.13	63.44	14.51	0.03	4.12	643.98	---	7.32	207.62	---	38.76
	39.81	29.45	58.84	11.61	1.34	5.65	643.98	---	7.92	207.62	---	28.03
	42.25	24.58	47.42	8.70	2.65	6.80	643.98	---	9.93	207.62	---	23.10
	44.7	16.51	30.71	5.80	3.95	8.18	643.98	---	15.59	207.62	---	19.04
47.14	5.25	14.67	2.90	5.26	9.52	643.98	---	33.41	207.62	---	16.22	
	48.84	1.61	4.49	0.89	6.73	10.73	643.98	---	109.95	207.62	---	14.25
	49.59	0.00	0.00	0.00	7.38	11.27	643.98	---	N/A	207.62	---	13.52
Stringer F1C-2	50.34	4.55	7.38	3.94	6.97	11.08	643.98	---	66.50	207.62	---	13.78
	52.17	15.64	25.39	13.55	5.96	10.62	643.98	---	18.89	207.62	---	14.48
	54.75	29.24	46.35	14.15	4.54	9.73	643.98	---	10.06	207.62	---	15.95
	57.33	39.22	61.96	14.74	3.12	8.71	643.98	---	7.36	207.62	---	17.98
	59.91	45.57	71.17	15.34	1.70	7.56	643.98	---	6.32	207.62	---	20.90
	62.49	46.97	74.20	15.94	0.09	6.36	643.98	---	6.04	207.62	---	25.10
	65.07	45.18	72.53	12.78	1.45	6.37	643.98	---	6.21	207.62	---	24.84
	67.65	39.55	63.70	9.59	2.91	7.69	643.98	---	7.16	207.62	---	20.39
	70.23	30.15	48.33	6.39	4.38	8.94	643.98	---	9.63	207.62	---	17.37
	72.81	16.97	27.13	3.19	5.84	10.13	643.98	---	17.63	207.62	---	15.19
	74.64	4.93	7.92	0.93	6.88	11.74	643.98	---	61.91	207.62	---	13.02
	75.39	0.00	0.05	0.01	7.31	12.40	643.98	---	9907.38	207.62	---	12.29

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V						
0	0.00	0.00	0.00	6.60	14.69	202.98	---	N/A	195.68	---	9.80
0.75	4.34	7.70	0.33	6.11	13.49	202.98	---	19.71	195.68	---	10.71
2.51	14.53	25.77	1.09	4.96	10.66	531.00	---	15.29	165.00	---	11.44
5.03	24.92	41.31	2.19	3.32	8.55	531.00	---	9.28	165.00	---	14.46
7.54	31.19	53.35	3.28	1.67	9.20	531.00	---	7.07	165.00	---	13.61
10.05	33.33	58.37	4.38	0.03	6.06	531.00	---	6.43	165.00	---	20.94
12.57	31.33	44.41	5.47	1.63	9.21	531.00	---	8.49	165.00	---	13.60
15.08	25.18	35.34	8.96	3.27	5.80	531.00	---	10.85	165.00	---	21.32
17.59	14.91	28.78	12.69	4.91	8.23	531.00	---	13.67	165.00	---	14.83
20.1	0.50	25.54	16.42	6.55	9.68	531.00	---	15.87	165.00	---	12.44
22.62	-18.04	19.84	25.53	8.20	10.82	531.00	---	15.29	165.00	---	10.97
24.38	-33.96	10.24	28.36	9.35	14.20	209.58	---	4.49	254.41	---	13.12
25.13	-40.75	6.15	29.56	9.84	15.64	209.58	---	4.08	254.41	---	11.88
25.88	-35.15	6.77	27.65	8.85	14.56	209.58	---	4.56	254.41	---	12.83
27.53	-22.82	8.14	23.45	6.68	12.18	531.00	---	16.44	165.00	---	9.87
29.93	-8.68	25.33	19.16	5.10	10.46	531.00	---	15.78	165.00	---	11.65
32.33	1.68	41.18	14.89	3.52	9.26	531.00	---	9.88	165.00	---	13.33
34.73	8.25	50.63	10.69	1.93	7.73	531.00	---	7.90	165.00	---	16.17
37.13	10.67	39.70	7.31	0.85	8.98	531.00	---	10.02	165.00	---	14.04
39.53	6.73	33.92	12.38	2.44	5.76	531.00	---	11.84	165.00	---	21.61
41.93	-1.03	29.13	18.02	4.03	7.81	531.00	---	13.99	165.00	---	15.74
44.33	-12.62	26.56	23.84	5.63	9.28	531.00	---	14.90	165.00	---	13.07
46.73	-28.03	21.00	29.66	7.22	10.41	531.00	---	12.83	165.00	---	11.50
48.38	-41.26	10.29	23.66	9.81	15.12	217.53	---	3.75	257.15	---	12.43
49.13	-47.28	5.42	35.48	10.99	17.26	217.53	---	3.38	257.15	---	10.82
49.88	-39.70	6.41	30.91	10.48	16.50	217.53	---	4.13	257.15	---	11.35
51.75	-20.79	8.88	19.53	9.20	14.61	531.00	---	19.85	165.00	---	8.06
54.37	1.06	30.40	16.56	7.42	13.06	531.00	---	13.40	165.00	---	9.15
57	18.27	54.92	13.59	5.63	11.82	531.00	---	7.10	165.00	---	10.26
59.62	30.84	70.82	10.67	3.85	10.13	531.00	---	5.33	165.00	---	12.15
62.24	37.41	64.04	8.31	1.89	11.76	531.00	---	5.79	165.00	---	10.63
64.86	39.51	67.06	6.65	0.11	8.88	531.00	---	5.50	165.00	---	14.28
67.48	36.81	65.75	4.98	1.94	6.97	531.00	---	5.65	165.00	---	17.93
70.11	29.33	56.79	3.32	3.77	8.70	531.00	---	6.68	165.00	---	14.16
72.73	17.05	36.10	1.65	5.60	11.27	531.00	---	10.84	165.00	---	10.77
74.6	4.88	10.36	0.51	6.91	15.57	531.00	---	38.97	165.00	---	7.71
75.35	0.00	0.03	0.05	7.43	17.30	531.00	---	8169.23	165.00	---	6.91

2F1

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.00	0.00	7.22	22.33	274.71	---	N/A	214.30	---	7.07	
0.75	4.76	12.50	0.89	6.69	20.83	274.71	---	16.53	214.50	---	7.00	
2.51	15.92	41.82	2.98	5.45	17.31	456.00	---	8.01	142.30	---	6.01	
5.03	27.40	69.10	5.95	3.68	14.30	456.00	---	4.68	142.30	---	7.40	
7.54	34.43	90.81	8.93	1.92	12.68	456.00	---	3.48	142.30	---	8.48	
10.05	37.03	102.30	11.91	0.15	10.58	456.00	---	3.07	142.30	---	10.33	
12.57	35.18	87.45	14.88	1.59	10.69	456.00	---	3.61	142.30	---	10.09	
15.08	28.96	68.75	19.61	3.36	10.69	456.00	---	4.68	142.30	---	9.93	
17.59	18.30	55.08	24.34	5.13	14.23	456.00	---	6.04	142.30	---	7.33	
20.1	3.20	46.64	29.08	6.89	16.20	456.00	---	7.45	142.30	---	6.33	
22.62	-16.34	28.76	35.00	8.66	17.76	456.00	---	9.56	142.30	---	5.68	
24.38	-33.15	16.63	42.69	9.90	21.88	252.27	---	3.77	225.70	---	7.48	
25.13	-40.31	11.46	45.97	10.43	23.63	252.27	---	3.34	225.70	---	6.91	
25.88	-35.03	10.85	43.87	9.09	22.08	252.27	---	3.62	225.70	---	7.45	
27.48	-23.78	9.54	39.40	6.23	18.76	456.00	---	8.30	142.30	---	5.50	
29.82	-11.11	35.21	32.84	4.58	16.35	456.00	---	9.65	142.30	---	6.41	
32.16	-2.31	59.80	26.27	2.93	14.74	456.00	---	5.83	142.30	---	7.23	
34.51	2.62	74.54	19.71	1.28	11.98	456.00	---	4.67	142.30	---	9.03	
36.85	3.68	64.37	14.66	0.37	12.15	456.00	---	5.39	142.30	---	8.98	
39.2	1.43	63.38	21.35	1.78	8.52	456.00	---	5.51	142.30	---	12.64	
41.54	-4.68	54.69	28.06	3.13	11.08	456.00	---	6.33	142.30	---	9.57	
43.89	-14.66	38.51	34.77	5.08	13.75	456.00	---	8.73	142.30	---	7.59	
46.23	-28.51	14.34	41.47	6.73	16.60	456.00	---	7.77	142.30	---	6.19	
47.83	-40.60	12.05	47.24	9.73	21.44	264.39	---	3.52	230.45	---	7.81	
48.58	-46.26	10.97	48.47	11.14	23.71	264.39	---	3.24	230.45	---	7.01	
49.33	-38.62	11.51	44.33	10.61	22.81	264.39	---	3.72	230.45	---	7.31	
51.26	-18.95	12.90	33.67	9.26	20.48	456.00	---	9.86	142.30	---	4.89	
53.93	3.32	46.47	29.02	7.38	18.22	456.00	---	7.48	142.30	---	5.60	
56.61	20.06	80.30	24.37	5.50	16.47	456.00	---	4.11	142.30	---	6.31	
59.29	32.75	103.40	19.72	3.61	14.31	456.00	---	3.08	142.30	---	7.40	
61.96	39.89	96.09	15.07	1.72	8.87	456.00	---	3.24	142.30	---	12.15	
64.64	41.99	90.96	12.06	0.16	8.03	456.00	---	3.39	142.30	---	13.61	
67.32	39.05	87.78	9.04	2.04	10.96	456.00	---	3.55	142.30	---	9.80	
70	31.07	85.21	6.02	3.92	12.86	456.00	---	3.75	142.30	---	8.21	
72.67	18.05	63.70	3.00	5.80	14.61	456.00	---	5.22	142.30	---	7.10	
74.6	5.05	17.84	0.88	7.16	20.36	456.00	---	19.38	142.30	---	5.02	
75.35	0.00	0.02	0.06	7.69	22.60	456.00	---	5846.15	142.30	---	4.50	

2F1

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+ L+I	M- L+I	V		D						
0	0.00	0.00	0.00	7.41	22.57	373.29	---	N/A	243.00	---	7.95	
0.75	4.90	12.79	1.06	6.88	21.12	373.29	---	22.06	243.00	---	8.82	
2.51	16.41	42.81	3.56	5.65	17.72	456.00	---	7.81	142.30	---	5.86	
5.03	28.39	71.84	7.12	3.88	14.87	456.00	---	4.49	142.30	---	7.10	
7.54	35.92	95.44	10.68	2.11	14.11	456.00	---	3.30	142.30	---	7.61	
10.05	39.01	108.72	14.24	0.35	11.25	456.00	---	2.87	142.30	---	9.70	
12.57	37.66	95.62	17.80	1.82	13.77	456.00	---	3.27	142.30	---	7.82	
15.08	30.86	76.66	21.63	3.59	11.91	456.00	---	4.17	142.30	---	8.89	
17.59	19.63	60.62	25.51	5.35	15.48	456.00	---	5.46	142.30	---	6.73	
20.1	3.95	48.15	29.44	7.12	17.36	456.00	---	7.20	142.30	---	5.90	
22.62	-16.16	26.77	35.52	8.89	18.77	456.00	---	9.42	142.30	---	5.36	
24.38	-33.37	18.64	47.59	10.13	22.49	349.23	---	4.94	255.38	---	8.28	
25.13	-40.71	14.27	52.73	10.66	24.08	349.23	---	4.32	255.38	---	7.72	
25.88	-35.48	13.25	50.53	9.19	22.51	349.23	---	4.61	255.38	---	8.32	
27.42	-24.73	11.17	46.07	6.17	19.29	456.00	---	7.09	142.30	---	5.35	
29.71	-12.44	38.24	39.28	4.56	17.15	456.00	---	8.61	142.30	---	6.12	
32	-3.84	64.43	32.55	2.95	15.33	456.00	---	5.38	142.30	---	6.95	
34.29	1.08	80.81	25.83	1.34	12.88	456.00	---	4.33	142.30	---	8.33	
36.58	2.32	72.79	21.49	0.45	13.70	456.00	---	4.79	142.30	---	7.96	
38.87	-0.55	71.53	28.90	2.06	9.46	456.00	---	4.90	142.30	---	11.35	
41.16	-7.11	60.19	36.30	3.67	12.23	456.00	---	5.71	142.30	---	8.65	
43.45	-17.36	41.66	43.70	5.28	14.73	456.00	---	7.63	142.30	---	7.07	
45.74	-31.30	16.36	51.10	6.89	17.23	456.00	---	6.25	142.30	---	5.95	
47.28	-43.13	13.95	56.06	10.05	21.84	356.97	---	4.13	256.57	---	8.58	
48.03	-48.89	12.77	58.48	11.59	24.08	356.97	---	3.86	256.57	---	7.71	
48.78	-40.91	12.95	51.52	11.06	23.25	356.97	---	4.54	256.57	---	8.01	
50.76	-19.84	12.25	33.14	9.67	21.05	456.00	---	9.99	142.30	---	4.74	
53.49	3.95	43.34	28.93	7.75	19.06	456.00	---	8.00	142.30	---	5.34	
56.22	22.30	79.86	24.75	5.83	17.43	456.00	---	4.11	142.30	---	5.95	
58.96	35.80	105.53	20.63	3.91	15.20	456.00	---	2.98	142.30	---	6.94	
61.69	43.87	99.45	16.51	1.99	16.17	456.00	---	3.09	142.30	---	6.65	
64.42	45.59	102.23	13.21	0.33	10.60	456.00	---	2.99	142.30	---	10.30	
67.15	42.07	97.77	9.90	2.25	9.73	456.00	---	3.16	142.30	---	11.02	
69.88	33.30	81.03	6.60	4.17	12.41	456.00	---	3.92	142.30	---	8.48	
72.62	19.28	48.78	3.30	6.09	15.43	456.00	---	6.80	142.30	---	6.70	
74.6	5.30	13.42	0.95	7.48	19.75	456.00	---	25.74	142.30	---	5.16	
75.35	0.00	0.03	0.06	8.01	21.39	456.00	---	5846.15	142.30	---	4.74	

2F1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	7.33	21.76	456.00	---	N/A	142.30	---	4.69	
0.75	4.84	13.47	1.00	6.80	20.83	456.00	---	25.68	142.30	---	4.93	
2.51	16.21	45.09	3.34	5.57	18.66	456.00	---	7.42	142.30	---	5.57	
5.03	27.97	74.25	6.68	3.80	15.37	456.00	---	4.35	142.30	---	6.87	
7.54	35.29	88.96	10.02	2.03	12.27	456.00	---	3.55	142.30	---	8.76	
10.05	38.18	91.84	13.36	0.26	9.50	456.00	---	3.40	142.30	---	11.49	
12.57	36.61	88.51	16.70	1.56	14.31	456.00	---	3.55	142.30	---	7.54	
15.08	30.47	80.98	19.92	3.33	11.38	456.00	---	3.96	142.30	---	9.33	
17.59	19.88	65.11	23.78	5.10	14.03	456.00	---	5.08	142.30	---	7.44	
20.1	4.85	41.09	27.64	6.86	16.76	456.00	---	8.42	142.30	---	6.12	
22.62	-14.62	13.74	31.50	8.63	19.41	456.00	---	10.67	142.30	---	5.19	
24.38	-31.41	15.04	48.98	9.87	22.26	456.00	---	6.52	142.30	---	4.47	
25.13	-38.57	15.59	56.43	10.40	23.47	456.00	---	5.53	142.30	---	4.22	
25.88	-33.62	15.80	54.03	8.85	22.37	456.00	---	5.87	142.30	---	4.50	
27.36	-23.85	16.21	49.29	5.80	20.21	456.00	---	6.63	142.30	---	5.13	
29.6	-12.64	41.56	42.16	4.23	17.54	456.00	---	8.02	142.30	---	6.00	
31.83	-4.94	59.06	35.02	2.66	14.65	456.00	---	5.86	142.30	---	7.29	
34.07	-0.75	67.92	27.89	1.09	11.77	456.00	---	5.15	142.30	---	9.21	
36.3	-0.07	69.74	24.21	0.48	13.47	456.00	---	5.03	142.30	---	8.09	
38.54	-2.89	69.44	32.57	2.05	9.02	456.00	---	5.01	142.30	---	11.91	
40.77	-9.23	60.13	40.92	3.62	11.77	456.00	---	5.68	142.30	---	8.99	
43.01	-19.07	42.50	49.28	5.19	14.51	456.00	---	6.73	142.30	---	7.19	
45.24	-32.42	17.50	57.64	6.76	17.21	456.00	---	5.52	142.30	---	5.97	
46.73	-43.64	14.36	63.19	10.01	21.51	456.00	---	4.86	142.30	---	4.62	
47.48	-49.29	12.78	65.99	11.65	23.68	456.00	---	4.57	142.30	---	4.13	
48.23	-41.27	12.34	56.57	11.12	23.23	456.00	---	5.47	142.30	---	4.23	
50.26	-19.55	11.16	31.07	9.69	22.03	456.00	---	10.66	142.30	---	4.53	
53.05	4.72	44.14	25.93	7.73	19.73	456.00	---	7.84	142.30	---	5.16	
55.84	23.53	70.85	22.21	5.77	17.02	456.00	---	4.62	142.30	---	6.09	
58.63	36.88	88.28	18.49	3.81	14.20	456.00	---	3.56	142.30	---	7.44	
61.41	44.75	96.57	14.85	1.85	16.66	456.00	---	3.17	142.30	---	6.46	
64.2	46.72	102.38	11.88	0.27	9.57	456.00	---	2.97	142.30	---	11.41	
66.99	43.23	98.98	8.90	2.23	9.56	456.00	---	3.11	142.30	---	11.22	
69.77	34.28	82.44	5.93	4.19	12.32	456.00	---	3.84	142.30	---	8.54	
72.56	19.86	50.02	2.95	6.15	15.39	456.00	---	6.62	142.30	---	6.71	
74.6	5.34	13.46	0.83	7.58	20.28	456.00	---	25.66	142.30	---	5.02	
75.35	0.00	0.02	0.05	8.11	22.08	456.00	---	7015.38	142.30	---	4.59	

2F1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		D						
		D	L+I	L+I	D		L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	7.61	21.95	489.00	---	N/A	149.50	---	4.89	
0.75	5.05	13.52	1.08	7.08	20.99	489.00	---	27.45	149.50	---	5.14	
2.51	16.91	45.25	3.61	5.85	18.73	489.00	---	7.94	149.50	---	5.83	
5.03	29.39	75.49	7.23	4.08	15.62	489.00	---	4.59	149.50	---	7.10	
7.54	37.44	91.79	10.84	2.32	12.66	489.00	---	3.69	149.50	---	8.90	
10.05	41.05	95.61	14.45	0.56	9.89	489.00	---	3.50	149.50	---	11.57	
12.57	40.23	91.00	18.07	1.93	14.34	489.00	---	3.69	149.50	---	7.88	
15.08	33.18	84.09	20.24	3.69	11.74	489.00	---	4.08	149.50	---	9.48	
17.59	21.69	66.63	23.51	5.45	14.65	489.00	---	5.32	149.50	---	7.48	
20.1	5.77	41.05	26.97	7.22	17.34	489.00	---	9.02	149.50	---	6.22	
22.62	-14.57	14.86	30.44	8.98	19.77	489.00	---	11.88	149.50	---	5.36	
24.38	-31.94	16.09	50.50	10.21	22.55	489.00	---	6.82	149.50	---	4.65	
25.13	-39.34	16.62	59.05	10.74	23.73	489.00	---	5.70	149.50	---	4.39	
25.88	-34.49	16.53	56.55	9.01	22.44	489.00	---	6.04	149.50	---	4.72	
27.31	-25.25	16.36	51.79	5.70	19.99	489.00	---	6.78	149.50	---	5.47	
29.49	-14.50	40.99	44.52	4.17	17.41	489.00	---	8.12	149.50	---	6.37	
31.67	-7.09	58.52	37.26	2.64	14.70	489.00	---	6.31	149.50	---	7.64	
33.85	-3.00	67.80	29.99	1.11	11.92	489.00	---	5.50	149.50	---	9.55	
36.03	-2.23	68.37	26.83	0.78	13.10	489.00	---	5.47	149.50	---	8.72	
38.21	-5.60	68.23	35.93	2.31	8.95	489.00	---	5.43	149.50	---	12.59	
40.39	-12.29	59.56	45.04	3.84	11.66	489.00	---	6.11	149.50	---	9.53	
42.57	-22.32	42.44	54.14	5.37	14.44	489.00	---	6.54	149.50	---	7.59	
44.75	-35.68	17.83	63.24	6.90	17.18	489.00	---	5.38	149.50	---	6.29	
46.18	-46.61	14.68	69.20	10.35	21.69	489.00	---	4.76	149.50	---	4.82	
46.93	-52.35	13.03	72.33	12.16	24.06	489.00	---	4.48	149.50	---	4.27	
47.68	-43.98	12.88	61.34	11.63	23.61	489.00	---	5.41	149.50	---	4.38	
49.77	-20.64	12.47	30.73	10.16	22.35	489.00	---	11.57	149.50	---	4.69	
52.61	5.41	44.51	24.74	8.17	20.27	489.00	---	8.33	149.50	---	5.27	
55.45	25.78	74.03	21.52	6.17	17.85	489.00	---	4.73	149.50	---	6.10	
58.3	40.49	95.10	18.35	4.18	15.20	489.00	---	3.53	149.50	---	7.29	
61.14	49.55	105.00	16.27	1.50	10.42	489.00	---	3.11	149.50	---	10.89	
63.98	50.98	109.37	13.02	0.50	10.42	489.00	---	2.97	149.50	---	10.99	
66.82	46.73	104.01	9.76	2.49	10.01	489.00	---	3.17	149.50	---	11.24	
69.66	36.82	84.54	6.50	4.48	12.69	489.00	---	4.01	149.50	---	8.71	
72.51	21.24	49.88	3.24	6.48	15.47	489.00	---	7.12	149.50	---	7.01	
74.6	5.61	13.19	0.90	7.94	19.54	489.00	---	28.08	149.50	---	5.48	
75.35	0.00	0.03	0.06	8.47	21.00	489.00	---	6269.23	149.50	---	5.07	

2F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I					
0	0.00	0.00	0.00	6.28	14.60	489.00	---	N/A	149.50	---	7.45	
0.75	4.10	8.75	0.49	5.79	13.86	489.00	---	42.51	149.50	---	7.88	
2.51	13.73	29.29	1.63	4.64	12.12	489.00	---	12.37	149.50	---	9.11	
5.03	23.33	47.37	3.27	3.00	9.80	489.00	---	7.45	149.50	---	11.43	
7.54	28.82	55.66	4.90	1.36	7.68	489.00	---	6.24	149.50	---	14.80	
10.05	30.18	56.06	6.53	0.28	5.92	489.00	---	6.17	149.50	---	19.38	
12.57	27.45	51.76	8.17	0.71	6.78	489.00	---	6.74	149.50	---	16.86	
15.08	23.61	49.25	10.29	2.35	6.78	489.00	---	7.16	149.50	---	16.62	
17.59	15.65	40.64	12.83	3.99	8.67	489.00	---	8.87	149.50	---	12.80	
20.1	3.58	26.27	15.39	5.63	10.61	489.00	---	14.18	149.50	---	10.31	
22.62	-12.62	8.81	18.30	7.27	12.52	489.00	---	19.87	149.50	---	8.60	
24.38	-26.86	8.54	30.89	8.42	14.91	489.00	---	11.31	149.50	---	7.15	
25.13	-32.93	8.43	36.26	8.91	15.93	489.00	---	9.47	149.50	---	6.66	
25.88	-28.43	9.23	34.53	7.63	14.89	489.00	---	10.07	149.50	---	7.21	
27.25	-20.20	10.70	31.36	5.30	12.99	489.00	---	11.35	149.50	---	8.44	
29.38	-10.41	25.41	26.46	3.92	11.09	489.00	---	13.82	149.50	---	10.02	
31.5	-3.55	35.23	21.57	2.54	9.13	489.00	---	10.58	149.50	---	12.32	
33.63	0.37	39.69	16.67	1.16	7.22	489.00	---	9.47	149.50	---	15.77	
35.75	1.51	39.14	13.41	0.39	8.86	489.00	---	9.57	149.50	---	12.94	
37.88	-0.79	39.68	18.40	1.77	5.42	489.00	---	9.46	149.50	---	20.89	
40	-6.00	35.23	23.60	3.14	7.17	489.00	---	10.51	149.50	---	15.60	
42.13	-14.14	25.50	28.80	4.52	9.03	489.00	---	12.57	149.50	---	12.23	
44.25	-25.19	10.92	34.00	5.89	10.89	489.00	---	10.32	149.50	---	10.02	
45.63	-34.24	8.66	37.37	8.03	13.82	489.00	---	9.15	149.50	---	7.74	
46.38	-39.16	7.43	39.20	9.20	15.41	489.00	---	8.60	149.50	---	6.87	
47.13	-32.94	8.06	33.61	8.73	14.96	489.00	---	10.21	149.50	---	7.11	
49.27	-15.18	9.85	17.67	7.37	13.66	489.00	---	20.43	149.50	---	7.88	
52.17	3.47	28.00	13.96	5.55	11.69	489.00	---	13.31	149.50	---	9.36	
55.07	16.78	41.72	11.13	3.72	9.68	489.00	---	8.61	149.50	---	11.50	
57.96	24.76	49.21	8.39	1.89	7.74	489.00	---	7.14	149.50	---	14.61	
60.86	29.04	50.65	6.26	2.44	10.54	489.00	---	6.85	149.50	---	10.68	
63.76	33.53	56.39	5.00	0.66	7.75	489.00	---	6.08	149.50	---	14.75	
66.66	32.87	57.50	3.75	1.12	5.72	489.00	---	5.97	149.50	---	19.91	
69.55	27.06	50.06	2.50	2.89	6.88	489.00	---	6.97	149.50	---	16.30	
72.45	16.10	31.59	1.25	4.67	8.99	489.00	---	11.40	149.50	---	12.27	
74.6	4.16	8.18	0.38	5.99	12.65	489.00	---	45.45	149.50	---	8.62	
75.35	0.00	0.02	0.07	6.45	13.93	489.00	---	5373.63	149.50	---	7.79	

2F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

2F1	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		From Rear (Ft)	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
Stringer F2A-2	0	0.00	0.00	0.00	6.99	13.22	1212.51	---	N/A	149.61	---	8.18
	0.75	4.73	8.50	0.52	6.57	12.90	1212.51	---	109.12	149.61	---	8.41
	2.51	15.82	28.46	1.75	5.60	12.15	1212.51	---	32.22	149.61	---	9.01
	5.03	28.16	50.76	3.49	4.21	10.87	1212.51	---	17.82	149.61	---	10.20
	7.54	37.00	65.71	5.24	2.83	9.43	1212.51	---	13.63	149.61	---	11.90
	10.05	42.36	72.90	6.99	1.44	7.91	1212.51	---	12.21	149.61	---	14.37
	12.57	44.23	77.61	8.73	0.85	6.47	1212.51	---	11.45	149.61	---	17.66
	15.08	40.35	74.03	6.99	2.23	6.81	1212.51	---	12.05	149.61	---	16.57
	17.59	32.99	59.28	5.24	3.62	8.41	1212.51	---	15.18	149.61	---	13.25
	20.1	22.15	37.58	3.49	5.01	10.08	1212.51	---	24.23	149.61	---	10.92
22.62	7.81	17.93	1.75	6.40	11.60	1212.51	---	51.58	149.61	---	9.37	
24.38	2.33	5.36	0.52	7.37	12.85	1212.51	---	173.65	149.61	---	8.38	
Stringer F2B-2	25.13	0.00	0.00	0.00	7.79	13.38	1212.51	---	N/A	149.61	---	8.02
	25.88	3.02	7.88	5.79	6.53	12.57	1212.51	---	117.92	149.61	---	8.64
	27.22	8.41	21.97	16.14	4.29	11.11	1212.51	---	42.07	149.61	---	9.97
	29.3	16.15	37.96	15.58	3.14	9.62	1212.51	---	24.15	149.61	---	11.64
	31.39	21.50	48.03	15.03	2.00	8.14	1212.51	---	18.97	149.61	---	13.89
	33.47	24.46	52.84	14.48	0.85	6.74	1212.51	---	17.19	149.61	---	16.95
	35.56	25.20	54.63	13.92	0.22	4.48	1212.51	---	16.61	149.61	---	25.64
	37.64	23.54	53.09	11.14	1.36	5.61	1212.51	---	17.12	149.61	---	20.27
	39.73	19.51	42.82	8.36	2.50	7.15	1212.51	---	21.33	149.61	---	15.75
	41.81	13.11	27.17	5.57	3.64	8.75	1212.51	---	33.85	149.61	---	12.74
43.9	4.34	11.91	2.79	4.78	10.21	1212.51	---	77.95	149.61	---	10.80	
45.23	1.56	4.29	1.01	7.15	11.85	1212.51	---	216.82	149.61	---	9.11	
45.98	0.00	0.00	0.00	8.49	12.77	1212.51	---	N/A	149.61	---	8.35	
Stringer F2C-2	46.73	5.49	8.09	3.66	8.09	12.49	1212.51	---	114.59	149.61	---	8.57
	48.92	21.51	31.72	14.35	6.94	11.67	1212.51	---	28.73	149.61	---	9.27
	51.86	39.55	57.27	15.54	5.38	10.58	1212.51	---	15.60	149.61	---	10.37
	54.8	52.95	76.35	16.73	3.82	9.45	1212.51	---	11.52	149.61	---	11.77
	57.74	61.74	87.96	17.92	2.26	8.23	1212.51	---	9.90	149.61	---	13.71
	60.68	67.58	91.43	19.12	0.89	6.88	1212.51	---	9.46	149.61	---	16.60
	63.62	63.06	86.37	15.34	2.33	6.95	1212.51	---	10.07	149.61	---	16.22
	66.56	53.97	72.16	11.51	3.85	8.09	1212.51	---	12.18	149.61	---	13.75
	69.5	40.45	51.23	7.67	5.36	8.95	1212.51	---	17.42	149.61	---	12.26
	72.44	22.48	26.21	3.83	6.87	9.50	1212.51	---	34.73	149.61	---	11.39
74.63	5.77	6.75	0.98	7.99	9.65	1212.51	---	137.26	149.61	---	11.10	
75.38	0.05	0.09	0.01	8.38	9.70	1212.51	---	10362.78	149.61	---	11.00	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
3F1	Stringer F1A-1	0	0.00	0.08	0.02	7.85	18.11	643.98	---	6192.12	207.62	---	8.39
		0.75	5.26	11.38	0.84	7.39	17.59	643.98	---	43.06	207.62	---	8.66
		2.75	19.30	41.52	3.01	6.17	16.21	643.98	---	11.47	207.62	---	9.47
		5.51	33.98	72.54	6.03	4.51	14.23	643.98	---	6.36	207.62	---	10.91
		8.26	44.12	92.91	9.04	2.86	12.23	643.98	---	4.86	207.62	---	12.82
		11.01	49.75	105.90	12.06	1.23	10.20	643.98	---	4.21	207.62	---	15.54
		13.76	50.89	113.87	15.11	0.40	8.05	643.98	---	3.90	207.62	---	19.79
		16.52	47.10	103.49	12.12	2.18	10.56	643.98	---	4.33	207.62	---	14.92
		19.27	38.91	86.71	9.09	3.77	12.48	643.98	---	5.26	207.62	---	12.50
		22.02	26.36	56.65	6.06	5.35	15.10	643.98	---	8.28	207.62	---	10.22
	24.77	9.49	25.84	3.03	6.91	16.93	643.98	---	18.80	207.62	---	9.03	
	26.78	2.58	7.02	0.82	8.05	14.99	643.98	---	70.18	207.62	---	10.12	
	27.53	0.00	0.00	0.00	8.47	14.27	643.98	---	N/A	207.62	---	10.60	
	28.28	2.70	9.75	8.43	7.08	14.13	643.98	---	50.51	207.62	---	10.80	
	29.61	7.49	27.05	23.39	4.62	13.88	643.98	---	18.04	207.62	---	11.17	
	31.69	15.88	46.83	23.52	3.46	12.06	643.98	---	10.24	207.62	---	12.96	
	33.77	21.88	59.58	23.64	2.30	10.28	643.98	---	7.95	207.62	---	15.31	
	35.84	25.47	68.08	23.77	1.16	9.27	643.98	---	6.90	207.62	---	17.10	
	37.92	26.70	74.63	23.86	0.24	7.47	643.98	---	6.28	207.62	---	21.35	
	40	26.02	68.49	19.09	0.89	9.27	643.98	---	6.85	207.62	---	17.13	
42.08	22.99	59.30	14.32	2.02	10.07	643.98	---	7.97	207.62	---	15.66		
44.16	17.63	46.04	9.55	3.13	11.85	643.98	---	10.38	207.62	---	13.21		
46.24	9.97	25.70	4.78	4.24	13.15	643.98	---	18.89	207.62	---	11.82		
47.57	3.59	9.27	1.72	4.94	12.53	643.98	---	53.07	207.62	---	12.35		
48.32	0.00	0.00	0.00	5.34	12.18	643.98	---	N/A	207.62	---	12.67		
3F1	Stringer S1-1	0	0.00	0.05	0.08	7.58	23.51	531.00	---	5105.77	165.00	---	5.08
		0.75	4.95	13.90	0.74	7.04	23.13	531.00	---	29.04	165.00	---	5.18
		2.7	17.83	49.90	2.47	5.62	22.14	531.00	---	7.83	165.00	---	5.48
		5.41	30.39	79.37	4.95	3.67	17.51	531.00	---	4.76	165.00	---	7.04
		8.11	37.69	92.82	7.44	1.74	13.26	531.00	---	3.99	165.00	---	9.44
		10.81	39.80	97.47	9.92	0.18	12.68	531.00	---	3.78	165.00	---	10.00
		13.52	36.73	91.77	12.37	1.95	11.92	531.00	---	4.88	165.00	---	10.48
		16.22	28.90	74.23	16.20	3.84	12.02	531.00	---	5.11	165.00	---	10.24
		18.92	15.98	60.60	20.86	5.72	17.94	531.00	---	6.48	165.00	---	6.76
		21.62	-2.00	43.25	25.69	7.58	18.16	531.00	---	9.40	165.00	---	6.57
		24.33	-25.01	15.99	33.28	9.44	20.21	531.00	---	11.52	165.00	---	5.81
		26.28	-45.26	4.85	44.99	10.77	22.73	243.03	---	3.15	248.02	---	7.92
		27.03	-53.05	0.57	49.50	11.28	23.70	243.03	---	2.70	248.02	---	7.57
		27.78	-46.17	1.24	46.04	10.28	21.58	243.03	---	3.06	248.02	---	8.40
		29.16	-33.52	2.48	39.68	8.47	17.45	531.00	---	9.45	165.00	---	6.79
		31.28	-17.04	25.19	32.89	7.04	15.41	531.00	---	11.90	165.00	---	7.78
		33.4	-3.61	38.90	26.10	5.61	12.64	531.00	---	10.41	165.00	---	9.60
		35.53	6.80	47.84	19.31	4.19	10.06	531.00	---	8.40	165.00	---	12.20
		37.65	14.16	44.39	12.53	2.77	16.37	531.00	---	6.88	165.00	---	7.58
		39.78	17.30	51.45	10.02	0.78	10.46	531.00	---	7.60	165.00	---	12.06
41.9	17.45	50.52	7.52	0.63	8.12	531.00	---	7.74	165.00	---	15.55		
44.03	14.61	44.64	5.01	2.04	10.98	531.00	---	8.82	165.00	---	11.37		
46.15	8.80	28.64	2.51	3.44	14.07	531.00	---	13.95	165.00	---	8.78		
47.53	3.10	10.08	0.88	4.34	15.88	202.98	---	15.18	195.68	---	9.20		
48.28	0.00	0.00	0.00	4.83	16.87	202.98	---	N/A	195.68	---	8.64		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		C* (k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
		D	L+I	L+I	D							L+I
0	0.00	0.03	0.08	7.45	27.90	456.00	---	4384.62	142.30	---	3.66	
0.75	4.88	18.25	1.48	6.92	27.21	456.00	---	18.95	142.30	---	3.77	
2.65	17.25	64.40	5.02	5.58	25.46	456.00	---	5.18	142.30	---	4.08	
5.3	29.57	107.08	10.06	3.72	21.10	456.00	---	3.00	142.30	---	5.01	
7.94	36.96	130.63	15.10	1.86	16.49	456.00	---	2.40	142.30	---	6.53	
10.59	39.42	137.52	20.14	0.00	14.53	456.00	---	2.26	142.30	---	7.53	
13.24	36.95	136.61	25.19	2.19	24.62	456.00	---	2.36	142.30	---	4.36	
15.89	28.69	108.39	32.17	4.05	17.12	456.00	---	2.97	142.30	---	6.16	
18.54	15.50	88.71	39.16	5.91	23.66	456.00	---	3.78	142.30	---	4.38	
21.18	-2.62	60.64	46.14	7.78	25.27	456.00	---	5.74	142.30	---	4.02	
23.83	-25.67	22.08	53.13	9.64	28.33	456.00	---	6.12	142.30	---	3.52	
25.73	-45.74	7.05	70.02	10.57	30.50	310.20	---	2.75	264.09	---	6.28	
26.48	-53.66	1.12	76.69	11.50	31.48	310.20	---	2.41	264.09	---	6.09	
27.23	-46.62	2.38	72.36	10.54	30.45	310.20	---	2.65	264.09	---	6.33	
28.66	-33.19	4.77	64.09	8.63	28.50	456.00	---	4.96	142.30	---	3.54	
30.84	-16.05	42.32	56.26	7.09	24.51	456.00	---	5.95	142.30	---	4.18	
33.02	-2.26	70.27	48.42	5.56	20.75	456.00	---	4.96	142.30	---	5.01	
35.2	8.19	87.14	40.59	4.03	17.61	456.00	---	3.93	142.30	---	5.99	
37.38	15.30	100.99	32.78	2.49	24.78	456.00	---	5.22	142.30	---	4.32	
39.56	18.92	104.09	26.22	0.90	12.46	456.00	---	3.19	142.30	---	8.71	
41.74	19.20	97.60	19.66	0.64	15.19	456.00	---	3.40	142.30	---	7.16	
43.92	16.14	80.69	13.11	2.17	19.27	456.00	---	4.15	142.30	---	5.57	
46.1	9.74	49.33	6.55	3.70	23.56	456.00	---	6.91	142.30	---	4.49	
47.53	3.35	16.97	2.25	4.71	25.34	274.71	---	12.25	214.50	---	6.32	
48.28	0.00	0.00	0.00	5.24	26.28	274.71	---	N/A	214.50	---	6.08	
0	0.00	0.04	0.09	7.04	26.36	390.00	---	3333.33	123.50	---	3.34	
0.75	4.61	17.11	1.58	6.52	25.58	390.00	---	17.26	123.50	---	3.46	
2.59	15.91	58.99	5.22	5.24	23.68	390.00	---	4.82	123.50	---	3.79	
5.19	27.17	99.67	10.46	3.44	19.70	390.00	---	2.74	123.50	---	4.65	
7.78	33.76	122.04	15.71	1.64	15.48	390.00	---	2.18	123.50	---	6.03	
10.37	35.69	129.36	20.95	0.15	14.67	390.00	---	2.04	123.50	---	6.47	
12.96	32.97	126.42	26.20	2.03	24.45	390.00	---	2.11	123.50	---	3.80	
15.56	25.38	108.76	32.65	3.83	17.35	390.00	---	2.67	123.50	---	5.25	
18.15	13.12	85.43	39.15	5.63	23.88	390.00	---	3.36	123.50	---	3.74	
20.74	-3.81	57.23	45.65	7.43	25.05	390.00	---	5.18	123.50	---	3.50	
23.34	-25.39	20.04	52.15	9.22	28.03	390.00	---	5.27	123.50	---	3.06	
25.18	-44.02	7.15	70.24	10.38	28.39	331.59	---	3.00	224.82	---	5.72	
25.93	-51.61	1.89	77.62	11.02	28.52	331.59	---	2.62	224.82	---	5.68	
26.68	-44.62	3.15	74.19	10.16	28.36	331.59	---	2.84	224.82	---	5.74	
28.16	-30.82	5.64	67.41	8.53	28.09	390.00	---	3.99	123.50	---	3.08	
30.4	-13.49	50.25	59.60	6.98	25.33	390.00	---	4.82	123.50	---	3.47	
32.63	0.37	82.46	51.61	5.43	22.68	390.00	---	3.63	123.50	---	3.95	
34.87	10.77	102.25	43.90	3.88	18.35	390.00	---	2.83	123.50	---	4.97	
37.1	17.73	108.69	36.19	2.33	23.70	390.00	---	2.00	123.50	---	3.91	
39.34	27.11	111.18	28.94	0.74	13.10	390.00	---	2.51	123.50	---	7.20	
41.57	21.02	104.02	21.70	0.81	15.37	390.00	---	2.68	123.50	---	6.13	
43.81	17.47	84.21	14.46	2.36	19.62	390.00	---	3.36	123.50	---	4.72	
46.04	10.46	51.05	7.22	3.91	23.78	390.00	---	5.67	123.50	---	3.83	
47.53	3.50	17.09	2.42	4.94	25.55	339.21	---	15.06	226.88	---	6.64	
48.28	0.00	0.00	0.00	5.46	26.44	339.21	---	N/A	226.88	---	6.39	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		(k-ft)						
	D	L+I	L+I	D	L+I							
3F1 Stringer S4-1	0	0.00	0.03	0.06	6.91	28.13	390.00	---	5000.00	123.50	---	3.13
	0.75	4.52	17.78	1.73	6.39	27.11	390.00	---	16.62	123.50	---	3.27
	2.54	15.30	60.13	5.73	5.15	24.66	390.00	---	4.73	123.50	---	3.64
	5.08	26.13	100.63	11.48	3.39	20.06	390.00	---	2.72	123.50	---	4.57
	7.61	32.49	121.11	17.22	1.63	15.39	390.00	---	2.21	123.50	---	6.07
	10.15	34.39	128.04	22.97	0.13	12.74	390.00	---	2.07	123.50	---	7.45
	12.69	31.83	124.94	28.72	2.24	25.02	390.00	---	2.15	123.50	---	3.71
	15.23	23.91	108.57	35.37	4.00	18.28	390.00	---	2.54	123.50	---	4.98
	17.76	11.52	87.46	42.02	5.76	20.50	390.00	---	3.30	123.50	---	4.35
	20.3	-5.34	52.77	48.67	7.52	25.21	390.00	---	5.58	123.50	---	3.47
	22.84	-26.66	7.39	55.32	9.28	29.28	390.00	---	4.94	123.50	---	2.93
	24.63	-44.83	4.03	72.62	10.52	29.34	390.00	---	3.51	123.50	---	2.88
	25.38	-52.45	2.62	79.87	11.04	29.37	390.00	---	3.10	123.50	---	2.86
	26.13	-45.25	4.56	76.67	10.31	29.13	390.00	---	3.32	123.50	---	2.91
	27.67	-30.46	8.54	70.09	8.81	28.64	390.00	---	3.85	123.50	---	3.01
	29.96	-12.11	49.45	61.74	7.22	24.69	390.00	---	4.66	123.50	---	3.56
	32.25	2.61	79.89	53.39	5.63	21.19	390.00	---	3.72	123.50	---	4.22
	34.54	13.69	98.29	45.04	4.05	17.69	390.00	---	2.91	123.50	---	5.14
	36.83	21.14	111.98	36.69	2.46	23.85	390.00	---	2.49	123.50	---	3.88
	39.12	24.18	114.31	29.35	0.53	12.73	390.00	---	2.41	123.50	---	7.42
41.41	23.58	106.94	22.01	1.05	15.73	390.00	---	2.58	123.50	---	5.97	
43.7	19.35	87.11	14.67	2.64	19.50	390.00	---	3.22	123.50	---	4.74	
45.99	11.49	52.40	7.34	4.23	23.82	390.00	---	5.51	123.50	---	3.81	
47.53	3.76	17.16	2.40	5.29	25.64	390.00	---	17.26	123.50	---	3.50	
48.28	0.00	0.00	0.00	5.81	26.52	390.00	---	N/A	123.50	---	3.36	
3F1 Stringer S5-1	0	0.00	0.05	0.10	6.59	24.87	389.64	---	2997.23	299.22	---	8.99
	0.75	4.31	15.70	1.87	6.08	23.92	389.64	---	18.82	299.22	---	9.37
	2.48	14.25	51.80	5.94	4.89	21.73	369.00	---	5.20	145.70	---	4.93
	4.97	24.29	93.47	11.92	3.20	19.13	369.00	---	2.78	145.70	---	5.69
	7.45	30.12	119.91	17.89	1.50	17.82	369.00	---	2.12	145.70	---	6.21
	9.93	31.74	129.05	23.86	0.20	12.72	369.00	---	1.95	145.70	---	8.80
	12.41	29.14	114.80	29.82	2.30	12.50	369.00	---	2.22	145.70	---	8.78
	14.9	21.33	99.50	36.55	3.99	18.47	369.00	---	2.64	145.70	---	5.85
	17.38	9.31	81.20	43.71	5.69	23.64	369.00	---	3.38	145.70	---	4.50
	19.86	-6.92	53.09	50.86	7.39	25.34	369.00	---	5.22	145.70	---	4.13
	22.34	-27.36	18.42	58.01	9.08	27.74	369.00	---	4.42	145.70	---	3.71
	24.08	-44.62	6.65	72.01	10.27	28.33	369.00	---	3.32	145.70	---	3.59
	24.83	-52.06	1.58	78.04	10.78	28.58	369.00	---	2.97	145.70	---	3.54
	25.58	-44.76	3.89	74.18	10.18	28.54	369.00	---	3.22	145.70	---	3.57
	27.17	-29.27	8.78	65.99	8.92	28.47	369.00	---	3.86	145.70	---	3.62
	29.52	-10.25	50.14	57.93	7.31	24.80	369.00	---	4.72	145.70	---	4.22
	31.86	5.02	81.31	49.88	5.71	21.21	369.00	---	3.43	145.70	---	5.01
	34.21	16.53	100.25	41.83	4.11	17.64	369.00	---	2.67	145.70	---	6.12
	36.55	24.25	112.19	33.80	2.51	23.84	369.00	---	2.31	145.70	---	4.60
	38.9	26.91	115.49	27.04	0.33	12.32	369.00	---	2.22	145.70	---	9.07
41.24	25.82	108.52	20.29	1.27	15.65	369.00	---	2.38	145.70	---	7.08	
43.59	20.97	89.35	13.53	2.87	19.19	369.00	---	2.94	145.70	---	5.69	
45.93	12.37	53.18	6.77	4.47	23.60	369.00	---	5.10	145.70	---	4.56	
47.53	3.95	16.97	2.16	5.56	25.59	369.00	---	16.49	145.70	---	4.16	
48.28	0.00	0.00	0.00	6.07	26.53	369.00	---	N/A	145.70	---	4.00	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
3F1 Stringer S6-1	0	0.00	0.04	0.10	4.88	17.12	369.00	---	2838.46	145.70	---	6.26
	0.75	3.13	10.14	0.86	4.46	16.18	369.00	---	27.69	145.70	---	6.65
	2.43	10.15	32.76	2.55	3.51	14.07	369.00	---	8.35	145.70	---	7.72
	4.86	16.98	53.25	5.11	2.12	11.14	369.00	---	5.01	145.70	---	9.87
	7.28	20.44	61.26	7.67	0.73	8.31	369.00	---	4.30	145.70	---	13.40
	9.71	20.50	62.89	10.24	0.68	9.43	369.00	---	4.19	145.70	---	11.81
	12.14	17.14	56.90	12.82	0.98	8.55	369.00	---	4.69	145.70	---	12.99
	14.57	13.02	53.97	18.52	2.42	9.51	369.00	---	5.02	145.70	---	11.53
	16.99	5.40	45.60	24.44	3.86	11.43	369.00	---	6.11	145.70	---	9.47
	19.42	-5.71	29.79	30.43	5.30	14.56	369.00	---	9.14	145.70	---	7.33
	21.85	-20.36	6.32	36.42	6.76	17.06	369.00	---	7.23	145.70	---	6.17
	23.53	-32.91	2.20	43.19	7.86	14.81	369.00	---	5.81	145.70	---	7.04
	24.28	-38.51	0.36	46.21	8.35	13.80	369.00	---	5.31	145.70	---	7.52
	25.03	-32.79	1.72	42.30	7.89	14.97	369.00	---	5.94	145.70	---	6.96
	26.68	-20.21	4.70	33.69	6.89	17.54	369.00	---	7.83	145.70	---	6.00
	29.08	-5.43	29.42	29.03	5.43	15.20	369.00	---	9.46	145.70	---	7.02
	31.48	5.83	47.03	24.37	3.95	12.70	369.00	---	5.91	145.70	---	8.51
	33.88	13.54	57.18	19.73	2.47	10.07	369.00	---	4.73	145.70	---	10.88
	36.28	17.72	60.90	15.08	2.28	15.65	369.00	---	4.37	145.70	---	7.02
	38.68	21.39	66.86	12.07	0.78	9.90	369.00	---	3.93	145.70	---	11.24
41.08	21.46	64.73	9.05	0.72	9.21	369.00	---	4.05	145.70	---	12.09	
43.48	17.93	55.75	6.04	2.22	11.86	369.00	---	4.77	145.70	---	9.26	
45.88	10.78	34.07	3.02	3.74	14.81	369.00	---	8.01	145.70	---	7.32	
47.53	3.37	10.65	0.94	4.78	16.74	369.00	---	26.34	145.70	---	6.41	
48.28	0.00	0.00	0.00	5.25	17.61	369.00	---	N/A	145.70	---	6.07	
3F1 Stringer F2A-1	0	0.00	0.13	0.04	6.23	12.66	1212.51	---	7174.62	149.61	---	8.60
	0.75	4.25	8.57	1.18	5.86	12.54	1212.51	---	108.32	149.61	---	8.71
	2.39	13.54	27.03	3.67	5.05	12.28	1212.51	---	34.01	149.61	---	8.96
	4.79	24.20	50.31	7.34	3.85	11.48	1212.51	---	18.06	149.61	---	9.69
	7.18	31.96	69.60	11.01	2.64	10.39	1212.51	---	12.94	149.61	---	10.82
	9.57	36.82	82.26	14.67	1.42	9.46	1212.51	---	10.89	149.61	---	12.02
	11.97	38.72	92.57	18.38	0.17	8.28	1212.51	---	9.66	149.61	---	13.88
	14.36	35.43	83.31	14.74	2.01	9.67	1212.51	---	10.77	149.61	---	11.69
	16.76	29.13	69.61	11.05	3.26	11.30	1212.51	---	12.98	149.61	---	9.90
	19.15	19.82	46.77	7.37	4.52	13.46	1212.51	---	19.52	149.61	---	8.21
	21.54	7.48	21.00	3.68	5.79	15.41	1212.51	---	44.06	149.61	---	7.09
	23.19	2.34	6.56	1.15	6.81	12.61	1212.51	---	141.77	149.61	---	8.59
	23.94	0.00	0.00	0.00	7.27	11.33	1212.51	---	N/A	149.61	---	9.52
	24.69	4.17	10.74	5.80	6.87	12.56	1212.51	---	86.42	149.61	---	8.62
	26.37	13.50	34.81	18.80	5.96	15.31	1212.51	---	26.41	149.61	---	7.13
	28.81	26.44	63.47	19.78	4.64	13.70	1212.51	---	14.28	149.61	---	8.06
	31.25	36.14	84.38	20.75	3.31	11.89	1212.51	---	10.63	149.61	---	9.40
	33.69	42.59	95.83	21.73	1.98	10.45	1212.51	---	9.29	149.61	---	10.82
	36.13	45.79	105.81	22.67	0.34	8.45	1212.51	---	8.38	149.61	---	13.58
	38.56	43.30	98.29	18.13	1.70	10.50	1212.51	---	9.05	149.61	---	10.80
41	37.49	86.49	13.60	3.06	12.05	1212.51	---	10.35	149.61	---	9.30	
43.44	28.36	66.42	9.06	4.44	14.17	1212.51	---	13.62	149.61	---	7.81	
45.88	15.86	36.83	4.53	5.82	16.18	1212.51	---	24.89	149.61	---	6.75	
47.57	4.88	11.32	1.39	6.78	15.75	1212.51	---	81.96	149.61	---	6.88	
48.32	0.00	0.00	0.00	7.21	15.56	1212.51	---	N/A	149.61	---	6.93	
3F1 Stringer F2B-1	0	0.00	0.13	0.04	6.23	12.66	1212.51	---	7174.62	149.61	---	8.60
	0.75	4.25	8.57	1.18	5.86	12.54	1212.51	---	108.32	149.61	---	8.71
	2.39	13.54	27.03	3.67	5.05	12.28	1212.51	---	34.01	149.61	---	8.96
	4.79	24.20	50.31	7.34	3.85	11.48	1212.51	---	18.06	149.61	---	9.69
	7.18	31.96	69.60	11.01	2.64	10.39	1212.51	---	12.94	149.61	---	10.82
	9.57	36.82	82.26	14.67	1.42	9.46	1212.51	---	10.89	149.61	---	12.02
	11.97	38.72	92.57	18.38	0.17	8.28	1212.51	---	9.66	149.61	---	13.88
	14.36	35.43	83.31	14.74	2.01	9.67	1212.51	---	10.77	149.61	---	11.69
	16.76	29.13	69.61	11.05	3.26	11.30	1212.51	---	12.98	149.61	---	9.90
	19.15	19.82	46.77	7.37	4.52	13.46	1212.51	---	19.52	149.61	---	8.21
	21.54	7.48	21.00	3.68	5.79	15.41	1212.51	---	44.06	149.61	---	7.09
	23.19	2.34	6.56	1.15	6.81	12.61	1212.51	---	141.77	149.61	---	8.59

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

3F1	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		From Rear (Ft)	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
Stringer F1A-2	0	0.00	0.00	0.00	6.31	14.74	643.98	---	N/A	207.62	---	10.41
	0.75	4.24	9.45	0.90	5.92	14.38	643.98	---	52.00	207.62	---	10.70
	2.51	14.20	31.61	3.01	4.99	13.52	643.98	---	15.22	207.62	---	11.44
	5.03	25.09	57.32	6.02	3.67	12.01	643.98	---	8.20	207.62	---	12.99
	7.54	32.67	75.44	9.03	2.36	10.29	643.98	---	6.13	207.62	---	15.29
	10.05	36.93	86.54	12.04	1.04	9.54	643.98	---	5.30	207.62	---	16.63
	12.57	37.89	96.18	15.05	0.48	5.30	643.98	---	4.76	207.62	---	30.04
	15.08	35.03	85.92	12.04	1.79	9.55	643.98	---	5.36	207.62	---	16.54
	17.59	28.86	71.10	9.03	3.11	10.43	643.98	---	6.56	207.62	---	15.01
	20.1	19.39	46.53	6.02	4.43	12.59	643.98	---	10.23	207.62	---	12.33
	22.62	6.60	22.05	3.01	5.75	14.19	643.98	---	22.17	207.62	---	10.85
	24.38	1.97	6.59	0.90	6.68	12.91	643.98	---	74.89	207.62	---	11.86
Stringer F1B-2	25.13	0.00	0.00	0.00	7.07	12.36	643.98	---	N/A	207.62	---	12.35
	25.88	3.46	8.88	5.49	6.33	12.46	643.98	---	55.41	207.62	---	12.31
	27.58	11.29	29.00	17.93	4.64	12.68	643.98	---	16.69	207.62	---	12.23
	30.02	21.06	52.53	18.47	3.34	11.17	643.98	---	9.03	207.62	---	14.00
	32.47	27.67	69.38	19.02	2.05	9.76	643.98	---	6.74	207.62	---	16.15
	34.91	31.13	79.26	19.71	0.75	8.99	643.98	---	5.86	207.62	---	17.68
	37.36	31.13	87.24	20.37	0.03	7.38	643.98	---	5.32	207.62	---	21.64
	39.81	29.45	78.80	16.30	1.34	9.03	643.98	---	5.91	207.62	---	17.54
	42.25	24.58	66.23	12.22	2.65	10.02	643.98	---	7.11	207.62	---	15.67
	44.7	16.51	43.93	8.14	3.95	12.42	643.98	---	10.90	207.62	---	12.54
	47.14	5.25	20.17	4.07	5.26	14.33	643.98	---	24.30	207.62	---	10.78
	48.84	1.61	6.17	1.25	6.73	11.78	643.98	---	79.97	207.62	---	12.99
49.59	0.00	0.00	0.00	7.38	10.65	643.98	---	N/A	207.62	---	14.30	
Stringer F1C-2	50.34	4.55	10.32	5.40	6.97	11.87	643.98	---	47.57	207.62	---	12.87
	52.17	15.64	35.49	18.57	5.96	14.85	643.98	---	13.52	207.62	---	10.35
	54.75	29.24	64.41	19.55	4.54	13.44	643.98	---	7.24	207.62	---	11.55
	57.33	39.22	84.84	20.54	3.12	11.55	643.98	---	5.38	207.62	---	13.56
	59.91	45.57	96.11	21.52	1.70	10.01	643.98	---	4.68	207.62	---	15.78
	62.49	46.97	106.53	22.52	0.09	8.11	643.98	---	4.21	207.62	---	19.68
	65.07	45.18	98.49	18.07	1.45	10.04	643.98	---	4.57	207.62	---	15.76
	67.65	39.55	87.11	13.55	2.91	11.33	643.98	---	5.23	207.62	---	13.84
	70.23	30.15	66.95	9.03	4.38	13.34	643.98	---	6.95	207.62	---	11.64
	72.81	16.97	37.46	4.51	5.84	15.13	643.98	---	12.77	207.62	---	10.17
	74.64	4.93	10.95	1.33	6.88	14.73	643.98	---	44.80	207.62	---	10.37
	75.39	0.00	0.08	0.02	7.31	14.57	643.98	---	6192.12	207.62	---	10.46

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V							
0	0.00	0.00	0.00	6.60	17.30	202.98	---	N/A	195.68	---	8.32
0.75	4.34	10.10	0.47	6.11	16.31	202.98	---	15.03	195.68	---	8.65
2.51	14.53	33.81	1.56	4.96	13.99	531.00	---	11.65	165.00	---	8.72
5.03	24.92	57.83	3.11	3.32	11.91	531.00	---	6.63	165.00	---	10.38
7.54	31.19	70.59	4.67	1.67	11.38	531.00	---	5.34	165.00	---	11.01
10.05	33.33	73.46	6.23	0.03	9.18	531.00	---	5.11	165.00	---	13.82
12.57	31.33	53.92	7.79	1.63	14.94	531.00	---	6.99	165.00	---	8.39
15.08	25.18	47.42	12.77	3.27	9.91	531.00	---	8.08	165.00	---	12.48
17.59	14.91	39.99	18.18	4.91	14.48	531.00	---	9.84	165.00	---	8.43
20.1	0.50	28.61	23.60	6.55	14.96	531.00	---	14.26	165.00	---	8.05
22.62	-18.04	11.68	32.05	8.20	16.51	531.00	---	12.18	165.00	---	7.19
24.38	-33.96	9.77	41.33	9.35	18.14	209.58	---	3.08	254.41	---	10.27
25.13	-40.75	8.95	45.29	9.84	18.83	209.58	---	2.66	254.41	---	9.87
25.88	-35.15	8.49	41.86	8.85	18.25	209.58	---	3.01	254.41	---	10.24
27.53	-22.82	7.47	34.37	6.68	16.97	531.00	---	11.24	165.00	---	7.09
29.93	-8.68	33.21	28.05	5.10	15.16	531.00	---	12.04	165.00	---	8.04
32.33	1.68	51.49	21.83	3.52	12.58	531.00	---	7.90	165.00	---	9.81
34.73	8.25	60.47	15.60	1.93	9.23	531.00	---	6.62	165.00	---	13.59
37.13	10.67	47.28	10.58	0.85	12.70	531.00	---	8.41	165.00	---	9.93
39.53	6.73	44.27	17.98	2.44	9.33	531.00	---	9.07	165.00	---	13.36
41.93	-1.03	39.99	26.20	4.03	14.36	531.00	---	10.19	165.00	---	8.56
44.33	-12.62	28.64	34.42	5.63	14.79	531.00	---	11.50	165.00	---	8.20
46.73	-28.03	12.45	42.64	7.22	16.53	531.00	---	8.92	165.00	---	7.24
48.38	-41.26	9.31	43.71	9.81	21.27	217.53	---	2.54	257.15	---	8.84
49.13	-47.28	7.88	52.93	10.99	23.43	217.53	---	2.27	257.15	---	7.97
49.88	-39.70	7.85	45.95	10.48	22.52	217.53	---	2.78	257.15	---	8.32
51.75	-20.79	7.87	28.55	9.20	20.24	531.00	---	13.58	165.00	---	5.82
54.37	1.06	42.66	24.22	7.42	18.19	531.00	---	9.35	165.00	---	6.57
57	18.27	71.86	19.93	5.63	17.80	531.00	---	5.43	165.00	---	6.81
59.62	30.84	87.75	15.69	3.85	12.52	531.00	---	4.30	165.00	---	9.83
62.24	37.41	86.63	12.23	1.89	18.79	531.00	---	4.28	165.00	---	6.65
64.86	39.51	92.06	9.79	0.11	12.36	531.00	---	4.01	165.00	---	10.26
67.48	36.81	88.08	7.34	1.94	10.87	531.00	---	4.22	165.00	---	11.50
70.11	29.33	75.33	4.89	3.77	14.62	531.00	---	5.03	165.00	---	8.42
72.73	17.05	47.04	2.43	5.60	18.11	531.00	---	8.32	165.00	---	6.70
74.6	4.88	13.50	0.75	6.91	20.58	531.00	---	29.89	165.00	---	5.93
75.35	0.00	0.05	0.08	7.43	21.57	531.00	---	5105.77	165.00	---	5.54

3F1

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.00	0.00	7.22	26.52	274.71	---	N/A	214.50	---	5.95	
0.75	4.76	16.48	1.27	6.69	25.41	274.71	---	12.53	214.50	---	6.23	
2.51	15.92	55.15	4.24	5.45	22.82	456.00	---	6.07	142.30	---	4.56	
5.03	27.40	97.52	8.47	3.68	19.50	456.00	---	3.32	142.30	---	5.42	
7.54	34.43	123.17	12.71	1.92	17.80	456.00	---	2.57	142.30	---	6.04	
10.05	37.03	130.93	16.94	0.15	12.81	456.00	---	2.40	142.30	---	8.53	
12.57	35.18	111.03	21.17	1.59	11.58	456.00	---	2.84	142.30	---	9.32	
15.08	28.96	95.03	27.83	3.36	18.10	456.00	---	3.39	142.30	---	5.86	
17.59	18.30	75.15	34.50	5.13	22.32	456.00	---	4.42	142.30	---	4.67	
20.1	3.20	50.96	41.17	6.89	24.54	456.00	---	6.82	142.30	---	4.18	
22.62	-16.34	18.09	47.85	8.66	27.06	456.00	---	6.99	142.30	---	3.73	
24.38	-33.15	17.66	63.65	9.90	28.03	252.27	---	2.53	225.70	---	5.84	
25.13	-40.31	16.62	70.38	10.43	28.44	252.27	---	2.18	225.70	---	5.74	
25.88	-35.03	14.20	66.02	9.09	27.46	252.27	---	2.41	225.70	---	5.99	
27.48	-23.78	9.05	56.71	6.23	25.36	456.00	---	5.77	142.30	---	4.07	
29.82	-11.11	45.09	47.27	4.58	22.44	456.00	---	7.19	142.30	---	4.67	
32.16	-2.31	73.73	37.83	2.93	19.69	456.00	---	4.73	142.30	---	5.41	
34.51	2.62	86.62	28.40	1.28	14.57	456.00	---	4.02	142.30	---	7.42	
36.85	3.68	82.53	21.24	0.37	8.62	456.00	---	4.21	142.30	---	5.86	
39.2	1.43	79.71	30.97	1.78	15.40	456.00	---	4.38	142.30	---	6.99	
41.54	-4.68	68.19	40.73	3.13	17.33	456.00	---	5.08	142.30	---	6.12	
43.89	-14.66	44.27	50.48	5.08	22.47	456.00	---	6.66	142.30	---	4.65	
46.23	-28.51	9.49	60.24	6.73	26.08	456.00	---	5.35	142.30	---	3.94	
47.83	-40.60	13.79	66.15	9.73	29.49	264.39	---	2.35	230.45	---	5.68	
48.58	-46.26	15.81	73.33	11.14	31.09	264.39	---	2.14	230.45	---	5.34	
49.33	-38.62	15.31	66.72	10.61	30.91	264.39	---	2.47	230.45	---	5.39	
51.26	-18.95	14.01	49.72	9.26	30.43	456.00	---	6.67	142.30	---	3.29	
53.93	3.32	65.21	42.86	7.38	27.50	456.00	---	5.38	142.30	---	3.71	
56.61	20.56	107.57	36.00	5.50	27.03	456.00	---	3.07	142.30	---	3.85	
59.29	32.75	129.74	29.14	3.61	21.98	456.00	---	2.45	142.30	---	4.82	
61.96	39.89	128.40	22.29	1.72	14.37	456.00	---	2.42	142.30	---	7.50	
64.64	41.99	127.98	17.83	0.16	14.00	456.00	---	2.41	142.30	---	7.81	
67.32	39.05	120.70	13.37	2.04	19.90	456.00	---	2.58	142.30	---	5.40	
70	31.07	103.14	8.90	3.92	19.93	456.00	---	3.10	142.30	---	5.30	
72.67	18.05	79.26	4.44	5.80	22.98	456.00	---	4.20	142.30	---	4.51	
74.6	5.05	22.20	1.31	7.16	27.70	456.00	---	15.57	142.30	---	3.69	
75.35	0.00	0.03	0.09	7.69	29.54	456.00	---	3897.44	142.30	---	3.45	

3F1

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.00	0.00	7.41	27.16	373.29	---	N/A	243.00	---	6.61	
0.75	4.90	17.00	1.51	6.88	26.08	373.29	---	16.61	243.00	---	6.90	
2.51	16.41	56.88	5.05	5.65	23.54	456.00	---	5.88	142.30	---	4.41	
5.03	28.39	101.48	10.09	3.88	20.35	456.00	---	3.18	142.30	---	5.19	
7.54	35.92	129.56	15.14	2.11	18.92	456.00	---	2.43	142.30	---	5.67	
10.05	39.01	139.21	20.18	0.35	13.62	456.00	---	2.24	142.30	---	8.01	
12.57	37.66	124.81	25.22	1.82	22.68	456.00	---	2.51	142.30	---	4.75	
15.08	30.86	104.80	30.74	3.59	19.66	456.00	---	3.05	142.30	---	5.39	
17.59	15.63	81.47	36.26	5.35	23.96	456.00	---	4.06	142.30	---	4.35	
20.1	3.95	52.52	41.77	7.12	26.10	456.00	---	6.50	142.30	---	3.92	
22.62	-16.16	18.50	47.29	8.89	28.48	456.00	---	7.08	142.30	---	3.53	
24.38	-33.37	19.35	69.17	10.13	28.58	349.23	---	3.40	255.38	---	6.52	
25.13	-40.71	20.57	78.50	10.66	28.62	349.23	---	2.90	255.38	---	6.49	
25.88	-35.48	17.22	74.78	9.19	27.92	349.23	---	3.12	255.38	---	6.71	
27.42	-24.73	10.34	67.14	6.17	26.47	456.00	---	4.86	142.30	---	3.90	
29.71	-12.44	49.63	57.29	4.56	23.61	456.00	---	5.91	142.30	---	4.44	
32	-3.84	79.44	47.45	2.95	20.81	456.00	---	4.37	142.30	---	5.12	
34.29	1.08	94.96	37.60	1.34	16.84	456.00	---	3.68	142.30	---	6.62	
36.58	2.32	95.89	31.09	0.45	19.54	456.00	---	3.63	142.30	---	5.58	
38.87	-0.55	89.97	41.66	2.06	16.84	456.00	---	3.89	142.30	---	6.38	
41.16	-7.11	75.64	52.31	3.67	19.04	456.00	---	4.54	142.30	---	5.56	
43.45	-17.36	48.79	62.96	5.28	23.63	456.00	---	5.30	142.30	---	4.41	
45.74	-31.30	12.38	73.61	6.89	27.06	456.00	---	4.34	142.30	---	3.79	
47.28	-43.13	16.56	80.75	10.05	30.32	356.97	---	2.87	256.57	---	6.18	
48.03	-48.89	18.59	84.22	11.59	31.91	356.97	---	2.68	256.57	---	5.82	
48.78	-40.91	18.91	74.40	11.06	31.71	356.97	---	3.14	256.57	---	5.87	
50.76	-19.84	16.48	48.48	9.67	31.19	456.00	---	6.83	142.30	---	3.20	
53.49	3.95	59.65	42.36	7.75	28.64	456.00	---	5.64	142.30	---	3.55	
56.22	22.50	105.49	36.24	5.83	28.75	456.00	---	3.11	142.30	---	3.60	
58.96	35.80	132.65	30.13	3.91	22.52	456.00	---	2.37	142.30	---	4.69	
61.69	43.87	136.51	24.10	1.99	27.32	456.00	---	2.25	142.30	---	3.93	
64.42	45.59	140.74	19.28	0.33	17.38	456.00	---	2.17	142.30	---	6.28	
67.15	42.07	131.68	14.46	2.25	15.99	456.00	---	2.34	142.30	---	6.70	
69.88	33.30	108.94	9.63	4.17	21.14	456.00	---	2.91	142.30	---	4.98	
72.62	19.28	65.88	4.81	6.09	25.24	456.00	---	5.03	142.30	---	4.10	
74.6	5.30	18.13	1.38	7.48	28.52	456.00	---	19.06	142.30	---	3.58	
75.35	0.00	0.04	0.08	8.01	29.76	456.00	---	4384.62	142.30	---	3.41	

3F1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.00	0.00	7.33	28.02	456.00	---	N/A	142.30	---	3.64	
0.75	4.84	17.52	1.42	6.80	26.90	456.00	---	19.74	142.30	---	3.82	
2.51	16.21	58.65	4.76	5.57	24.27	456.00	---	5.70	142.30	---	4.28	
5.03	27.97	97.80	9.53	3.80	19.56	456.00	---	3.30	142.30	---	5.40	
7.54	35.29	116.77	14.29	2.03	15.33	456.00	---	2.70	142.30	---	7.01	
10.05	38.18	122.94	19.05	0.26	12.28	456.00	---	2.54	142.30	---	8.89	
12.57	36.61	118.56	23.82	1.56	24.32	456.00	---	2.65	142.30	---	4.44	
15.08	30.47	104.21	28.46	3.33	18.29	456.00	---	3.07	142.30	---	5.80	
17.59	19.88	83.00	33.96	5.10	20.79	456.00	---	3.99	142.30	---	5.02	
20.1	4.85	48.36	39.45	6.86	25.27	456.00	---	7.15	142.30	---	4.06	
22.62	-14.62	20.03	44.95	8.63	29.18	456.00	---	7.48	142.30	---	3.46	
24.38	-31.41	21.83	70.74	9.87	29.18	456.00	---	4.51	142.30	---	3.41	
25.13	-38.57	22.60	81.73	10.40	29.18	456.00	---	3.82	142.30	---	3.39	
25.88	-33.62	19.20	78.26	8.85	28.35	456.00	---	4.05	142.30	---	3.55	
27.36	-23.85	12.50	71.42	5.80	26.70	456.00	---	4.58	142.30	---	3.88	
29.6	-12.64	47.44	61.11	4.23	23.08	456.00	---	5.53	142.30	---	4.56	
31.83	-4.94	72.08	50.79	2.66	19.45	456.00	---	4.80	142.30	---	5.49	
34.07	-0.75	85.45	40.48	1.09	15.52	456.00	---	4.10	142.30	---	6.98	
36.3	-0.07	91.62	35.32	0.48	19.01	456.00	---	3.83	142.30	---	5.73	
38.54	-2.89	86.94	47.49	2.05	15.62	456.00	---	4.00	142.30	---	6.88	
40.77	-9.23	73.91	59.69	3.62	19.24	456.00	---	4.62	142.30	---	5.50	
43.01	-19.07	49.24	71.90	5.19	23.04	456.00	---	4.61	142.30	---	4.53	
45.24	-32.42	13.00	84.10	6.76	26.55	456.00	---	3.79	142.30	---	3.87	
46.73	-43.64	16.66	92.22	10.01	23.74	456.00	---	3.33	142.30	---	4.19	
47.48	-49.29	18.50	96.30	11.65	22.32	456.00	---	3.13	142.30	---	4.38	
48.23	-41.27	17.84	82.30	11.12	24.69	456.00	---	3.76	142.30	---	3.98	
50.26	-19.55	16.06	44.40	9.69	31.09	456.00	---	7.46	142.30	---	3.21	
53.05	4.72	50.97	37.14	7.73	27.20	456.00	---	6.79	142.30	---	3.74	
55.84	23.53	89.42	31.85	5.77	23.03	456.00	---	3.66	142.30	---	4.50	
58.63	36.88	115.78	26.55	3.81	18.72	456.00	---	2.71	142.30	---	5.64	
61.41	44.75	132.41	21.43	1.85	25.54	456.00	---	2.31	142.30	---	4.21	
64.2	46.72	138.78	17.14	0.27	12.92	456.00	---	2.19	142.30	---	8.45	
66.99	43.23	130.04	12.84	2.23	16.07	456.00	---	2.36	142.30	---	6.67	
69.77	34.28	109.73	8.55	4.19	20.52	456.00	---	2.88	142.30	---	5.13	
72.56	19.86	67.47	4.26	6.15	25.25	456.00	---	4.90	142.30	---	4.09	
74.6	5.34	18.16	1.20	7.58	26.38	456.00	---	19.02	142.30	---	3.86	
75.35	0.00	0.03	0.07	8.11	26.79	456.00	---	5010.99	142.30	---	3.78	

3F1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.00	0.00	7.61	28.28	489.00	---	N/A	149.50	---	3.80	
0.75	5.05	17.73	1.54	7.08	27.17	489.00	---	20.93	149.50	---	3.97	
2.51	16.91	59.35	5.15	5.85	24.56	489.00	---	6.05	149.50	---	4.44	
5.03	29.39	99.84	10.29	4.08	19.98	489.00	---	3.47	149.50	---	5.55	
7.54	37.44	120.14	15.44	2.32	15.83	489.00	---	2.82	149.50	---	7.12	
10.05	41.05	127.60	20.58	0.56	12.46	489.00	---	2.63	149.50	---	9.18	
12.57	40.23	123.55	25.73	1.93	24.24	489.00	---	2.72	149.50	---	4.66	
15.08	33.18	107.67	28.81	3.69	18.57	489.00	---	3.19	149.50	---	5.99	
17.59	21.69	84.72	33.44	5.45	22.04	489.00	---	4.18	149.50	---	4.97	
20.1	5.77	48.34	38.36	7.22	25.87	489.00	---	7.66	149.50	---	4.17	
22.62	-14.57	21.75	43.27	8.98	29.61	489.00	---	8.36	149.50	---	3.58	
24.38	-31.94	23.55	72.54	10.21	29.25	489.00	---	4.75	149.50	---	3.58	
25.13	-39.34	24.32	85.01	10.74	29.09	489.00	---	3.96	149.50	---	3.58	
25.88	-34.49	20.49	81.41	9.01	28.26	489.00	---	4.20	149.50	---	3.75	
27.31	-25.25	13.20	74.54	5.70	26.67	489.00	---	4.71	149.50	---	4.10	
29.49	-14.50	46.64	64.08	4.17	23.16	489.00	---	5.64	149.50	---	4.79	
31.67	-7.09	70.94	53.63	2.64	19.60	489.00	---	5.20	149.50	---	5.73	
33.85	-3.00	84.23	43.18	1.11	15.72	489.00	---	4.43	149.50	---	7.24	
36.03	-2.23	89.99	39.26	0.78	18.41	489.00	---	4.16	149.50	---	6.20	
38.21	-5.60	85.03	52.59	2.31	15.44	489.00	---	4.36	149.50	---	7.30	
40.39	-12.29	72.41	65.91	3.84	19.39	489.00	---	5.03	149.50	---	5.73	
42.57	-22.32	48.86	79.24	5.37	23.07	489.00	---	4.47	149.50	---	4.75	
44.75	-35.68	15.09	92.57	6.90	26.69	489.00	---	3.68	149.50	---	4.05	
46.18	-46.61	17.48	101.29	10.35	24.12	489.00	---	3.25	149.50	---	4.34	
46.93	-52.35	18.74	105.87	12.16	22.77	489.00	---	3.06	149.50	---	4.52	
47.68	-43.98	18.17	89.45	11.63	25.13	489.00	---	3.71	149.50	---	4.11	
49.77	-20.64	16.58	43.69	10.16	31.72	489.00	---	8.14	149.50	---	3.31	
52.61	5.41	50.71	35.20	8.17	28.20	489.00	---	7.31	149.50	---	3.79	
55.45	25.78	93.56	30.62	6.17	24.30	489.00	---	3.74	149.50	---	4.48	
58.3	40.49	124.62	26.21	4.18	20.01	489.00	---	2.69	149.50	---	5.54	
61.14	49.55	144.21	23.29	1.50	16.04	489.00	---	2.26	149.50	---	7.08	
63.98	50.98	148.43	18.63	0.50	14.44	489.00	---	2.19	149.50	---	7.93	
66.82	46.73	137.31	13.97	2.49	16.66	489.00	---	2.40	149.50	---	6.75	
69.66	36.82	113.20	9.31	4.48	20.75	489.00	---	3.00	149.50	---	5.33	
72.51	21.24	68.06	4.64	6.48	24.96	489.00	---	5.21	149.50	---	4.35	
74.6	5.61	18.00	1.28	7.94	25.25	489.00	---	20.58	149.50	---	4.24	
75.35	0.00	0.04	0.08	8.47	25.35	489.00	---	4701.92	149.50	---	4.20	

3F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V								
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
0	0.00	0.00	0.00	6.28	18.32	489.00	---	N/A	149.50	---	5.93	
0.75	4.10	11.31	0.69	5.79	17.53	489.00	---	32.89	149.50	---	6.23	
2.51	13.73	37.86	2.32	4.64	15.67	489.00	---	9.57	149.50	---	7.04	
5.03	23.33	61.74	4.65	3.00	12.32	489.00	---	5.71	149.50	---	9.09	
7.54	28.82	71.83	6.97	1.36	9.67	489.00	---	4.84	149.50	---	11.75	
10.05	30.18	74.42	9.30	0.28	9.91	489.00	---	4.65	149.50	---	11.58	
12.57	27.45	68.43	11.63	0.71	9.14	489.00	---	5.10	149.50	---	12.50	
15.08	23.61	62.92	14.63	2.35	10.96	489.00	---	5.60	149.50	---	10.28	
17.59	15.65	50.73	18.28	3.99	13.75	489.00	---	7.11	149.50	---	8.07	
20.1	3.58	30.44	21.93	5.63	16.25	489.00	---	12.24	149.50	---	6.73	
22.62	-12.62	10.93	26.12	7.27	18.82	489.00	---	13.92	149.50	---	5.72	
24.38	-26.86	11.89	45.02	8.42	19.51	489.00	---	7.76	149.50	---	5.46	
25.13	-32.93	12.30	53.07	8.91	19.81	489.00	---	6.47	149.50	---	5.36	
25.88	-28.43	10.87	50.28	7.63	18.94	489.00	---	6.92	149.50	---	5.67	
27.25	-20.20	8.26	45.17	5.30	17.36	489.00	---	7.88	149.50	---	6.32	
29.38	-10.41	28.78	38.10	3.92	14.88	489.00	---	9.60	149.50	---	7.47	
31.5	-3.55	41.74	31.02	2.54	12.21	489.00	---	8.93	149.50	---	9.21	
33.63	0.37	48.77	23.96	1.16	9.49	489.00	---	7.71	149.50	---	12.00	
35.75	1.51	49.87	19.55	0.39	12.16	489.00	---	7.51	149.50	---	9.43	
37.88	-0.79	48.74	26.89	1.77	9.41	489.00	---	7.70	149.50	---	12.03	
40	-6.00	41.84	34.45	3.14	12.14	489.00	---	8.85	149.50	---	9.21	
42.13	-14.14	29.10	42.01	4.52	14.71	489.00	---	8.62	149.50	---	7.51	
44.25	-25.19	8.84	49.60	5.89	17.03	489.00	---	7.08	149.50	---	6.41	
45.63	-34.24	10.04	54.51	8.03	15.29	489.00	---	6.27	149.50	---	6.99	
46.38	-39.16	10.69	57.18	9.20	14.35	489.00	---	5.89	149.50	---	7.37	
47.13	-32.94	10.31	48.88	8.73	15.48	489.00	---	7.02	149.50	---	6.87	
49.27	-15.18	9.21	25.19	7.37	18.69	489.00	---	14.33	149.50	---	5.76	
52.17	3.47	30.94	19.89	5.55	15.70	489.00	---	12.05	149.50	---	6.97	
55.07	16.78	51.87	15.86	3.72	12.71	489.00	---	6.93	149.50	---	8.76	
57.96	24.76	64.43	11.97	1.89	9.92	489.00	---	5.45	149.50	---	11.40	
60.86	29.04	67.26	8.93	2.44	16.20	489.00	---	5.16	149.50	---	6.95	
63.76	33.53	76.62	7.14	0.66	10.04	489.00	---	4.47	149.50	---	11.39	
66.66	32.87	74.56	5.35	1.12	8.73	489.00	---	4.60	149.50	---	13.04	
69.55	27.06	64.49	3.57	2.89	11.62	489.00	---	5.41	149.50	---	9.65	
72.45	16.10	41.42	1.78	4.67	14.92	489.00	---	8.69	149.50	---	7.39	
74.6	4.16	10.73	0.53	5.99	16.40	489.00	---	34.65	149.50	---	6.65	
75.35	0.00	0.03	0.10	6.45	16.92	489.00	---	3761.54	149.50	---	6.42	

3F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

3F1	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		From Rear (Ft)	Unfactored Moment (k-ft)		Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
			M+	M-	V							
			D	L+I	L+I	D						
Stringer F2A-2	0	0.00	0.00	0.00	6.99	18.11	1212.51	---	N/A	149.61	---	5.97
	0.75	4.73	11.44	0.75	6.57	17.59	1212.51	---	81.09	149.61	---	6.17
	2.51	15.82	38.30	2.51	5.60	16.38	1212.51	---	23.94	149.61	---	6.68
	5.03	28.16	68.32	5.01	4.21	14.30	1212.51	---	13.24	149.61	---	7.75
	7.54	37.00	88.15	7.52	2.83	12.15	1212.51	---	10.16	149.61	---	9.24
	10.05	42.36	98.68	10.03	1.44	10.52	1212.51	---	9.02	149.61	---	10.80
	12.57	44.23	106.61	12.54	0.85	6.81	1212.51	---	8.33	149.61	---	16.77
	15.08	40.35	98.23	10.03	2.23	10.63	1212.51	---	9.08	149.61	---	10.62
	17.59	32.99	82.68	7.52	3.62	12.49	1212.51	---	10.88	149.61	---	8.92
	20.1	22.15	54.38	5.01	5.01	15.07	1212.51	---	16.74	149.61	---	7.30
22.62	7.81	25.06	2.51	6.40	17.37	1212.51	---	36.91	149.61	---	6.26	
24.38	2.33	7.49	0.75	7.37	16.49	1212.51	---	124.25	149.61	---	6.53	
Stringer F2B-2	25.13	0.00	0.00	0.00	7.79	16.12	1212.51	---	N/A	149.61	---	6.66
	25.88	3.02	10.42	8.05	6.53	15.61	1212.51	---	89.21	149.61	---	6.95
	27.22	8.41	29.04	22.43	4.29	14.70	1212.51	---	31.83	149.61	---	7.54
	29.3	16.15	49.73	21.63	3.14	12.67	1212.51	---	18.43	149.61	---	8.84
	31.39	21.50	63.62	20.83	2.00	11.24	1212.51	---	14.32	149.61	---	10.06
	33.47	24.46	70.60	20.02	0.85	9.44	1212.51	---	12.86	149.61	---	12.10
	35.56	25.20	75.14	19.31	0.22	7.66	1212.51	---	12.08	149.61	---	15.00
	37.64	23.54	70.53	15.45	1.36	9.21	1212.51	---	12.89	149.61	---	12.35
	39.73	19.51	58.17	11.59	2.50	11.08	1212.51	---	15.70	149.61	---	10.16
	41.81	13.11	39.35	7.73	3.64	13.51	1212.51	---	23.37	149.61	---	8.25
43.9	4.34	15.79	3.87	4.78	15.62	1212.51	---	58.79	149.61	---	7.06	
45.23	1.56	5.69	1.40	7.15	13.35	1212.51	---	163.54	149.61	---	8.08	
45.98	0.00	0.00	0.00	8.49	12.07	1212.51	---	N/A	149.61	---	8.83	
Stringer F2C-2	46.73	5.49	11.44	4.92	8.09	13.21	1212.51	---	81.02	149.61	---	8.10
	48.92	21.51	44.86	19.30	6.94	16.53	1212.51	---	20.31	149.61	---	6.54
	51.86	39.55	79.82	21.10	5.38	14.78	1212.51	---	11.19	149.61	---	7.42
	54.8	52.95	104.73	22.91	3.82	12.94	1212.51	---	8.40	149.61	---	8.60
	57.74	61.74	121.80	24.72	2.26	10.94	1212.51	---	7.15	149.61	---	10.31
	60.68	67.58	133.03	26.53	0.89	8.74	1212.51	---	6.50	149.61	---	13.07
	63.62	63.06	119.30	21.29	2.33	10.95	1212.51	---	7.29	149.61	---	10.30
	66.56	53.97	100.43	15.96	3.85	12.44	1212.51	---	8.75	149.61	---	8.94
	69.5	40.45	73.56	10.64	5.36	13.65	1212.51	---	12.13	149.61	---	8.04
	72.44	22.48	38.79	5.32	6.87	14.33	1212.51	---	23.47	149.61	---	7.55
74.63	5.77	9.98	1.37	7.99	11.77	1212.51	---	92.83	149.61	---	9.10	
75.38	0.05	0.12	0.02	8.38	10.89	1212.51	---	7772.08	149.61	---	9.80	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V								
		D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
4F1 Stringer F1A-1	0	0.00	0.08	0.02	7.85	17.23	643.98	---	6192.12	207.62	---	8.81
	0.75	5.26	10.56	0.78	7.39	16.64	643.98	---	46.42	207.62	---	9.15
	2.75	19.30	38.50	2.82	6.17	15.08	643.98	---	12.37	207.62	---	10.18
	5.51	33.98	65.73	5.65	4.51	13.01	643.98	---	7.02	207.62	---	11.93
	8.26	44.12	87.06	8.49	2.86	10.98	643.98	---	5.18	207.62	---	14.28
	11.01	49.75	99.99	11.32	1.23	8.96	643.98	---	4.46	207.62	---	17.69
	13.76	50.89	103.75	14.18	0.40	6.65	643.98	---	4.28	207.62	---	23.96
	16.52	47.10	96.59	11.37	2.18	9.35	643.98	---	4.64	207.62	---	16.85
	19.27	38.91	78.65	8.53	3.77	11.02	643.98	---	5.80	207.62	---	14.15
	22.02	26.36	55.68	5.68	5.35	13.59	643.98	---	8.42	207.62	---	11.36
	24.77	9.49	24.98	2.84	6.91	13.87	643.98	---	19.45	207.62	---	11.02
	26.78	2.58	6.79	0.77	8.05	14.28	643.98	---	72.60	207.62	---	10.62
	27.53	0.00	0.00	0.00	8.47	14.43	643.98	---	N/A	207.62	---	10.48
	28.28	2.70	8.43	6.90	7.08	13.61	643.98	---	58.47	207.62	---	11.22
	29.61	7.49	23.37	19.13	4.62	12.15	643.98	---	20.88	207.62	---	12.76
	31.69	15.88	40.86	19.72	3.46	11.02	643.98	---	11.73	207.62	---	14.18
	33.77	21.88	53.91	20.37	2.30	9.49	643.98	---	8.78	207.62	---	16.59
	35.84	25.47	64.00	21.02	1.16	8.21	643.98	---	7.34	207.62	---	19.31
	37.92	26.70	71.17	21.63	0.24	6.20	643.98	---	6.59	207.62	---	25.72
	40	26.02	63.14	17.30	0.89	8.09	643.98	---	7.43	207.62	---	19.63
42.08	22.99	53.77	12.98	2.02	9.17	643.98	---	8.79	207.62	---	17.20	
44.16	17.63	40.58	8.65	3.13	10.47	643.98	---	11.77	207.62	---	14.95	
46.24	9.97	22.48	4.33	4.24	11.61	643.98	---	21.59	207.62	---	13.39	
47.57	3.59	8.11	1.56	4.94	11.96	643.98	---	60.67	207.62	---	12.94	
48.32	0.00	0.00	0.00	5.34	12.16	643.98	---	N/A	207.62	---	12.69	
4F1 Stringer S1-1	0	0.00	0.05	0.08	7.58	20.87	531.00	---	5105.77	165.00	---	5.72
	0.75	4.95	12.26	0.71	7.04	19.78	531.00	---	32.90	165.00	---	8.06
	2.7	17.83	44.02	2.35	5.62	16.94	531.00	---	8.87	165.00	---	7.16
	5.41	30.39	69.47	4.70	3.67	13.27	531.00	---	5.44	165.00	---	9.29
	8.11	37.69	87.37	7.06	1.74	9.77	531.00	---	4.24	165.00	---	12.81
	10.81	39.80	89.80	9.42	0.18	10.58	531.00	---	4.11	165.00	---	11.98
	13.52	36.75	82.09	11.75	1.95	10.31	531.00	---	4.58	165.00	---	12.12
	16.22	28.90	68.80	15.09	3.84	10.31	531.00	---	5.52	165.00	---	11.94
	18.92	15.98	55.55	19.29	5.72	15.35	531.00	---	7.07	165.00	---	7.90
	21.62	-2.00	32.82	25.59	7.58	16.74	531.00	---	12.38	165.00	---	7.13
	24.33	-25.01	6.31	35.34	9.44	19.47	531.00	---	10.85	165.00	---	6.03
	26.28	-45.26	2.15	48.17	10.77	20.60	243.03	---	2.94	248.02	---	8.74
	27.03	-53.05	0.55	53.10	11.28	21.04	243.03	---	2.52	248.02	---	8.53
	27.78	-46.17	0.56	47.99	10.28	19.28	243.03	---	2.93	248.02	---	9.36
	29.16	-33.52	0.57	38.59	8.47	16.05	531.00	---	9.72	165.00	---	7.38
	31.28	-17.04	18.44	31.87	7.04	13.70	531.00	---	12.24	165.00	---	8.75
	33.4	-3.61	31.20	25.35	5.61	11.11	531.00	---	12.98	165.00	---	10.92
	35.53	6.80	44.00	19.04	4.19	8.53	531.00	---	9.80	165.00	---	14.39
	37.65	14.16	38.75	12.23	2.77	13.65	531.00	---	10.48	165.00	---	9.10
	39.78	17.30	44.28	9.78	0.78	7.75	531.00	---	8.83	165.00	---	16.28
41.9	17.45	44.62	7.34	0.63	6.62	531.00	---	8.76	165.00	---	19.08	
44.03	14.61	37.04	4.89	2.04	9.10	531.00	---	10.63	165.00	---	13.72	
46.15	8.80	24.38	2.45	3.44	11.97	531.00	---	16.39	165.00	---	10.32	
47.53	3.10	8.58	0.86	4.34	13.76	202.98	---	17.83	195.68	---	40.62	
48.28	0.00	0.00	0.00	4.83	14.74	202.98	---	N/A	195.68	---	9.88	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	From Rear (Ft)	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
4F1 Stringer S2-1	0	0.00	0.03	0.08	7.45	25.59	456.00	---	4384.62	142.30	---	3.99
	0.75	4.88	16.65	1.38	6.92	24.89	456.00	---	20.77	142.30	---	4.12
	2.65	17.25	58.77	4.66	5.58	23.11	456.00	---	5.67	142.30	---	4.50
	5.3	29.57	96.49	9.34	3.72	17.79	456.00	---	3.33	142.30	---	5.94
	7.94	36.96	120.93	14.02	1.86	13.83	456.00	---	2.59	142.30	---	7.78
	10.59	39.42	128.14	18.71	0.00	11.14	456.00	---	2.43	142.30	---	9.83
	13.24	36.95	121.69	23.39	2.19	21.58	456.00	---	2.58	142.30	---	4.97
	15.89	28.69	103.19	29.94	4.05	15.49	456.00	---	3.15	142.30	---	6.81
	18.54	15.50	82.39	36.48	5.91	21.56	456.00	---	4.07	142.30	---	4.80
	21.18	-2.62	47.69	43.06	7.78	23.56	456.00	---	7.30	142.30	---	4.32
	23.83	-25.67	6.87	54.81	9.64	27.07	456.00	---	5.93	142.30	---	3.69
	25.73	-45.74	2.73	75.37	10.57	29.96	310.20	---	2.56	264.09	---	6.41
	26.48	-53.66	1.10	83.49	11.50	31.10	310.20	---	2.22	264.09	---	6.16
	27.23	-46.62	1.11	76.32	10.54	29.55	310.20	---	2.52	264.09	---	6.57
	28.66	-33.19	1.14	62.64	8.63	25.96	456.00	---	5.07	142.30	---	3.88
	30.84	-16.05	34.52	55.81	7.09	22.92	456.00	---	6.08	142.30	---	4.47
	33.02	-2.26	61.64	47.37	5.56	19.16	456.00	---	5.65	142.30	---	5.42
	35.2	8.19	78.66	39.74	4.03	15.52	456.00	---	4.30	142.30	---	6.79
	37.38	15.30	90.31	32.12	2.49	20.73	456.00	---	3.74	142.30	---	5.16
	39.56	16.92	91.81	25.69	0.90	10.36	456.00	---	3.61	142.30	---	10.48
41.74	19.20	85.91	19.27	0.64	13.04	456.00	---	3.86	142.30	---	8.35	
43.92	16.14	69.73	12.85	2.17	16.65	456.00	---	4.80	142.30	---	6.44	
46.1	9.74	42.79	6.42	3.70	20.43	456.00	---	7.97	142.30	---	5.18	
47.53	3.35	14.72	2.21	4.71	22.94	274.71	---	14.13	214.50	---	6.99	
48.28	0.00	0.00	0.00	5.24	24.25	274.71	---	N/A	214.50	---	6.59	
4F1 Stringer S3-1	0	0.00	0.04	0.08	7.04	24.81	390.00	---	3750.00	123.50	---	3.55
	0.75	4.61	15.53	1.46	6.52	23.85	390.00	---	19.02	123.50	---	3.71
	2.59	15.91	53.54	4.84	5.24	21.50	390.00	---	5.31	123.50	---	4.17
	5.19	27.17	89.14	9.70	3.44	17.34	390.00	---	3.06	123.50	---	5.28
	7.78	33.76	111.80	14.55	1.64	13.20	390.00	---	2.38	123.50	---	7.07
	10.37	35.69	118.41	19.41	0.15	11.80	390.00	---	2.23	123.50	---	8.04
	12.96	32.97	110.96	24.28	2.03	21.21	390.00	---	2.41	123.50	---	4.38
	15.56	25.38	97.21	30.46	3.83	15.54	390.00	---	2.83	123.50	---	5.87
	18.15	13.12	78.29	36.66	5.63	22.07	390.00	---	3.66	123.50	---	4.05
	20.74	-3.81	44.12	42.06	7.43	22.88	390.00	---	6.71	123.50	---	3.83
	23.34	-25.39	4.69	53.24	9.22	26.41	390.00	---	5.16	123.50	---	3.25
	25.18	-44.02	2.67	76.22	10.58	28.16	331.59	---	2.77	224.82	---	5.77
	25.93	-51.61	1.84	85.59	11.02	28.87	331.59	---	2.38	224.82	---	5.61
	26.68	-44.62	2.08	79.03	10.48	27.92	331.59	---	2.66	224.82	---	5.83
	28.16	-30.82	2.54	66.08	8.53	26.04	390.00	---	4.07	123.50	---	3.32
	30.4	-13.49	40.58	58.43	6.98	23.12	390.00	---	4.90	123.50	---	3.81
	32.63	0.37	69.37	50.78	5.43	20.61	390.00	---	4.32	123.50	---	4.35
	34.87	10.77	99.77	43.13	3.88	16.11	390.00	---	3.19	123.50	---	5.66
	37.1	17.73	95.03	35.48	2.33	19.83	390.00	---	2.57	123.50	---	4.67
	39.34	21.11	96.23	28.37	0.74	10.96	390.00	---	2.90	123.50	---	8.60
41.57	21.02	91.64	21.28	0.81	13.25	390.00	---	3.04	123.50	---	7.11	
43.81	17.47	72.98	14.18	2.36	17.01	390.00	---	3.87	123.50	---	5.45	
46.04	10.46	45.66	7.08	3.91	20.80	390.00	---	6.34	123.50	---	4.38	
47.53	3.50	15.29	2.37	4.94	23.31	339.21	---	16.84	226.88	---	5.28	
48.28	0.00	0.00	0.00	5.46	24.57	339.21	---	N/A	226.88	---	6.88	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1 Stringer S4-1	0	0.00	0.03	0.06	6.91	25.84	390.00	---	5000.00	123.50	---	3.41
	0.75	4.52	15.73	1.61	6.39	24.65	390.00	---	18.78	123.50	---	3.59
	2.54	15.30	53.21	5.32	5.15	21.82	390.00	---	5.35	123.50	---	4.12
	5.08	26.13	88.38	10.65	3.39	17.47	390.00	---	3.10	123.50	---	5.24
	7.61	32.49	110.57	15.98	1.63	13.47	390.00	---	2.42	123.50	---	6.93
	10.15	34.39	117.61	21.31	0.13	10.86	390.00	---	2.26	123.50	---	8.74
	12.69	31.83	109.96	26.64	2.24	22.08	390.00	---	2.44	123.50	---	4.20
	15.23	23.91	100.42	32.76	4.00	16.44	390.00	---	2.75	123.50	---	5.54
	17.76	11.52	78.52	38.88	5.76	19.23	390.00	---	3.67	123.50	---	4.64
	20.3	-5.34	41.56	45.01	7.52	23.74	390.00	---	6.55	123.50	---	3.68
	22.84	-26.66	1.81	51.13	9.28	27.23	390.00	---	5.35	123.50	---	3.15
	24.63	-44.83	2.30	76.80	10.52	28.56	390.00	---	3.32	123.50	---	2.96
	25.38	-52.45	2.50	87.55	11.04	29.12	390.00	---	2.83	123.50	---	2.88
	26.13	-45.25	2.80	81.11	10.31	28.37	390.00	---	3.14	123.50	---	2.99
	27.67	-30.46	3.41	67.89	8.81	26.82	390.00	---	3.97	123.50	---	3.21
	29.96	-12.11	41.00	59.87	7.22	23.15	390.00	---	4.81	123.50	---	3.79
	32.25	2.61	69.79	51.85	5.63	19.63	390.00	---	4.26	123.50	---	4.55
	34.54	13.69	88.57	43.83	4.05	15.77	390.00	---	3.23	123.50	---	5.77
	36.83	21.14	99.69	35.82	2.46	21.29	390.00	---	2.80	123.50	---	4.35
	39.12	24.18	101.61	28.65	0.53	10.76	390.00	---	2.71	123.50	---	8.78
41.41	23.58	94.76	21.49	1.05	13.74	390.00	---	2.92	123.50	---	6.84	
43.7	19.35	76.43	14.33	2.64	17.33	390.00	---	3.67	123.50	---	5.33	
45.99	11.49	48.05	7.16	4.23	21.79	390.00	---	6.00	123.50	---	4.17	
47.53	3.76	15.74	2.34	5.29	23.77	390.00	---	18.82	123.50	---	3.77	
48.28	0.00	0.00	0.00	5.81	24.74	390.00	---	N/A	123.50	---	3.61	
4F1 Stringer S5-1	0	0.00	0.04	0.09	6.59	23.68	389.64	---	3330.26	299.22	---	9.44
	0.75	4.31	14.58	1.73	6.08	22.65	389.64	---	20.26	299.22	---	9.89
	2.48	14.25	48.12	5.51	4.89	20.28	369.00	---	5.60	145.70	---	5.29
	4.97	24.29	81.64	11.05	3.20	17.49	369.00	---	3.18	145.70	---	6.23
	7.45	30.12	102.35	16.59	1.50	14.09	369.00	---	2.48	145.70	---	7.85
	9.93	31.74	113.98	22.13	0.20	10.77	369.00	---	2.21	145.70	---	10.39
	12.41	29.14	101.37	27.66	2.30	14.49	369.00	---	2.51	145.70	---	7.58
	14.9	21.33	91.70	33.88	3.99	16.21	369.00	---	2.86	145.70	---	6.67
	17.38	9.31	74.68	40.47	5.69	21.04	369.00	---	3.68	145.70	---	5.06
	19.86	-6.92	39.71	47.06	7.39	22.96	369.00	---	5.88	145.70	---	4.56
	22.34	-27.36	3.35	55.78	9.08	26.75	369.00	---	4.60	145.70	---	3.85
	24.08	-44.62	2.02	76.54	10.27	28.30	369.00	---	3.13	145.70	---	3.60
	24.83	-52.06	1.45	85.49	10.78	28.97	369.00	---	2.71	145.70	---	3.50
	25.58	-44.76	1.66	78.82	10.18	28.24	369.00	---	3.03	145.70	---	3.61
	27.17	-29.27	2.09	64.68	8.92	26.70	369.00	---	3.94	145.70	---	3.86
	29.52	-10.25	39.79	56.72	7.31	23.14	369.00	---	4.82	145.70	---	4.53
	31.86	5.02	70.55	48.76	5.71	19.68	369.00	---	3.95	145.70	---	5.40
	34.21	16.53	89.48	40.80	4.11	15.71	369.00	---	2.99	145.70	---	6.87
	36.55	24.25	100.42	32.86	2.51	21.08	369.00	---	2.59	145.70	---	5.20
	38.9	26.91	103.54	26.29	0.33	10.48	369.00	---	2.48	145.70	---	10.66
41.24	25.82	96.29	19.72	1.27	13.73	369.00	---	2.68	145.70	---	8.07	
43.59	20.97	77.57	13.15	2.87	17.21	369.00	---	3.39	145.70	---	6.35	
45.93	12.37	48.33	6.58	4.47	21.39	369.00	---	5.62	145.70	---	5.03	
47.53	3.95	15.42	2.10	5.56	23.68	369.00	---	18.15	145.70	---	4.50	
48.28	0.00	0.00	0.00	6.07	24.75	369.00	---	N/A	145.70	---	4.28	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1 Stringer S6-1	0	0.00	0.04	0.10	4.88	15.41	369.00	---	2838.46	145.70	---	6.96
	0.75	3.13	8.96	0.80	4.46	14.49	369.00	---	31.32	145.70	---	7.43
	2.43	10.15	28.95	2.37	3.51	12.44	369.00	---	9.45	145.70	---	8.73
	4.86	16.98	45.26	4.75	2.12	9.68	369.00	---	5.90	145.70	---	11.36
	7.28	20.44	55.38	7.13	0.73	7.08	369.00	---	4.76	145.70	---	15.73
	9.71	20.50	56.37	9.52	0.68	7.33	369.00	---	4.67	145.70	---	15.20
	12.14	17.14	49.65	11.91	0.98	7.59	369.00	---	5.37	145.70	---	14.64
	14.57	13.02	48.25	17.27	2.42	8.29	369.00	---	5.61	145.70	---	13.23
	16.99	5.40	40.17	22.81	3.86	10.36	369.00	---	6.93	145.70	---	10.45
	19.42	-5.71	23.02	28.39	5.30	13.40	369.00	---	9.80	145.70	---	7.97
	21.85	-20.36	0.34	33.97	6.76	15.92	369.00	---	7.76	145.70	---	6.62
	23.53	-32.91	0.33	44.72	7.86	13.82	369.00	---	5.61	145.70	---	7.54
	24.28	-38.51	0.33	49.52	8.35	12.88	369.00	---	4.95	145.70	---	8.05
	25.03	-32.79	0.36	44.04	7.89	13.98	369.00	---	5.70	145.70	---	7.45
	26.68	-20.21	0.44	31.98	6.89	16.40	369.00	---	8.24	145.70	---	6.41
	29.08	-5.43	22.45	27.63	5.43	14.01	369.00	---	10.08	145.70	---	7.61
	31.48	5.83	40.74	23.29	3.95	11.50	369.00	---	6.82	145.70	---	9.40
	33.88	13.54	50.98	18.94	2.47	8.89	369.00	---	5.30	145.70	---	12.33
	36.28	17.72	54.24	14.57	2.28	13.86	369.00	---	4.91	145.70	---	7.92
	38.68	21.39	59.74	11.66	0.78	7.91	369.00	---	4.39	145.70	---	14.07
41.08	21.46	57.58	8.75	0.72	7.86	369.00	---	4.56	145.70	---	14.17	
43.48	17.93	47.44	5.83	2.22	10.31	369.00	---	5.61	145.70	---	10.66	
45.88	10.78	30.20	2.92	3.74	13.12	369.00	---	9.04	145.70	---	8.26	
47.53	3.37	9.44	0.91	4.78	15.03	369.00	---	29.72	145.70	---	7.14	
48.28	0.00	0.00	0.00	5.25	15.90	369.00	---	N/A	145.70	---	6.72	
4F1 Stringer F2A-1	0	0.00	0.13	0.04	6.23	12.48	1212.51	---	7174.62	149.61	---	8.72
	0.75	4.25	8.06	1.09	5.86	12.26	1212.51	---	115.15	149.61	---	8.91
	2.39	13.54	25.41	3.40	5.05	11.78	1212.51	---	36.17	149.61	---	9.34
	4.79	24.20	46.48	6.80	3.85	10.91	1212.51	---	19.55	149.61	---	10.20
	7.18	31.96	63.74	10.20	2.64	9.80	1212.51	---	14.13	149.61	---	11.47
	9.57	36.82	76.37	13.60	1.42	8.41	1212.51	---	11.73	149.61	---	13.52
	11.97	38.72	85.23	17.03	0.17	6.80	1212.51	---	10.49	149.61	---	16.90
	14.36	35.43	75.45	13.66	2.01	8.73	1212.51	---	11.89	149.61	---	12.95
	16.76	29.13	62.16	10.24	3.26	10.29	1212.51	---	14.54	149.61	---	10.87
	19.15	19.82	43.24	6.83	4.52	12.08	1212.51	---	21.11	149.61	---	9.15
	21.54	7.48	18.95	3.41	5.79	13.16	1212.51	---	48.82	149.61	---	8.31
	23.19	2.34	5.92	1.07	6.81	12.03	1212.51	---	157.11	149.61	---	9.00
	23.94	0.00	0.00	0.00	7.27	11.52	1212.51	---	N/A	149.61	---	9.36
	24.69	4.17	10.09	4.64	6.87	12.42	1212.51	---	92.03	149.61	---	8.71
	26.37	13.50	32.69	15.02	5.96	14.44	1212.51	---	28.12	149.61	---	7.56
	28.81	26.44	57.48	16.27	4.64	12.47	1212.51	---	15.77	149.61	---	8.86
	31.25	36.14	75.73	17.53	3.31	11.27	1212.51	---	11.84	149.61	---	9.92
	33.69	42.59	88.33	18.78	1.98	9.58	1212.51	---	10.08	149.61	---	11.81
	36.13	45.79	96.21	20.01	0.34	7.11	1212.51	---	9.22	149.61	---	16.14
	38.56	43.30	90.46	16.00	1.70	9.42	1212.51	---	9.83	149.61	---	12.04
41	37.49	77.96	12.00	3.06	11.17	1212.51	---	11.48	149.61	---	10.03	
43.44	28.36	59.49	8.00	4.44	12.80	1212.51	---	15.20	149.61	---	8.64	
45.88	15.86	34.21	4.00	5.82	15.07	1212.51	---	26.80	149.61	---	7.25	
47.57	4.88	10.52	1.23	6.78	15.28	1212.51	---	88.24	149.61	---	7.09	
48.32	0.00	0.00	0.00	7.21	15.38	1212.51	---	N/A	149.61	---	7.01	
4F1 Stringer F2B-1	0	0.00	0.13	0.04	6.23	12.48	1212.51	---	7174.62	149.61	---	8.72
	0.75	4.25	8.06	1.09	5.86	12.26	1212.51	---	115.15	149.61	---	8.91
	2.39	13.54	25.41	3.40	5.05	11.78	1212.51	---	36.17	149.61	---	9.34
	4.79	24.20	46.48	6.80	3.85	10.91	1212.51	---	19.55	149.61	---	10.20
	7.18	31.96	63.74	10.20	2.64	9.80	1212.51	---	14.13	149.61	---	11.47
	9.57	36.82	76.37	13.60	1.42	8.41	1212.51	---	11.73	149.61	---	13.52
	11.97	38.72	85.23	17.03	0.17	6.80	1212.51	---	10.49	149.61	---	16.90
	14.36	35.43	75.45	13.66	2.01	8.73	1212.51	---	11.89	149.61	---	12.95
	16.76	29.13	62.16	10.24	3.26	10.29	1212.51	---	14.54	149.61	---	10.87
	19.15	19.82	43.24	6.83	4.52	12.08	1212.51	---	21.11	149.61	---	9.15
	21.54	7.48	18.95	3.41	5.79	13.16	1212.51	---	48.82	149.61	---	8.31
	23.19	2.34	5.92	1.07	6.81	12.03	1212.51	---	157.11	149.61	---	9.00

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	D	M+	M-	V								
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1	Stringer F1A-2	0	0.00	0.00	0.00	6.31	16.02	643.98	---	N/A	207.62	---	9.58
		0.75	4.24	9.95	0.99	5.92	15.52	643.98	---	49.34	207.62	---	9.91
		2.51	14.20	33.31	3.31	4.99	14.34	643.98	---	14.45	207.62	---	10.79
		5.03	25.09	60.46	6.63	3.67	12.69	643.98	---	7.78	207.62	---	12.30
		7.54	32.67	79.59	9.94	2.36	10.82	643.98	---	5.81	207.62	---	14.54
		10.05	36.93	93.87	13.25	1.04	9.82	643.98	---	4.88	207.62	---	16.16
		12.57	37.89	100.61	16.57	0.48	7.33	643.98	---	4.55	207.62	---	21.72
		15.08	35.03	88.69	13.26	1.79	10.18	643.98	---	5.19	207.62	---	15.51
		17.59	28.86	71.89	9.94	3.11	10.86	643.98	---	6.49	207.62	---	14.42
		20.1	19.39	50.94	6.63	4.43	13.00	643.98	---	9.34	207.62	---	11.94
	22.62	6.60	22.63	3.31	5.75	14.20	643.98	---	21.60	207.62	---	10.84	
	24.38	1.97	6.76	0.99	6.68	14.48	643.98	---	72.97	207.62	---	10.57	
	Stringer F1B-2	25.13	0.00	0.00	0.00	7.07	14.60	643.98	---	N/A	207.62	---	10.45
		25.88	3.46	9.51	5.13	6.33	14.29	643.98	---	51.75	207.62	---	10.73
		27.58	11.29	31.05	16.76	4.64	13.59	643.98	---	15.59	207.62	---	11.41
		30.02	21.06	55.16	17.71	3.34	12.15	643.98	---	8.60	207.62	---	12.87
		32.47	27.67	72.40	18.65	2.05	10.37	643.98	---	6.46	207.62	---	15.20
		34.91	31.13	84.90	19.60	0.75	9.20	643.98	---	5.47	207.62	---	17.28
		37.36	31.13	91.10	20.68	0.03	7.43	643.98	---	5.10	207.62	---	21.49
		39.81	29.45	81.24	16.54	1.34	9.44	643.98	---	5.74	207.62	---	16.78
		42.25	24.58	67.36	12.40	2.65	10.47	643.98	---	6.99	207.62	---	15.00
		44.7	16.51	47.11	8.27	3.95	12.84	643.98	---	10.16	207.62	---	12.13
	47.14	5.25	20.25	4.13	5.26	14.41	643.98	---	24.20	207.62	---	10.72	
	48.84	1.61	6.20	1.26	6.73	12.79	643.98	---	79.65	207.62	---	11.96	
	49.59	0.00	0.00	0.00	7.38	12.07	643.98	---	N/A	207.62	---	12.62	
	Stringer F1C-2	50.34	4.55	10.94	5.01	6.97	13.15	643.98	---	44.88	207.62	---	11.62
		52.17	15.64	37.62	17.24	5.96	15.77	643.98	---	12.75	207.62	---	9.75
		54.75	29.24	67.52	18.71	4.54	13.75	643.98	---	6.90	207.62	---	11.28
		57.33	39.22	88.02	20.18	3.12	12.31	643.98	---	5.18	207.62	---	12.72
		59.91	45.57	104.15	21.65	1.70	10.53	643.98	---	4.32	207.62	---	15.01
		62.49	46.97	111.67	23.14	0.09	8.30	643.98	---	4.02	207.62	---	19.23
		65.07	45.18	106.18	18.56	1.45	10.63	643.98	---	4.24	207.62	---	14.89
		67.65	39.55	90.55	13.92	2.91	12.18	643.98	---	5.03	207.62	---	12.87
70.23		30.15	69.89	9.27	4.38	14.06	643.98	---	6.66	207.62	---	11.05	
72.81		16.97	39.55	4.63	5.84	16.10	643.98	---	12.10	207.62	---	9.56	
74.64		4.93	11.56	1.36	6.88	16.65	643.98	---	42.42	207.62	---	9.18	
75.39		0.00	0.09	0.02	7.31	16.87	643.98	---	5504.10	207.62	---	9.03	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	6.60	18.80	202.98	---	N/A	195.68	---	7.66
0.75	4.34	10.87	0.51	6.11	17.69	202.98	---	13.96	195.68	---	8.17
2.51	14.53	36.39	1.72	4.96	15.07	531.00	---	10.83	165.00	---	8.09
5.03	24.92	56.94	3.43	3.32	11.86	531.00	---	6.74	165.00	---	10.42
7.54	31.19	69.25	5.15	1.67	10.43	531.00	---	5.45	165.00	---	12.01
10.05	33.33	73.34	6.87	0.03	9.41	531.00	---	5.11	165.00	---	13.48
12.57	31.33	53.46	8.58	1.63	16.05	531.00	---	7.05	165.00	---	7.81
15.08	25.18	49.61	14.18	3.27	9.73	531.00	---	7.73	165.00	---	12.71
17.59	15.91	41.62	19.94	4.91	14.04	531.00	---	9.46	165.00	---	8.69
20.1	0.50	22.01	25.85	6.55	15.53	531.00	---	15.18	165.00	---	7.75
22.62	-18.04	8.59	37.43	8.20	18.38	531.00	---	10.43	165.00	---	6.46
24.38	-33.96	9.57	47.78	9.35	20.41	209.58	---	2.66	254.41	---	9.13
25.13	-40.75	9.99	52.19	9.84	21.27	209.58	---	2.31	254.41	---	8.74
25.88	-35.15	8.66	47.92	8.85	20.35	209.58	---	2.63	254.41	---	9.18
27.53	-22.82	5.74	38.55	6.68	18.31	531.00	---	10.01	165.00	---	6.57
29.93	-8.68	29.92	31.42	5.10	15.24	531.00	---	12.72	165.00	---	7.99
32.33	1.68	46.40	24.41	3.52	12.02	531.00	---	8.77	165.00	---	10.27
34.73	8.25	57.51	17.50	1.93	8.71	531.00	---	6.96	165.00	---	14.35
37.13	10.67	44.34	11.93	0.85	12.88	531.00	---	8.97	165.00	---	9.79
39.53	6.73	45.83	20.04	2.44	8.95	531.00	---	8.77	165.00	---	14.07
41.93	-1.03	41.20	28.86	1.03	13.54	531.00	---	9.89	165.00	---	9.08
44.33	-12.62	23.17	37.85	5.63	14.94	531.00	---	10.46	165.00	---	8.12
46.73	-28.03	5.13	47.65	7.22	18.00	531.00	---	7.98	165.00	---	6.65
48.38	-41.26	7.66	57.33	9.81	22.04	217.53	---	2.20	257.15	---	8.53
49.13	-47.28	8.81	61.72	10.99	23.88	217.53	---	1.95	257.15	---	7.82
49.88	-39.70	8.52	53.09	10.48	23.37	217.53	---	2.40	257.15	---	8.02
51.75	-20.79	7.78	31.58	9.20	22.10	531.00	---	12.28	165.00	---	5.33
54.37	1.06	39.31	26.61	7.42	18.81	531.00	---	10.36	165.00	---	6.35
57	19.27	68.94	21.91	5.63	16.00	531.00	---	5.66	165.00	---	7.58
59.62	30.84	91.04	17.21	3.85	12.85	531.00	---	4.15	165.00	---	9.58
62.24	37.41	88.44	13.29	1.89	18.38	531.00	---	4.20	165.00	---	6.80
64.86	39.51	96.91	10.64	0.11	11.42	531.00	---	3.81	165.00	---	11.10
67.48	36.81	94.69	7.97	1.94	10.47	531.00	---	3.92	165.00	---	11.94
70.11	29.33	76.21	5.31	3.77	14.89	531.00	---	4.97	165.00	---	8.27
72.73	17.05	47.79	2.64	5.60	18.92	531.00	---	8.19	165.00	---	6.41
74.6	4.88	13.72	0.82	6.91	21.85	531.00	---	29.42	165.00	---	5.49
75.35	0.00	0.05	0.09	7.43	23.03	531.00	---	4538.46	165.00	---	5.19

4F1

Stringer S1-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V							
0	0.00	0.00	0.00	7.22	29.08	274.71	---	N/A	214.50	---	5.43
0.75	4.76	17.62	1.40	6.69	27.68	274.71	---	11.72	214.50	---	5.72
2.51	15.92	58.96	4.69	5.45	24.40	456.00	---	5.68	142.30	---	4.26
5.03	27.40	98.82	9.38	3.68	20.24	456.00	---	3.27	142.30	---	5.23
7.54	34.43	121.65	14.07	1.92	16.22	456.00	---	2.60	142.30	---	6.63
10.05	37.03	133.30	18.76	0.15	12.22	456.00	---	2.35	142.30	---	8.95
12.57	35.18	112.86	23.43	1.59	15.65	456.00	---	2.80	142.30	---	6.89
15.08	28.96	99.88	30.72	3.36	18.23	456.00	---	3.22	142.30	---	5.82
17.59	18.90	80.79	38.02	5.13	22.76	456.00	---	4.12	142.30	---	4.58
20.1	3.20	43.25	45.31	6.89	25.68	456.00	---	7.07	142.30	---	3.99
22.62	-16.34	46.59	58.03	8.66	29.81	456.00	---	5.76	142.30	---	3.38
24.38	-33.15	18.72	76.71	9.90	32.04	252.27	---	2.10	225.70	---	5.11
25.13	-40.31	18.77	84.67	10.43	32.99	252.27	---	1.82	225.70	---	4.95
25.88	-35.03	16.04	78.22	9.09	31.25	252.27	---	2.03	225.70	---	5.26
27.48	-23.78	10.22	64.45	6.23	27.55	456.00	---	5.07	142.30	---	3.75
29.82	-11.11	42.23	53.73	4.58	23.66	456.00	---	6.32	142.30	---	4.43
32.16	-2.31	68.17	43.00	2.93	19.83	456.00	---	5.11	142.30	---	5.37
34.51	2.62	85.57	32.27	1.28	14.87	456.00	---	4.07	142.30	---	7.53
36.85	3.68	78.06	23.98	0.37	19.28	456.00	---	4.45	142.30	---	5.66
39.2	1.43	79.67	35.00	1.78	19.90	456.00	---	4.38	142.30	---	7.18
41.54	-4.68	68.24	46.05	2.43	17.54	456.00	---	5.07	142.30	---	6.05
43.89	-14.66	39.95	57.10	5.08	23.40	456.00	---	5.89	142.30	---	4.46
46.23	-28.51	10.04	68.15	6.73	28.00	456.00	---	4.73	142.30	---	3.67
47.83	-40.60	15.44	71.28	9.73	31.42	264.39	---	2.00	230.45	---	5.33
48.58	-46.26	17.97	87.43	11.14	33.03	264.39	---	1.80	230.45	---	5.03
49.33	-38.62	17.40	77.92	10.61	32.76	264.39	---	2.11	230.45	---	5.09
51.26	-18.95	15.92	53.45	9.26	32.06	456.00	---	6.21	142.30	---	3.13
53.93	3.32	61.51	46.11	7.38	28.72	456.00	---	5.55	142.30	---	3.55
56.61	29.36	104.78	38.78	5.50	23.01	456.00	---	3.15	142.30	---	4.52
59.29	32.75	136.72	31.44	3.61	17.72	456.00	---	2.33	142.30	---	5.97
61.96	39.89	131.42	24.12	1.72	14.33	456.00	---	2.37	142.30	---	7.52
64.64	41.99	138.83	19.29	0.16	12.47	456.00	---	2.22	142.30	---	8.77
67.32	39.05	133.42	14.46	2.04	18.25	456.00	---	2.34	142.30	---	5.89
70	31.07	105.98	9.63	3.92	21.95	456.00	---	3.02	142.30	---	4.81
72.67	18.05	66.36	4.80	5.80	25.75	456.00	---	5.01	142.30	---	4.03
74.6	5.05	18.60	1.42	7.16	28.36	456.00	---	18.59	142.30	---	5.61
75.35	0.00	0.04	0.10	7.69	29.37	456.00	---	3507.69	142.30	---	3.47

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.41	29.57	373.29	---	N/A	243.00	---	6.07
0.75	4.90	18.19	1.64	6.88	28.27	373.29	---	15.52	243.00	---	6.37
2.51	16.41	60.88	5.50	5.65	25.23	456.00	---	5.49	142.30	---	4.11
5.03	28.39	103.21	10.99	3.88	21.23	456.00	---	3.12	142.30	---	4.97
7.54	35.92	128.33	16.49	2.11	18.42	456.00	---	2.45	142.30	---	5.83
10.05	39.01	142.90	21.99	0.35	13.29	456.00	---	2.18	142.30	---	8.21
12.57	37.66	127.40	27.48	1.82	24.39	456.00	---	2.46	142.30	---	4.41
15.08	30.86	110.79	33.53	3.59	20.18	456.00	---	2.89	142.30	---	5.25
17.59	19.63	87.27	39.59	5.35	24.59	456.00	---	3.79	142.30	---	4.23
20.1	3.95	45.82	45.66	7.12	27.19	456.00	---	7.87	142.30	---	3.76
22.62	-16.16	20.72	56.99	8.89	31.42	456.00	---	5.87	142.30	---	3.20
24.38	-33.37	22.16	83.05	10.13	32.95	349.23	---	2.83	255.38	---	5.65
25.13	-40.71	23.20	94.15	10.66	33.60	349.23	---	2.42	255.38	---	5.53
25.88	-35.48	19.40	87.98	9.19	31.99	349.23	---	2.65	255.38	---	5.85
27.42	-24.73	11.61	75.38	6.17	28.69	456.00	---	4.33	142.30	---	3.60
29.71	-12.44	48.04	64.26	4.56	25.41	456.00	---	5.27	142.30	---	4.13
32	-3.84	75.41	53.22	2.95	21.37	456.00	---	4.60	142.30	---	4.98
34.29	1.08	96.33	42.19	1.34	16.25	456.00	---	3.63	142.30	---	6.65
36.58	2.32	91.05	35.02	0.45	18.86	456.00	---	3.83	142.30	---	5.78
38.87	-0.55	89.43	46.98	2.06	16.63	456.00	---	3.92	142.30	---	6.46
41.16	-7.11	75.72	58.94	2.67	19.49	456.00	---	4.54	142.30	---	5.43
43.45	-17.36	46.71	70.89	5.28	24.57	456.00	---	4.70	142.30	---	4.24
45.74	-31.30	10.66	82.88	6.89	29.21	456.00	---	3.86	142.30	---	3.51
47.28	-43.13	17.53	84.25	10.05	32.55	356.97	---	2.46	256.57	---	5.75
48.03	-48.89	20.87	99.80	11.59	34.18	356.97	---	2.26	256.57	---	5.44
48.78	-40.91	20.22	86.37	11.06	33.89	356.97	---	2.71	256.57	---	5.50
50.76	-19.84	18.50	50.93	9.67	33.11	456.00	---	6.50	142.30	---	3.01
53.49	3.95	54.69	44.58	7.75	29.86	456.00	---	6.84	142.30	---	3.41
56.22	22.50	103.32	38.23	5.83	24.38	456.00	---	3.18	142.30	---	4.25
58.96	35.80	140.00	31.88	3.91	19.47	456.00	---	2.25	142.30	---	5.42
61.69	43.87	138.23	25.53	1.99	27.72	456.00	---	2.22	142.30	---	3.88
64.42	45.59	149.45	20.42	0.33	15.23	456.00	---	2.04	142.30	---	7.17
67.15	42.07	141.32	15.31	2.25	15.79	456.00	---	2.18	142.30	---	6.79
69.88	33.30	111.60	10.20	4.17	21.25	456.00	---	2.84	142.30	---	4.95
72.62	19.28	68.15	5.10	6.09	26.04	456.00	---	4.86	142.30	---	3.97
74.6	5.30	18.75	1.47	7.48	28.75	456.00	---	18.42	142.30	---	5.55
75.35	0.00	0.04	0.09	8.01	29.78	456.00	---	3897.44	142.30	---	3.41

4F1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V						
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.33	29.35	456.00	---	N/A	142.30	---	3.48
0.75	4.84	17.70	1.52	6.80	27.91	456.00	---	19.54	142.30	---	3.68
2.51	16.21	59.24	5.10	5.57	24.53	456.00	---	5.65	142.30	---	4.24
5.03	27.97	98.29	10.19	3.80	20.03	456.00	---	3.28	142.30	---	5.28
7.54	35.29	121.40	15.29	2.03	15.77	456.00	---	2.60	142.30	---	6.81
10.05	38.18	130.40	20.39	0.26	12.24	456.00	---	2.40	142.30	---	8.92
12.57	36.61	122.86	25.49	1.56	25.13	456.00	---	2.56	142.30	---	4.29
15.08	30.47	110.42	30.34	3.33	19.13	456.00	---	2.90	142.30	---	5.55
17.59	19.88	84.42	36.18	5.10	22.55	456.00	---	3.92	142.30	---	4.63
20.1	4.85	43.69	42.02	6.86	27.25	456.00	---	7.92	142.30	---	3.77
22.62	-14.62	22.18	48.62	8.63	30.97	456.00	---	6.91	142.30	---	3.26
24.38	-31.41	24.14	82.92	9.87	32.74	456.00	---	3.85	142.30	---	3.04
25.13	-38.57	24.98	97.53	10.40	33.50	456.00	---	3.20	142.30	---	2.96
25.88	-33.62	20.89	90.87	8.85	31.90	456.00	---	3.49	142.30	---	3.15
27.36	-23.85	12.81	77.74	5.80	28.74	456.00	---	4.21	142.30	---	3.61
29.6	-12.64	45.86	66.57	4.23	24.57	456.00	---	5.08	142.30	---	4.28
31.83	-4.94	73.15	55.39	2.66	20.13	456.00	---	4.73	142.30	---	5.31
34.07	-0.75	88.49	44.21	1.09	15.48	456.00	---	3.96	142.30	---	7.00
36.3	-0.07	90.71	39.15	0.48	18.15	456.00	---	3.87	142.30	---	6.00
38.54	-2.89	89.00	52.58	2.05	15.50	456.00	---	3.91	142.30	---	6.93
40.77	-9.23	74.51	66.03	3.62	19.81	456.00	---	4.58	142.30	---	5.34
43.01	-19.07	47.74	79.47	5.19	24.39	456.00	---	4.17	142.30	---	4.28
45.24	-32.42	10.90	92.91	6.76	28.57	456.00	---	3.43	142.30	---	3.59
46.73	-43.64	17.13	103.31	10.01	28.04	456.00	---	2.97	142.30	---	3.55
47.48	-49.29	20.27	108.54	11.65	27.77	456.00	---	2.78	142.30	---	3.52
48.23	-41.27	19.54	92.06	11.12	29.18	456.00	---	3.36	142.30	---	3.37
50.26	-19.55	17.55	47.45	9.69	32.99	456.00	---	6.98	142.30	---	3.02
53.05	4.72	49.97	39.15	7.73	28.06	456.00	---	6.93	142.30	---	3.63
55.84	23.53	95.21	33.53	5.77	23.36	456.00	---	3.44	142.30	---	4.44
58.63	36.88	124.70	27.95	3.81	19.09	456.00	---	2.52	142.30	---	5.53
61.41	44.75	136.12	22.59	1.85	27.82	456.00	---	2.25	142.30	---	3.87
64.2	46.72	148.25	18.07	0.27	12.23	456.00	---	2.05	142.30	---	8.93
66.99	43.23	140.10	13.54	2.23	15.87	456.00	---	2.20	142.30	---	6.76
69.77	34.28	111.15	9.01	4.19	20.40	456.00	---	2.85	142.30	---	5.16
72.56	19.86	68.63	4.49	6.15	25.59	456.00	---	4.82	142.30	---	4.04
74.6	5.34	18.48	1.26	7.58	28.52	456.00	---	18.69	142.30	---	3.57
75.35	0.00	0.04	0.07	8.11	29.60	456.00	---	5010.99	142.30	---	3.42

4F1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.61	29.70	489.00	---	N/A	149.50	---	3.62
0.75	5.05	17.96	1.63	7.08	28.26	489.00	---	20.66	149.50	---	3.82
2.51	16.91	60.11	5.45	5.85	24.88	489.00	---	5.98	149.50	---	4.39
5.03	29.39	100.12	10.90	4.08	20.52	489.00	---	3.46	149.50	---	5.41
7.54	37.44	124.14	16.35	2.32	16.39	489.00	---	2.73	149.50	---	6.87
10.05	41.05	135.52	21.80	0.56	12.51	489.00	---	2.47	149.50	---	9.15
12.57	40.23	129.74	27.26	1.93	24.91	489.00	---	2.59	149.50	---	4.54
15.08	33.18	114.31	30.46	3.69	19.64	489.00	---	3.00	149.50	---	5.67
17.59	21.69	85.60	35.27	5.45	23.95	489.00	---	4.14	149.50	---	4.57
20.1	5.77	43.71	40.45	7.22	27.71	489.00	---	8.47	149.50	---	3.89
22.62	-14.57	23.99	47.56	8.98	31.45	489.00	---	7.60	149.50	---	3.37
24.38	-31.94	25.97	84.53	10.21	33.01	489.00	---	4.07	149.50	---	3.17
25.13	-39.34	26.81	100.28	10.74	33.68	489.00	---	3.36	149.50	---	3.10
25.88	-34.49	22.31	93.42	9.01	31.94	489.00	---	3.66	149.50	---	3.32
27.31	-25.25	13.74	80.35	5.70	28.62	489.00	---	4.37	149.50	---	3.82
29.49	-14.50	44.91	69.09	4.17	24.56	489.00	---	5.23	149.50	---	4.51
31.67	-7.09	71.73	57.83	2.64	20.19	489.00	---	5.15	149.50	---	5.57
33.85	-3.00	87.50	46.58	1.11	15.59	489.00	---	4.26	149.50	---	7.31
36.03	-2.23	89.49	43.27	0.78	17.39	489.00	---	4.18	149.50	---	6.57
38.21	-5.60	88.46	57.99	2.31	15.27	489.00	---	4.19	149.50	---	7.38
40.39	-12.29	73.33	72.72	3.84	19.93	489.00	---	4.96	149.50	---	5.58
42.57	-22.32	47.26	87.44	5.37	24.40	489.00	---	4.05	149.50	---	4.49
44.75	-35.68	11.68	102.16	6.90	28.55	489.00	---	3.33	149.50	---	3.79
46.18	-46.61	17.28	111.80	10.35	28.19	489.00	---	2.95	149.50	---	3.71
46.93	-52.35	20.21	116.85	12.16	28.00	489.00	---	2.77	149.50	---	3.67
47.68	-43.98	19.59	98.53	11.63	29.57	489.00	---	3.37	149.50	---	3.50
49.77	-20.64	17.88	47.48	10.16	33.93	489.00	---	7.49	149.50	---	3.09
52.61	5.41	50.45	37.18	8.17	29.48	489.00	---	7.35	149.50	---	3.62
55.45	25.78	99.82	32.33	6.17	24.72	489.00	---	3.51	149.50	---	4.40
58.3	40.49	134.35	27.74	4.18	20.30	489.00	---	2.50	149.50	---	5.46
61.14	49.55	149.34	24.65	1.50	16.57	489.00	---	2.19	149.50	---	6.85
63.98	50.98	158.64	19.72	0.50	13.99	489.00	---	2.05	149.50	---	8.18
66.82	46.73	147.26	14.78	2.49	16.74	489.00	---	2.24	149.50	---	6.72
69.66	36.82	116.21	9.85	4.48	21.02	489.00	---	2.92	149.50	---	5.26
72.51	21.24	69.63	4.91	6.48	25.53	489.00	---	5.10	149.50	---	4.25
74.6	5.61	18.42	1.36	7.94	27.76	489.00	---	20.12	149.50	---	3.86
75.35	0.00	0.04	0.09	8.47	28.56	489.00	---	4179.49	149.50	---	3.73

4F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V						
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	6.28	19.39	489.00	---	N/A	149.50	---	5.61
0.75	4.10	11.46	0.73	5.79	18.34	489.00	---	32.48	149.50	---	5.96
2.51	13.73	38.34	2.45	4.64	15.87	489.00	---	9.45	149.50	---	6.95
5.03	23.33	61.02	4.90	3.00	12.64	489.00	---	5.78	149.50	---	8.86
7.54	28.82	74.92	7.35	1.36	9.75	489.00	---	4.64	149.50	---	11.66
10.05	30.18	78.47	9.80	0.28	9.34	489.00	---	4.41	149.50	---	12.28
12.57	27.45	71.67	12.26	0.71	10.50	489.00	---	4.87	149.50	---	10.88
15.08	23.61	66.23	15.35	2.35	11.34	489.00	---	5.32	149.50	---	9.93
17.59	15.65	51.74	19.14	3.99	14.49	489.00	---	6.97	149.50	---	7.66
20.1	3.58	27.71	22.93	5.63	17.45	489.00	---	13.45	149.50	---	6.27
22.62	-12.62	12.01	29.29	7.27	20.25	489.00	---	12.41	149.50	---	5.32
24.38	-26.86	13.06	52.55	8.42	21.61	489.00	---	6.65	149.50	---	4.93
25.13	-32.93	13.51	62.46	8.91	22.19	489.00	---	5.50	149.50	---	4.78
25.88	-28.43	11.20	57.61	7.63	20.82	489.00	---	6.04	149.50	---	5.16
27.25	-20.20	6.97	48.75	5.30	18.32	489.00	---	7.30	149.50	---	5.99
29.38	-10.41	26.56	41.10	3.92	15.34	489.00	---	8.90	149.50	---	7.24
31.5	-3.55	42.39	33.46	2.54	12.27	489.00	---	8.79	149.50	---	9.17
33.63	0.37	50.37	25.84	1.16	9.24	489.00	---	7.46	149.50	---	12.32
35.75	1.51	50.06	21.42	0.39	11.37	489.00	---	7.48	149.50	---	10.08
37.88	-0.79	50.36	29.54	1.77	9.15	489.00	---	7.45	149.50	---	12.37
40	-6.00	42.50	37.90	3.14	12.20	489.00	---	8.71	149.50	---	9.17
42.13	-14.14	26.96	46.26	4.52	15.18	489.00	---	7.83	149.50	---	7.28
44.25	-25.19	6.64	54.62	5.89	18.02	489.00	---	6.43	149.50	---	6.05
45.63	-34.24	9.81	61.35	8.03	17.68	489.00	---	5.57	149.50	---	6.05
46.38	-39.16	11.54	65.00	9.20	17.50	489.00	---	5.18	149.50	---	6.05
47.13	-32.94	11.12	55.16	8.73	17.94	489.00	---	6.22	149.50	---	5.92
49.27	-15.18	9.94	27.07	7.37	19.21	489.00	---	13.33	149.50	---	5.60
52.17	3.47	31.40	20.82	5.55	16.19	489.00	---	11.87	149.50	---	6.76
55.07	16.78	55.01	16.62	3.72	13.03	489.00	---	6.53	149.50	---	8.54
57.96	24.76	67.82	12.61	1.89	9.77	489.00	---	5.18	149.50	---	11.58
60.86	29.04	69.63	9.47	2.44	17.84	489.00	---	4.99	149.50	---	6.31
63.76	33.53	80.24	7.57	0.66	9.75	489.00	---	4.27	149.50	---	11.73
66.66	32.87	80.48	5.68	1.12	8.78	489.00	---	4.27	149.50	---	12.97
69.55	27.06	65.94	3.78	2.89	11.67	489.00	---	5.29	149.50	---	9.61
72.45	16.10	41.56	1.89	4.67	14.97	489.00	---	8.66	149.50	---	7.37
74.6	4.16	10.77	0.57	5.99	17.44	489.00	---	34.54	149.50	---	6.25
75.35	0.00	0.03	0.11	6.45	18.30	489.00	---	3419.58	149.50	---	5.93

4F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1	Stringer F2A-2	0	0.00	0.00	0.00	6.99	19.32	1212.51	---	N/A	149.61	---	5.59
		0.75	4.73	11.83	0.80	6.57	18.64	1212.51	---	78.42	149.61	---	5.82
		2.51	15.82	39.60	2.68	5.60	17.04	1212.51	---	23.15	149.61	---	6.43
		5.03	28.16	70.63	5.36	4.21	15.16	1212.51	---	12.81	149.61	---	7.31
		7.54	37.00	91.32	8.04	2.83	13.16	1212.51	---	9.81	149.61	---	8.53
		10.05	42.36	107.68	10.72	1.44	10.79	1212.51	---	8.27	149.61	---	10.53
		12.57	44.23	113.97	13.40	0.85	9.19	1212.51	---	7.80	149.61	---	12.43
		15.08	40.35	101.84	10.72	2.23	11.30	1212.51	---	8.76	149.61	---	9.99
		17.59	32.99	85.09	8.04	3.62	13.50	1212.51	---	10.57	149.61	---	8.26
		20.1	22.15	58.49	5.36	5.01	15.76	1212.51	---	15.57	149.61	---	6.98
		22.62	7.81	25.28	2.68	6.40	18.32	1212.51	---	36.59	149.61	---	5.93
		24.38	2.33	7.55	0.80	7.37	18.57	1212.51	---	123.17	149.61	---	5.80
	Stringer F2B-2	25.13	0.00	0.00	0.00	7.79	18.68	1212.51	---	N/A	149.61	---	5.74
		25.88	3.02	10.61	7.44	6.53	17.50	1212.51	---	87.58	149.61	---	6.20
		27.22	8.41	29.58	20.72	4.29	15.38	1212.51	---	31.25	149.61	---	7.20
		29.3	16.15	50.70	20.30	3.14	13.59	1212.51	---	18.08	149.61	---	8.24
		31.39	21.50	64.93	19.88	2.00	11.51	1212.51	---	14.03	149.61	---	9.82
		33.47	24.46	77.00	19.45	0.85	9.06	1212.51	---	11.80	149.61	---	12.61
		35.56	25.20	80.01	19.03	0.22	7.27	1212.51	---	11.34	149.61	---	15.80
		37.64	23.54	71.58	15.23	1.36	9.31	1212.51	---	12.70	149.61	---	12.22
		39.73	19.51	61.54	11.42	2.50	11.51	1212.51	---	14.84	149.61	---	9.78
		41.81	13.11	41.82	7.62	3.64	13.67	1212.51	---	21.99	149.61	---	8.15
		43.9	4.34	16.38	3.81	4.78	15.52	1212.51	---	56.68	149.61	---	7.11
		45.23	1.56	5.91	1.37	7.15	14.55	1212.51	---	157.65	149.61	---	7.42
	45.98	0.00	0.00	0.00	8.49	14.00	1212.51	---	N/A	149.61	---	7.61	
	Stringer F2C-2	46.73	5.49	12.14	4.26	8.09	14.91	1212.51	---	76.41	149.61	---	7.18
		48.92	21.51	47.57	16.69	6.94	17.56	1212.51	---	19.15	149.61	---	6.16
		51.86	39.55	85.25	19.22	5.38	15.48	1212.51	---	10.48	149.61	---	7.09
		54.8	52.95	112.73	21.75	3.82	13.29	1212.51	---	7.80	149.61	---	8.37
		57.74	61.74	132.57	24.28	2.26	11.20	1212.51	---	6.57	149.61	---	10.07
		60.68	67.58	140.54	26.83	0.89	8.86	1212.51	---	6.16	149.61	---	12.89
		63.62	63.06	130.01	21.52	2.33	11.39	1212.51	---	6.69	149.61	---	9.90
		66.56	53.97	107.65	16.14	3.85	12.93	1212.51	---	8.16	149.61	---	8.60
		69.5	40.45	79.26	10.76	5.36	14.68	1212.51	---	11.26	149.61	---	7.47
		72.44	22.48	42.64	5.38	6.87	15.88	1212.51	---	21.35	149.61	---	6.81
		74.63	5.77	10.97	1.39	7.99	14.16	1212.51	---	84.46	149.61	---	7.56
75.38		0.05	0.13	0.02	8.38	13.57	1212.51	---	7174.23	149.61	---	7.86	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
5C1 Stringer F1A-1	0	0.00	0.07	0.02	7.85	17.57	643.98	---	7076.70	207.62	---	8.64
	0.75	5.26	10.98	0.78	7.39	17.04	643.98	---	44.64	207.62	---	8.94
	2.75	19.30	40.07	2.81	6.17	15.63	643.98	---	11.88	207.62	---	9.82
	5.51	33.98	69.78	5.64	4.51	13.68	643.98	---	6.61	207.62	---	11.34
	8.26	44.12	89.37	8.46	2.86	11.78	643.98	---	5.05	207.62	---	13.31
	11.01	49.75	100.78	11.28	1.23	10.03	643.98	---	4.42	207.62	---	15.80
	13.76	50.89	108.63	14.13	0.40	8.01	643.98	---	4.09	207.62	---	19.89
	16.52	47.10	98.04	11.33	2.18	9.99	643.98	---	4.57	207.62	---	15.77
	19.27	38.91	82.71	8.50	3.77	11.95	643.98	---	5.52	207.62	---	13.05
	22.02	26.36	54.15	5.67	5.35	14.60	643.98	---	8.66	207.62	---	10.57
	24.77	9.49	24.21	2.83	6.91	16.46	643.98	---	20.07	207.62	---	9.28
	26.78	2.58	6.58	0.77	8.05	14.99	643.98	---	74.91	207.62	---	10.12
	27.53	0.00	0.00	0.00	8.47	14.44	643.98	---	N/A	207.62	---	10.47
	28.28	2.70	9.29	8.41	7.08	14.01	643.98	---	53.02	207.62	---	10.90
	29.61	7.49	25.77	23.32	4.62	13.24	643.98	---	18.93	207.62	---	11.71
	31.69	15.88	44.09	23.37	3.46	11.43	643.98	---	10.88	207.62	---	13.67
	33.77	21.88	58.26	23.42	2.30	10.10	643.98	---	8.13	207.62	---	15.58
	35.84	25.47	66.64	23.48	1.16	9.37	643.98	---	7.05	207.62	---	16.92
	37.92	26.70	71.39	23.49	0.24	7.42	643.98	---	6.56	207.62	---	21.49
	40	26.02	67.06	18.80	0.89	9.10	643.98	---	7.00	207.62	---	17.45
42.08	22.99	57.13	14.10	2.02	9.99	643.98	---	8.27	207.62	---	15.78	
44.16	17.63	43.26	9.40	3.13	11.15	643.98	---	11.04	207.62	---	14.04	
46.24	9.97	24.52	4.70	4.24	12.56	643.98	---	19.80	207.62	---	12.38	
47.57	3.59	8.84	1.69	4.94	12.09	643.98	---	55.62	207.62	---	12.80	
48.32	0.00	0.00	0.00	5.34	11.82	643.98	---	N/A	207.62	---	13.06	
5C1 Stringer S1-1	0	0.00	0.05	0.08	7.58	22.58	531.00	---	5105.77	165.00	---	5.29
	0.75	4.95	13.55	0.67	7.04	22.20	531.00	---	29.79	165.00	---	6.40
	2.7	17.83	48.64	2.21	5.62	21.21	531.00	---	8.03	165.00	---	5.72
	5.41	30.39	78.29	4.43	3.67	17.04	531.00	---	4.83	165.00	---	7.23
	8.11	37.69	91.66	6.65	1.74	13.09	531.00	---	4.05	165.00	---	9.56
	10.81	39.80	95.67	8.86	0.18	12.87	531.00	---	3.85	165.00	---	9.85
	13.52	36.73	88.60	11.06	1.95	11.43	531.00	---	4.20	165.00	---	10.93
	16.22	28.90	78.18	14.54	3.84	11.73	531.00	---	5.41	165.00	---	10.49
	18.92	15.98	58.11	18.81	5.72	17.46	531.00	---	6.75	165.00	---	6.94
	21.62	-2.00	41.92	23.50	7.58	17.61	531.00	---	9.70	165.00	---	6.78
	24.33	-25.01	16.41	36.71	9.44	19.63	531.00	---	10.45	165.00	---	5.98
	26.28	-45.26	5.00	47.14	10.77	22.12	243.03	---	3.01	248.02	---	8.13
	27.03	-53.05	0.61	51.15	11.28	23.09	243.03	---	2.62	248.02	---	7.77
	27.78	-46.17	1.67	46.47	10.23	21.12	243.03	---	3.03	248.02	---	8.55
	29.16	-33.52	3.61	37.87	8.47	17.50	531.00	---	9.90	165.00	---	6.77
	31.28	-17.04	25.07	24.84	7.04	15.51	531.00	---	12.49	165.00	---	7.73
	33.4	-3.61	37.07	24.81	5.61	12.89	531.00	---	10.92	165.00	---	9.41
	35.53	6.80	49.59	18.28	4.19	10.49	531.00	---	8.81	165.00	---	11.70
	37.65	14.16	42.04	11.83	2.77	17.13	531.00	---	9.38	165.00	---	7.25
	39.78	17.30	49.04	9.46	0.78	10.70	531.00	---	7.98	165.00	---	11.79
41.9	17.45	48.60	7.09	0.63	7.88	531.00	---	8.05	165.00	---	16.03	
44.03	14.61	43.29	4.73	2.04	10.72	531.00	---	9.10	165.00	---	11.65	
46.15	8.80	28.17	2.37	3.44	13.91	531.00	---	14.19	165.00	---	8.88	
47.53	3.10	9.92	0.83	4.34	15.69	202.98	---	15.43	195.68	---	9.32	
48.28	0.00	0.00	0.00	4.83	16.66	202.98	---	N/A	195.68	---	8.75	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
	From Rear (Ft)	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
5C1 Stringer S2-1	0	0.00	0.03	0.08	7.45	27.12	456.00	---	4384.62	142.30	---	3.76	
	0.75	4.88	17.82	1.34	6.92	26.48	456.00	---	19.41	142.30	---	3.87	
	2.65	17.25	62.89	4.52	5.58	24.86	456.00	---	5.30	142.30	---	4.18	
	5.3	29.57	105.57	9.07	3.72	20.80	456.00	---	3.04	142.30	---	5.08	
	7.94	36.96	128.09	13.61	1.86	16.16	456.00	---	2.45	142.30	---	6.66	
	10.59	39.42	134.35	18.15	0.00	13.86	456.00	---	2.32	142.30	---	7.90	
	13.24	36.95	129.30	22.70	2.19	25.31	456.00	---	2.45	142.30	---	4.24	
	15.89	28.69	108.21	28.95	4.05	17.64	456.00	---	3.12	142.30	---	5.98	
	18.54	15.50	85.34	35.64	5.91	23.93	456.00	---	3.93	142.30	---	4.33	
	21.18	-2.62	59.10	42.83	7.78	24.56	456.00	---	5.89	142.30	---	4.14	
	23.83	-25.67	22.86	55.55	9.64	27.45	456.00	---	5.85	142.30	---	3.64	
	25.73	-45.74	7.75	72.93	10.97	29.72	310.20	---	2.64	264.09	---	6.47	
	26.48	-53.66	1.78	79.79	11.50	30.61	310.20	---	2.32	264.09	---	6.26	
	27.23	-46.62	3.48	73.12	10.51	29.56	310.20	---	2.63	264.09	---	6.53	
	28.66	-33.19	6.72	60.41	8.63	27.37	456.00	---	5.26	142.30	---	3.68	
	30.84	-16.05	42.18	52.04	7.09	24.32	456.00	---	6.31	142.30	---	4.21	
	33.02	-2.26	65.45	45.68	5.56	20.97	456.00	---	5.32	142.30	---	4.95	
	35.2	8.19	92.62	38.32	4.03	18.04	456.00	---	4.15	142.30	---	5.84	
	37.38	15.30	95.41	30.97	2.49	25.47	456.00	---	3.52	142.30	---	4.20	
	39.56	18.92	98.92	24.77	0.90	12.56	456.00	---	3.35	142.30	---	8.64	
	41.74	19.20	93.53	18.58	0.64	14.80	456.00	---	3.55	142.30	---	7.35	
	43.92	16.14	78.10	12.38	2.17	18.66	456.00	---	4.28	142.30	---	5.75	
	46.1	9.74	48.06	6.19	3.70	22.95	456.00	---	7.10	142.30	---	4.61	
	47.53	3.35	16.53	2.13	4.71	24.43	274.71	---	12.58	214.50	---	5.56	
	48.28	0.00	0.00	0.00	5.24	25.20	274.71	---	N/A	214.50	---	6.34	
	5C1 Stringer S3-1	0	0.00	0.05	0.08	7.04	25.67	390.00	---	3750.00	123.50	---	3.43
		0.75	4.61	16.71	1.46	6.52	24.93	390.00	---	17.68	123.50	---	3.55
		2.59	15.91	57.59	4.83	5.24	23.12	390.00	---	4.93	123.50	---	3.88
5.19		27.17	97.83	9.67	3.44	19.33	390.00	---	2.79	123.50	---	4.74	
7.78		33.76	118.89	14.51	1.64	15.24	390.00	---	2.24	123.50	---	6.13	
10.37		35.69	124.65	19.35	0.15	14.59	390.00	---	2.12	123.50	---	6.50	
12.96		32.97	119.02	24.20	2.03	25.27	390.00	---	2.24	123.50	---	3.68	
15.56		25.38	97.90	30.13	3.83	17.87	390.00	---	2.81	123.50	---	5.10	
18.15		13.12	82.44	36.07	5.63	24.10	390.00	---	3.48	123.50	---	3.71	
20.74		-3.81	55.86	42.57	7.43	24.15	390.00	---	5.30	123.50	---	3.63	
23.34		-25.39	21.15	56.45	9.22	27.12	390.00	---	4.86	123.50	---	3.16	
25.18		-44.02	7.64	75.97	10.59	28.11	331.59	---	2.78	224.82	---	5.78	
25.93		-51.61	2.14	83.93	11.02	28.52	331.59	---	2.42	224.82	---	5.68	
26.68		-44.62	3.85	77.07	10.46	28.01	331.59	---	2.73	224.82	---	5.81	
28.16		-30.82	7.23	63.54	8.53	27.01	390.00	---	4.24	123.50	---	3.20	
30.4		-13.49	49.92	56.19	6.98	24.85	390.00	---	5.10	123.50	---	3.54	
32.63		0.37	77.67	48.83	5.43	22.92	390.00	---	3.86	123.50	---	3.91	
34.87		10.77	97.40	41.48	3.88	18.87	390.00	---	2.97	123.50	---	4.83	
37.1		17.73	101.83	34.17	2.33	24.75	390.00	---	2.77	123.50	---	3.74	
39.34		21.11	105.75	27.33	0.74	13.57	390.00	---	2.64	123.50	---	6.95	
41.57		21.02	99.13	20.49	0.81	14.54	390.00	---	2.81	123.50	---	6.48	
43.81		17.47	81.67	13.66	2.36	18.99	390.00	---	3.46	123.50	---	4.88	
46.04		10.46	49.90	6.82	3.91	23.25	390.00	---	5.80	123.50	---	3.92	
47.53		3.50	16.71	2.28	4.94	24.36	339.21	---	15.41	226.88	---	5.96	
48.28		0.00	0.00	0.00	5.46	24.92	339.21	---	N/A	226.88	---	6.78	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1 Stringer S4-1	0	0.00	0.03	0.06	6.91	27.41	390.00	---	5000.00	123.50	---	3.21
	0.75	4.52	17.31	1.61	6.39	26.41	390.00	---	17.07	123.50	---	3.36
	2.54	15.30	58.54	5.31	5.15	24.01	390.00	---	4.86	123.50	---	3.74
	5.08	26.13	98.06	10.64	3.39	19.54	390.00	---	2.79	123.50	---	4.69
	7.61	32.49	117.39	15.97	1.63	14.90	390.00	---	2.28	123.50	---	6.27
	10.15	34.39	123.21	21.30	0.13	12.43	390.00	---	2.16	123.50	---	7.63
	12.69	31.83	118.28	26.63	2.24	25.36	390.00	---	2.27	123.50	---	3.66
	15.23	23.91	103.94	32.79	4.00	18.64	390.00	---	2.66	123.50	---	4.88
	17.76	11.52	85.11	38.95	5.76	20.55	390.00	---	3.39	123.50	---	4.34
	20.3	-5.34	52.46	45.28	7.52	24.88	390.00	---	5.62	123.50	---	3.52
	22.84	-26.66	8.76	59.95	9.28	28.38	390.00	---	4.56	123.50	---	3.02
	24.63	-44.83	5.00	78.20	10.52	29.06	390.00	---	3.26	123.50	---	2.91
	25.38	-52.45	3.42	85.85	11.04	29.34	390.00	---	2.88	123.50	---	2.86
	26.13	-45.25	5.70	79.31	10.31	28.75	390.00	---	3.21	123.50	---	2.95
	27.67	-30.46	10.39	65.89	8.81	27.55	390.00	---	4.09	123.50	---	3.13
	29.96	-12.11	48.98	58.05	7.22	24.47	390.00	---	4.96	123.50	---	3.59
	32.25	2.61	75.44	50.21	5.63	21.47	390.00	---	3.94	123.50	---	4.16
	34.54	13.69	93.10	42.37	4.05	18.11	390.00	---	3.08	123.50	---	5.02
	36.83	21.14	105.97	34.53	2.46	24.43	390.00	---	2.63	123.50	---	3.79
	39.12	24.18	108.97	27.63	0.53	13.07	390.00	---	2.53	123.50	---	7.23
41.41	23.58	103.03	20.72	1.05	14.78	390.00	---	2.68	123.50	---	6.36	
43.7	19.35	84.35	13.81	2.64	18.89	390.00	---	3.33	123.50	---	4.89	
45.99	11.49	50.92	6.91	4.23	23.15	390.00	---	5.67	123.50	---	3.92	
47.53	3.76	16.68	2.26	5.29	24.19	390.00	---	17.76	123.50	---	3.71	
48.28	0.00	0.00	0.00	5.81	24.70	390.00	---	N/A	123.50	---	3.61	
5C1 Stringer S5-1	0	0.00	0.05	0.09	6.59	24.23	389.64	---	3330.26	299.22	---	9.23
	0.75	4.31	15.31	1.73	6.08	23.31	389.64	---	19.30	299.22	---	9.61
	2.48	14.25	50.50	5.52	4.89	21.18	369.00	---	5.34	145.70	---	5.06
	4.97	24.29	91.29	11.07	3.20	18.94	369.00	---	2.84	145.70	---	5.75
	7.45	30.12	116.12	16.61	1.50	17.29	369.00	---	2.19	145.70	---	6.40
	9.93	31.74	124.64	22.16	0.20	12.77	369.00	---	2.02	145.70	---	8.76
	12.41	29.14	107.11	27.69	2.30	13.48	369.00	---	2.38	145.70	---	8.14
	14.9	21.33	95.80	34.02	3.99	18.84	369.00	---	2.74	145.70	---	5.74
	17.38	9.31	79.35	40.64	5.69	23.90	369.00	---	3.46	145.70	---	4.45
	19.86	-6.92	52.29	47.26	7.39	24.53	369.00	---	5.30	145.70	---	4.27
	22.34	-27.36	19.41	60.38	9.08	27.07	369.00	---	4.25	145.70	---	3.80
	24.08	-44.62	7.44	77.07	10.27	28.10	369.00	---	3.10	145.70	---	3.62
	24.83	-52.06	2.28	84.26	10.78	28.55	369.00	---	2.75	145.70	---	3.55
	25.58	-44.76	4.77	77.44	10.18	28.22	369.00	---	3.09	145.70	---	3.61
	27.17	-29.27	10.05	62.98	8.92	27.53	369.00	---	4.04	145.70	---	3.75
	29.52	-10.25	49.72	54.73	7.31	24.46	369.00	---	5.00	145.70	---	4.28
	31.86	5.02	77.76	47.10	5.71	21.48	369.00	---	3.59	145.70	---	4.95
	34.21	16.53	95.10	39.48	4.11	18.12	369.00	---	2.81	145.70	---	5.96
	36.55	24.25	106.83	31.87	2.51	24.44	369.00	---	2.43	145.70	---	4.48
	38.9	26.91	110.15	25.49	0.33	12.74	369.00	---	2.33	145.70	---	8.77
41.24	25.82	105.00	19.12	1.27	14.58	369.00	---	2.46	145.70	---	7.60	
43.59	20.97	86.47	12.75	2.87	18.58	369.00	---	3.04	145.70	---	5.88	
45.93	12.37	51.59	6.38	4.47	22.90	369.00	---	5.26	145.70	---	4.70	
47.53	3.95	16.46	2.04	5.56	24.02	369.00	---	17.00	145.70	---	4.44	
48.28	0.00	0.00	0.00	6.07	24.54	369.00	---	N/A	145.70	---	4.32	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	D	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
5C1 Stringer S6-1	0	0.00	0.04	0.10	4.88	16.70	369.00	---	2838.46	145.70	---	6.42
	0.75	3.13	9.84	0.80	4.46	15.76	369.00	---	28.53	145.70	---	6.83
	2.43	10.15	31.79	2.36	3.51	13.65	369.00	---	8.61	145.70	---	7.95
	4.86	16.98	51.98	4.73	2.12	10.72	369.00	---	5.13	145.70	---	10.26
	7.28	20.44	59.59	7.10	0.73	8.02	369.00	---	4.42	145.70	---	13.88
	9.71	20.50	60.64	9.47	0.68	9.55	369.00	---	4.34	145.70	---	11.66
	12.14	17.14	54.15	11.86	0.98	8.18	369.00	---	4.93	145.70	---	13.58
	14.57	13.02	51.93	17.27	2.42	9.85	369.00	---	5.22	145.70	---	11.13
	16.99	5.40	44.53	22.89	3.86	11.60	369.00	---	6.25	145.70	---	9.33
	19.42	-5.71	29.76	28.62	5.30	14.60	369.00	---	9.35	145.70	---	7.31
	21.85	-20.36	6.90	34.42	6.76	17.00	369.00	---	7.66	145.70	---	6.20
	23.53	-32.91	2.43	44.43	7.86	14.55	369.00	---	5.65	145.70	---	7.16
	24.28	-38.51	0.44	48.90	8.35	13.46	369.00	---	5.02	145.70	---	7.71
	25.03	-32.79	2.01	43.61	7.89	14.69	369.00	---	5.76	145.70	---	7.09
	26.68	-20.21	5.46	31.97	6.89	17.38	369.00	---	8.25	145.70	---	6.05
	29.08	-5.43	29.35	27.32	5.43	15.22	369.00	---	9.49	145.70	---	7.01
	31.48	5.83	46.01	22.95	3.95	12.83	369.00	---	6.04	145.70	---	8.43
	33.88	13.54	54.95	18.57	2.47	10.34	369.00	---	4.92	145.70	---	10.60
	36.28	17.72	58.35	14.20	2.28	16.09	369.00	---	4.56	145.70	---	6.82
	38.68	21.39	64.29	11.37	0.78	10.08	369.00	---	4.08	145.70	---	11.04
41.08	21.46	63.04	8.52	0.72	8.78	369.00	---	4.16	145.70	---	12.68	
43.48	17.93	54.33	5.68	2.22	11.28	369.00	---	4.89	145.70	---	9.74	
45.88	10.78	32.87	2.84	3.74	14.21	369.00	---	8.31	145.70	---	7.62	
47.53	3.37	10.27	0.89	4.78	16.20	369.00	---	27.31	145.70	---	6.62	
48.28	0.00	0.00	0.00	5.25	17.10	369.00	---	N/A	145.70	---	6.25	
5C1 Stringer F2A-1	0	0.00	0.13	0.04	6.23	11.98	1212.51	---	7174.62	149.61	---	9.09
	0.75	4.25	8.09	1.10	5.86	11.85	1212.51	---	114.84	149.61	---	9.22
	2.39	13.54	25.48	3.43	5.05	11.56	1212.51	---	36.07	149.61	---	9.52
	4.79	24.20	47.67	6.85	3.85	10.87	1212.51	---	19.06	149.61	---	10.23
	7.18	31.96	66.74	10.28	2.64	10.33	1212.51	---	13.50	149.61	---	10.89
	9.57	36.82	80.71	13.70	1.42	9.29	1212.51	---	11.10	149.61	---	12.24
	11.97	38.72	87.80	17.16	0.17	8.25	1212.51	---	10.18	149.61	---	13.93
	14.36	35.43	81.11	13.76	2.01	9.51	1212.51	---	11.06	149.61	---	11.89
	16.76	29.13	65.78	10.32	3.26	10.97	1212.51	---	13.74	149.61	---	10.19
	19.15	19.82	44.15	6.88	4.52	12.84	1212.51	---	20.68	149.61	---	8.61
	21.54	7.48	18.55	3.44	5.79	14.80	1212.51	---	49.88	149.61	---	7.38
	23.19	2.34	5.80	1.08	6.81	12.30	1212.51	---	160.49	149.61	---	8.80
	23.94	0.00	0.00	0.00	7.27	11.17	1212.51	---	N/A	149.61	---	9.65
	24.69	4.17	10.32	5.76	6.87	12.26	1212.51	---	89.97	149.61	---	8.83
	26.37	13.50	33.44	18.65	5.96	14.70	1212.51	---	27.49	149.61	---	7.42
	28.81	26.44	60.65	19.47	4.64	13.05	1212.51	---	14.94	149.61	---	8.46
	31.25	36.14	79.93	20.29	3.31	11.74	1212.51	---	11.22	149.61	---	9.52
	33.69	42.59	91.51	21.11	1.98	10.58	1212.51	---	9.73	149.61	---	10.69
	36.13	45.79	99.42	21.91	0.34	8.68	1212.51	---	8.92	149.61	---	13.22
	38.56	43.30	92.84	17.52	1.70	10.38	1212.51	---	9.58	149.61	---	10.92
41	37.49	82.54	13.14	3.06	11.78	1212.51	---	10.85	149.61	---	9.51	
43.44	28.36	63.67	8.76	4.44	13.56	1212.51	---	14.20	149.61	---	8.16	
45.88	15.86	35.44	4.38	5.82	15.56	1212.51	---	25.87	149.61	---	7.02	
47.57	4.88	10.89	1.35	6.78	15.35	1212.51	---	85.17	149.61	---	7.05	
48.32	0.00	0.00	0.00	7.21	15.26	1212.51	---	N/A	149.61	---	7.07	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1	Stringer F1A-2	0	0.00	0.00	0.00	6.31	14.16	643.98	---	N/A	207.62	---	10.83
		0.75	4.24	9.07	0.85	5.92	13.80	643.98	---	54.16	207.62	---	11.15
		2.51	14.20	30.35	2.85	4.99	12.94	643.98	---	15.85	207.62	---	11.96
		5.03	25.09	55.01	5.70	3.67	11.48	643.98	---	8.55	207.62	---	13.59
		7.54	32.67	72.44	8.54	2.36	10.28	643.98	---	6.39	207.62	---	15.31
		10.05	36.93	83.02	11.39	1.04	9.40	643.98	---	5.52	207.62	---	16.88
		12.57	37.89	91.22	14.24	0.48	5.13	643.98	---	5.02	207.62	---	31.04
		15.08	35.03	80.11	11.40	1.79	9.39	643.98	---	5.75	207.62	---	16.82
		17.59	28.86	67.37	8.55	3.11	14.37	643.98	---	6.92	207.62	---	10.90
		20.1	19.39	44.47	5.70	4.43	15.64	643.98	---	10.70	207.62	---	9.93
	22.62	6.60	19.11	2.85	5.75	13.83	643.98	---	25.58	207.62	---	11.13	
	24.38	1.97	5.71	0.85	6.68	13.08	643.98	---	86.41	207.62	---	11.70	
	Stringer F1B-2	25.13	0.00	0.00	0.00	7.07	12.76	643.98	---	N/A	207.62	---	11.96
		25.88	3.46	8.56	6.02	6.33	12.57	643.98	---	57.45	207.62	---	12.20
		27.58	11.29	27.97	19.66	4.64	12.14	643.98	---	17.31	207.62	---	12.77
		30.02	21.06	50.61	21.66	3.34	10.69	643.98	---	9.37	207.62	---	14.63
		32.47	27.67	66.75	23.65	2.05	9.96	643.98	---	7.01	207.62	---	15.83
		34.91	31.13	75.83	25.65	0.75	8.97	643.98	---	6.12	207.62	---	17.72
		37.36	31.13	82.40	27.63	0.03	7.19	643.98	---	5.63	207.62	---	22.21
		39.81	29.45	74.65	22.10	1.34	8.73	643.98	---	6.24	207.62	---	18.14
		42.25	24.58	62.84	16.57	2.65	10.15	643.98	---	7.49	207.62	---	15.47
		44.7	16.51	42.00	11.04	3.95	11.91	643.98	---	11.40	207.62	---	13.08
	47.14	5.25	17.03	5.51	5.26	13.87	643.98	---	28.78	207.62	---	11.14	
	48.84	1.61	5.21	1.69	6.73	13.49	643.98	---	94.71	207.62	---	11.34	
	49.59	0.00	0.00	0.00	7.38	13.32	643.98	---	N/A	207.62	---	11.44	
	Stringer F1C-2	50.34	4.55	10.03	5.35	6.97	13.63	643.98	---	48.95	207.62	---	11.20
		52.17	15.64	34.49	18.40	5.96	14.40	643.98	---	13.91	207.62	---	10.68
		54.75	29.24	62.16	19.23	4.54	12.94	643.98	---	7.50	207.62	---	11.99
		57.33	39.22	80.95	20.06	3.12	11.04	643.98	---	5.63	207.62	---	14.18
		59.91	45.57	91.21	20.89	1.70	9.94	643.98	---	4.93	207.62	---	15.90
		62.49	46.97	99.95	21.72	0.09	8.25	643.98	---	4.49	207.62	---	19.35
		65.07	45.18	93.60	17.43	1.45	9.96	643.98	---	4.81	207.62	---	15.89
		67.65	39.55	83.36	13.07	2.91	10.87	643.98	---	5.47	207.62	---	14.42
70.23		30.15	64.56	8.71	4.38	12.80	643.98	---	7.21	207.62	---	12.13	
72.81		16.97	36.29	4.35	5.84	14.60	643.98	---	13.18	207.62	---	10.54	
74.64	4.93	10.60	1.28	6.88	14.51	643.98	---	46.27	207.62	---	10.53		
75.39	0.00	0.07	0.02	7.31	14.47	643.98	---	7076.70	207.62	---	10.53		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	6.60	16.95	202.98	---	N/A	195.68	---	8.49
0.75	4.34	9.87	0.44	6.11	15.98	202.98	---	15.38	195.68	---	9.04
2.51	14.53	33.03	1.47	4.96	13.69	531.00	---	11.93	165.00	---	8.91
5.03	24.92	57.07	2.94	3.32	12.74	531.00	---	6.72	165.00	---	9.70
7.54	31.19	69.36	4.40	1.67	11.23	531.00	---	5.44	165.00	---	11.15
10.05	33.33	72.25	5.87	0.03	9.15	531.00	---	5.19	165.00	---	13.87
12.57	31.33	50.89	7.34	1.63	15.71	531.00	---	7.41	165.00	---	7.98
15.08	25.18	45.76	12.14	3.27	10.31	531.00	---	8.38	165.00	---	11.99
17.59	15.91	42.32	17.14	4.91	14.53	531.00	---	9.30	165.00	---	8.40
20.1	0.50	33.52	22.33	6.55	14.85	531.00	---	12.77	165.00	---	8.11
22.62	-18.04	19.55	34.75	8.20	16.75	531.00	---	11.24	165.00	---	7.09
24.38	-33.96	11.81	43.42	9.35	18.43	209.58	---	2.93	254.41	---	10.11
25.13	-40.75	7.66	47.12	9.84	19.15	209.58	---	2.56	254.41	---	9.71
25.88	-35.15	9.44	42.09	8.85	18.22	209.58	---	3.00	254.41	---	10.26
27.53	-22.82	13.37	31.68	6.68	16.17	531.00	---	12.43	165.00	---	7.44
29.93	-8.68	36.14	25.74	5.10	14.56	531.00	---	11.06	165.00	---	8.37
32.33	1.68	49.86	22.14	3.52	12.39	531.00	---	8.16	165.00	---	9.96
34.73	8.25	59.08	18.77	1.93	9.27	531.00	---	6.77	165.00	---	13.34
37.13	10.67	42.80	16.05	0.85	13.78	531.00	---	9.29	165.00	---	9.15
39.53	6.73	42.10	20.80	2.44	9.53	531.00	---	9.54	165.00	---	12.93
41.93	-1.03	39.01	26.15	4.33	14.27	531.00	---	10.44	165.00	---	8.61
44.33	-12.62	29.56	31.83	5.63	14.41	531.00	---	12.44	165.00	---	8.42
46.73	-28.03	16.54	42.89	7.22	15.90	531.00	---	8.88	165.00	---	7.53
48.38	-41.26	9.51	50.77	9.81	20.41	217.53	---	2.48	257.15	---	9.21
49.13	-47.28	6.31	54.39	10.99	22.46	217.53	---	2.21	257.15	---	8.32
49.88	-39.70	8.94	47.17	10.48	21.57	217.53	---	2.71	257.15	---	8.68
51.75	-20.79	15.49	29.16	9.20	19.35	531.00	---	13.29	165.00	---	6.08
54.37	1.06	45.62	22.93	7.42	17.47	531.00	---	8.93	165.00	---	6.84
57	18.27	70.59	18.92	5.63	17.14	531.00	---	5.53	165.00	---	7.08
59.62	30.84	85.23	14.93	3.85	12.75	531.00	---	4.43	165.00	---	9.65
62.24	37.41	82.53	11.60	1.89	19.10	531.00	---	4.50	165.00	---	6.55
64.86	39.51	90.08	9.29	0.11	12.46	531.00	---	4.10	165.00	---	10.18
67.48	36.81	86.53	6.96	1.94	10.53	531.00	---	4.30	165.00	---	11.87
70.11	29.33	74.20	4.64	3.77	14.21	531.00	---	5.11	165.00	---	8.67
72.73	17.05	45.82	2.31	5.60	17.63	531.00	---	8.54	165.00	---	6.88
74.6	4.88	13.14	0.71	6.91	20.09	531.00	---	30.70	165.00	---	5.97
75.35	0.00	0.04	0.07	7.43	21.08	531.00	---	5835.16	165.00	---	5.67

CUY-2-1441 Load Rating Analysis

Main Ave Bridge

Section K - As Built Stringers

Calculated: DWC 2/24/2012

Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.22	25.89	274.71	---	N/A	214.50	---	6.09
0.75	4.76	16.12	1.20	6.69	24.83	274.71	---	12.81	214.50	---	6.38
2.51	15.92	53.95	4.00	5.45	22.33	456.00	---	6.21	142.30	---	4.66
5.03	27.40	96.18	8.01	3.68	19.32	456.00	---	3.36	142.30	---	5.48
7.54	34.43	120.22	12.01	1.92	17.39	456.00	---	2.63	142.30	---	6.18
10.05	37.03	128.21	16.02	0.15	12.62	456.00	---	2.45	142.30	---	8.66
12.57	35.18	103.40	20.01	1.59	12.25	456.00	---	3.05	142.30	---	8.81
15.08	28.96	92.85	26.31	3.36	18.62	456.00	---	3.47	142.30	---	5.70
17.59	18.30	82.00	32.61	5.13	22.54	456.00	---	4.05	142.30	---	4.63
20.1	3.20	61.44	38.91	6.89	26.31	456.00	---	5.56	142.30	---	3.90
22.62	-16.34	37.74	47.73	8.66	28.92	456.00	---	7.01	142.30	---	3.49
24.38	-33.15	21.88	65.62	9.90	28.57	252.27	---	2.45	225.70	---	5.73
25.13	-40.31	14.41	73.24	10.43	28.42	252.27	---	2.10	225.70	---	5.74
25.88	-35.03	15.48	65.96	9.09	27.21	252.27	---	2.41	225.70	---	6.05
27.48	-23.78	17.76	50.48	6.23	24.64	456.00	---	6.48	142.30	---	4.19
29.82	-11.11	48.20	44.15	4.58	21.32	456.00	---	7.05	142.30	---	4.92
32.16	-2.31	70.81	40.20	2.93	18.42	456.00	---	4.92	142.30	---	5.78
34.51	2.62	83.82	36.38	1.28	14.24	456.00	---	4.15	142.30	---	7.54
36.85	3.68	73.49	33.89	0.37	19.47	456.00	---	4.72	142.30	---	5.60
39.2	1.43	75.83	37.59	1.78	15.32	456.00	---	4.61	142.30	---	7.03
41.54	-4.68	64.59	42.42	3.43	16.66	456.00	---	5.36	142.30	---	6.36
43.89	-14.66	47.02	47.40	5.08	21.31	456.00	---	7.09	142.30	---	4.90
46.23	-28.51	21.30	54.87	6.73	25.30	456.00	---	5.87	142.30	---	4.06
47.83	-40.60	15.67	68.63	9.73	28.09	264.39	---	2.37	230.45	---	5.96
48.58	-46.26	13.03	75.08	11.14	29.40	264.39	---	2.09	230.45	---	5.65
49.33	-38.62	17.55	67.88	10.61	29.21	264.39	---	2.43	230.45	---	5.70
51.26	-18.95	30.18	49.34	9.26	28.73	456.00	---	6.73	142.30	---	3.49
53.93	3.32	72.62	40.13	7.38	26.22	456.00	---	4.78	142.30	---	3.89
56.61	20.36	107.59	33.52	5.50	25.99	456.00	---	3.07	142.30	---	4.00
59.29	32.75	129.80	27.11	3.61	21.12	456.00	---	2.45	142.30	---	5.01
61.96	39.89	121.94	20.72	1.72	14.57	456.00	---	2.55	142.30	---	7.39
64.64	41.99	124.11	16.57	0.16	13.38	456.00	---	2.49	142.30	---	8.17
67.32	39.05	117.87	12.42	2.04	19.61	456.00	---	2.64	142.30	---	5.48
70	31.07	100.77	8.27	3.92	19.73	456.00	---	3.17	142.30	---	5.35
72.67	18.05	77.77	4.13	5.80	22.40	456.00	---	4.28	142.30	---	4.63
74.6	5.05	21.79	1.21	7.16	26.69	456.00	---	15.87	142.30	---	5.83
75.35	0.00	0.03	0.08	7.69	28.36	456.00	---	4384.62	142.30	---	3.59

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
				D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.41	26.49	373.29	---	N/A	243.00	---	6.78
0.75	4.90	16.61	1.42	6.88	25.45	373.29	---	16.99	243.00	---	7.87
2.51	16.41	55.60	4.74	5.65	23.01	456.00	---	6.01	142.30	---	4.51
5.03	28.39	99.59	9.47	3.88	20.64	456.00	---	3.24	142.30	---	5.12
7.54	35.92	125.90	14.21	2.11	18.35	456.00	---	2.50	142.30	---	5.85
10.05	39.01	135.35	18.95	0.35	13.47	456.00	---	2.30	142.30	---	8.10
12.57	37.66	116.41	23.68	1.82	23.52	456.00	---	2.69	142.30	---	4.58
15.08	30.86	104.92	28.83	3.59	20.07	456.00	---	3.05	142.30	---	5.28
17.59	18.63	90.25	33.99	5.35	27.14	456.00	---	3.67	142.30	---	3.84
20.1	3.95	66.63	39.14	7.12	30.10	456.00	---	5.21	142.30	---	3.40
22.62	-16.16	42.01	50.69	8.89	32.39	456.00	---	6.60	142.30	---	3.11
24.38	-33.37	25.45	72.35	10.13	29.75	349.23	---	3.25	255.38	---	6.26
25.13	-40.71	18.40	81.58	10.66	28.62	349.23	---	2.79	255.38	---	6.49
25.88	-35.48	19.06	74.01	9.19	27.61	349.23	---	3.15	255.38	---	6.78
27.42	-24.73	20.42	58.46	6.17	25.54	456.00	---	5.58	142.30	---	4.04
29.71	-12.44	50.75	54.15	4.56	22.45	456.00	---	6.25	142.30	---	4.67
32	-3.84	76.46	51.73	2.95	19.02	456.00	---	4.54	142.30	---	5.60
34.29	1.08	91.01	49.58	1.34	15.53	456.00	---	3.84	142.30	---	6.96
36.58	2.32	84.59	49.33	0.45	20.44	456.00	---	4.12	142.30	---	5.33
38.87	-0.55	83.60	52.17	2.06	16.60	456.00	---	4.19	142.30	---	6.47
41.16	-7.11	69.00	56.04	3.37	18.20	456.00	---	4.98	142.30	---	5.81
43.45	-17.36	48.24	60.12	5.28	22.42	456.00	---	5.55	142.30	---	4.65
45.74	-31.30	22.03	66.96	6.89	26.03	456.00	---	4.77	142.30	---	3.94
47.28	-43.13	17.66	77.83	10.05	28.88	356.97	---	2.90	256.57	---	6.49
48.03	-48.89	15.53	86.10	11.59	30.27	356.97	---	2.62	256.57	---	6.14
48.78	-40.91	18.46	77.23	11.06	30.07	356.97	---	3.03	256.57	---	6.20
50.76	-19.84	26.28	53.80	9.67	29.55	456.00	---	6.15	142.30	---	3.38
53.49	3.95	69.75	39.71	7.75	27.15	456.00	---	4.97	142.30	---	3.75
56.22	22.80	107.20	32.42	5.83	27.42	456.00	---	3.06	142.30	---	3.78
58.96	35.80	133.10	26.35	3.91	21.46	456.00	---	2.37	142.30	---	4.92
61.69	43.87	130.10	20.86	1.99	26.81	456.00	---	2.36	142.30	---	4.01
64.42	45.59	136.05	16.68	0.33	17.34	456.00	---	2.24	142.30	---	6.29
67.15	42.07	128.88	12.51	2.25	15.63	456.00	---	2.40	142.30	---	6.86
69.88	33.30	107.11	8.34	4.17	20.79	456.00	---	2.96	142.30	---	5.06
72.62	19.28	64.35	4.16	6.09	24.66	456.00	---	5.15	142.30	---	4.19
74.6	5.30	17.71	1.20	7.48	27.60	456.00	---	19.51	142.30	---	4.70
75.35	0.00	0.04	0.08	8.01	28.71	456.00	---	4384.62	142.30	---	3.55

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V						
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.33	27.30	456.00	---	N/A	142.30	---	3.74
0.75	4.84	17.04	1.34	6.80	26.19	456.00	---	20.30	142.30	---	3.92
2.51	16.21	57.03	4.48	5.57	23.60	456.00	---	5.87	142.30	---	4.40
5.03	27.97	95.11	8.95	3.80	19.00	456.00	---	3.39	142.30	---	5.56
7.54	35.29	113.20	13.43	2.03	14.83	456.00	---	2.79	142.30	---	7.24
10.05	38.18	118.06	17.90	0.26	12.43	456.00	---	2.65	142.30	---	8.79
12.57	36.61	113.53	22.38	1.56	24.71	456.00	---	2.77	142.30	---	4.37
15.08	30.47	107.10	26.64	3.33	18.63	456.00	---	2.99	142.30	---	5.70
17.59	19.88	88.90	31.79	5.10	20.98	456.00	---	3.72	142.30	---	4.97
20.1	4.85	62.92	36.93	6.86	28.17	456.00	---	5.50	142.30	---	3.64
22.62	-14.62	29.94	48.83	8.63	31.57	456.00	---	6.88	142.30	---	3.19
24.38	-31.41	23.87	74.61	9.87	29.85	456.00	---	4.28	142.30	---	3.34
25.13	-38.57	21.28	85.60	10.40	29.12	456.00	---	3.65	142.30	---	3.40
25.88	-33.62	22.03	77.80	8.85	27.99	456.00	---	4.08	142.30	---	3.59
27.36	-23.85	23.52	62.41	5.80	25.76	456.00	---	5.24	142.30	---	4.02
29.6	-12.64	48.34	57.90	4.23	21.65	456.00	---	5.84	142.30	---	4.86
31.83	-4.94	69.87	55.10	2.66	17.94	456.00	---	4.95	142.30	---	5.95
34.07	-0.75	81.64	53.67	1.09	14.47	456.00	---	4.29	142.30	---	7.49
36.3	-0.07	84.15	54.55	0.48	20.04	456.00	---	4.17	142.30	---	5.44
38.54	-2.89	81.11	58.35	2.05	15.68	456.00	---	4.29	142.30	---	6.85
40.77	-9.23	66.93	63.19	3.62	18.30	456.00	---	5.10	142.30	---	5.78
43.01	-19.07	48.76	68.99	5.19	21.96	456.00	---	4.81	142.30	---	4.75
45.24	-32.42	25.63	76.47	6.76	25.53	456.00	---	4.16	142.30	---	4.02
46.73	-43.64	19.71	87.49	10.01	27.21	456.00	---	3.51	142.30	---	3.65
47.48	-49.29	16.73	93.04	11.65	28.06	456.00	---	3.24	142.30	---	3.49
48.23	-41.27	20.16	83.35	11.12	28.48	456.00	---	3.71	142.30	---	3.45
50.26	-19.55	29.45	57.12	9.69	29.61	456.00	---	5.80	142.30	---	3.37
53.05	4.72	64.65	36.36	7.73	25.84	456.00	---	5.35	142.30	---	3.94
55.84	23.53	93.73	27.93	5.77	21.91	456.00	---	3.49	142.30	---	4.73
58.63	36.88	116.21	22.65	3.81	18.18	456.00	---	2.70	142.30	---	5.81
61.41	44.75	126.83	18.96	1.85	26.02	456.00	---	2.41	142.30	---	4.14
64.2	46.72	133.70	15.16	0.27	13.43	456.00	---	2.27	142.30	---	8.13
66.99	43.23	126.38	11.36	2.23	15.64	456.00	---	2.43	142.30	---	6.86
69.77	34.28	107.02	7.57	4.19	20.01	456.00	---	2.96	142.30	---	5.26
72.56	19.86	65.78	3.77	6.15	24.62	456.00	---	5.03	142.30	---	4.20
74.6	5.34	17.70	1.06	7.58	25.66	456.00	---	19.51	142.30	---	3.97
75.35	0.00	0.03	0.07	8.11	26.04	456.00	---	5010.99	142.30	---	3.89

5C1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	7.61	27.50	489.00	---	N/A	149.50	---	3.91
0.75	5.05	17.20	1.43	7.08	26.40	489.00	---	21.58	149.50	---	4.09
2.51	16.91	57.56	4.79	5.85	23.82	489.00	---	6.24	149.50	---	4.58
5.03	29.39	96.78	9.58	4.08	19.34	489.00	---	3.58	149.50	---	5.74
7.54	37.44	116.41	14.37	2.32	15.49	489.00	---	2.91	149.50	---	7.27
10.05	41.05	122.17	19.16	0.56	12.66	489.00	---	2.74	149.50	---	9.04
12.57	40.23	119.88	23.95	1.93	24.68	489.00	---	2.80	149.50	---	4.58
15.08	33.18	111.03	26.96	3.69	18.88	489.00	---	3.09	149.50	---	5.90
17.59	21.69	93.17	31.23	5.45	23.60	489.00	---	3.80	149.50	---	4.64
20.1	5.77	65.60	35.82	7.22	27.26	489.00	---	5.65	149.50	---	3.95
22.62	-14.57	32.24	47.47	8.98	30.43	489.00	---	7.62	149.50	---	3.48
24.38	-31.94	24.91	75.97	10.21	29.44	489.00	---	4.53	149.50	---	3.56
25.13	-39.34	21.79	88.11	10.74	29.02	489.00	---	3.82	149.50	---	3.59
25.88	-34.49	22.28	79.85	9.01	27.88	489.00	---	4.28	149.50	---	3.80
27.31	-25.25	23.20	64.11	5.70	25.71	489.00	---	5.47	149.50	---	4.25
29.49	-14.50	47.40	60.80	4.17	21.78	489.00	---	5.95	149.50	---	5.09
31.67	-7.09	69.09	58.58	2.64	18.04	489.00	---	5.34	149.50	---	6.23
33.85	-3.00	80.38	57.85	1.11	14.59	489.00	---	4.64	149.50	---	7.81
36.03	-2.23	83.59	60.12	0.78	19.46	489.00	---	4.47	149.50	---	5.87
38.21	-5.60	79.63	64.22	2.31	15.80	489.00	---	4.65	149.50	---	7.13
40.39	-12.29	68.52	69.56	3.84	18.67	489.00	---	5.23	149.50	---	5.95
42.57	-22.32	49.22	76.46	5.37	22.02	489.00	---	4.63	149.50	---	4.98
44.75	-35.68	23.46	84.66	6.90	25.43	489.00	---	4.02	149.50	---	4.25
46.18	-46.61	18.91	94.61	10.35	26.98	489.00	---	3.48	149.50	---	3.88
46.93	-52.35	16.53	99.83	12.16	27.79	489.00	---	3.24	149.50	---	3.70
47.68	-43.98	19.46	88.92	11.63	28.43	489.00	---	3.74	149.50	---	3.64
49.77	-20.64	27.61	58.52	10.16	30.21	489.00	---	6.08	149.50	---	3.47
52.61	5.41	67.20	35.47	8.17	26.80	489.00	---	5.52	149.50	---	3.99
55.45	25.78	98.46	26.30	6.17	23.12	489.00	---	3.56	149.50	---	4.71
58.3	40.49	125.23	22.58	4.18	19.18	489.00	---	2.68	149.50	---	5.78
61.14	49.55	138.46	20.06	1.50	16.34	489.00	---	2.36	149.50	---	6.95
63.98	50.98	142.58	16.04	0.50	14.74	489.00	---	2.28	149.50	---	7.77
66.82	46.73	132.91	12.03	2.49	16.18	489.00	---	2.48	149.50	---	6.95
69.66	36.82	110.00	8.01	4.48	20.17	489.00	---	3.08	149.50	---	5.48
72.51	21.24	66.20	4.00	6.48	24.28	489.00	---	5.36	149.50	---	4.47
74.6	5.61	17.51	1.12	7.94	24.46	489.00	---	21.16	149.50	---	4.38
75.35	0.00	0.04	0.08	8.47	24.53	489.00	---	4701.92	149.50	---	4.34

5C1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	D	M+	M-	V						
	D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.00	0.00	6.28	17.93	489.00	---	N/A	149.50	---	6.06
0.75	4.10	11.05	0.66	5.79	17.15	489.00	---	33.68	149.50	---	6.37
2.51	13.73	36.97	2.21	4.64	15.31	489.00	---	9.80	149.50	---	7.21
5.03	23.33	60.40	4.41	3.00	12.06	489.00	---	5.84	149.50	---	9.29
7.54	28.82	70.38	6.62	1.36	9.59	489.00	---	4.94	149.50	---	11.85
10.05	30.18	72.23	8.82	0.28	10.25	489.00	---	4.79	149.50	---	11.19
12.57	27.45	66.89	11.04	0.71	9.72	489.00	---	5.21	149.50	---	11.76
15.08	23.61	64.61	13.68	2.35	11.22	489.00	---	5.46	149.50	---	10.04
17.59	15.65	54.18	17.10	3.99	13.87	489.00	---	6.65	149.50	---	8.00
20.1	3.58	40.07	20.52	5.63	16.26	489.00	---	9.30	149.50	---	6.73
22.62	-12.62	19.24	26.92	7.27	18.40	489.00	---	13.50	149.50	---	5.85
24.38	-26.86	13.23	46.53	8.42	19.59	489.00	---	7.51	149.50	---	5.44
25.13	-32.93	10.67	54.88	8.91	20.09	489.00	---	6.25	149.50	---	5.28
25.88	-28.43	11.64	49.22	7.63	18.86	489.00	---	7.06	149.50	---	5.69
27.25	-20.20	13.40	38.88	5.30	16.62	489.00	---	9.16	149.50	---	6.60
29.38	-10.41	29.48	35.88	3.92	13.81	489.00	---	10.19	149.50	---	8.04
31.5	-3.55	40.84	33.29	2.54	11.28	489.00	---	9.12	149.50	---	9.97
33.63	0.37	46.76	31.33	1.16	9.03	489.00	---	8.04	149.50	---	12.61
35.75	1.51	47.15	30.86	0.39	12.38	489.00	---	7.95	149.50	---	9.26
37.88	-0.79	45.62	33.46	1.77	9.55	489.00	---	8.23	149.50	---	11.86
40	-6.00	40.93	36.70	3.14	11.87	489.00	---	9.04	149.50	---	9.42
42.13	-14.14	28.75	40.31	4.52	13.95	489.00	---	8.98	149.50	---	7.92
44.25	-25.19	13.86	44.55	5.89	16.37	489.00	---	7.88	149.50	---	6.67
45.63	-34.24	10.74	52.10	8.03	17.66	489.00	---	6.56	149.50	---	6.06
46.38	-39.16	9.04	56.20	9.20	18.36	489.00	---	6.00	149.50	---	5.76
47.13	-32.94	11.63	50.12	8.73	18.21	489.00	---	6.85	149.50	---	5.84
49.27	-15.18	19.01	32.78	7.37	17.77	489.00	---	11.01	149.50	---	6.06
52.17	3.47	39.19	21.07	5.55	15.00	489.00	---	9.51	149.50	---	7.30
55.07	16.78	54.87	14.20	3.72	12.36	489.00	---	6.55	149.50	---	9.00
57.96	24.76	64.83	10.46	1.89	9.64	489.00	---	5.42	149.50	---	11.73
60.86	29.04	65.50	7.86	2.44	16.65	489.00	---	5.30	149.50	---	6.76
63.76	33.53	74.47	6.29	0.66	10.22	489.00	---	4.60	149.50	---	11.19
66.66	32.87	72.73	4.71	1.12	8.59	489.00	---	4.72	149.50	---	13.26
69.55	27.06	63.30	3.14	2.89	11.41	489.00	---	5.51	149.50	---	9.83
72.45	16.10	40.58	1.57	4.67	14.62	489.00	---	8.87	149.50	---	7.55
74.6	4.16	10.52	0.47	5.99	16.27	489.00	---	35.37	149.50	---	6.70
75.35	0.00	0.03	0.09	6.45	16.84	489.00	---	4179.49	149.50	---	6.45

5C1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section K - As Built Stringers

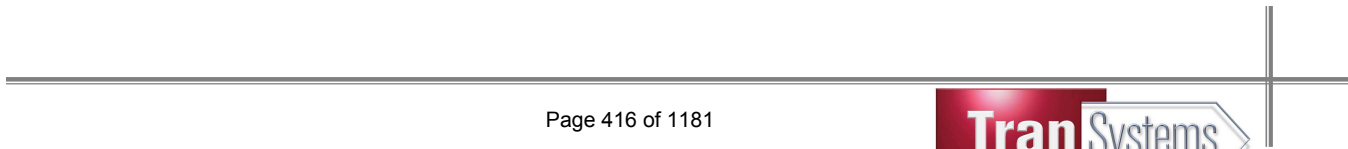
Calculated: DWC 2/24/2012
Checked: CTG 2/27/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1	Stringer F2A-2	0	0.00	0.00	0.00	6.99	17.41	1212.51	---	N/A	149.61	---	6.21
		0.75	4.73	10.94	0.72	6.57	16.89	1212.51	---	84.81	149.61	---	6.42
		2.51	15.82	36.62	2.40	5.60	15.67	1212.51	---	25.04	149.61	---	6.99
		5.03	28.16	65.27	4.79	4.21	13.66	1212.51	---	13.86	149.61	---	8.12
		7.54	37.00	84.96	7.19	2.83	12.12	1212.51	---	10.54	149.61	---	9.26
		10.05	42.36	96.81	9.58	1.44	10.55	1212.51	---	9.20	149.61	---	10.77
		12.57	44.23	102.59	11.98	0.85	7.31	1212.51	---	8.66	149.61	---	15.63
		15.08	40.35	94.82	9.58	2.23	10.56	1212.51	---	9.41	149.61	---	10.69
		17.59	32.99	78.94	7.19	3.62	14.09	1212.51	---	11.40	149.61	---	7.91
		20.1	22.15	51.95	4.79	5.01	16.60	1212.51	---	17.53	149.61	---	6.63
		22.62	7.81	21.61	2.39	6.40	16.88	1212.51	---	42.80	149.61	---	6.44
	24.38	2.33	6.46	0.71	7.37	16.51	1212.51	---	144.08	149.61	---	6.52	
	Stringer F2B-2	25.13	0.00	0.00	0.00	7.79	16.35	1212.51	---	N/A	149.61	---	6.56
		25.88	3.02	10.08	8.38	6.53	15.54	1212.51	---	92.20	149.61	---	6.99
		27.22	8.41	28.10	23.35	4.29	14.09	1212.51	---	32.89	149.61	---	7.86
		29.3	16.15	48.97	23.14	3.14	12.30	1212.51	---	18.72	149.61	---	9.10
		31.39	21.50	63.79	22.92	2.00	11.04	1212.51	---	14.28	149.61	---	10.24
		33.47	24.46	71.80	22.70	0.85	9.46	1212.51	---	12.65	149.61	---	12.08
		35.56	25.20	75.42	22.59	0.22	7.62	1212.51	---	12.03	149.61	---	15.07
		37.64	23.54	70.90	18.08	1.36	9.12	1212.51	---	12.82	149.61	---	12.47
		39.73	19.51	57.16	13.56	2.50	12.37	1212.51	---	15.98	149.61	---	9.10
		41.81	13.11	37.27	9.04	3.64	12.85	1212.51	---	24.67	149.61	---	8.67
		43.9	4.34	15.83	4.52	4.78	14.98	1212.51	---	58.65	149.61	---	7.36
	45.23	1.56	5.71	1.63	7.15	15.22	1212.51	---	163.13	149.61	---	7.09	
	45.98	0.00	0.00	0.00	8.49	15.35	1212.51	---	N/A	149.61	---	6.94	
	Stringer F2C-2	46.73	5.49	11.22	4.72	8.09	15.56	1212.51	---	82.63	149.61	---	6.87
		48.92	21.51	43.99	18.50	6.94	16.19	1212.51	---	20.71	149.61	---	6.68
		51.86	39.55	77.81	19.70	5.38	14.39	1212.51	---	11.48	149.61	---	7.62
		54.8	52.95	101.51	20.90	3.82	12.50	1212.51	---	8.67	149.61	---	8.90
		57.74	61.74	117.51	22.10	2.26	10.42	1212.51	---	7.41	149.61	---	10.83
		60.68	67.58	126.65	23.61	0.89	8.61	1212.51	---	6.83	149.61	---	13.26
		63.62	63.06	113.63	18.94	2.33	10.44	1212.51	---	7.65	149.61	---	10.80
		66.56	53.97	96.17	14.20	3.85	11.91	1212.51	---	9.14	149.61	---	9.34
69.5		40.45	70.83	9.47	5.36	13.14	1212.51	---	12.60	149.61	---	8.35	
72.44		22.48	37.57	4.73	6.87	13.87	1212.51	---	24.23	149.61	---	7.80	
74.63		5.77	9.67	1.22	7.99	12.02	1212.51	---	95.82	149.61	---	8.91	
75.38	0.05	0.12	0.02	8.38	11.38	1212.51	---	7772.08	149.61	---	9.38		



FLOORBEAM RATINGS



West Approach - Section K

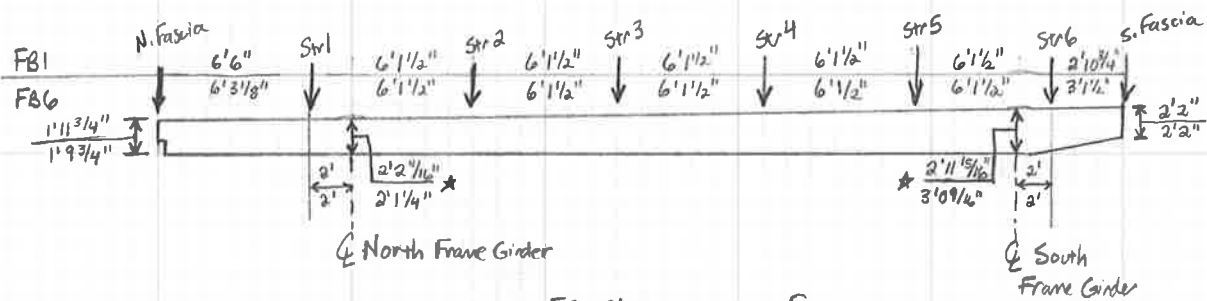
Floorbeams

- End FB's are new 33WF125 continuous at Frame girders
- Int FB's are existing W sections with cantilever brackets made continuous, Framed into columns

End FB'S (sheet 155/997)

Top + Bottom Fl's: 11 1/2" x 1"

Web Pl: 3/4"



FB Elev - Looking East

*-heights include Flanges and Web

SEC K

Int. FB's

FB 2, 3, 4, 5 = FB 9, 10, 11, 12 in 1938 Shop Drawings

• All FB's between Girders = 33 WF 132

AISC 1973-1952

$$A = 38.84 \text{ in}^2$$

$$t_w = 0.580 \text{ in}$$

$$I = 6856.8 \text{ in}^4$$

1994 AB-Plans

Carbon Steel $F_b = 18,000 \text{ psi}$

$$d = 33.150 \text{ in}$$

$$t_f = 0.880 \text{ in}$$

$$S_x = 413.7 \text{ in}^3$$

$$\therefore F_y = 33 \text{ ksi}$$

$$b_f = 11.510 \text{ in}$$

$$r_y = 2.31 \text{ in}$$

Check if Compact: (AASHTO 10.48.1.1)

$$\frac{b_f}{t_f} \leq \frac{4110}{\sqrt{F_y}} \rightarrow 13.08 < 22.62 \quad \checkmark$$

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}} \rightarrow 54.12 < 105.86 \quad \checkmark$$

$$\frac{L_b}{r_y} \leq \frac{[3.6 - 2.2(\frac{M_1}{M_2})] \times 10^6}{F_y} \quad 32.03 < 42.42 \quad \checkmark$$

Let $L_b = 6'2"$

$M_1/M_2 = 1.0$ conservative

∴ Section is Compact

Approximate Z from spreadsheet calc

Capacity

$$M_u = F_y Z_x = 33 \text{ ksi} (469.73 \text{ in}^3) / 12 = 1292 \text{ k-ft}$$

$$\begin{aligned} V_u &= C V_p = C (0.58 F_y D t_w) \\ &= 0.58 (33 \text{ ksi}) (31.39 \text{ in}) (0.58 \text{ in}) \\ &= 348.5 \text{ k} \end{aligned}$$

$$\frac{D}{t_w} \leq \frac{6000 \sqrt{F_y}}{F_y} \rightarrow 54.12 < 73.85 \rightarrow C = 1.0$$

AS-Built Capacity Summary

$M_u = 1292 \text{ k-ft}$

$V_u = 348.5 \text{ k-ft}$

} FB between girders

Int. FB (continued)

FB Cantilever Brackets (SHOPDRAW-FTW-APPROACH SH1 37+38/50)

	Height @ Connection	Flange PL (in)	Web PL (in)	Overall Length (ft)	Max Distance bwn Stiffeners (ft)
FB 2 South	2'9 1/8"	12 1/2 x 1/2	3/8	6'5"	3'2 5/8"
FB 2 North	2'9 1/8"	12 1/2 x 1/2	"	7'1"	3'3 5/8"
FB 3 South	2'9 3/4"	"	"	6'10 5/8"	3'3 1/2"
FB 3 North	2'9 3/4"	"	"	6'6"	3'3 1/2"
FB 4 South	2'9 3/4"	"	"	6'9 1/16"	3'3 1/2"
FB 4 North	2'9 3/4"	"	"	6'5 3/16"	3'3 1/2"
FB 5 South	2'9 1/8"	"	"	6'5 3/16"	3'3 5/8"
FB 5 North	2'9 1/8"	"	"	7'0 5/16"	3'3 5/8"

Check if compact @ connection (worst case)

$$\frac{b_f}{t_f} \leq \frac{410}{\sqrt{F_y}} \rightarrow 8.33 < 22.62 \checkmark$$

$$\frac{D}{t_w} \leq \frac{19200}{\sqrt{F_y}} \rightarrow 87.33 < 105.86 \checkmark$$

$$\frac{L_b}{r_y} \leq \frac{[3.6 - 2.2(\frac{M_u}{M_u})] \times 10^6}{F_y} \rightarrow \frac{39.625''}{2.56''} = 15.48 < 42.42 \checkmark$$

↑ From spreadsheet

} ⇒ Compact

Capacities

↙ spreadsheet

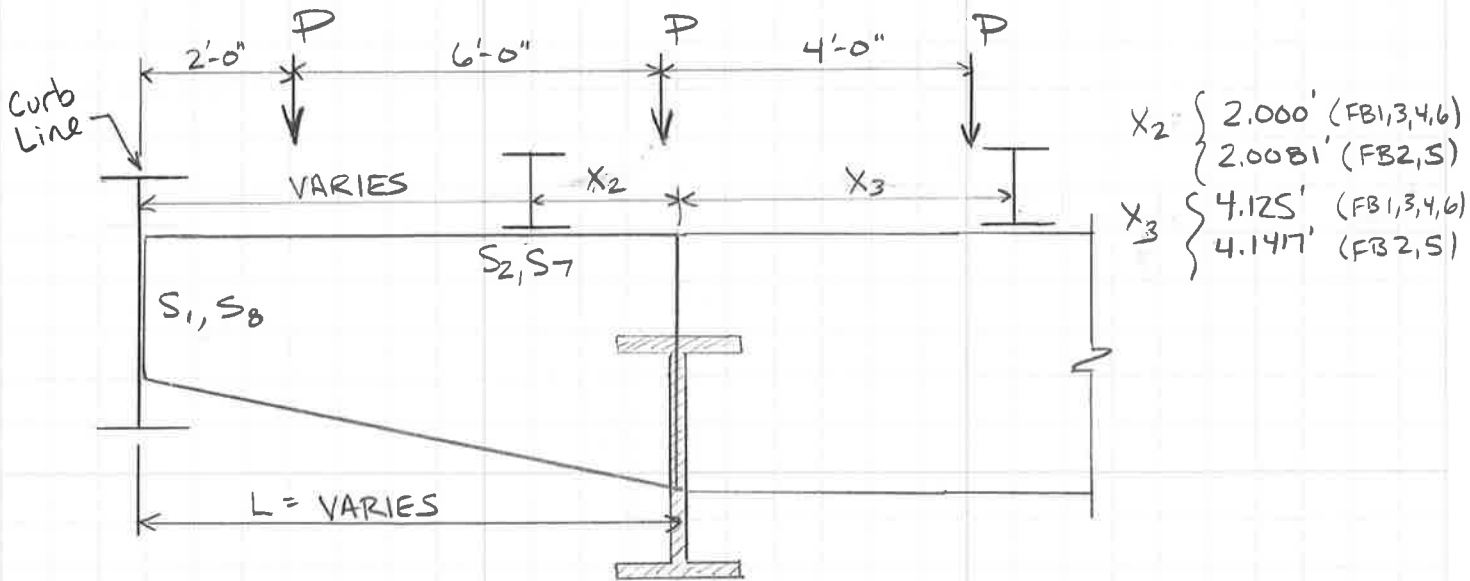
$$M_u = F_y Z_x = (33 \text{ ksi})(308.37 \text{ in}^3) / 12 = 848 \text{ K-ft}$$

$$V_u = C(0.58 F_y D t_w)$$

$$k = 5 + \left(\frac{5}{(d/D)^2}\right) = 5 + \left(\frac{5}{(30.625/32.75)^2}\right) = 9$$

$$\frac{D}{t_w} \leq \frac{6000 \sqrt{k}}{F_y} \rightarrow 87.33 < 99.09 \rightarrow C = 1.0$$

$$V_u = 0.58(33 \text{ ksi})(32.75 \text{ in})(1.375 \text{ in}) = 235 \text{ K}$$



→ Use Section K-Framing.dgn to determine stringer reactions from LL at each bracket location.

$$M_{max} = S_1 L + S_2 X_2$$

$$V_{max} = S_1 + S_2$$

$$S_1, S_8 = \frac{L - 2 - X_2}{L - X_2}$$

→ Calculate S_2 for the other locations

$$S_2, S_7 = \frac{L + X_3 - 8}{X_2 + X_3} + (1 - S_{1,8})$$

↖ This formula includes contribution from first truck only. For FB1 + FB6 on North side only, add in contribution from 3rd wheel.

$$\hookrightarrow \frac{(6.125 - (L + X_3 - 8))}{X_2 + X_3}$$

SECTION K



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/14/2012

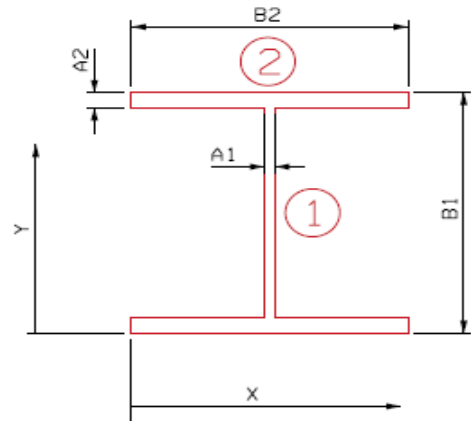
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 26.6875$ in
 $B_2 = b_f = 11.5000$ in



FB1 @ North Frame Girder
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		18.5156	13.3438	247.0679	940.3973	0.0000	0.0000	940.3973
2	Top Flange		11.5000	26.1875	301.1563	0.9583	12.8438	1897.0620	1898.0203
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	12.8438	1897.0620	1898.0203
Total			41.52		553.97	942.31		3794.12	4736.44
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	13.3438	in	S _{top} =	354.96	in ³	y-bar =	13.3438	in	S _{top} =	354.96	in ³
I _x =	4736.44	in ⁴	S _{bott.} =	354.96	in ³	I _x =	4736.44	in ⁴	S _{bott.} =	354.96	in ³
c _{top} =	13.3438	in	A =	41.5156	in ²	c _{top} =	13.3438	in	A =	41.5156	in ²
c _{bottom} =	13.3438	in	r _x =	10.6812	in	c _{bottom} =	13.3438	in	r _x =	10.6812	in
			Z =	409.68	in ³				Z =	409.68	in ³

SECTION K



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/14/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	1229.04 k-ft	1229.04 k-ft
V	386.61 k	386.61 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION K



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/14/2012

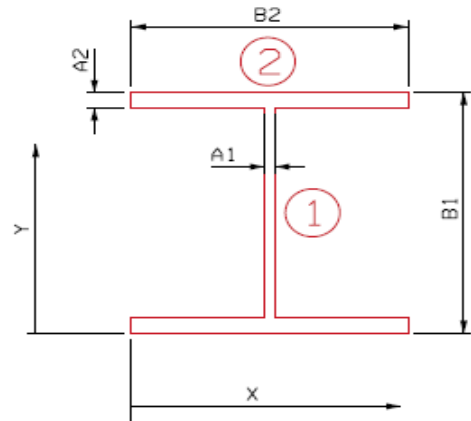
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 31.3125$ in
 $B_2 = b_f = 11.5000$ in



FB1 @ Center between Girders
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		21.9844	15.6563	344.1929	1574.1228	0.0000	0.0000	1574.1228
2	Top Flange		11.5000	30.8125	354.3438	0.9583	15.1563	2641.6870	2642.6453
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	15.1563	2641.6870	2642.6453
Total			44.98		704.29	1576.04		5283.37	6859.41
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	15.6563	in	S _{top} = 438.13 in ³	y-bar =	15.6563	in	S _{top} = 438.13 in ³
I _x =	6859.41	in ⁴	S _{bott.} = 438.13 in ³	I _x =	6859.41	in ⁴	S _{bott.} = 438.13 in ³
c _{top} =	15.6563	in	A = 44.9844 in ²	c _{top} =	15.6563	in	A = 44.9844 in ²
c _{bottom} =	15.6563	in	r _x = 12.3485 in	c _{bottom} =	15.6563	in	r _x = 12.3485 in
			Z = 509.70 in ³				Z = 509.70 in ³

SECTION K



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Date 2/14/2012
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Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	1529.10 k-ft	1529.10 k-ft
V	459.03 k	459.03 k

*Compact Section

$F_y =$ **36.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION K



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Date 2/14/2012
Date 2/14/2012

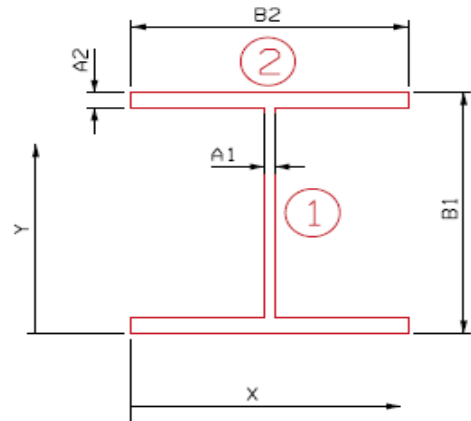
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 35.9375$ in
 $B_2 = b_f = 11.5000$ in



FB1 @ South Frame Girder
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		25.4531	17.9688	457.3608	2442.9780	0.0000	0.0000	2442.9780
2	Top Flange		11.5000	35.4375	407.5313	0.9583	17.4688	3509.3081	3510.2664
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	17.4688	3509.3081	3510.2664
Total			48.45		870.64	2444.89		7018.62	9463.51
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	17.9688	in	S _{top} =	526.66	in ³	y-bar =	17.9688	in	S _{top} =	526.66	in ³
I _x =	9463.51	in ⁴	S _{bott.} =	526.66	in ³	I _x =	9463.51	in ⁴	S _{bott.} =	526.66	in ³
c _{top} =	17.9688	in	A =	48.4531	in ²	c _{top} =	17.9688	in	A =	48.4531	in ²
c _{bottom} =	17.9688	in	r _x =	13.9754	in	c _{bottom} =	17.9688	in	r _x =	13.9754	in
			Z =	617.74	in ⁵				Z =	617.74	in ⁵

SECTION K



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Date 2/14/2012
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Sheet No. _____

Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	1853.22 k-ft	1853.22 k-ft
V	531.46 k	531.46 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION K



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Date 2/14/2012
Date 2/14/2012

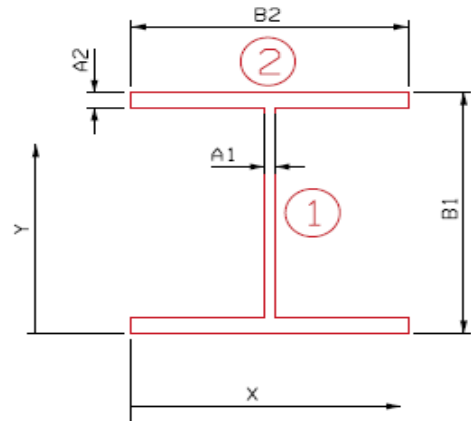
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 25.2500$ in
 $B_2 = b_f = 11.5000$ in



FB6 @ North Frame Girder
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.4375	12.6250	220.1484	785.5049	0.0000	0.0000	785.5049
2	Top Flange		11.5000	24.7500	284.6250	0.9583	12.1250	1690.6797	1691.6380
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	12.1250	1690.6797	1691.6380
Total			40.44		510.52	787.42		3381.36	4168.78
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	12.6250	in	S _{top} = 330.20 in ³	y-bar =	12.6250	in	S _{top} = 330.20 in ³
I _x =	4168.78	in ⁴	S _{bott.} = 330.20 in ³	I _x =	4168.78	in ⁴	S _{bott.} = 330.20 in ³
c _{top} =	12.6250	in	A = 40.4375 in ²	c _{top} =	12.6250	in	A = 40.4375 in ²
c _{bottom} =	12.6250	in	r _x = 10.1534 in	c _{bottom} =	12.6250	in	r _x = 10.1534 in
			Z = 380.23 in ³				Z = 380.23 in ³

SECTION K



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Date 2/14/2012
Date 2/14/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	1140.69 k-ft	1140.69 k-ft
V	364.10 k	364.10 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION K



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Date 2/14/2012
Date 2/14/2012

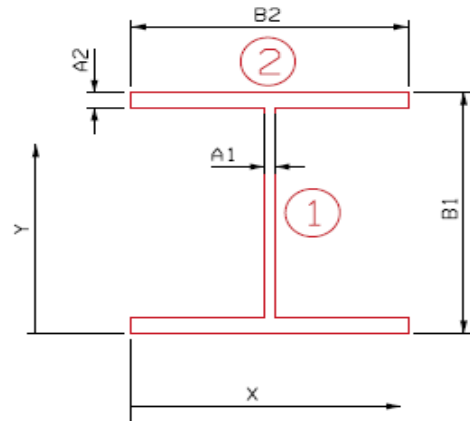
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 30.9063$ in
 $B_2 = b_f = 11.5000$ in



FB6 @ Center between Girders
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		21.6797	15.4531	335.0189	1509.5770	0.0000	0.0000	1509.5770
2	Top Flange		11.5000	30.4063	349.6719	0.9583	14.9531	2571.3534	2572.3117
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	14.9531	2571.3534	2572.3117
Total			44.68		690.44	1511.49		5142.71	6654.20
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	15.4531	in	S _{top} =	430.61	in ³	y-bar =	15.4531	in	S _{top} =	430.61	in ³
I _x =	6654.20	in ⁴	S _{bott.} =	430.61	in ³	I _x =	6654.20	in ⁴	S _{bott.} =	430.61	in ³
c _{top} =	15.4531	in	A =	44.6797	in ²	c _{top} =	15.4531	in	A =	44.6797	in ²
c _{bottom} =	15.4531	in	r _x =	12.2037	in	c _{bottom} =	15.4531	in	r _x =	12.2037	in
			Z =	500.59	in ³				Z =	500.59	in ³

SECTION K



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Date 2/14/2012
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Sheet No. _____

Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	1501.77 k-ft	1501.77 k-ft
V	452.67 k	452.67 k

*Compact Section

F_y = 36.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION K



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Date 2/14/2012
Date 2/14/2012

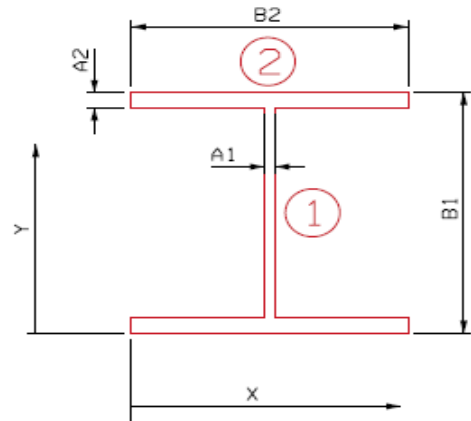
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 36.5625$ in
 $B_2 = b_f = 11.5000$ in



FB6 @ Center between Girders
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		25.9219	18.2813	473.8843	2580.4501	0.0000	0.0000	2580.4501
2	Top Flange		11.5000	36.0625	414.7188	0.9583	17.7813	3635.9878	3636.9461
	Bottom Flange		11.5000	0.5000	5.7500	0.9583	17.7813	3635.9878	3636.9461
Total			48.92		894.35	2582.37		7271.98	9854.34
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	18.2813	in	S _{top} = 539.04 in ³	y-bar =	18.2813	in	S _{top} = 539.04 in ³
I _x =	9854.34	in ⁴	S _{bott.} = 539.04 in ³	I _x =	9854.34	in ⁴	S _{bott.} = 539.04 in ³
c _{top} =	18.2813	in	A = 48.9219 in ²	c _{top} =	18.2813	in	A = 48.9219 in ²
c _{bottom} =	18.2813	in	r _x = 14.1926 in	c _{bottom} =	18.2813	in	r _x = 14.1926 in
			Z = 632.95 in ³				Z = 632.95 in ³

SECTION K



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Date 2/14/2012
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Sheet No. _____

Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	1898.85 k-ft	1898.85 k-ft
V	541.25 k	541.25 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION K

FB2,FB5



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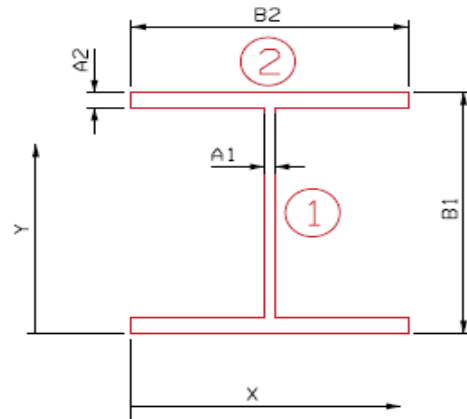
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.3750$ in
- $A_2 = t_f = 0.5000$ in
- $B_1 = d = 33.1250$ in
- $B_2 = b_f = 12.5000$ in

- $d0 = 36.6250$ in (stiffener spacing for shear check)



FB Bracket
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		12.0469	16.5625	199.5264	1036.0469	0.0000	0.0000	1036.0469
2	Top Flange		6.2500	32.8750	205.4688	0.1302	16.3125	1663.1104	1663.2406
	Bottom Flange		6.2500	0.2500	1.5625	0.1302	16.3125	1663.1104	1663.2406
Total			24.55		406.56	1036.31		3326.22	4362.53
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	16.5625	in	S _{top} = 263.40 in ³	y-bar =	16.5625	in	S _{top} = 263.40 in ³
I _x =	4362.53	in ⁴	S _{bottom} = 263.40 in ³	I _x =	4362.53	in ⁴	S _{bottom} = 263.40 in ³
c _{top} =	16.5625	in	A = 24.5469 in ²	c _{top} =	16.5625	in	A = 24.5469 in ²
c _{bottom} =	16.5625	in	r _x = 13.3313 in	c _{bottom} =	16.5625	in	r _x = 13.3313 in
			Z = 300.66 in ³				Z = 300.66 in ³



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Date 2/15/2012
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Job No. P402110046
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Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	724.34 k-ft	724.34 k-ft
V	230.58 k	230.58 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION K

FB3,FB4



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Date 2/15/2012
Date 2/15/2012

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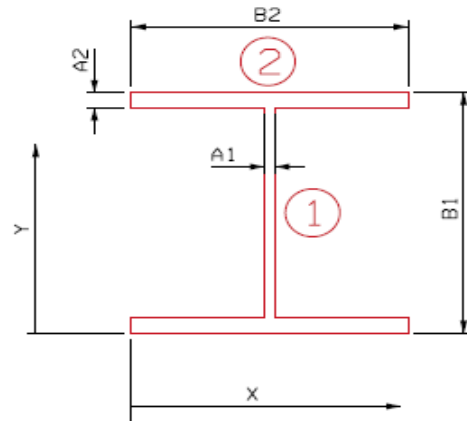
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.3750$ in
- $A_2 = t_f = 0.5000$ in
- $B_1 = d = 33.7500$ in
- $B_2 = b_f = 12.5000$ in

- $d0 = 36.6250$ in (stiffener spacing for shear check)



FB Bracket
SECTION K

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		12.2813	16.8750	207.2461	1097.7007	0.0000	0.0000	1097.7007
2	Top Flange		6.2500	33.5000	209.3750	0.1302	16.6250	1727.4414	1727.5716
	Bottom Flange		6.2500	0.2500	1.5625	0.1302	16.6250	1727.4414	1727.5716
Total			24.78		418.18	1097.96		3454.88	4552.84
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	16.8750	in	S _{top} = 269.80 in ³	y-bar =	16.8750	in	S _{top} = 269.80 in ³
I _x =	4552.84	in ⁴	S _{bott.} = 269.80 in ³	I _x =	4552.84	in ⁴	S _{bott.} = 269.80 in ³
c _{top} =	16.8750	in	A = 24.7813 in ²	c _{top} =	16.8750	in	A = 24.7813 in ²
c _{bottom} =	16.8750	in	r _x = 13.5544 in	c _{bottom} =	16.8750	in	r _x = 13.5544 in
			Z = 308.37 in ³				Z = 308.37 in ³



Made By CTG
 Checked By DWC

Date 2/15/2012
 Date 2/15/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

FLOORBEAM CAPACITY

Non-composite Capacities*		
	AB	AI
M	741.94 k-ft	741.94 k-ft
V	235.06 k	235.06 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear


```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 22-Mar-11
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
**FB1 AND FB2 (for FB1, just check R1)
*1 0 0 0; 2 27.0312 0 0; 3 48.2760 0 0;
**FB3 AND FB4
*1 0 0 0; 2 24 0 0; 3 49.1302 0 0;
**FB5 AND FB6 (for FB6, just check R1)
1 0 0 0; 2 28.9740 0 0; 3 50.2187 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 TABLE ST W24x84
CONSTANTS
BETA 0 MEMB 2
MATERIAL STEEL ALL
SUPPORTS
1 2 3 PINNED
MEMBER RELEASE
1 START MZ
1 END MZ
2 START MZ
2 END MZ
DEFINE MOVING LOAD
TYPE 1 LOAD 16 16 4
DIST 14 14
TYPE 2 LOAD 10 5
DIST 10
TYPE 3 LOAD 6 8.5 8.5
DIST 10 4
TYPE 4 LOAD 6 7 7 7
DIST 10 4 4
TYPE 5 LOAD 6 8.5 8.5 8.5 8.5
DIST 12 4 31 4
TYPE 6 LOAD 4 16 16
DIST 14 14
TYPE 7 LOAD 5 10
DIST 10
TYPE 8 LOAD 8.5 8.5 6
DIST 4 10
TYPE 9 LOAD 7 7 7 6
DIST 4 4 10
TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
DIST 4 31 4 12

*LANE LOADING DISTRIBUTED LOAD
LOAD 1 LOADTYPE Live TITLE LANE LOAD DISTRIBUTED
MEMBER LOAD
1 TO 2 UNI GY -0.320

****HS20
*LOAD GENERATION 1000
*TYPE 1 -28 0 0 XINC 0.1
*LOAD GENERATION 1000
*TYPE 6 -28 0 0 XINC 0.1

***2F1
*LOAD GENERATION 1000
*TYPE 2 -10 0 0 XINC 0.1
*LOAD GENERATION 1000
*TYPE 7 -10 0 0 XINC 0.1
*

***3F1
*LOAD GENERATION 1000
*TYPE 3 -14 0 0 XINC 0.1

```

```
*LOAD GENERATION 1000
*TYPE 8 -14 0 0 XINC 0.1
*
****4F1
*LOAD GENERATION 1000
*TYPE 4 -18 0 0 XINC 0.1
*LOAD GENERATION 1000
*TYPE 9 -18 0 0 XINC 0.1
*
****5C1
*LOAD GENERATION 1000
*TYPE 5 -51 0 0 XINC 0.1
*LOAD GENERATION 1000
*TYPE 10 -51 0 0 XINC 0.1
*
PERFORM ANALYSIS
PRINT MAXREACTION
FINISH
```

String Live Load Distribution Factors at Floorbeams

DWC 2/16/12

CTG 2/17/12

	FB1	FB2*	FB3	FB4**	FB5	FB6	
	2	2, mid	7	2	7	7	
HS20 (P = 16 k)	23.712	25.076 24.781	24.751	24.751	25.631	24.402	
2F1 (P = 10 k)	13.149	13.149 13.05	13.009	13.009	13.273	13.273	
3F1 (P = 8.5 k)	18.634	19.179 19.148	19.195	19.195	19.328	18.927	
4F1 (P = 7 k)	19.896	21.538 21.391	21.376	21.376	21.816	20.373	
5C1 (P = 8.5 k)	18.19	18.735 18.68	18.717	18.717	18.914	18.512	
HS20 Lane Load	13.325	16.724	16.861	16.861	17.035	13.636	TOTAL MOMENT
	17.325	20.724	20.861	20.861	21.035	17.636	TOTAL SHEAR
	4.325	7.724	7.861	7.861	8.035	4.636	Distributed Load

* According to analysis on FB2, the LLDF doesn't vary much due to FB skew. Therefore, just use worst case.

** Floorbeam spacing of worst case is the same as FB3

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 1 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 8.5104 0 0; 3 35.1354 0 0; 4 40.0469 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1 1 1 1 1
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6

LOAD 1 LOADTYPE Live TITLE 3 Trucks Moment
MEMBER LOAD
2 CON GY -1 0.3125
2 CON GY -1 6.3125
2 CON GY -1 10.3125
2 CON GY -1 16.3125
2 CON GY -1 20.3125
2 CON GY -1 26.3125

LOAD 2 LOADTYPE Live TITLE 3 Trucks Shear
MEMBER LOAD
2 CON GY -1 0
2 CON GY -1 6
2 CON GY -1 10
2 CON GY -1 16
2 CON GY -1 20
2 CON GY -1 26
*
*LOAD 3 LOADTYPE Live TITLE 2 Trucks Moment
*MEMBER LOAD
*2 CON GY -1 5.3125
*2 CON GY -1 11.3125
*2 CON GY -1 15.3125
*2 CON GY -1 21.3125
*
*LOAD 4 LOADTYPE Live TITLE 2 Trucks Shear
*MEMBER LOAD
*2 CON GY -1 0
*2 CON GY -1 6
*2 CON GY -1 10
*2 CON GY -1 16

*
*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
*LOAD GENERATION 1005
*TYPE 1 2 0 0 XINC 0.01
**
*** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
*LOAD GENERATION 2005
*TYPE 2 2 0 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE

```

FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 2 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 7.1363 0 0; 3 33.8689 0 0; 4 40.0189 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1 1 1 1 1
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
*
LOAD 1 LOADTYPE Live TITLE 3 Trucks Moment
MEMBER LOAD
2 CON GY -1 0.36625
2 CON GY -1 6.36625
2 CON GY -1 10.36625
2 CON GY -1 16.36625
2 CON GY -1 20.36625
2 CON GY -1 26.36625

LOAD 2 LOADTYPE Live TITLE 3 Trucks Shear
MEMBER LOAD
2 CON GY -1 0
2 CON GY -1 6
2 CON GY -1 10
2 CON GY -1 16
2 CON GY -1 20
2 CON GY -1 26

*LOAD 3 LOADTYPE Live TITLE 2 Trucks Moment
*MEMBER LOAD
*2 CON GY -1 5.36625
*2 CON GY -1 11.36625
*2 CON GY -1 15.36625
*2 CON GY -1 21.36625
*
*LOAD 4 LOADTYPE Live TITLE 2 Trucks Shear
*MEMBER LOAD
*2 CON GY -1 0
*2 CON GY -1 6
*2 CON GY -1 10
*2 CON GY -1 16

**
** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 1002
TYPE 1 2 0 0 XINC 0.01

***** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
*LOAD GENERATION 2002
*TYPE 2 2 0 0 XINC 0.01
*
PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE

```

FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 3 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 6.5599 0 0; 3 33.1849 0 0; 4 39.9699 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1 1 1 1 1
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6

*LOAD 1 LOADTYPE Live TITLE 3 Trucks Moment
*MEMBER LOAD
*2 CON GY -1 0.3125
*2 CON GY -1 6.3125
*2 CON GY -1 10.3125
*2 CON GY -1 16.3125
*2 CON GY -1 20.3125
*2 CON GY -1 26.3125
**
*LOAD 2 LOADTYPE Live TITLE 3 Trucks Shear
*MEMBER LOAD
*2 CON GY -1 0
*2 CON GY -1 6
*2 CON GY -1 10
*2 CON GY -1 16
*2 CON GY -1 20
*2 CON GY -1 26

LOAD 3 LOADTYPE Live TITLE 2 Trucks Moment
MEMBER LOAD
2 CON GY -1 5.3125
2 CON GY -1 11.3125
2 CON GY -1 15.3125
2 CON GY -1 21.3125

LOAD 4 LOADTYPE Live TITLE 2 Trucks Shear
MEMBER LOAD
2 CON GY -1 0
2 CON GY -1 6
2 CON GY -1 10
2 CON GY -1 16

**
***** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
*LOAD GENERATION 997
*TYPE 1 2 0 0 XINC 0.01

** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 1997
TYPE 2 2 0 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE

```


FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 4 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 6.4864 0 0; 3 33.1114 0 0; 4 39.9699 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 TABLE ST W33X130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1 1 1 1 1
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6

LOAD 1 LOADTYPE Live TITLE 3 Trucks Moment
MEMBER LOAD
2 CON GY -1 0.3125
2 CON GY -1 6.3125
2 CON GY -1 10.3125
2 CON GY -1 16.3125
2 CON GY -1 20.3125
2 CON GY -1 26.3125

LOAD 2 LOADTYPE Live TITLE 3 Trucks Shear
MEMBER LOAD
2 CON GY -1 0
2 CON GY -1 6
2 CON GY -1 10
2 CON GY -1 16
2 CON GY -1 20
2 CON GY -1 26

*LOAD 3 LOADTYPE Live TITLE 2 Trucks Moment
*MEMBER LOAD
*2 CON GY -1 5.3125
*2 CON GY -1 11.3125
*2 CON GY -1 15.3125
*2 CON GY -1 21.3125
*

*LOAD 4 LOADTYPE Live TITLE 2 Trucks Shear
*MEMBER LOAD
*2 CON GY -1 0
*2 CON GY -1 6
*2 CON GY -1 10
*2 CON GY -1 16

*
*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 997
TYPE 1 2 0 0 XINC 0.01

**** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ****
*LOAD GENERATION 1997
*TYPE 2 2 0 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE

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FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 5 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 7.0618 0 0; 3 33.7943 0 0; 4 40.2645 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1 1 1 1 1
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6

LOAD 1 LOADTYPE Live TITLE 3 Trucks Moment
MEMBER LOAD
2 CON GY -1 0.36625
2 CON GY -1 6.36625
2 CON GY -1 10.36625
2 CON GY -1 16.36625
2 CON GY -1 20.36625
2 CON GY -1 26.36625

LOAD 2 LOADTYPE Live TITLE 3 Trucks Shear
MEMBER LOAD
2 CON GY -1 0
2 CON GY -1 6
2 CON GY -1 10
2 CON GY -1 16
2 CON GY -1 20
2 CON GY -1 26
*
*LOAD 3 LOADTYPE Live TITLE 2 Trucks Moment
*MEMBER LOAD
*2 CON GY -1 5.36625
*2 CON GY -1 11.36625
*2 CON GY -1 15.36625
*2 CON GY -1 21.36625
*
*LOAD 4 LOADTYPE Live TITLE 2 Trucks Shear
*MEMBER LOAD
*2 CON GY -1 0
*2 CON GY -1 6
*2 CON GY -1 10
*2 CON GY -1 16

**
*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 1026
TYPE 1 2 0 0 XINC 0.01
*
**** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
*LOAD GENERATION 2026
*TYPE 2 2 0 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE

```

FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 6 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 8.2708 0 0; 3 34.8958 0 0; 4 40.0365 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1 1 1 1 1
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6

LOAD 1 LOADTYPE Live TITLE 3 Trucks Moment
MEMBER LOAD
2 CON GY -1 0.3125
2 CON GY -1 6.3125
2 CON GY -1 10.3125
2 CON GY -1 16.3125
2 CON GY -1 20.3125
2 CON GY -1 26.3125

LOAD 2 LOADTYPE Live TITLE 3 Trucks Shear
MEMBER LOAD
2 CON GY -1 0
2 CON GY -1 6
2 CON GY -1 10
2 CON GY -1 16
2 CON GY -1 20
2 CON GY -1 26

*LOAD 3 LOADTYPE Live TITLE 2 Trucks Moment
*MEMBER LOAD
*2 CON GY -1 5.3125
*2 CON GY -1 11.3125
*2 CON GY -1 15.3125
*2 CON GY -1 21.3125
*

*LOAD 4 LOADTYPE Live TITLE 2 Trucks Shear
*MEMBER LOAD
*2 CON GY -1 0
*2 CON GY -1 6
*2 CON GY -1 10
*2 CON GY -1 16

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 1004
TYPE 1 2 0 0 XINC 0.01
**
**** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
*LOAD GENERATION 2004
*TYPE 2 2 0 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE

```

FINISH

FB Transverse Live Load Distribution

DWC 2/16/12

CTG 2/17/12

0.9 =MPF		FB1	FB2	FB3	FB4	FB5	FB6
	Mmax- North (k-ft)	-7.021	-5.136	-4.56	-4.486	-5.062	-6.542
	Mmax+ (k-ft)	17.327	17.485	17.328	17.328	17.485	17.327
3 TRUCKS	Mmax- South (k-ft)	-2.905	-4.141	-4.775	-4.849	-4.456	-3.134
	Vmax North (k)	3.42	3.235	3.098	3.081	3.218	3.42
	Vmax South (k)	3.069	3.08	3.147	3.163	3.082	3.069
	RN (k)	4.538	4.235	4.098	4.081	4.218	4.484
	RS (k)	3.725	4.012	4.147	4.163	4.082	3.777
	1 =MPF						
	Mmax- North (k-ft)	-7.021	-5.136	-4.56	-4.486	-5.062	-6.542
	Mmax+ (k-ft)	16.625	16.733	16.625	16.625	16.733	16.625
2 TRUCKS	Mmax- South (k-ft)	-2.905	-4.141	-4.775	-4.849	-4.456	-3.134
	Vmax North (k)	2.798	2.803	2.798	2.798	2.803	2.798
	Vmax South (k)	2.797	2.802	2.797	2.798	2.802	2.797
	RN (k)	3.776	3.572	3.483	3.472	3.56	3.74
	RS (k)	3.234	3.423	3.516	3.527	3.47	3.269
		X2 (feet) =	2	2.0081	2	2	2.0081
	X3 (feet) =	4.125	4.1417	4.125	4.125	4.1417	4.125
	North Bracket Length (ft) =	8.5104	7.1363	6.5599	6.4864	7.0618	8.2708
	S1 (k) =	0.692799	0.61	0.561394	0.554208	0.60425	0.681061
	S2 (k) =	1.16774	0.923026	0.876957	0.872143	0.916661	1.101241
	South Bracket Length (ft) =	4.9115	6.15	6.785	6.8554	6.4702	5.1406
	S7 (k) =	0.856156	0.855516	0.893075	0.898508	0.872932	0.84345
	S8 (k) =	0.313069	0.51713	0.582027	0.588087	0.551781	0.363179

* See hand calculations for equations

FB Transverse Live Load Distribution

DWC 2/16/12

CTG 2/17/12

GOVERNING VALUES

	FB1	FB2	FB3	FB4	FB5	FB6
Mmax- North (k-ft)	-7.021	-5.136	-4.560	-4.486	-5.062	-6.542
Mmax+ (k-ft)	16.625	16.733	16.625	16.625	16.733	16.625
Mmax- South (k-ft)	-2.905	-4.141	-4.775	-4.849	-4.456	-3.134
Vmax North (k)	3.078	2.912	2.798	2.798	2.896	3.078
Vmax South (k)	2.797	2.802	2.832	2.847	2.802	2.797
RN (k)	4.084	3.812	3.688	3.673	3.796	4.036
RS (k)	3.353	3.611	3.732	3.747	3.674	3.399
*Mmax NB (k-ft)	-8.231	-6.207	-5.437	-5.339	-6.108	-7.835
*Vmax NB (k)	1.861	1.533	1.438	1.426	1.521	1.782
*Mmax SB (k-ft)	-3.250	-4.898	-5.735	-5.829	-5.323	-3.554
*Vmax SB (k)	1.169	1.373	1.475	1.487	1.425	1.207



Made By DWC
 Checked By CTG

Date 2/16/2012
 Date 2/21/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section K

Floorbeam 1

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	23.71	13.15	18.63	19.90	18.19

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-216.43	-120.01	-170.08	-181.60	-166.03
Mmax+ (k-ft)	512.48	284.18	402.73	430.00	393.13
Mmax- South (k-ft)	-89.55	-49.66	-70.37	-75.14	-68.69
Vmax North (k)	94.88	52.61	74.56	79.61	72.79
Vmax South (k)	86.22	47.81	67.76	72.34	66.14
RN (k)	125.90	69.81	98.94	105.64	96.58
RS (k)	103.34	57.31	81.21	86.71	79.28

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-253.74	-140.71	-199.40	-212.91	-194.65
Vmax* (k)	57.35	31.80	45.07	48.12	44.00

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-100.18	-55.55	-78.73	-84.06	-76.85
Vmax* (k)	36.04	19.99	28.32	30.24	27.65



Made By DWC
 Checked By CTG

Date 2/16/2012
 Date 2/21/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section K

Floorbeam 2

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	25.08	13.15	19.18	21.54	18.74

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-167.43	-87.79	-128.05	-143.80	-125.09
Mmax+ (k-ft)	545.48	286.03	417.20	468.51	407.54
Mmax- South (k-ft)	-134.99	-70.79	-103.25	-115.95	-100.86
Vmax North (k)	94.91	49.77	72.59	81.52	70.91
Vmax South (k)	91.34	47.90	69.86	78.45	68.24
RN (k)	124.25	65.15	95.03	106.72	92.83
RS (k)	117.71	61.72	90.03	101.10	87.94

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-202.33	-106.09	-154.75	-173.78	-151.17
Vmax* (k)	49.97	26.21	38.22	42.92	37.34

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-159.68	-83.73	-122.13	-137.15	-119.30
Vmax* (k)	44.75	23.46	34.22	38.43	33.43



Made By DWC
Checked By CTG

Date 2/16/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section K

Floorbeam 3

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	24.75	13.01	19.20	21.38	18.72

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-146.72	-77.12	-113.79	-126.72	-110.95
Mmax+ (k-ft)	534.93	281.16	414.85	461.99	404.52
Mmax- South (k-ft)	-153.64	-80.75	-119.15	-132.69	-116.19
Vmax North (k)	90.03	47.32	69.82	77.75	68.08
Vmax South (k)	91.13	47.90	70.68	78.71	68.92
RN (k)	118.67	62.37	92.03	102.49	89.74
RS (k)	120.09	63.12	93.13	103.72	90.81

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-174.93	-91.94	-135.66	-151.08	-132.28
Vmax* (k)	46.28	24.32	35.89	39.97	35.00

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-184.54	-96.99	-143.11	-159.37	-139.55
Vmax* (k)	47.46	24.95	36.81	40.99	35.89



Made By DWC
Checked By CTG

Date 2/16/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section K

Floorbeam 4

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	24.75	13.01	19.20	21.38	18.72

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-144.34	-75.87	-111.94	-124.66	-109.15
Mmax+ (k-ft)	534.93	281.16	414.85	461.99	404.52
Mmax- South (k-ft)	-156.02	-82.00	-121.00	-134.75	-117.99
Vmax North (k)	90.03	47.32	69.82	77.75	68.08
Vmax South (k)	91.60	48.14	71.04	79.11	69.27
RN (k)	118.18	62.11	91.65	102.07	89.37
RS (k)	120.55	63.36	93.49	104.12	91.17

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-171.79	-90.29	-133.23	-148.37	-129.91
Vmax* (k)	45.89	24.12	35.59	39.64	34.71

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-187.54	-98.57	-145.44	-161.97	-141.82
Vmax* (k)	47.83	25.14	37.10	41.31	36.17



Made By DWC
Checked By CTG

Date 2/16/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section K

Floorbeam 5

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	25.63	13.27	19.33	21.82	18.91

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-168.67	-87.34	-127.19	-143.56	-124.47
Mmax+ (k-ft)	557.55	288.73	420.44	474.56	411.43
Mmax- South (k-ft)	-148.48	-76.89	-111.96	-126.38	-109.57
Vmax North (k)	96.50	49.97	72.77	82.14	71.21
Vmax South (k)	93.36	48.35	70.40	79.47	68.90
RN (k)	126.49	65.50	95.38	107.66	93.34
RS (k)	122.41	63.39	92.31	104.19	90.33

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-203.52	-105.39	-153.47	-173.22	-150.18
Vmax* (k)	50.68	26.24	38.22	43.13	37.40

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-177.37	-91.85	-133.75	-150.97	-130.88
Vmax* (k)	47.47	24.58	35.80	40.41	35.03



Made By DWC
Checked By CTG

Date 2/16/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section K

Floorbeam 6

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	24.40	13.27	18.93	20.37	18.51

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-207.53	-112.88	-160.97	-173.26	-157.44
Mmax+ (k-ft)	527.39	286.86	409.06	440.31	400.09
Mmax- South (k-ft)	-99.42	-54.08	-77.11	-83.00	-75.42
Vmax North (k)	97.64	53.11	75.73	81.52	74.07
Vmax South (k)	88.73	48.26	68.82	74.08	67.31
RN (k)	128.02	69.63	99.30	106.88	97.12
RS (k)	107.83	58.65	83.64	90.03	81.81

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-248.56	-135.20	-192.79	-207.52	-188.56
Vmax* (k)	56.54	30.75	43.85	47.20	42.89

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-112.74	-61.32	-87.44	-94.12	-85.53
Vmax* (k)	38.28	20.82	29.69	31.96	29.04

Girder 1 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.54	0.00	0.00	0.00	8.54	6.57
	Steel 1.91					
	Conc 6.63					
23.94	18.65	0.00	0.00	0.00	18.65	14.35
	Steel 3.77					
	Conc 14.88					
48.32	9.85	0.00	0.00	0.00	9.85	7.58
	Steel 1.94					
	Conc 7.91					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	6.57	0.00	0.00	0.00	6.57	6.57
	Steel 1.47					
	Conc 5.10					
23.94	14.35	0.00	0.00	0.00	14.35	14.35
	Steel 2.90					
	Conc 11.44					
48.32	7.58	0.00	0.00	0.00	7.58	7.58
	Steel 1.50					
	Conc 6.08					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Reaction at Hinge

Positive value: Downward on girder to left of hinge,
 Upward on girder to right of hinge.

Negative value: Upward on girder to left of hinge,
 Downward on girder to right of hinge.

Hinge Loc	DL1	DL2	Max LL+I	Min LL+I
22.90	-6.52	0.00	0.00	0.00

Girder 2 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.02	0.00	0.00	0.00	7.02	5.40
Steel	1.09					
Conc	5.93					
24.28	21.55	0.00	0.00	0.00	21.55	16.58
Steel	2.67					
Conc	18.89					
48.28	7.35	0.00	0.00	0.00	7.36	5.66
Steel	0.88					
Conc	6.47					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	5.40	0.00	0.00	0.00	5.40	5.40
Steel	0.84					
Conc	4.56					
24.28	16.58	0.00	0.00	0.00	16.58	16.58
Steel	2.05					
Conc	14.53					
48.28	5.66	0.00	0.00	0.00	5.66	5.66
Steel	0.68					
Conc	4.98					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 3 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	9.43	0.00	0.00	0.00	9.43	7.25
Steel	1.32					
Conc	8.11					
24.83	27.69	0.00	0.00	0.00	27.69	21.30
Steel	3.14					
Conc	24.54					
48.28	8.48	0.00	0.00	0.00	8.48	6.52
Steel	0.95					
Conc	7.53					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.25	0.00	0.00	0.00	7.26	7.26
Steel	1.01					
Conc	6.24					
24.83	21.30	0.00	0.00	0.00	21.30	21.30
Steel	2.42					
Conc	18.88					
48.28	6.52	0.00	0.00	0.00	6.52	6.52
Steel	0.73					
Conc	5.79					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 4 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	9.87	0.00	0.00	0.00	9.87	7.59
Steel	1.44					
Conc	8.43					
25.38	27.87	0.00	0.00	0.00	27.88	21.44
Steel	3.35					
Conc	24.52					
48.28	8.15	0.00	0.00	0.00	8.15	6.27
Steel	0.99					
Conc	7.17					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.59	0.00	0.00	0.00	7.59	7.59
Steel	1.11					
Conc	6.49					
25.38	21.44	0.00	0.00	0.00	21.44	21.44
Steel	2.58					
Conc	18.86					
48.28	6.27	0.00	0.00	0.00	6.27	6.27
Steel	0.76					
Conc	5.51					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 5 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.01	0.00	0.00	0.00	10.01	7.70
Steel	1.47					
Conc	8.54					
25.93	27.43	0.00	0.00	0.00	27.44	21.10
Steel	3.37					
Conc	24.06					
48.28	7.69	0.00	0.00	0.00	7.69	5.92
Steel	0.94					
Conc	6.75					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.70	0.00	0.00	0.00	7.70	7.70
Steel	1.13					
Conc	6.57					
25.93	21.10	0.00	0.00	0.00	21.10	21.10
Steel	2.59					
Conc	18.51					
48.28	5.92	0.00	0.00	0.00	5.92	5.92
Steel	0.73					
Conc	5.19					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 6 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.60	0.00	0.00	0.00	10.60	8.15
Steel	1.67					
Conc	8.93					
26.48	28.16	0.00	0.00	0.00	28.17	21.66
Steel	3.79					
Conc	24.37					
48.28	7.41	0.00	0.00	0.00	7.41	5.70
Steel	1.01					
Conc	6.40					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.15	0.00	0.00	0.00	8.15	8.15
Steel	1.28					
Conc	6.87					
26.48	21.66	0.00	0.00	0.00	21.67	21.67
Steel	2.91					
Conc	18.75					
48.28	5.70	0.00	0.00	0.00	5.70	5.70
Steel	0.77					
Conc	4.93					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 7 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.79	0.00	0.00	0.00	10.79	8.30
Steel	1.84					
Conc	8.95					
27.03	27.56	0.00	0.00	0.00	27.56	21.20
Steel	4.20					
Conc	23.35					
48.28	6.84	0.00	0.00	0.00	6.84	5.26
Steel	1.11					
Conc	5.73					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.30	0.00	0.00	0.00	8.30	8.30
Steel	1.41					
Conc	6.89					
27.03	21.20	0.00	0.00	0.00	21.20	21.20
Steel	3.23					
Conc	17.96					
48.28	5.26	0.00	0.00	0.00	5.26	5.26
Steel	0.86					
Conc	4.41					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 8 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.87	0.00	0.00	0.00	10.87	8.36
Steel	1.79					
Conc	9.08					
27.53	18.53	0.00	0.00	0.00	18.53	14.25
Steel	2.92					
Conc	15.61					
48.32	7.36	0.00	0.00	0.00	7.36	5.66
Steel	1.26					
Conc	6.10					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.36	0.00	0.00	0.00	8.36	8.36
Steel	1.38					
Conc	6.98					
27.53	14.25	0.00	0.00	0.00	14.25	14.25
Steel	2.25					
Conc	12.00					
48.32	5.66	0.00	0.00	0.00	5.66	5.66
Steel	0.97					
Conc	4.69					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Reaction at Hinge

Positive value: Downward on girder to left of hinge,
 Upward on girder to right of hinge.

Negative value: Upward on girder to left of hinge,
 Downward on girder to right of hinge.

Hinge Loc	DL1	DL2	Max LL+I	Min LL+I
26.50	-7.88	0.00	0.00	0.00

Girder 1 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	9.55	0.00	0.00	0.00	9.55	7.34
Steel	1.93					
Conc	7.61					
25.13	17.19	0.00	0.00	0.00	17.19	13.22
Steel	3.46					
Conc	13.73					
45.98	18.73	0.00	0.00	0.00	18.74	14.41
Steel	3.87					
Conc	14.86					
75.38	11.35	0.00	0.00	0.00	11.36	8.73
Steel	2.47					
Conc	8.89					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.34	0.00	0.00	0.00	7.34	7.34
Steel	1.49					
Conc	5.85					
25.13	13.22	0.00	0.00	0.00	13.22	13.22
Steel	2.66					
Conc	10.56					
45.98	14.41	0.00	0.00	0.00	14.41	14.41
Steel	2.98					
Conc	11.43					
75.38	8.73	0.00	0.00	0.00	8.74	8.74
Steel	1.90					
Conc	6.84					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Reaction at Hinge

Positive value: Downward on girder to left of hinge,
 Upward on girder to right of hinge.

Negative value: Upward on girder to left of hinge,
Downward on girder to right of hinge.

Hinge Loc	DL1	DL2	Max LL+I	Min LL+I
24.60	-7.49	0.00	0.00	0.00
45.50	-5.65	0.00	0.00	0.00

Girder 2 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.72	0.00	0.00	0.00	8.72	6.71
Steel	1.22					
Conc	7.49					
25.13	20.27	0.00	0.00	0.00	20.27	15.59
Steel	2.84					
Conc	17.43					
46.38	21.40	0.00	0.00	0.00	21.41	16.46
Steel	3.10					
Conc	18.31					
75.35	9.12	0.00	0.00	0.00	9.12	7.01
Steel	1.52					
Conc	7.60					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	6.71	0.00	0.00	0.00	6.71	6.71
Steel	0.94					
Conc	5.77					
25.13	15.59	0.00	0.00	0.00	15.59	15.59
Steel	2.18					
Conc	13.41					
46.38	16.46	0.00	0.00	0.00	16.47	16.47
Steel	2.38					
Conc	14.08					
75.35	7.01	0.00	0.00	0.00	7.01	7.01
Steel	1.17					
Conc	5.84					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 3 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.50	0.00	0.00	0.00	10.50	8.08
	Steel 1.39					
	Conc 9.11					
25.13	23.36	0.00	0.00	0.00	23.36	17.97
	Steel 3.07					
	Conc 20.29					
46.93	26.75	0.00	0.00	0.00	26.76	20.58
	Steel 3.52					
	Conc 23.23					
75.35	11.90	0.00	0.00	0.00	11.90	9.15
	Steel 1.82					
	Conc 10.08					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.08	0.00	0.00	0.00	8.08	8.08
	Steel 1.07					
	Conc 7.01					
25.13	17.97	0.00	0.00	0.00	17.97	17.97
	Steel 2.36					
	Conc 15.61					
46.93	20.58	0.00	0.00	0.00	20.58	20.58
	Steel 2.71					
	Conc 17.87					
75.35	9.15	0.00	0.00	0.00	9.16	9.16
	Steel 1.40					
	Conc 7.75					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 4 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.14	0.00	0.00	0.00	10.14	7.80
Steel	1.35					
Conc	8.78					
25.13	23.10	0.00	0.00	0.00	23.11	17.77
Steel	3.09					
Conc	20.02					
47.48	25.98	0.00	0.00	0.00	25.98	19.98
Steel	3.45					
Conc	22.53					
75.35	11.46	0.00	0.00	0.00	11.46	8.82
Steel	1.77					
Conc	9.69					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.80	0.00	0.00	0.00	7.80	7.80
Steel	1.04					
Conc	6.76					
25.13	17.77	0.00	0.00	0.00	17.77	17.77
Steel	2.37					
Conc	15.40					
47.48	19.98	0.00	0.00	0.00	19.98	19.98
Steel	2.65					
Conc	17.33					
75.35	8.82	0.00	0.00	0.00	8.82	8.82
Steel	1.36					
Conc	7.46					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 5 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	10.24	0.00	0.00	0.00	10.25	7.88
	Steel 1.37					
	Conc 8.87					
25.13	23.97	0.00	0.00	0.00	23.97	18.44
	Steel 3.20					
	Conc 20.77					
48.03	26.12	0.00	0.00	0.00	26.12	20.09
	Steel 3.47					
	Conc 22.65					
75.35	11.29	0.00	0.00	0.00	11.29	8.69
	Steel 1.75					
	Conc 9.54					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.88	0.00	0.00	0.00	7.88	7.88
	Steel 1.05					
	Conc 6.83					
25.13	18.44	0.00	0.00	0.00	18.44	18.44
	Steel 2.46					
	Conc 15.98					
48.03	20.09	0.00	0.00	0.00	20.09	20.09
	Steel 2.67					
	Conc 17.42					
75.35	8.69	0.00	0.00	0.00	8.69	8.69
	Steel 1.35					
	Conc 7.34					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 6 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	9.99	0.00	0.00	0.00	9.99	7.68
Steel	1.36					
Conc	8.63					
25.13	23.79	0.00	0.00	0.00	23.80	18.30
Steel	3.22					
Conc	20.58					
48.58	25.38	0.00	0.00	0.00	25.38	19.52
Steel	3.41					
Conc	21.97					
75.35	10.90	0.00	0.00	0.00	10.90	8.38
Steel	1.72					
Conc	9.18					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.68	0.00	0.00	0.00	7.68	7.68
Steel	1.04					
Conc	6.64					
25.13	18.30	0.00	0.00	0.00	18.30	18.30
Steel	2.47					
Conc	15.83					
48.58	19.52	0.00	0.00	0.00	19.52	19.52
Steel	2.62					
Conc	16.90					
75.35	8.38	0.00	0.00	0.00	8.38	8.38
Steel	1.32					
Conc	7.06					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 7 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	9.14	0.00	0.00	0.00	9.14	7.03
Steel	1.45					
Conc	7.68					
25.13	23.53	0.00	0.00	0.00	23.53	18.10
Steel	3.72					
Conc	19.81					
49.13	25.74	0.00	0.00	0.00	25.74	19.80
Steel	3.93					
Conc	21.81					
75.35	10.55	0.00	0.00	0.00	10.56	8.12
Steel	1.83					
Conc	8.72					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	7.03	0.00	0.00	0.00	7.03	7.03
Steel	1.12					
Conc	5.91					
25.13	18.10	0.00	0.00	0.00	18.10	18.10
Steel	2.86					
Conc	15.24					
49.13	19.80	0.00	0.00	0.00	19.80	19.80
Steel	3.02					
Conc	16.78					
75.35	8.12	0.00	0.00	0.00	8.12	8.12
Steel	1.41					
Conc	6.71					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Girder 8 Factored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	8.62	0.00	0.00	0.00	8.62	6.63
Steel	1.49					
Conc	7.12					
25.13	16.89	0.00	0.00	0.00	16.90	13.00
Steel	2.85					
Conc	14.05					
49.59	18.14	0.00	0.00	0.00	18.14	13.95
Steel	2.94					
Conc	15.20					
75.39	10.10	0.00	0.00	0.00	10.11	7.77
Steel	1.74					
Conc	8.36					

Unfactored Reactions - k

Loc	Noncomp Dead	Comp Dead	LL+I Max	LL+I Min	Max Total	Min Total
0.00	6.63	0.00	0.00	0.00	6.63	6.63
Steel	1.15					
Conc	5.48					
25.13	13.00	0.00	0.00	0.00	13.00	13.00
Steel	2.19					
Conc	10.81					
49.59	13.95	0.00	0.00	0.00	13.95	13.95
Steel	2.26					
Conc	11.69					
75.39	7.77	0.00	0.00	0.00	7.77	7.77
Steel	1.34					
Conc	6.43					

Reactions in girder output include weight in girder extensions at abutments, which is not included in girder system output.

Reaction at Hinge

Positive value: Downward on girder to left of hinge,
 Upward on girder to right of hinge.

Negative value: Upward on girder to left of hinge,
Downward on girder to right of hinge.

Hinge Loc	DL1	DL2	Max LL+I	Min LL+I
24.60	-6.79	0.00	0.00	0.00
49.10	-6.30	0.00	0.00	0.00

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 1 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 8.5104 0 0; 3 35.1354 0 0; 4 40.0469 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

UNIT INCH KIP
MEMBER PROPERTY AMERICAN
1 TAPERED 23.75 .75 26.6875 11.5 1 11.5 1
2 TAPERED 26.6875 .75 35.9375 11.5 1 11.5 1
3 TAPERED 35.9375 .75 26 11.5 1 11.5 1

UNIT FEET KIP
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

LOAD 1 LOADTYPE Dead TITLE DL
SELFWEIGHT Y -1.05 LIST 1 TO 3

MEMBER LOAD
1 CON GY -8.36 0
1 CON GY -8.30 6.5104
2 CON GY -8.15 4.125
2 CON GY -7.70 10.25
2 CON GY -7.59 16.375
2 CON GY -7.26 22.5
3 CON GY -5.40 2.00
3 CON GY -6.57 4.9115

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 2 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 7.1364 0 0; 3 33.8689 0 0; 4 40.019 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TABLE ST W33X130
```

```
UNIT INCH KIP
MEMBER PROPERTY AMERICAN
1 TAPERED 18.75 .375 33.125 12.5 .5 12.5 .5
3 TAPERED 33.125 .375 18.375 12.5 .5 12.5 .5
```

```
UNIT FEET KIP
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED
```

```
LOAD 1 LOADTYPE Dead TITLE DL
```

```
SELFWEIGHT Y -1.07 LIST 1 TO 3
```

```
MEMBER LOAD
1 CON GY -14.25 0
1 CON GY -21.20 5.1283
2 CON GY -21.67 4.1417
2 CON GY -21.10 10.2914
2 CON GY -21.44 16.4411
2 CON GY -21.30 22.5908
3 CON GY -16.58 2.0081
3 CON GY -14.35 6.1500
```

```
PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH
```

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 3 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 6.5599 0 0; 3 33.1849 0 0; 4 39.9699 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TABLE ST W33X130

```

```

UNIT INCH KIP
MEMBER PROPERTY AMERICAN
1 TAPERED 18.75 .375 33.75 12.5 .5 12.5 .5
3 TAPERED 33.75 .375 18.375 12.5 .5 12.5 .5

```

```

UNIT FEET KIP
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

```

```
LOAD 1 LOADTYPE Dead TITLE DL
```

```
SELFWEIGHT Y -1.07 LIST 1 TO 3
```

```

MEMBER LOAD
1 CON GY -12.29 0
1 CON GY -12.29 4.5599
2 CON GY -13.38 4.125
2 CON GY -13.80 10.25
2 CON GY -14.07 16.375
2 CON GY -14.60 22.5
3 CON GY -12.37 2.00
3 CON GY -14.92 6.785

```

```

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 4 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 6.4864 0 0; 3 33.1114 0 0; 4 39.9668 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TABLE ST W33X130

```

```

UNIT INCH KIP
MEMBER PROPERTY AMERICAN
1 TAPERED 18.75 .375 33.75 12.5 .5 12.5 .5
3 TAPERED 33.75 .375 18.375 12.5 .5 12.5 .5

```

```

UNIT FEET KIP
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

```

```
LOAD 1 LOADTYPE Dead TITLE DL
```

```
SELFWEIGHT Y -1.07 LIST 1 TO 3
```

```

MEMBER LOAD
1 CON GY -13.00 0
1 CON GY -18.10 4.4864
2 CON GY -18.30 4.125
2 CON GY -18.44 10.25
2 CON GY -17.77 16.375
2 CON GY -17.97 22.5
3 CON GY -15.59 2.00
3 CON GY -13.22 6.8544

```

```

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```

```
STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 5 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 7.0618 0 0; 3 33.7943 0 0; 4 40.2645 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TABLE ST W33X130

UNIT INCH KIP
MEMBER PROPERTY AMERICAN
1 TAPERED 18.75 .375 33.125 12.5 .5 12.5 .5
3 TAPERED 33.125 .375 18.375 12.5 .5 12.5 .5

UNIT FEET KIP
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

LOAD 1 LOADTYPE Dead TITLE DL

SELFWEIGHT Y -1.07 LIST 1 TO 3

MEMBER LOAD
1 CON GY -13.95 0
1 CON GY -19.80 5.0537
2 CON GY -19.52 4.1417
2 CON GY -20.09 10.2914
2 CON GY -19.98 16.4411
2 CON GY -20.58 22.5908
3 CON GY -16.47 2.0081
3 CON GY -14.41 6.4702

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH
```

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 6 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 8.2708 0 0; 3 34.8958 0 0; 4 40.0365 0 0;
MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

```

```

UNIT INCH KIP
MEMBER PROPERTY AMERICAN
1 TAPERED 21.75 .75 25.25 11.5 1 11.5 1
2 TAPERED 25.25 .75 36.5625 11.5 1 11.5 1
3 TAPERED 36.5625 .75 26 11.5 1 11.5 1

```

```

UNIT FEET KIP
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
2 3 PINNED

```

```
LOAD 1 LOADTYPE Dead TITLE DL
```

```
SELFWEIGHT Y -1.05 LIST 1 TO 3
```

```

MEMBER LOAD
1 CON GY -7.77 0
1 CON GY -8.12 6.2708
2 CON GY -8.38 4.125
2 CON GY -8.69 10.25
2 CON GY -8.82 16.375
2 CON GY -9.16 22.5
3 CON GY -7.01 2.00
3 CON GY -8.74 5.1406

```

```

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```

Floorbeam Dead Load Effects

DWC 2/21/12

CTG 2/21/12

MOMENT	FB1	FB2	FB3	FB4	FB5	FB6
At RN	-92.92	-146.2	-106.85	-122.13	-140.17	-85.22
At 10.25 or 16.44	58.75	187.96	96.44	150.33	168.76	67.84
At RS	-46.4	-122.98	-127.72	-123.58	-127.9	-62.79
SHEAR	FB1	FB2	FB3	FB4	FB5	FB6
At RN	19.55	53.43	28.54	38.23	42.05	20.2
Center	---	---	---	---	---	---
At RS	15.42	35.73	31.01	37.96	41.84	19.09
North Bracket	17.89	36.01	25.1	31.62	34.31	17.04
South Bracket	12.75	31.41	27.83	29.36	31.39	16.57
NORTH REACTION	37.44	81.59	53.65	69.85	76.36	37.25
SOUTH REACTION	28.17	75.08	58.84	67.31	73.23	35.66

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section K - Floorbeam As-Built Ratings

Calculated: **DWC** 2/20/2012

Checked: **CTG** 2/21/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear					
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF			
	From Rear (Ft)	M+	M-	V										
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating		
HS20-44	FB 1	North	-92.92	---	-216.43	19.55	94.88	1229.04	2.36	3.93	386.61	1.75	2.92	
		Center	58.75	512.48	---	---	---	---	1529.10	1.31	2.18	459.03	N/A	N/A
		South	-46.40	---	-89.55	15.42	86.22	1853.22	9.23	15.38	531.46	2.73	4.56	
		N Bracket	-92.92	---	-253.74	17.89	57.35	1229.04	2.01	3.36	386.61	2.92	4.87	
		S Bracket	-46.40	---	-100.18	12.75	36.04	1853.22	8.25	13.75	531.46	6.58	10.97	
	FB 2	North	-146.20	---	-167.43	53.43	94.91	1292.00	3.03	5.06	348.50	1.35	2.26	
		Center	187.96	545.48	---	---	---	---	1292.00	0.89	1.48	348.50	N/A	N/A
		South	-122.98	---	-134.99	35.73	91.34	1292.00	3.86	6.44	348.50	1.52	2.54	
		N Bracket	-146.20	---	-202.33	36.01	49.97	724.34	1.22	2.03	230.58	1.69	2.82	
		S Bracket	-122.98	---	-159.68	31.41	44.75	724.34	1.63	2.72	230.58	1.95	3.26	
	FB 3	North	-106.85	---	-146.72	28.54	90.03	1292.00	3.62	6.04	348.50	1.59	2.66	
		Center	96.44	534.93	---	---	---	---	1292.00	1.01	1.68	348.50	N/A	N/A
		South	-127.72	---	-153.64	31.01	91.13	1292.00	3.38	5.63	348.50	1.56	2.60	
		N Bracket	-106.85	---	-174.93	25.10	46.28	741.94	1.59	2.65	235.06	2.02	3.36	
		S Bracket	-127.72	---	-184.54	27.83	47.46	741.94	1.44	2.40	235.06	1.93	3.22	
	FB 4	North	-122.13	---	-144.34	38.23	90.03	1292.00	3.62	6.03	348.50	1.53	2.55	
		Center	150.33	534.93	---	---	---	---	1292.00	0.94	1.57	348.50	N/A	N/A
		South	-123.58	---	-156.02	37.96	91.60	1292.00	3.34	5.57	348.50	1.51	2.51	
		N Bracket	-122.13	---	-171.79	31.62	45.89	741.94	1.56	2.61	235.06	1.95	3.25	
		S Bracket	-123.58	---	-187.54	29.36	47.83	741.94	1.43	2.38	235.06	1.90	3.16	
FB 5	North	-140.17	---	-168.67	42.05	96.50	1292.00	3.03	5.05	348.50	1.40	2.34		
	Center	168.76	557.55	---	---	---	---	1292.00	0.89	1.48	348.50	N/A	N/A	
	South	-127.90	---	-148.48	41.84	93.36	1292.00	3.49	5.82	348.50	1.45	2.42		
	N Bracket	-140.17	---	-203.52	34.31	50.68	724.34	1.23	2.05	230.58	1.69	2.82		
	S Bracket	-127.90	---	-177.37	31.39	47.47	724.34	1.45	2.42	230.58	1.84	3.07		
FB 6	North	-85.22	---	-207.53	20.20	97.64	1140.69	2.29	3.81	364.10	1.59	2.66		
	Center	67.84	527.39	---	---	---	---	1501.77	1.24	2.06	452.67	N/A	N/A	
	South	-62.79	---	-99.42	19.09	88.73	1898.85	8.42	14.04	541.25	2.68	4.47		
	N Bracket	-85.22	---	-248.56	17.04	56.54	1140.69	1.91	3.18	364.10	2.79	4.65		
	S Bracket	-62.79	---	-112.74	16.57	38.28	1898.85	7.43	12.38	541.25	6.26	10.43		

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section K - Floorbeam As-Built Ratings

Calculated: **DWC** 2/20/2012

Checked: **CTG** 2/21/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
2F1	FB 1	North	-92.92	---	-120.01	19.55	52.61	1229.04	---	7.10	386.61	---	5.28
		Center	58.75	284.18	---	---	---	1529.10	---	3.93	459.03	---	N/A
		South	-46.40	---	-49.66	15.42	47.81	1853.22	---	27.77	531.46	---	8.23
		N Bracket	-92.92	---	-140.71	17.89	31.80	1229.04	---	6.06	386.61	---	8.79
		S Bracket	-46.40	---	-55.55	12.75	19.99	1853.22	---	24.83	531.46	---	19.82
	FB 2	North	-146.20	---	-87.79	53.43	49.77	1292.00	---	9.66	348.50	---	4.31
		Center	187.96	286.03	---	---	---	1292.00	---	2.82	348.50	---	N/A
		South	-122.98	---	-70.79	35.73	47.90	1292.00	---	12.30	348.50	---	4.85
		N Bracket	-146.20	---	-106.09	36.01	26.21	724.34	---	3.87	230.58	---	5.39
		S Bracket	-122.98	---	-83.73	31.41	23.46	724.34	---	5.19	230.58	---	6.22
	FB 3	North	-106.85	---	-77.12	28.54	47.32	1292.00	---	11.50	348.50	---	5.06
		Center	96.44	281.16	---	---	---	1292.00	---	3.19	348.50	---	N/A
		South	-127.72	---	-80.75	31.01	47.90	1292.00	---	10.73	348.50	---	4.95
		N Bracket	-106.85	---	-91.94	25.10	24.32	741.94	---	5.05	235.06	---	6.40
		S Bracket	-127.72	---	-96.99	27.83	24.95	741.94	---	4.57	235.06	---	6.13
	FB 4	North	-122.13	---	-75.87	38.23	47.32	1292.00	---	11.49	348.50	---	4.86
		Center	150.33	281.16	---	---	---	1292.00	---	3.00	348.50	---	N/A
		South	-123.58	---	-82.00	37.96	48.14	1292.00	---	10.61	348.50	---	4.78
		N Bracket	-122.13	---	-90.29	31.62	24.12	741.94	---	4.97	235.06	---	6.19
		S Bracket	-123.58	---	-98.57	29.36	25.14	741.94	---	4.54	235.06	---	6.02
FB 5	North	-140.17	---	-87.34	42.05	49.97	1292.00	---	9.77	348.50	---	4.52	
	Center	168.76	288.73	---	---	---	1292.00	---	2.86	348.50	---	N/A	
	South	-127.90	---	-76.89	41.84	48.35	1292.00	---	11.26	348.50	---	4.68	
	N Bracket	-140.17	---	-105.39	34.31	26.24	724.34	---	3.96	230.58	---	5.45	
	S Bracket	-127.90	---	-91.85	31.39	24.58	724.34	---	4.67	230.58	---	5.94	
FB 6	North	-85.22	---	-112.88	20.20	53.11	1140.69	---	7.02	364.10	---	4.89	
	Center	67.84	286.86	---	---	---	1501.77	---	3.79	452.67	---	N/A	
	South	-62.79	---	-54.08	19.09	48.26	1898.85	---	25.85	541.25	---	8.23	
	N Bracket	-85.22	---	-135.20	17.04	30.75	1140.69	---	5.86	364.10	---	8.55	
	S Bracket	-62.79	---	-61.32	16.57	20.82	1898.85	---	22.80	541.25	---	19.20	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section K - Floorbeam As-Built Ratings

Calculated: **DWC** 2/20/2012

Checked: **CTG** 2/21/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		(k-ft)							Inventory
		D	L+I	L+I	D		L+I						
3F1	FB 1	North	-92.92	---	-170.08	19.55	74.56	1229.04	---	5.01	386.61	---	3.73
		Center	58.75	402.73	---	---	---	1529.10	---	2.77	459.03	---	N/A
		South	-46.40	---	-70.37	15.42	67.76	1853.22	---	19.60	531.46	---	5.81
		N Bracket	-92.92	---	-199.40	17.89	45.07	1229.04	---	4.28	386.61	---	6.20
		S Bracket	-46.40	---	-78.73	12.75	28.32	1853.22	---	17.52	531.46	---	13.98
	FB 2	North	-146.20	---	-128.05	53.43	72.59	1292.00	---	6.62	348.50	---	2.96
		Center	187.96	417.20	---	---	---	1292.00	---	1.93	348.50	---	N/A
		South	-122.98	---	-103.25	35.73	69.86	1292.00	---	8.43	348.50	---	3.33
		N Bracket	-146.20	---	-154.75	36.01	38.22	724.34	---	2.66	230.58	---	3.70
		S Bracket	-122.98	---	-122.13	31.41	34.22	724.34	---	3.56	230.58	---	4.26
	FB 3	North	-106.85	---	-113.79	28.54	69.82	1292.00	---	7.80	348.50	---	3.43
		Center	96.44	414.85	---	---	---	1292.00	---	2.16	348.50	---	N/A
		South	-127.72	---	-119.15	31.01	70.68	1292.00	---	7.27	348.50	---	3.35
		N Bracket	-106.85	---	-135.66	25.10	35.89	741.94	---	3.42	235.06	---	4.34
		S Bracket	-127.72	---	-143.11	27.83	36.81	741.94	---	3.10	235.06	---	4.16
	FB 4	North	-122.13	---	-111.94	38.23	69.82	1292.00	---	7.79	348.50	---	3.29
		Center	150.33	414.85	---	---	---	1292.00	---	2.03	348.50	---	N/A
		South	-123.58	---	-121.00	37.96	71.04	1292.00	---	7.19	348.50	---	3.24
		N Bracket	-122.13	---	-133.23	31.62	35.59	741.94	---	3.37	235.06	---	4.19
		S Bracket	-123.58	---	-145.44	29.36	37.10	741.94	---	3.07	235.06	---	4.08
FB 5	North	-140.17	---	-127.19	42.05	72.77	1292.00	---	6.71	348.50	---	3.11	
	Center	168.76	420.44	---	---	---	1292.00	---	1.96	348.50	---	N/A	
	South	-127.90	---	-111.96	41.84	70.40	1292.00	---	7.73	348.50	---	3.21	
	N Bracket	-140.17	---	-153.47	34.31	38.22	724.34	---	2.72	230.58	---	3.74	
	S Bracket	-127.90	---	-133.75	31.39	35.80	724.34	---	3.21	230.58	---	4.08	
FB 6	North	-85.22	---	-160.97	20.20	75.73	1140.69	---	4.92	364.10	---	3.43	
	Center	67.84	409.06	---	---	---	1501.77	---	2.66	452.67	---	N/A	
	South	-62.79	---	-77.11	19.09	68.82	1898.85	---	18.13	541.25	---	5.77	
	N Bracket	-85.22	---	-192.79	17.04	43.85	1140.69	---	4.11	364.10	---	6.00	
	S Bracket	-62.79	---	-87.44	16.57	29.69	1898.85	---	15.99	541.25	---	13.47	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section K - Floorbeam As-Built Ratings

Calculated: **DWC** 2/20/2012

Checked: **CTG** 2/21/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		(k-ft)							Inventory
		D	L+I	L+I	D		L+I						
4F1	FB 1	North	-92.92	---	-181.60	19.55	79.61	1229.04	---	4.69	386.61	---	3.49
		Center	58.75	430.00	---	---	---	1529.10	---	2.60	459.03	---	N/A
		South	-46.40	---	-75.14	15.42	72.34	1853.22	---	18.36	531.46	---	5.44
		N Bracket	-92.92	---	-212.91	17.89	48.12	1229.04	---	4.00	386.61	---	5.81
		S Bracket	-46.40	---	-84.06	12.75	30.24	1853.22	---	16.41	531.46	---	13.10
	FB 2	North	-146.20	---	-143.80	53.43	81.52	1292.00	---	5.89	348.50	---	2.63
		Center	187.96	468.51	---	---	---	1292.00	---	1.72	348.50	---	N/A
		South	-122.98	---	-115.95	35.73	78.45	1292.00	---	7.51	348.50	---	2.96
		N Bracket	-146.20	---	-173.78	36.01	42.92	724.34	---	2.36	230.58	---	3.29
		S Bracket	-122.98	---	-137.15	31.41	38.43	724.34	---	3.17	230.58	---	3.80
	FB 3	North	-106.85	---	-126.72	28.54	77.75	1292.00	---	7.00	348.50	---	3.08
		Center	96.44	461.99	---	---	---	1292.00	---	1.94	348.50	---	N/A
		South	-127.72	---	-132.69	31.01	78.71	1292.00	---	6.53	348.50	---	3.01
		N Bracket	-106.85	---	-151.08	25.10	39.97	741.94	---	3.07	235.06	---	3.90
		S Bracket	-127.72	---	-159.37	27.83	40.99	741.94	---	2.78	235.06	---	3.73
	FB 4	North	-122.13	---	-124.66	38.23	77.75	1292.00	---	6.99	348.50	---	2.96
		Center	150.33	461.99	---	---	---	1292.00	---	1.83	348.50	---	N/A
		South	-123.58	---	-134.75	37.96	79.11	1292.00	---	6.46	348.50	---	2.91
		N Bracket	-122.13	---	-148.37	31.62	39.64	741.94	---	3.02	235.06	---	3.76
		S Bracket	-123.58	---	-161.97	29.36	41.31	741.94	---	2.76	235.06	---	3.67
FB 5	North	-140.17	---	-143.56	42.05	82.14	1292.00	---	5.95	348.50	---	2.75	
	Center	168.76	474.56	---	---	---	1292.00	---	1.74	348.50	---	N/A	
	South	-127.90	---	-126.38	41.84	79.47	1292.00	---	6.85	348.50	---	2.85	
	N Bracket	-140.17	---	-173.22	34.31	43.13	724.34	---	2.41	230.58	---	3.32	
	S Bracket	-127.90	---	-150.97	31.39	40.41	724.34	---	2.84	230.58	---	3.61	
FB 6	North	-85.22	---	-173.26	20.20	81.52	1140.69	---	4.57	364.10	---	3.19	
	Center	67.84	440.31	---	---	---	1501.77	---	2.47	452.67	---	N/A	
	South	-62.79	---	-83.00	19.09	74.08	1898.85	---	16.84	541.25	---	5.36	
	N Bracket	-85.22	---	-207.52	17.04	47.20	1140.69	---	3.82	364.10	---	5.57	
	S Bracket	-62.79	---	-94.12	16.57	31.96	1898.85	---	14.85	541.25	---	12.51	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section K - Floorbeam As-Built Ratings

Calculated: **DWC** 2/20/2012

Checked: **CTG** 2/21/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
5C1	FB 1	North	-92.92	---	-166.03	19.55	72.79	1229.04	---	5.13	386.61	---	3.82
		Center	58.75	393.13	---	---	---	1529.10	---	2.84	459.03	---	N/A
		South	-46.40	---	-68.69	15.42	66.14	1853.22	---	20.08	531.46	---	5.95
		N Bracket	-92.92	---	-194.65	17.89	44.00	1229.04	---	4.38	386.61	---	6.35
		S Bracket	-46.40	---	-76.85	12.75	27.65	1853.22	---	17.95	531.46	---	14.32
	FB 2	North	-146.20	---	-125.09	53.43	70.91	1292.00	---	6.78	348.50	---	3.03
		Center	187.96	407.54	---	---	---	1292.00	---	1.98	348.50	---	N/A
		South	-122.98	---	-100.86	35.73	68.24	1292.00	---	8.63	348.50	---	3.40
		N Bracket	-146.20	---	-151.17	36.01	37.34	724.34	---	2.72	230.58	---	3.79
		S Bracket	-122.98	---	-119.30	31.41	33.43	724.34	---	3.64	230.58	---	4.37
	FB 3	North	-106.85	---	-110.95	28.54	68.08	1292.00	---	7.99	348.50	---	3.52
		Center	96.44	404.52	---	---	---	1292.00	---	2.22	348.50	---	N/A
		South	-127.72	---	-116.19	31.01	68.92	1292.00	---	7.45	348.50	---	3.44
		N Bracket	-106.85	---	-132.28	25.10	35.00	741.94	---	3.51	235.06	---	4.45
		S Bracket	-127.72	---	-139.55	27.83	35.89	741.94	---	3.17	235.06	---	4.26
	FB 4	North	-122.13	---	-109.15	38.23	68.08	1292.00	---	7.99	348.50	---	3.38
		Center	150.33	404.52	---	---	---	1292.00	---	2.09	348.50	---	N/A
		South	-123.58	---	-117.99	37.96	69.27	1292.00	---	7.38	348.50	---	3.32
		N Bracket	-122.13	---	-129.91	31.62	34.71	741.94	---	3.45	235.06	---	4.30
		S Bracket	-123.58	---	-141.82	29.36	36.17	741.94	---	3.15	235.06	---	4.19
FB 5	North	-140.17	---	-124.47	42.05	71.21	1292.00	---	6.86	348.50	---	3.17	
	Center	168.76	411.43	---	---	---	1292.00	---	2.01	348.50	---	N/A	
	South	-127.90	---	-109.57	41.84	68.90	1292.00	---	7.90	348.50	---	3.28	
	N Bracket	-140.17	---	-150.18	34.31	37.40	724.34	---	2.78	230.58	---	3.83	
	S Bracket	-127.90	---	-130.88	31.39	35.03	724.34	---	3.28	230.58	---	4.17	
FB 6	North	-85.22	---	-157.44	20.20	74.07	1140.69	---	5.03	364.10	---	3.51	
	Center	67.84	400.09	---	---	---	1501.77	---	2.72	452.67	---	N/A	
	South	-62.79	---	-75.42	19.09	67.31	1898.85	---	18.53	541.25	---	5.90	
	N Bracket	-85.22	---	-188.56	17.04	42.89	1140.69	---	4.20	364.10	---	6.13	
	S Bracket	-62.79	---	-85.53	16.57	29.04	1898.85	---	16.34	541.25	---	13.77	



FRAME RATINGS



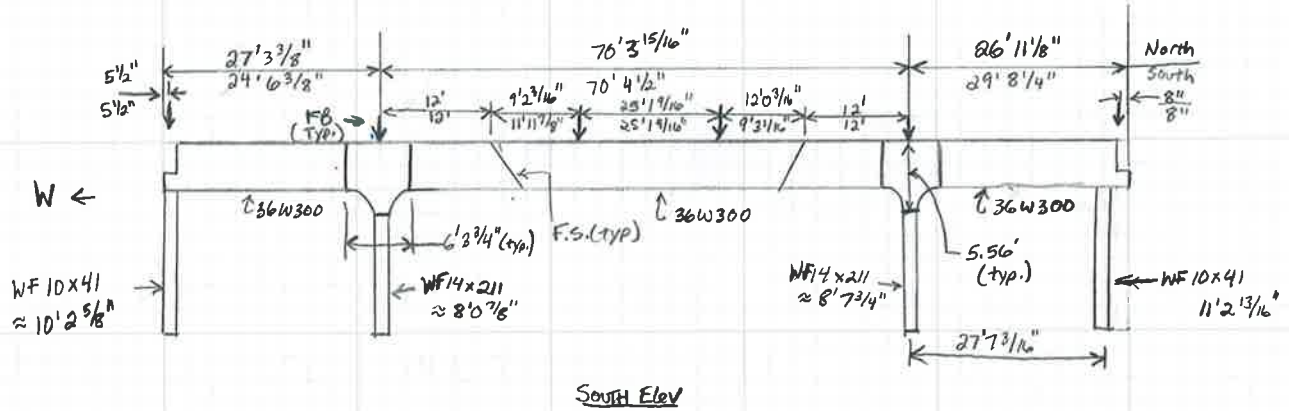
SECTION K
ASSUMPTIONS FOR FRAME MODELS

- The girder is modeled as continuous for the full length
- The end columns are modeled as pinned/pinned
- The interior columns are modeled as fixed at the top and pinned at the bottom
- The model is 2D with nodes at the centroids of the girder
- The haunched section of the girder is modeled as tapered section
- A fictitious "deck" was placed above the frame model with a release between Unit 1 and Unit 2 with rigid links connecting to the girder at the FB locations
- LLDF will be applied to Force results based on FB reactions
- The columns are rated for the range that captures the highest axial force with corresponding moment, the highest moment with corresponding axial force and all the values that fall between those extremes
- Column 1 refers to the westernmost column and FB1 refers to the westernmost FB, with numbers increasing eastward
- Axial force was combined with primary frame (strong axis) bending moment for interior columns, and axial force was combined with centrifugal horizontal force effects at end columns

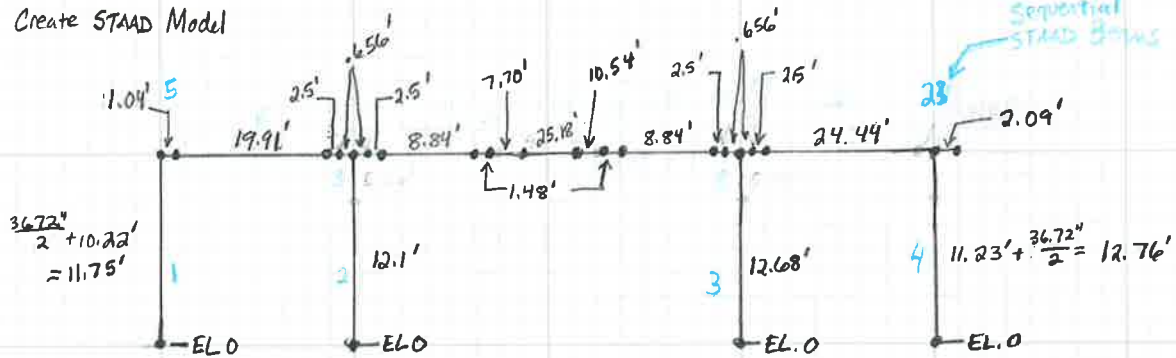
SECTION K - Frames

Existing Steel 1938
 $F_y = 33 \text{ ksi}$

Dimensions from Shop Drawings
 1938 - SHOPDRAW-F7-W-APPROACH



Create STAAD Model



$$24'6\frac{3}{8}'' - \frac{10''}{2} = 24.1146'$$

$$5'' + 1'7'' - 11\frac{1}{2}'' = 12.5''$$

$$3'17\frac{7}{8}'' - 7\frac{7}{8}'' = 2.5'$$

$$24.1146' - 1'0\frac{1}{2}'' - 3'17\frac{7}{8}'' = 19.91'$$

$$12' - 3'17\frac{7}{8}'' = 8.84'$$

$$70'4\frac{1}{2}'' - 24' - 2(1'5\frac{3}{4}'') = 43.42'$$

$$8.07' + 2'6'' + \frac{36.72''}{2} = 12.1'$$

$$9.1823' - 1.48' = 7.70'$$

$$12.0156' - 1.48' = 10.54'$$

$$43.42' - 7.70' - 10.54' = 25.18'$$

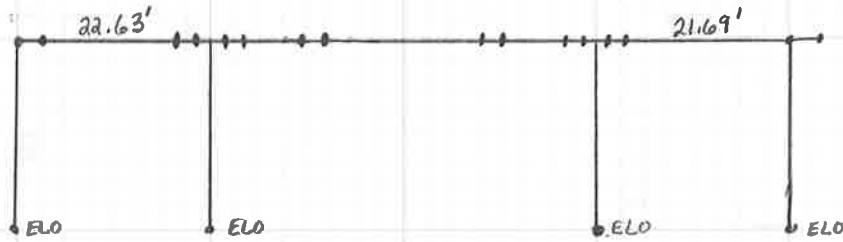
$$27'7\frac{3}{16}'' - 3'17\frac{7}{8}'' = 24.44'$$

$$8 \times 6\frac{1}{2}'' = 14\frac{1}{2}''$$

$$1'4\frac{1}{2}'' + 89\frac{1}{16}'' = 2'09''$$

$$8 \times 65' + 2'6'' + \frac{36.72''}{2} = 12.68'$$

North Frame - similar to South, except as noted

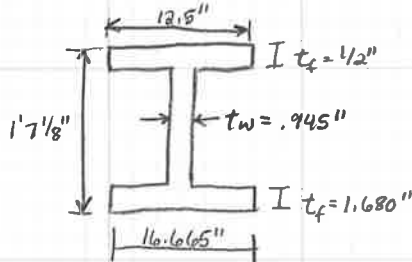


$$24'6\frac{3}{8}'' - 5\frac{1}{2}'' - 2.5' - .656' - 1.04' = 22.63'$$

$$24'10\frac{1}{8}'' - .656' - 2.5' = 21.69'$$

Girder Section Properties

Ends of Frame Girder



input to spreadsheet

Typical Section WF 36x300

$$b_f = 16.665'' \quad t_f = 1.68'' \quad h = 36.72'' \quad t_w = .945'' \quad r_y = 3.73''$$

check compactness

see FB's

$$S_x = 1105.1 \text{ in}^3$$

$$\frac{b_f}{t_f} = 9.92 < 22.62 \checkmark$$

$$\frac{D}{t_w} = 35.3 < 105.86 \checkmark$$

$$\frac{L_b}{r_y} = \frac{25.1' \times 12}{3.73} = 80.8 > 42.42 \Rightarrow \text{Noncompact}$$

shear

$$\frac{D}{t_w} = 35.3 < 73.9 \Rightarrow C = 1.0$$

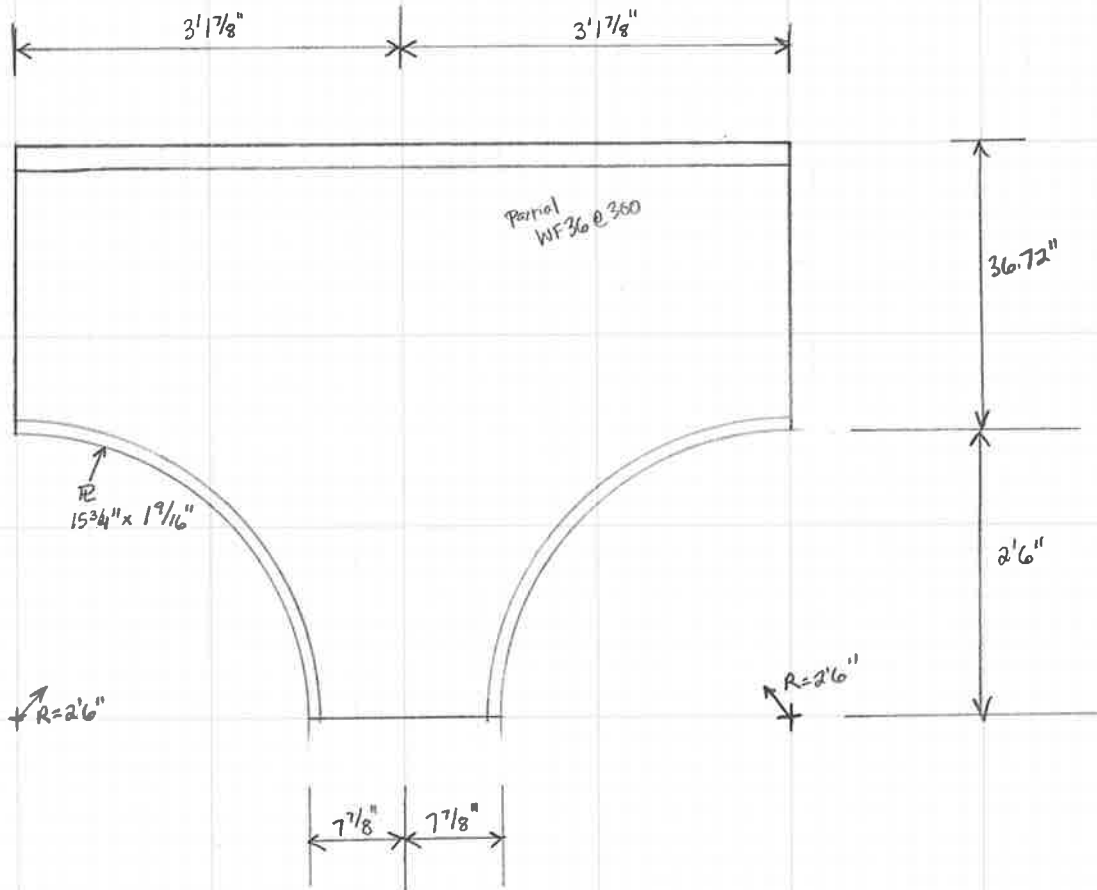
$$\therefore M_u = F_y S = (33 \text{ ksi})(1105.1 \text{ in}^3) / 2 = 3039 \text{ k-ft}$$

$$V = 0.58 F_y D t_w = .58(33 \text{ ksi})(36.72'')(945'') = 603.4 \text{ k}$$

For WF 36x300

$$M_u = 3039 \text{ k-ft}$$

$$V_u = 603.4 \text{ k-ft}$$



For Model use tapered section

Depth @ Start = 3.06'

Web t = 0.945" = 0.07875'

Depth @ End = 5.56'

Width Top FE = 16.665" = 1.38875'

Thickness Top FE = 1.680" = 0.14'

Width Bot FE = 15.75" = 1.3125'

Thickness Bot FE = 1 9/16" = 0.1302'

+ Full Height Section

Height = 5.56'

Top FE width = 1.38875'

Top FE t = 0.14'

Web t = $\frac{(2 \times 1 9/16 + 0.945)(3.25) + (0.945)(2.31)}{5.56}$

= 0.17'

STAAD

Ref 4 

5 

6 FB seat

7 FH @ pier

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 16-Feb-12
JOB NAME Section K North Frame
JOB NO P402110046
ENGINEER NAME CTG
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 7.28 9.961 0; 2 34.11 10 0; 3 104.49 10 0; 4 129.324 9.987 0;
5 7.28 21.711 0; 6 8.32 21.726 0; 7 30.95 22.054 0; 8 33.45 22.09 0;
9 34.106 22.1 0; 10 34.762 22.11 0; 11 37.262 22.146 0; 12 46.102 22.274 0;
13 47.582 22.296 0; 14 55.282 22.357 0; 15 80.462 22.559 0; 16 91.002 22.644 0;
17 92.482 22.648 0; 18 101.322 22.671 0; 19 103.822 22.678 0;
20 104.478 22.68 0; 21 105.134 22.682 0; 22 107.634 22.689 0;
23 129.324 22.747 0; 24 131.414 22.754 0; 100 7.28 25 0; 101 34.106 25 0;
102 55.282 25 0; 103 80.462 25 0; 104 104.478 25 0; 105 129.324 25 0;
MEMBER INCIDENCES
1 1 5; 2 2 9; 3 3 20; 4 4 23; 5 5 6; 6 6 7; 7 7 8; 8 8 9; 9 9 10; 10 10 11;
11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 17; 17 17 18; 18 18 19;
19 19 20; 20 20 21; 21 21 22; 22 22 23; 23 23 24; 100 100 101; 101 101 102;
102 102 103; 103 103 104; 104 104 105;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6.5e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 4 TABLE ST W10X45
2 3 TABLE ST W14X211
6 11 TO 17 22 TABLE ST W36X300
MEMBER PROPERTY AMERICAN
7 18 TAPERED 3.06 0.07875 5.56 1.38875 0.14 1.3125 0.1302
10 21 TAPERED 5.56 0.07875 3.06 1.38875 0.14 1.3125 0.1302
5 23 TAPERED 1.59375 0.07875 1.59375 1.04167 0.04167 1.38875 0.14
8 9 19 20 TAPERED 5.56 0.17 5.56 1.38875 0.14 1.38875 0.14
100 TO 104 TABLE ST W18X60
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
1 TO 4 PINNED
MEMBER RELEASE
101 END MX MY MZ
102 START MX MY MZ
1 END MZ
4 END MZ
SLAVE FY MASTER 100 JOINT 5
SLAVE FY MASTER 101 JOINT 9
SLAVE FY MASTER 102 JOINT 14
SLAVE FY MASTER 103 JOINT 15
SLAVE FY MASTER 104 JOINT 20
SLAVE FY MASTER 105 JOINT 24
DEFINE MOVING LOAD
**HS20 TRUCK
*TYPE 1 LOAD 16 16 4
*DIST 14 14
*TYPE 2 LOAD 4 16 16
*DIST 14 14
***2F1 TRUCK
*TYPE 3 LOAD 5 10
*DIST 10
*TYPE 4 LOAD 10 5
*DIST 10
**3F1 TRUCK
*TYPE 5 LOAD 6 8.5 8.5
*DIST 10 4
*TYPE 6 LOAD 8.5 8.5 6
*DIST 4 10
**4F1 TRUCK
*TYPE 7 LOAD 6 7 7 7
*DIST 10 4 4
*TYPE 8 LOAD 7 7 7 6
*DIST 4 4 10
***5C1 TRUCK
*TYPE 9 LOAD 6 8.5 8.5 8.5 8.5

```

```
DIST 12 4 31 4
TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
DIST 4 31 4 12
*LOAD 1 LOADTYPE Dead TITLE SELF WEIGHT
*SELFWHEIGHT Y -1.05 LIST 1 TO 23
**Dead Loads reactions from FB models
*LOAD 2 LOADTYPE Dead TITLE LOAD CASE 2
*JOINT LOAD
*5 FY -37.44
*9 FY -81.59
*14 FY -53.65
*15 FY -69.85
*20 FY -76.36
*24 FY -37.25
***HS20 LOADING 1 TRUCK - FORWARD
*LOAD GENERATION 2000
*TYPE 1 -20.72 25 0 XINC 0.1
**HS20 LOADING 1 TRUCK - BACKWARD
*LOAD GENERATION 2000
*TYPE 2 -20.72 25 0 XINC 0.1
**2F1 FORWARD
*LOAD GENERATION 2000
*TYPE 3 -2.72 25 0 XINC 0.1
**2F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 4 -2.72 25 0 XINC 0.1
***3F1 FORWARD
*LOAD GENERATION 2000
*TYPE 5 -6.72 25 0 XINC 0.1
**3F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 6 -6.72 25 0 XINC 0.1
**4F1 FORWARD
*LOAD GENERATION 2000
*TYPE 7 -10.72 25 0 XINC 0.1
**4F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 8 -10.72 25 0 XINC 0.1
*5C1 FORWARD
LOAD GENERATION 2000
TYPE 9 -43.72 25 0 XINC 0.1
*5C1 BACKWARD
LOAD GENERATION 2000
TYPE 10 -43.72 25 0 XINC 0.1

*LOAD COMB 5000 ALL DEAD LOADS
*1 1.0 2 1.0
PERFORM ANALYSIS
FINISH
```



```
*DIST 12 4 31 4
*TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
*DIST 4 31 4 12
*
*
LOAD 1 LOADTYPE Dead TITLE SELF WEIGHT
SELFWEIGHT Y -1.05 LIST 1 TO 23
*Dead Loads reactions from FB models
LOAD 2 LOADTYPE Dead TITLE LOAD CASE 2
JOINT LOAD
5 FY -28.17
9 FY -75.08
14 FY -58.84
15 FY -67.31
20 FY -73.23
24 FY -35.66
**HS20 LOADING 1 TRUCK - FORWARD
*LOAD GENERATION 2000
*TYPE 1 -18 25 0 XINC 0.1
**HS20 LOADING 1 TRUCK - BACKWARD
*LOAD GENERATION 2000
*TYPE 2 -18 25 0 XINC 0.1
*
**2F1 FORWARD
*LOAD GENERATION 2000
*TYPE 3 0 25 0 XINC 0.1
**2F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 4 0 25 0 XINC 0.1
**3F1 FORWARD
*LOAD GENERATION 2000
*TYPE 5 -4 25 0 XINC 0.1
**3F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 6 -4 25 0 XINC 0.1
**4F1 FORWARD
*LOAD GENERATION 2000
*TYPE 7 -8 25 0 XINC 0.1
**4F1 BACKWARD
*LOAD GENERATION 2000
*TYPE 8 -8 25 0 XINC 0.1
**5C1 FORWARD
*LOAD GENERATION 2000
*TYPE 9 -41 25 0 XINC 0.1
**5C1 BACKWARD
*LOAD GENERATION 2000
*TYPE 10 -41 25 0 XINC 0.1
*
LOAD COMB 5000 ALL DEAD LOADS
1 1.0 2 1.0
```

```
PERFORM ANALYSIS
FINISH
```

Section K



Made By CTG
Checked By DWC

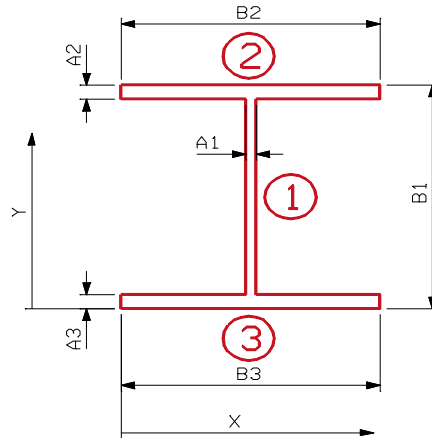
Date 2/14/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.9450$ in
- $B_1 = d = 19.1250$ in
- $A_2 = t_f = 0.5000$ in
- $B_2 = b_f = 12.5000$ in
- $A_3 = t_f = 1.6800$ in
- $B_3 = b_f = 16.6550$ in



Frame Girder at FB Seat

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		16.0130	9.5625	153.1246	383.1557	3.6991	219.1128	602.2685
2	Top Flange		6.2500	18.8750	117.9688	0.1302	13.0116	1058.1373	1058.2675
3	Bottom Flange		27.9804	0.8400	23.5035	6.5810	5.0234	706.0702	712.6511
Total			50.24		294.60	389.87		1983.32	2373.19
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	5.8634	in	$S_{top} = 178.95$	in^3	y-bar =	5.8634	in	$S_{top} = 178.95$	in^3		
$I_x =$	2373.19	in^4	$S_{bott.} = 404.75$	in^3	$I_x =$	2373.19	in^4	$S_{bott.} = 404.75$	in^3		
$c_{top} =$	13.2616	in	A =	50.2434	in^2	$c_{top} =$	13.2616	in	A =	50.2434	in^2
$c_{bottom} =$	5.8634	in	$r_x =$	6.8727	in	$c_{bottom} =$	5.8634	in	$r_x =$	6.8727	in

Section K



Made By CTG
Checked By DWC

Date 2/14/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web	16.0130	8.3275	133.3485	1.1917	0.0000	0.0000	1.1917
2	Top Flange	6.2500	8.3275	52.0469	81.3802	0.0000	0.0000	81.3802
3	Bottom Flange	27.9804	8.3275	233.0068	646.7880	0.0000	0.0000	646.7880
Total		50.24		418.40	729.36		0.00	729.36
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	8.3275	in	S _{right} = 87.58 in ³	x-bar =	8.3275	in	S _{right} = 87.58 in ³
I _y =	729.36	in ⁴	S _{left} = 87.58 in ³	I _y =	729.36	in ⁴	S _{left} = 87.58 in ³
C _{right} =	8.3275	in	A = 50.2434 in ²	C _{right} =	8.3275	in	A = 50.2434 in ²
C _{left} =	8.3275	in	r _y = 3.8101 in	C _{left} =	8.3275	in	r _y = 3.8101 in

Non-composite Capacities*		
	AB	AI
M	492.12 k-ft	492.12 k-ft
V	306.49 k	306.49 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Section K



Made By CTG
Checked By DWC

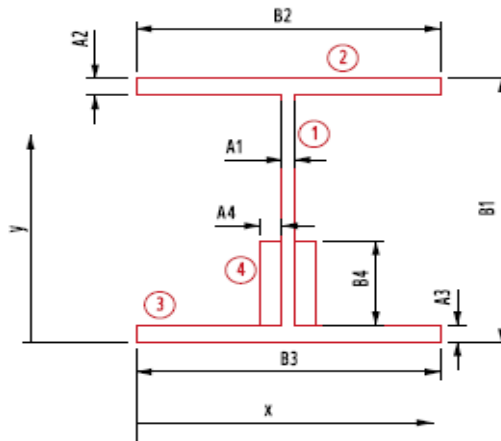
Date 2/20/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.9450$ in
- $B_1 = d = 36.7200$ in
- $A_2 = t_f = 1.6800$ in
- $B_2 = b_f = 16.6550$ in
- $A_3 = t_f = 1.5625$ in
- $B_3 = b_f = 15.7500$ in
- $A_4 = t = 0.7500$ in
- $B_4 = h = 9.0000$ in



Frame Girder @ short side of taper

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		31.6362	18.3600	580.8413	2954.6743	1.1092	38.9257	2993.6000
2	Top Flange		27.9804	35.8800	1003.9368	6.5810	18.6292	9710.5591	9717.1401
3	Bottom Flange		24.6094	0.7813	19.2261	5.0068	16.4695	6675.1633	6680.1700
4	Web Plates		13.5000	6.0625	81.8438	91.1250	11.1883	1689.8914	1781.0164
Total			97.73		1685.85	3057.39		18114.54	21171.93
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	17.2508	in	S _{top} = 1087.46 in ³	y-bar =	17.2508	in	S _{top} = 1087.46 in ³
I _x =	21171.93	in ⁴	S _{bott.} = 1227.30 in ³	I _x =	21171.93	in ⁴	S _{bott.} = 1227.30 in ³
c _{top} =	19.4692	in	A = 97.7260 in ²	c _{top} =	19.4692	in	A = 97.7260 in ²
c _{bottom} =	17.2508	in	r _x = 14.7189 in	c _{bottom} =	17.2508	in	r _x = 14.7189 in
			Z = 1330.24 in ³				Z = 1330.24 in ³

Section K



Made By CTG
Checked By DWC

Date 2/20/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web	31.6362	8.3275	263.4508	2.3543	0.0000	0.0000	2.3543
2	Top Flange	27.9804	8.3275	233.0068	646.7880	0.0000	0.0000	646.7880
3	Bottom Flange	24.6094	8.3275	204.9346	508.7219	0.0000	0.0000	508.7219
4	Left web plate	6.7500	7.4800	50.4900	0.3164	0.8475	4.8482	5.1646
4	Right web plate	6.7500	9.1750	61.9313	0.3164	0.8475	4.8482	5.1646
Total		84.23		701.39	1157.86		0.00	1157.86
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	8.3275	in	S _{right} = 139.04 in ³	x-bar =	8.3275	in	S _{right} = 139.04 in ³
I _y =	1157.86	in ⁴	S _{left} = 139.04 in ³	I _y =	1157.86	in ⁴	S _{left} = 139.04 in ³
C _{right} =	8.3275	in	A = 84.2260 in ²	C _{right} =	8.3275	in	A = 84.2260 in ²
C _{left} =	8.3275	in	r _y = 3.7077 in	C _{left} =	8.3275	in	r _y = 3.7077 in

Non-composite Capacities*		
	AB	AI
M	3658.16 k-ft	3658.16 k-ft
V	863.91 k	863.91 k

*Compact Section

F_y = 33.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Section K



Made By CTG
Checked By DWC

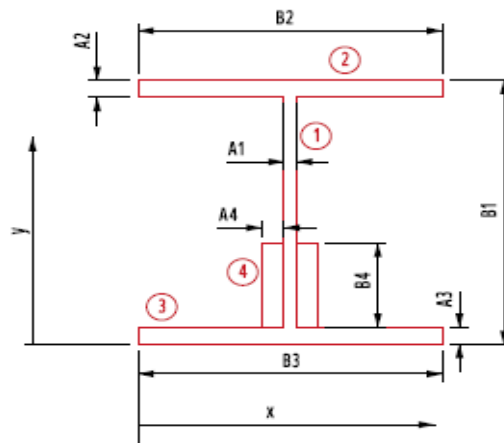
Date 2/20/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.9450$ in
- $B_1 = d = 66.7200$ in
- $A_2 = t_f = 1.6800$ in
- $B_2 = b_f = 16.6550$ in
- $A_3 = t_f = 1.0000$ in
- $B_3 = b_f = 15.7500$ in
- $A_4 = t = 0.7500$ in
- $B_4 = h = 39.0000$ in



Frame Girder @ tall side of taper

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		60.5178	33.3600	2018.8738	20682.5714	2.2116	296.0006	20978.5720
2	Top Flange		27.9804	65.8800	1843.3488	6.5810	34.7316	33752.2917	33758.8727
3	Bottom Flange		15.7500	0.5000	7.8750	1.3125	30.6484	14794.3687	14795.6812
4	Web Plates		58.5000	20.5000	1199.2500	7414.8750	10.6484	6633.2344	14048.1094
Total			162.75		5069.35	28105.34		55475.90	83581.24
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 31.1484 in	S _{top} = 2349.66 in ³			y-bar = 31.1484 in	S _{top} = 2349.66 in ³		
I _x = 83581.24 in ⁴	S _{bott.} = 2683.32 in ³			I _x = 83581.24 in ⁴	S _{bott.} = 2683.32 in ³		
C _{top} = 35.5716 in	A = 162.7482 in ²			C _{top} = 35.5716 in	A = 162.7482 in ²		
C _{bottom} = 31.1484 in	r _x = 22.6619 in			C _{bottom} = 31.1484 in	r _x = 22.6619 in		
	Z = 3140.41 in ³				Z = 3140.41 in ³		

Section K



Made By CTG
Checked By DWC

Date 2/20/2012
Date 2/21/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y, gross}	
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)	
1	Web	60.5178	8.3275	503.9620	4.5037	0.0000	0.0000	4.5037	
2	Top Flange	27.9804	8.3275	233.0068	646.7880	0.0000	0.0000	646.7880	
3	Bottom Flange	15.7500	8.3275	131.1581	325.5820	0.0000	0.0000	325.5820	
4	Left web plate	29.2500	7.4800	218.7900	1.3711	0.8475	21.0090	22.3801	
4	Right web plate	29.2500	9.1750	268.3688	1.3711	0.8475	21.0090	22.3801	
Total		104.25		868.13	976.87		0.00	976.87	
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	8.3275	n	S _{right} = 117.31 in ³	x-bar =	8.3275	in	S _{right} = 117.31 in ³
I _y =	976.87	n ⁴	S _{left} = 117.31 in ³	I _y =	976.87	n ⁴	S _{left} = 117.31 in ³
C _{right} =	8.3275	in	A = 104.2482 in ²	C _{right} =	8.3275	in	A = 104.2482 in ²
C _{left} =	8.3275	in	r _y = 3.0612 in	C _{left} =	8.3275	in	r _y = 3.0612 in

Non-composite Capacities*		
	AB	AI
M	8636.13 k-ft	8636.13 k-ft
V	2278.00 k	2278.00 k

*Compact Section

F _y =	33.00 ksi
------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - Frame Girder Ratings

Calculated: CTG 2/22/2012

Checked: DWC 2/22/2012

Revised: CTG 4/26/2012

*capacities taken from spreadsheet or hand calculations

	Location	Impact Factor	LLDF	Service Moment from STAAD Model		Total Moment	Service Shear from STAAD Model		Total Shear	RF - Moment			RF - Shear			
				D	L		D	L		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating	
				Total L+I		Total L+I		Total L+I		Total L+I						
HS20-44	North Girder	Beam Seat at FB1	1.30	4.08	0.00	0.00	0	24.31	7.88	41.83	492.12	N/A	N/A	306.49	3.03	5.05
		Rear End Span	1.30	3.95	647.60	186.50	957.16	31.44	7.88	40.43	3039.00	1.06	1.76	603.40	6.41	10.69
		Short End of Taper at FB 2	1.30	3.81	686.90	186.50	924.1	36.08	7.88	39.04	3658.16	1.38	2.30	863.91	9.64	16.08
		Tall End of Taper at FB 2	1.30	3.81	778.20	206.20	1021.71	36.96	7.88	39.04	8636.13	3.44	5.73	2278.00	26.32	43.88
		At FB2	1.30	3.81	915.30	256.70	1271.94	70.98	20.42	101.17	8636.13	2.70	4.50	2278.00	9.96	16.60
		Tall End of Taper at FB 2	1.26	3.81	923.80	243.30	1164.75	74.49	20.42	97.76	8636.13	2.94	4.90	2278.00	10.28	17.14
		Short End of Taper at FB 2	1.26	3.81	738.70	192.30	920.6	73.61	20.42	97.76	3658.16	1.35	2.25	863.91	3.62	6.04
		Center Span	1.26	3.68	710.10	236.90	1095.15	69.68	21.02	97.16	3039.00	0.89	1.48	603.40	2.43	4.05
		Short End of Taper at FB 5	1.26	3.80	686.20	205.60	980.32	68.04	21.00	100.13	3658.16	1.30	2.17	863.91	3.57	5.95
		Tall End of Taper at FB 5	1.26	3.80	857.30	257.70	1228.74	68.91	21.00	100.13	8636.13	2.82	4.70	2278.00	10.07	16.79
		At FB5	1.30	3.80	930.70	271.40	1339.38	70.68	21.00	103.64	8636.13	2.56	4.26	2278.00	9.72	16.20
		Tall End of Taper at FB 5	1.30	3.80	709.00	218.80	1079.79	27.96	9.07	44.78	8636.13	3.29	5.49	2278.00	23.07	38.46
	Short End of Taper at FB 5	1.30	3.80	640.20	196.10	967.77	27.08	9.07	44.78	3658.16	1.35	2.24	863.91	8.53	14.22	
	Forward End Span	1.30	3.92	661.30	196.10	998.28	30.80	9.07	46.19	3039.00	1.01	1.68	603.40	5.62	9.37	
	At FB6	1.30	4.04	72.50	40.00	209.85	34.86	19.13	100.36	3039.00	6.47	10.78	603.40	2.56	4.27	
	Beam Seat at East End	1.30	4.04	0.00	0.00	0	36.28	19.13	100.36	492.12	N/A	N/A	306.49	1.19	1.99	
	South Girder	Beam Seat at FB1	1.30	3.35	30.90	0.00	0	29.81	9.14	39.83	492.12	N/A	N/A	306.49	3.10	5.16
		Rear End Span	1.30	3.48	686.90	191.50	866.76	36.08	9.14	41.37	3039.00	1.14	1.90	603.40	6.20	10.33
		Short End of Taper at FB 2	1.30	3.61	686.90	191.50	898.91	36.08	9.14	42.9	3658.16	1.42	2.36	863.91	8.78	14.63
		Tall End of Taper at FB 2	1.30	3.61	778.20	214.40	1006.4	36.96	9.14	42.9	8636.13	3.49	5.82	2278.00	23.95	39.93
		At FB2	1.30	3.61	972.80	265.40	1245.8	74.91	20.64	96.89	8636.13	2.73	4.55	2278.00	10.37	17.29
		Tall End of Taper at FB 2	1.26	3.61	923.80	251.90	1142.42	74.49	20.65	93.63	8636.13	3.00	5.00	2278.00	10.74	17.90
		Short End of Taper at FB 2	1.26	3.61	738.70	200.30	908.41	73.61	20.65	93.63	3658.16	1.37	2.28	863.91	3.78	6.30
		Center Span	1.26	3.74	738.70	240.00	1127.25	73.61	20.78	97.62	3039.00	0.85	1.42	603.40	2.40	4.00
Short End of Taper at FB 5		1.26	3.67	686.20	197.30	910.41	68.04	20.77	95.82	3658.16	1.40	2.33	863.91	3.73	6.22	
Tall End of Taper at FB 5		1.26	3.67	857.30	248.80	1148.05	68.91	20.77	95.82	8636.13	3.02	5.03	2278.00	10.52	17.54	
At FB5		1.30	3.67	902.70	262.40	1253.21	69.35	20.77	99.18	8636.13	2.74	4.57	2278.00	10.17	16.95	
Tall End of Taper at FB 5		1.30	3.67	709.00	210.20	1003.9	27.96	7.82	37.36	8636.13	3.54	5.90	2278.00	27.65	46.09	
Short End of Taper at FB 5	1.30	3.67	640.20	190.60	910.29	27.08	7.82	37.36	3658.16	1.43	2.38	863.91	10.22	17.04		
Forward End Span	1.30	3.54	640.20	190.60	876.29	27.08	7.82	35.97	3039.00	1.16	1.93	603.40	7.28	12.13		
At FB6	1.30	3.40	72.50	47.60	210.35	34.86	22.79	100.73	3039.00	6.45	10.75	603.40	2.55	4.26		
Beam Seat at East End	1.30	3.40	72.50	0.00	0	34.86	22.79	100.73	492.12	N/A	N/A	306.49	1.19	1.99		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - Frame Girder Ratings

Calculated: CTG 2/22/2012

Checked: DWC 2/22/2012

Revised: CTG 4/26/2012

*capacities taken from spreadsheet or hand calculations

	Location	Impact Factor	LLDF	Service Moment from STAAD Model		Total Moment Total L+I	Service Shear from STAAD Model		Total Shear Total L+I	RF - Moment			RF - Shear			
				D	L		D	L		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating	
2F1	North Girder	Beam Seat at FB1	1.30	4.08	0.00	0.00	0	24.31	3.69	19.57	492.12	---	N/A	306.49	---	10.80
		Rear End Span	1.30	3.95	647.60	87.20	447.53	31.44	3.69	18.91	3039.00	---	3.78	603.40	---	22.88
		Short End of Taper at FB 2	1.30	3.81	686.90	87.20	432.07	36.08	3.69	18.26	3658.16	---	4.92	863.91	---	34.42
		Tall End of Taper at FB 2	1.30	3.81	778.20	96.40	477.66	36.96	3.69	18.26	8636.13	---	12.28	2278.00	---	93.94
		At FB2	1.30	3.81	915.30	117.30	581.22	70.98	10.14	50.24	8636.13	---	9.85	2278.00	---	33.47
		Tall End of Taper at FB 2	1.26	3.81	923.80	110.70	529.95	74.49	10.14	48.55	8636.13	---	10.79	2278.00	---	34.56
		Short End of Taper at FB 2	1.26	3.81	738.70	85.30	408.36	73.61	10.14	48.55	3658.16	---	5.08	863.91	---	12.17
		Center Span	1.26	3.68	710.10	114.40	528.85	69.68	10.15	46.93	3039.00	---	3.08	603.40	---	8.41
		Short End of Taper at FB 5	1.26	3.80	686.20	94.20	449.15	68.04	9.95	47.42	3658.16	---	4.74	863.91	---	12.58
		Tall End of Taper at FB 5	1.26	3.80	857.30	118.90	566.93	68.91	9.95	47.42	8636.13	---	10.21	2278.00	---	35.50
		At FB5	1.30	3.80	930.70	125.40	618.86	70.68	9.95	49.08	8636.13	---	9.23	2278.00	---	34.26
		Tall End of Taper at FB 5	1.30	3.80	709.00	102.10	503.87	27.96	4.22	20.84	8636.13	---	11.78	2278.00	---	82.74
		Short End of Taper at FB 5	1.30	3.80	640.20	91.60	452.05	27.08	4.22	20.84	3658.16	---	4.81	863.91	---	30.59
		Forward End Span	1.30	3.92	661.30	91.60	466.31	30.80	4.22	21.5	3039.00	---	3.60	603.40	---	20.16
	At FB6	1.30	4.04	72.50	23.50	123.29	34.86	11.25	59.03	3039.00	---	18.37	603.40	---	7.27	
	Beam Seat at East End	1.30	4.04	0.00	0.00	0	36.28	11.25	59.03	492.12	---	N/A	306.49	---	3.38	
	South Girder	Beam Seat at FB1	1.30	3.35	30.90	0.00	0	29.81	4.27	18.61	492.12	---	N/A	306.49	---	11.07
		Rear End Span	1.30	3.48	686.90	89.50	405.09	36.08	4.27	19.33	3039.00	---	4.08	603.40	---	22.15
		Short End of Taper at FB 2	1.30	3.61	686.90	89.50	420.12	36.08	4.27	20.04	3658.16	---	5.06	863.91	---	31.36
		Tall End of Taper at FB 2	1.30	3.61	778.20	100.10	469.87	36.96	4.27	20.04	8636.13	---	12.48	2278.00	---	85.60
		At FB2	1.30	3.61	972.80	121.10	568.45	74.91	10.23	48.03	8636.13	---	9.98	2278.00	---	34.92
		Tall End of Taper at FB 2	1.26	3.61	923.80	114.40	518.83	74.49	10.23	46.41	8636.13	---	11.02	2278.00	---	36.15
Short End of Taper at FB 2		1.26	3.61	738.70	88.80	402.73	73.61	10.23	46.41	3658.16	---	5.15	863.91	---	12.73	
Center Span		1.26	3.74	738.70	115.80	543.9	73.61	10.24	48.11	3039.00	---	2.94	603.40	---	8.12	
Short End of Taper at FB 5		1.26	3.67	686.20	90.40	417.14	68.04	9.83	45.37	3658.16	---	5.10	863.91	---	13.15	
Tall End of Taper at FB 5		1.26	3.67	857.30	114.80	529.73	68.91	9.83	45.37	8636.13	---	10.92	2278.00	---	37.10	
At FB5		1.30	3.67	902.70	121.20	578.84	69.35	9.83	46.96	8636.13	---	9.92	2278.00	---	35.84	
Tall End of Taper at FB 5		1.30	3.67	709.00	98.10	468.52	27.96	3.64	17.39	8636.13	---	12.67	2278.00	---	99.16	
Short End of Taper at FB 5		1.30	3.67	640.20	89.00	425.06	27.08	3.64	17.39	3658.16	---	5.11	863.91	---	36.66	
Forward End Span		1.30	3.54	640.20	89.00	409.18	27.08	3.64	16.74	3039.00	---	4.15	603.40	---	26.11	
At FB6	1.30	3.40	72.50	26.80	118.43	34.86	12.84	56.75	3039.00	---	19.13	603.40	---	7.56		
Beam Seat at East End	1.30	3.40	72.50	0.00	0	34.86	12.84	56.75	492.12	---	N/A	306.49	---	3.54		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - Frame Girder Ratings

Calculated: CTG 2/22/2012

Checked: DWC 2/22/2012

Revised: CTG 4/26/2012

*capacities taken from spreadsheet or hand calculations

	Location	Impact Factor	LLDF	Service Moment from STAAD Model		Total Moment Total L+I	Service Shear from STAAD Model		Total Shear Total L+I	RF - Moment			RF - Shear			
				D	L		D	L		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating	
3F1	North Girder	Beam Seat at FB1	1.30	4.08	0.00	0.00	0	24.31	5.48	29.1	492.12	---	N/A	306.49	---	7.27
		Rear End Span	1.30	3.95	647.60	129.70	665.65	31.44	5.48	28.13	3039.00	---	2.54	603.40	---	15.38
		Short End of Taper at FB 2	1.30	3.81	686.90	129.70	642.66	36.08	5.48	27.16	3658.16	---	3.31	863.91	---	23.14
		Tall End of Taper at FB 2	1.30	3.81	778.20	143.50	711.04	36.96	5.48	27.16	8636.13	---	8.25	2278.00	---	63.16
		At FB2	1.30	3.81	915.30	175.90	871.58	70.98	14.78	73.23	8636.13	---	6.57	2278.00	---	22.96
		Tall End of Taper at FB 2	1.26	3.81	923.80	166.20	795.65	74.49	14.78	70.76	8636.13	---	7.19	2278.00	---	23.71
		Short End of Taper at FB 2	1.26	3.81	738.70	129.30	619	73.61	14.78	70.76	3658.16	---	3.35	863.91	---	8.35
		Center Span	1.26	3.68	710.10	172.10	795.59	69.68	15.02	69.41	3039.00	---	2.05	603.40	---	5.68
		Short End of Taper at FB 5	1.26	3.80	686.20	142.70	680.41	68.04	15.00	71.53	3658.16	---	3.13	863.91	---	8.34
		Tall End of Taper at FB 5	1.26	3.80	857.30	180.00	858.26	68.91	15.00	71.53	8636.13	---	6.74	2278.00	---	23.53
		At FB5	1.30	3.80	930.70	189.80	936.67	70.68	15.00	74.04	8636.13	---	6.10	2278.00	---	22.71
		Tall End of Taper at FB 5	1.30	3.80	709.00	154.40	761.97	27.96	6.39	31.51	8636.13	---	7.79	2278.00	---	54.72
	Short End of Taper at FB 5	1.30	3.80	640.20	138.40	683.01	27.08	6.39	31.51	3658.16	---	3.18	863.91	---	20.23	
	Forward End Span	1.30	3.92	661.30	138.40	704.55	30.80	6.39	32.5	3039.00	---	2.38	603.40	---	13.33	
	At FB6	1.30	4.04	72.50	32.40	169.98	34.86	15.49	81.25	3039.00	---	13.33	603.40	---	5.28	
	Beam Seat at East End	1.30	4.04	0.00	0.00	0	36.28	15.49	81.25	492.12	---	N/A	306.49	---	2.46	
	South Girder	Beam Seat at FB1	1.30	3.35	30.90	0.00	0	29.81	6.35	27.69	492.12	---	N/A	306.49	---	7.44
		Rear End Span	1.30	3.48	686.90	133.10	602.43	36.08	6.35	28.76	3039.00	---	2.74	603.40	---	14.88
		Short End of Taper at FB 2	1.30	3.61	686.90	133.10	624.78	36.08	6.35	29.83	3658.16	---	3.40	863.91	---	21.07
		Tall End of Taper at FB 2	1.30	3.61	778.20	149.00	699.41	36.96	6.35	29.83	8636.13	---	8.39	2278.00	---	57.50
		At FB2	1.30	3.61	972.80	181.70	852.91	74.91	14.92	70.04	8636.13	---	6.65	2278.00	---	23.95
		Tall End of Taper at FB 2	1.26	3.61	923.80	171.90	779.6	74.49	14.92	67.68	8636.13	---	7.34	2278.00	---	24.79
		Short End of Taper at FB 2	1.26	3.61	738.70	134.60	610.44	73.61	14.92	67.68	3658.16	---	3.40	863.91	---	8.73
		Center Span	1.26	3.74	738.70	174.20	818.2	73.61	14.94	70.17	3039.00	---	1.95	603.40	---	5.57
Short End of Taper at FB 5		1.26	3.67	686.20	136.90	631.7	68.04	14.83	68.44	3658.16	---	3.37	863.91	---	8.72	
Tall End of Taper at FB 5		1.26	3.67	857.30	173.80	801.97	68.91	14.83	68.44	8636.13	---	7.21	2278.00	---	24.60	
At FB5		1.30	3.67	902.70	183.50	876.38	69.35	14.83	70.84	8636.13	---	6.55	2278.00	---	23.76	
Tall End of Taper at FB 5		1.30	3.67	709.00	148.20	707.79	27.96	5.51	26.29	8636.13	---	8.38	2278.00	---	65.59	
Short End of Taper at FB 5	1.30	3.67	640.20	134.40	641.89	27.08	5.51	26.29	3658.16	---	3.39	863.91	---	24.25		
Forward End Span	1.30	3.54	640.20	134.40	617.91	27.08	5.51	25.31	3039.00	---	2.75	603.40	---	17.27		
At FB6	1.30	3.40	72.50	37.60	166.16	34.86	18.01	79.58	3039.00	---	13.63	603.40	---	5.39		
Beam Seat at East End	1.30	3.40	72.50	0.00	0	34.86	18.01	79.58	492.12	---	N/A	306.49	---	2.52		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - Frame Girder Ratings

Calculated: CTG 2/22/2012

Checked: DWC 2/22/2012

Revised: CTG 4/26/2012

*capacities taken from spreadsheet or hand calculations

	Location	Impact Factor	LLDF	Service Moment from STAAD Model		Total Moment Total L+I	Service Shear from STAAD Model		Total Shear Total L+I	RF - Moment			RF - Shear			
				D	L		D	L		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating	
4F1	North Girder	Beam Seat at FB1	1.30	4.08	0.00	0.00	0	24.31	6.21	32.96	492.12	---	N/A	306.49	---	6.42
		Rear End Span	1.30	3.95	647.60	146.90	753.92	31.44	6.21	31.86	3039.00	---	2.24	603.40	---	13.58
		Short End of Taper at FB 2	1.30	3.81	686.90	146.90	727.88	36.08	6.21	30.76	3658.16	---	2.92	863.91	---	20.43
		Tall End of Taper at FB 2	1.30	3.81	778.20	162.50	805.18	36.96	6.21	30.76	8636.13	---	7.28	2278.00	---	55.77
		At FB2	1.30	3.81	915.30	201.00	995.94	70.98	16.67	82.58	8636.13	---	5.75	2278.00	---	20.36
		Tall End of Taper at FB 2	1.26	3.81	923.80	190.30	911.02	74.49	16.67	79.79	8636.13	---	6.28	2278.00	---	21.03
		Short End of Taper at FB 2	1.26	3.81	738.70	149.30	714.74	73.61	16.67	79.79	3658.16	---	2.90	863.91	---	7.41
		Center Span	1.26	3.68	710.10	196.70	909.31	69.68	17.23	79.67	3039.00	---	1.79	603.40	---	4.95
		Short End of Taper at FB 5	1.26	3.80	686.20	164.70	785.3	68.04	17.22	82.1	3658.16	---	2.71	863.91	---	7.27
		Tall End of Taper at FB 5	1.26	3.80	857.30	207.40	988.9	68.91	17.22	82.1	8636.13	---	5.85	2278.00	---	20.50
		At FB5	1.30	3.80	930.70	218.70	1079.3	70.68	17.22	84.98	8636.13	---	5.29	2278.00	---	19.79
		Tall End of Taper at FB 5	1.30	3.80	709.00	177.60	876.47	27.96	7.35	36.27	8636.13	---	6.77	2278.00	---	47.54
	Short End of Taper at FB 5	1.30	3.80	640.20	159.20	785.66	27.08	7.35	36.27	3658.16	---	2.77	863.91	---	17.58	
	Forward End Span	1.30	3.92	661.30	159.20	810.43	30.80	7.35	37.41	3039.00	---	2.07	603.40	---	11.58	
	At FB6	1.30	4.04	72.50	33.50	175.75	34.86	16.02	84.04	3039.00	---	12.89	603.40	---	5.11	
	Beam Seat at East End	1.30	4.04	0.00	0.00	0	36.28	16.02	84.04	492.12	---	N/A	306.49	---	2.37	
	South Girder	Beam Seat at FB1	1.30	3.35	30.90	0.00	0	29.81	7.20	31.38	492.12	---	N/A	306.49	---	6.56
		Rear End Span	1.30	3.48	686.90	150.80	682.54	36.08	7.20	32.58	3039.00	---	2.42	603.40	---	13.14
		Short End of Taper at FB 2	1.30	3.61	686.90	150.80	707.86	36.08	7.20	33.79	3658.16	---	3.00	863.91	---	18.60
		Tall End of Taper at FB 2	1.30	3.61	778.20	168.80	792.35	36.96	7.20	33.79	8636.13	---	7.40	2278.00	---	50.77
		At FB2	1.30	3.61	972.80	207.70	974.95	74.91	16.82	78.94	8636.13	---	5.82	2278.00	---	21.25
		Tall End of Taper at FB 2	1.26	3.61	923.80	196.90	892.99	74.49	16.82	76.28	8636.13	---	6.40	2278.00	---	22.00
		Short End of Taper at FB 2	1.26	3.61	738.70	155.50	705.23	73.61	16.82	76.28	3658.16	---	2.94	863.91	---	7.75
		Center Span	1.26	3.74	738.70	199.20	935.62	73.61	17.04	80.03	3039.00	---	1.71	603.40	---	4.88
Short End of Taper at FB 5		1.26	3.67	686.20	158.10	729.53	68.04	17.03	78.56	3658.16	---	2.92	863.91	---	7.59	
Tall End of Taper at FB 5		1.26	3.67	857.30	200.30	924.25	68.91	17.03	78.56	8636.13	---	6.26	2278.00	---	21.43	
At FB5		1.30	3.67	902.70	211.40	1009.63	69.35	17.03	81.32	8636.13	---	5.69	2278.00	---	20.70	
Tall End of Taper at FB 5		1.30	3.67	709.00	170.50	814.3	27.96	6.34	30.27	8636.13	---	7.29	2278.00	---	56.97	
Short End of Taper at FB 5	1.30	3.67	640.20	154.70	738.84	27.08	6.34	30.27	3658.16	---	2.94	863.91	---	21.06		
Forward End Span	1.30	3.54	640.20	154.70	711.24	27.08	6.34	29.13	3039.00	---	2.39	603.40	---	15.00		
At FB6	1.30	3.40	72.50	39.80	175.88	34.86	19.04	84.14	3039.00	---	12.88	603.40	---	5.10		
Beam Seat at East End	1.30	3.40	72.50	0.00	0	34.86	19.04	84.14	492.12	---	N/A	306.49	---	2.39		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - Frame Girder Ratings

Calculated: CTG 2/22/2012

Checked: DWC 2/22/2012

Revised: CTG 4/26/2012

*capacities taken from spreadsheet or hand calculations

5C1	Girder	Location	Impact Factor	LLDF	Service Moment from STAAD Model		Total Moment	Service Shear from STAAD Model		Total Shear	RF - Moment			RF - Shear		
					D	L	Total L+I	D	L	Total L+I	C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
North Girder	Beam Seat at FB1	1.30	4.08	0.00	0.00	0	24.31	5.92	31.45	492.12	---	N/A	306.49	---	6.72	
	Rear End Span	1.30	3.95	647.60	140.20	719.54	31.44	5.92	30.4	3039.00	---	2.35	603.40	---	14.23	
	Short End of Taper at FB 2	1.30	3.81	686.90	140.20	694.68	36.08	5.92	29.35	3658.16	---	3.06	863.91	---	21.41	
	Tall End of Taper at FB 2	1.30	3.81	778.20	155.00	768.02	36.96	5.92	29.35	8636.13	---	7.64	2278.00	---	58.44	
	At FB2	1.30	3.81	915.30	193.10	956.8	70.98	15.42	76.4	8636.13	---	5.99	2278.00	---	22.01	
	Tall End of Taper at FB 2	1.26	3.81	923.80	183.00	876.08	74.49	15.42	73.82	8636.13	---	6.53	2278.00	---	22.73	
	Short End of Taper at FB 2	1.26	3.81	738.70	144.40	691.29	73.61	15.42	73.82	3658.16	---	3.00	863.91	---	8.01	
	Center Span	1.26	3.68	710.10	171.40	792.35	69.68	15.44	71.38	3039.00	---	2.05	603.40	---	5.53	
	Short End of Taper at FB 5	1.26	3.80	686.20	150.70	718.55	68.04	15.41	73.47	3658.16	---	2.96	863.91	---	8.12	
	Tall End of Taper at FB 5	1.26	3.80	857.30	189.10	901.65	68.91	15.41	73.47	8636.13	---	6.42	2278.00	---	22.91	
	At FB5	1.30	3.80	930.70	199.20	983.06	70.68	15.41	76.05	8636.13	---	5.81	2278.00	---	22.11	
	Tall End of Taper at FB 5	1.30	3.80	709.00	160.80	793.56	27.96	6.69	33	8636.13	---	7.48	2278.00	---	52.25	
	Short End of Taper at FB 5	1.30	3.80	640.20	144.10	711.14	27.08	6.69	33	3658.16	---	3.06	863.91	---	19.32	
	Forward End Span	1.30	3.92	661.30	144.10	733.57	30.80	6.69	34.04	3039.00	---	2.29	603.40	---	12.73	
	At FB6	1.30	4.04	72.50	31.50	165.26	34.86	15.07	79.05	3039.00	---	13.71	603.40	---	5.43	
	Beam Seat at East End	1.30	4.04	0.00	0.00	0	36.28	15.07	79.05	492.12	---	N/A	306.49	---	2.52	
	South Girder	Beam Seat at FB1	1.30	3.35	30.90	0.00	0	29.81	6.87	29.95	492.12	---	N/A	306.49	---	6.88
		Rear End Span	1.30	3.48	686.90	144.00	651.76	36.08	6.87	31.11	3039.00	---	2.53	603.40	---	13.76
		Short End of Taper at FB 2	1.30	3.61	686.90	144.00	675.94	36.08	6.87	32.26	3658.16	---	3.15	863.91	---	19.48
		Tall End of Taper at FB 2	1.30	3.61	778.20	161.20	756.68	36.96	6.87	32.26	8636.13	---	7.75	2278.00	---	53.17
		At FB2	1.30	3.61	972.80	199.70	937.4	74.91	15.58	73.14	8636.13	---	6.05	2278.00	---	22.93
		Tall End of Taper at FB 2	1.26	3.61	923.80	189.50	859.42	74.49	15.58	70.68	8636.13	---	6.65	2278.00	---	23.74
Short End of Taper at FB 2		1.26	3.61	738.70	150.50	682.55	73.61	15.58	70.68	3658.16	---	3.04	863.91	---	8.36	
Center Span		1.26	3.74	738.70	173.60	815.38	73.61	15.60	73.29	3039.00	---	1.96	603.40	---	5.33	
Short End of Taper at FB 5		1.26	3.67	686.20	144.60	667.24	68.04	15.23	70.26	3658.16	---	3.19	863.91	---	8.49	
Tall End of Taper at FB 5		1.26	3.67	857.30	182.60	842.58	68.91	15.23	70.26	8636.13	---	6.87	2278.00	---	23.96	
At FB5		1.30	3.67	902.70	192.60	919.85	69.35	15.23	72.72	8636.13	---	6.24	2278.00	---	23.14	
Tall End of Taper at FB 5		1.30	3.67	709.00	154.40	737.41	27.96	5.76	27.51	8636.13	---	8.05	2278.00	---	62.68	
Short End of Taper at FB 5		1.30	3.67	640.20	140.00	668.63	27.08	5.76	27.51	3658.16	---	3.25	863.91	---	23.17	
Forward End Span		1.30	3.54	640.20	140.00	643.65	27.08	5.76	26.49	3039.00	---	2.64	603.40	---	16.50	
At FB6	1.30	3.40	72.50	36.70	162.18	34.86	17.58	77.68	3039.00	---	13.97	603.40	---	5.53		
Beam Seat at East End	1.30	3.40	72.50	0.00	0	34.86	17.58	77.68	492.12	---	N/A	306.49	---	2.59		

West Approach - Section K - Columns

End Columns - WF 10x41

Interior Columns - WF 14x211

End Columns

WF 10x41 →	$h = 10''$	$A = 12.06 \text{ in}^2$	$r_x = 4.29''$
	$b_f = 8''$	$I_x = 222.4 \text{ in}^4$	$r_y = 1.99''$
	$t_f = .558''$	$I_y = 47.7 \text{ in}^4$	$S_x = 44.5 \text{ in}^3$
	$t_w = .328''$		$S_y = 11.9 \text{ in}^3$

• Strong axis is perpendicular to girders

Capacity - AASHTO 10.54

Concentrically loaded column : $P_u = 0.85 A_s F_{cr}$

Check if $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$E = 29,000 \text{ ksi}$ $F_y = 33 \text{ ksi}$

$r_y: 67.7 < 131.1$

$K = 1.0$ For Pinned-Pinned (AASHTO App. C)

$r_x: 31.4 < 131.1$

$L_c = 134.8''$ @ F86 ← governs

$L_c = 122.8''$ @ F81

$\therefore F_{cr} = F_y \left[1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right]$

$F_{cr} = 33 \text{ ksi} \left[1 - \frac{33 \text{ ksi}}{4\pi^2 (29,000 \text{ ksi})} (67.7)^2 \right]$

$F_{cr} = 28.6 \text{ ksi}$

$\Rightarrow P_u = 0.85 (12.06 \text{ in}^2) (28.6 \text{ ksi}) = 293.2 \text{ k}$

Combined Axial and Bending

$\frac{P}{0.85 A_s F_{cr}} + \frac{M_c}{M_u \left(1 - \frac{P}{A_s F_e} \right)} \leq 1.0$

$C = 0.6 + 0.4 \frac{M_{small}}{M_{large}} = 0.6$
 $F_{cr} = 30.8$

$F_e = \frac{E \pi^2}{\left(\frac{KL_c}{r} \right)^2}$

$F_{e_x} = \frac{29,000 \text{ ksi} \pi^2}{(31.4)^2} = 290.3 \text{ ksi}$

$F_{e_y} = \frac{29,000 \text{ ksi} \pi^2}{(67.7)^2} = 162.4 \text{ ksi}$

Interior Columns

WF14x211 \Rightarrow

$h = 15.75''$	$A = 62.07 \text{ in}^2$	$r_x = 6.56 \text{ in}$
$b_f = 15.8''$	$I_x = 2671.4 \text{ in}^4$	$r_y = 4.07 \text{ in}$
$t_f = 1.563''$	$I_y = 1028.6 \text{ in}^4$	$S_x = 339.2 \text{ in}^3$
$t_w = .980''$		$S_y = 130.2 \text{ in}^3$

Capacity AASHTO 10.54

Concentrically loaded column $\Rightarrow P_U = 0.85 A_s F_{cr}$

Check $\frac{KL}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

same properties as on sheet 1

$L_c = 103.8''$

$K = 0.8$ For Fixed pinned

$r_y: 20.4 < 131.1$

$r_x: 12.7 < 131.1$

$\therefore F_{cr} = 33 \text{ ksi} \left[1 - \frac{33 \text{ ksi}}{4\pi^2 29000 \text{ ksi}} (20.4)^2 \right]$

$F_{cr} = 32.6 \text{ ksi}$

$\Rightarrow P_U = 0.85 (62.07 \text{ in}^2) (32.6 \text{ ksi}) = 1720 \text{ K}$

Combined Axial and Bending

$\frac{P}{0.85 A_s F_{cr}} + \frac{M_c}{M_u \left(1 - \frac{P}{A_s F_{cr}} \right)} \leq 1.0$

$F_{cr} = 32.6 \text{ ksi}$

$F_e = \frac{E \pi^2}{\left(\frac{K L_c}{r} \right)^2}$

$F_{ex} = \frac{29000 \text{ ksi} \pi^2}{(12.7)^2} = 1774.6 \text{ ksi}$

$F_{ey} = \frac{29000 \text{ ksi} \pi^2}{(20.4)^2} = 687.8 \text{ ksi}$

Section K - Columns

Check if columns are compact

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}} = 22.62$$

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}} = 105.86$$

$$\frac{L_b}{r_y} \leq \frac{(3.16 - 2.2 \frac{M_1}{M_2}) \times 10^6}{F_y} = 109.1$$

WF10x41

$$\frac{b}{t} = 14.34 < 22.62 \checkmark$$

$$\frac{D}{t_w} = 27.09 < 105.86 \checkmark$$

$$\frac{L_b}{r_y} = 67.7 < 109.1 \checkmark$$

⇒ WF10x41 columns are compact

WF14x21

$$\frac{b}{t} = 10.1 < 22.62 \checkmark$$

$$\frac{D}{t_w} = 12.9 < 105.86 \checkmark$$

$$\frac{L_b}{r_y} = 25.5 < 109.1 \checkmark$$

⇒ WF14x21 columns are compact

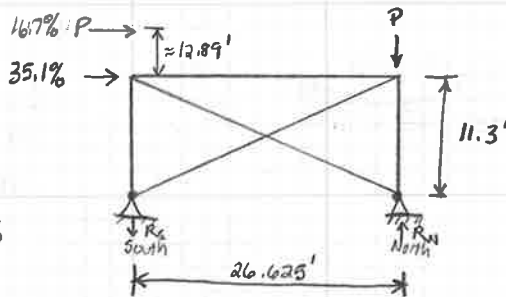
$$M_U = F_y Z = \frac{(33 \text{ ksi})(390 \text{ in}^3)}{12} = 1072.5 \text{ k-ft}$$

Centrifugal Force

AASHTO 3.10

$$C = \frac{6.685^2}{R}$$

$$C = \frac{6.68(50 \text{ mph})^2}{1000} = 16.7\%$$



$$h = 1.59' + 2.58' + 1.56' + .75' + 6' = 12.48' @ \text{ C Rdwy}$$

Gider FG Str. Deck Hurch

$$\frac{2.1042' + 3.0469'}{2} = 2.58'$$

$$\frac{1.54 + 1.57}{2} = 1.56'$$

$$\frac{12.48' + 11.3'}{11.3'} = 2.10 \quad \therefore 2.10 \times 16.7\% = 35.1\%$$

$$R_N = 35.1\% \left(\frac{11.3'}{26.625'} \right) = 14.89\% = -R_S$$

↑
Apply to LL Axial Columns 1+4

To determine a rating factor for the combined axial and bending we will need to iterate the condition equation

Let Rating Factor = β

Then:

$$\text{Inventory: } \frac{2.17\beta P_{LL} + 1.3P_{DL}}{0.85 A_s F_{cr}} + \frac{(2.17\beta M_{LL} + 1.3M_{DL})0.6}{M_u \left(1 - \frac{2.17\beta P_{LL} + 1.3P_{DL}}{A_s F_e}\right)} = 1.0$$

*For Operating replace 2.17 with 1.3

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor 1.30

LL Factor 2.17 INV 1.30 OPER

Impact 1.3

			Axial Forces From STAAD						Capacity	Rating Factors					
			Dead Load	HS20 LL	2F1 LL	3F1 LL	4F1 LL	5C1	P _u	HS20	HS20	2F1	3F1	4F1	5C1
Member	LLDF	Centrifugal %	kips	kips	kips	kips	kips	kips	kips	RF _{INV}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}
COL K5	4.0842	14.90	13.18	22.39	12.75	17.83	18.78	17.38	293.2	0.96	1.60	2.81	2.01	1.91	2.06
COL K8	4.0356	14.90	13.3	21.73	12.56	17.44	18.21	16.98	293.2	1.00	1.67	2.89	2.08	1.99	2.14

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K6	3.81	247.26	284.97	216.58	475.53	1720.00	1072.50	110149.42	1.0000	1.69		
HS20 INV	COL K6	3.81	247.26	292.65	216.58	474.49	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	297.77	216.58	473.45	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	302.04	216.58	472.40	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K6	3.81	247.26	302.62	216.58	471.36	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K6	3.81	247.26	303.20	216.58	470.32	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K6	3.81	247.26	303.79	216.58	469.28	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	304.36	216.58	468.24	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	304.94	216.58	467.20	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	305.52	216.58	466.16	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	306.11	216.58	465.12	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	306.69	216.58	464.08	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	307.27	216.58	463.04	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	307.84	216.58	462.00	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	308.43	216.58	460.96	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	309.01	216.58	459.92	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	309.59	216.58	458.88	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	310.17	216.58	457.84	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	310.76	216.58	456.80	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	311.33	216.58	455.76	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	311.91	216.58	454.72	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	312.49	216.58	453.68	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	313.08	216.58	452.63	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	313.65	216.58	451.59	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	314.22	216.58	450.55	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	315.48	216.58	449.51	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	316.99	216.58	448.47	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	318.51	216.58	447.43	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	320.02	216.58	446.39	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	321.53	216.58	445.35	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	323.03	216.58	444.31	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	324.53	216.58	443.27	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	325.28	216.58	442.23	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	326.78	216.58	441.19	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	328.28	216.58	440.15	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	329.78	216.58	439.11	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	330.52	216.58	438.07	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	330.99	216.58	437.03	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K6	3.81	247.26	321.73	216.58	435.99	1720.00	1072.50	110149.42	1.0000	1.70		
HS20 INV	COL K6	3.81	247.26	331.46	216.58	434.95	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	331.93	216.58	433.90	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	332.40	216.58	432.86	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	332.46	216.58	431.82	1720.00	1072.50	110149.42	1.0000	1.70		
HS20 INV	COL K6	3.81	247.26	332.87	216.58	430.78	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	333.34	216.58	429.74	1720.00	1072.50	110149.42	1.0000	1.68		
HS20 INV	COL K6	3.81	247.26	333.81	216.58	428.70	1720.00	1072.50	110149.42	1.0000	1.69		
HS20 INV	COL K6	3.81	247.26	325.74	216.58	427.66	1720.00	1072.50	110149.42	1.0000	1.71		
HS20 INV	COL K6	3.81	247.26	334.27	216.58	426.62	1720.00	1072.50	110149.42	1.0000	1.69		
HS20 INV	COL K6	3.81	247.26	334.74	216.58	425.58	1720.00	1072.50	110149.42	1.0000	1.69		
HS20 INV	COL K6	3.81	247.26	335.21	216.58	424.54	1720.00	1072.50	110149.42	1.0000	1.69		
HS20 INV	COL K6	3.81	247.26	335.68	216.58	422.46	1720.00	1072.50	110149.42	1.0000	1.69		
HS20 INV	COL K6	3.81	247.26	336.14	216.58	421.42	1720.00	1072.50	110149.42	1.0000	1.70		
HS20 INV	COL K6	3.81	247.26	336.60	216.58	420.38	1720.00	1072.50	110149.42	1.0000	1.70		
HS20 INV	COL K6	3.81	247.26	329.73	216.58	419.34	1720.00	1072.50	110149.42	1.0000	1.72		
HS20 INV	COL K6	3.81	247.26	337.06	216.58	418.30	1720.00	1072.50	110149.42	1.0000	1.70		
HS20 INV	COL K6	3.81	247.26	337.53	216.58	417.26	1720.00	1072.50	110149.42	1.0000	1.70		
HS20 INV	COL K6	3.81	247.26	331.41	216.58	416.22	1720.00	1072.50	110149.42	1.0000	1.72		
HS20 INV	COL K6	3.81	247.26	337.99	216.58	415.18	1720.00	1072.50	110149.42	1.0000	1.71		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K6	3.81	247.26	338.46	216.58	414.13	1720.00	1072.50	110149.42	1.0000	1.71		
HS20 INV	COL K6	3.81	247.26	338.91	216.58	413.09	1720.00	1072.50	110149.42	1.0000	1.71		
HS20 INV	COL K6	3.81	247.26	333.11	216.58	412.05	1720.00	1072.50	110149.42	1.0000	1.72		
HS20 INV	COL K6	3.81	247.26	339.37	216.58	411.01	1720.00	1072.50	110149.42	1.0000	1.71		
HS20 INV	COL K6	3.81	247.26	339.83	216.58	409.97	1720.00	1072.50	110149.42	1.0000	1.71		
HS20 INV	COL K6	3.81	247.26	340.29	216.58	408.93	1720.00	1072.50	110149.42	1.0000	1.71		
HS20 INV	COL K6	3.81	247.26	340.75	216.58	406.85	1720.00	1072.50	110149.42	1.0000	1.72		
HS20 INV	COL K6	3.81	247.26	341.19	216.58	405.81	1720.00	1072.50	110149.42	1.0000	1.72		
HS20 INV	COL K6	3.81	247.26	341.65	216.58	404.77	1720.00	1072.50	110149.42	1.0000	1.72		
HS20 INV	COL K6	3.81	247.26	337.01	216.58	403.73	1720.00	1072.50	110149.42	1.0000	1.73		
HS20 INV	COL K6	3.81	247.26	342.11	216.58	402.69	1720.00	1072.50	110149.42	1.0000	1.72		
HS20 INV	COL K6	3.81	247.26	342.56	216.58	401.65	1720.00	1072.50	110149.42	1.0000	1.73		
HS20 INV	COL K6	3.81	247.26	343.01	216.58	399.57	1720.00	1072.50	110149.42	1.0000	1.73		
HS20 INV	COL K6	3.81	247.26	343.46	216.58	398.53	1720.00	1072.50	110149.42	1.0000	1.73		
HS20 INV	COL K6	3.81	247.26	343.91	216.58	397.49	1720.00	1072.50	110149.42	1.0000	1.73		
HS20 INV	COL K6	3.81	247.26	340.32	216.58	396.45	1720.00	1072.50	110149.42	1.0000	1.74		
HS20 INV	COL K6	3.81	247.26	344.36	216.58	395.41	1720.00	1072.50	110149.42	1.0000	1.74		
HS20 INV	COL K6	3.81	247.26	344.80	216.58	394.36	1720.00	1072.50	110149.42	1.0000	1.74		
HS20 INV	COL K6	3.81	247.26	341.41	216.58	393.32	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K6	3.81	247.26	345.25	216.58	392.28	1720.00	1072.50	110149.42	1.0000	1.74		
HS20 INV	COL K6	3.81	247.26	345.69	216.58	391.24	1720.00	1072.50	110149.42	1.0000	1.74		
HS20 INV	COL K6	3.81	247.26	346.14	216.58	390.20	1720.00	1072.50	110149.42	1.0000	1.74		
HS20 INV	COL K6	3.81	247.26	343.59	216.58	389.16	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K6	3.81	247.26	346.57	216.58	388.12	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K6	3.81	247.26	347.02	216.58	387.08	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K6	3.81	247.26	344.67	216.58	386.04	1720.00	1072.50	110149.42	1.0000	1.76		
HS20 INV	COL K6	3.81	247.26	347.46	216.58	385.00	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K6	3.81	247.26	347.89	216.58	383.96	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K6	3.81	247.26	348.33	216.58	382.92	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K6	3.81	247.26	348.77	216.58	380.84	1720.00	1072.50	110149.42	1.0000	1.76		
HS20 INV	COL K6	3.81	247.26	349.19	216.58	379.80	1720.00	1072.50	110149.42	1.0000	1.76		
HS20 INV	COL K6	3.81	247.26	347.87	216.58	378.76	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K6	3.81	247.26	349.63	216.58	377.72	1720.00	1072.50	110149.42	1.0000	1.76		
HS20 INV	COL K6	3.81	247.26	350.06	216.58	376.68	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K6	3.81	247.26	350.48	216.58	375.63	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K6	3.81	247.26	349.47	216.58	374.59	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K6	3.81	247.26	350.91	216.58	373.55	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K6	3.81	247.26	351.34	216.58	372.51	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K6	3.81	247.26	351.04	216.58	371.47	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	351.76	216.58	370.43	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	352.19	216.58	369.39	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	352.61	216.58	368.35	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	352.60	216.58	367.31	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	353.11	216.58	366.27	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	353.63	216.58	365.23	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	354.14	216.58	364.19	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K6	3.81	247.26	353.87	216.58	363.15	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K6	3.81	247.26	354.66	216.58	362.11	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K6	3.81	247.26	355.17	216.58	361.07	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K6	3.81	247.26	355.68	216.58	360.03	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K6	3.81	247.26	356.19	216.58	358.99	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K6	3.81	247.26	355.51	216.58	357.95	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K6	3.81	247.26	356.69	216.58	356.91	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K6	3.81	247.26	357.20	216.58	355.86	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K6	3.81	247.26	357.70	216.58	354.82	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K6	3.81	247.26	358.20	216.58	353.78	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K6	3.81	247.26	358.69	216.58	352.74	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K6	3.81	247.26	357.13	216.58	351.70	1720.00	1072.50	110149.42	1.0000	1.81		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
						Axial Force		Moment		P _u	M _u	A _s F _{ex}		
						Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF			
HS20 INV	COL K6	3.81	247.26	359.19	216.58	350.66	1720.00	1072.50	110149.42	1.0000	1.81			
HS20 INV	COL K6	3.81	247.26	359.68	216.58	349.62	1720.00	1072.50	110149.42	1.0000	1.81			
HS20 INV	COL K6	3.81	247.26	360.18	216.58	348.58	1720.00	1072.50	110149.42	1.0000	1.81			
HS20 INV	COL K6	3.81	247.26	360.67	216.58	347.54	1720.00	1072.50	110149.42	1.0000	1.81			
HS20 INV	COL K6	3.81	247.26	361.16	216.58	346.50	1720.00	1072.50	110149.42	1.0000	1.81			
HS20 INV	COL K6	3.81	247.26	361.65	216.58	344.42	1720.00	1072.50	110149.42	1.0000	1.81			
HS20 INV	COL K6	3.81	247.26	362.14	216.58	343.38	1720.00	1072.50	110149.42	1.0000	1.82			
HS20 INV	COL K6	3.81	247.26	362.63	216.58	342.34	1720.00	1072.50	110149.42	1.0000	1.82			
HS20 INV	COL K6	3.81	247.26	363.11	216.58	341.30	1720.00	1072.50	110149.42	1.0000	1.82			
HS20 INV	COL K6	3.81	247.26	363.59	216.58	340.26	1720.00	1072.50	110149.42	1.0000	1.82			
HS20 INV	COL K6	3.81	247.26	360.67	216.58	339.22	1720.00	1072.50	110149.42	1.0000	1.83			
HS20 INV	COL K6	3.81	247.26	364.06	216.58	338.18	1720.00	1072.50	110149.42	1.0000	1.82			
HS20 INV	COL K6	3.81	247.26	364.54	216.58	337.13	1720.00	1072.50	110149.42	1.0000	1.83			
HS20 INV	COL K6	3.81	247.26	365.02	216.58	336.09	1720.00	1072.50	110149.42	1.0000	1.83			
HS20 INV	COL K6	3.81	247.26	365.49	216.58	335.05	1720.00	1072.50	110149.42	1.0000	1.83			
HS20 INV	COL K6	3.81	247.26	365.96	216.58	334.01	1720.00	1072.50	110149.42	1.0000	1.83			
HS20 INV	COL K6	3.81	247.26	362.19	216.58	332.97	1720.00	1072.50	110149.42	1.0000	1.84			
HS20 INV	COL K6	3.81	247.26	366.43	216.58	331.93	1720.00	1072.50	110149.42	1.0000	1.83			
HS20 INV	COL K6	3.81	247.26	366.89	216.58	330.89	1720.00	1072.50	110149.42	1.0000	1.84			
HS20 INV	COL K6	3.81	247.26	367.36	216.58	329.85	1720.00	1072.50	110149.42	1.0000	1.84			
HS20 INV	COL K6	3.81	247.26	367.82	216.58	328.81	1720.00	1072.50	110149.42	1.0000	1.84			
HS20 INV	COL K6	3.81	247.26	368.29	216.58	327.77	1720.00	1072.50	110149.42	1.0000	1.84			
HS20 INV	COL K6	3.81	247.26	368.75	216.58	325.69	1720.00	1072.50	110149.42	1.0000	1.84			
HS20 INV	COL K6	3.81	247.26	369.20	216.58	324.65	1720.00	1072.50	110149.42	1.0000	1.85			
HS20 INV	COL K6	3.81	247.26	369.65	216.58	323.61	1720.00	1072.50	110149.42	1.0000	1.85			
HS20 INV	COL K6	3.81	247.26	370.11	216.58	322.57	1720.00	1072.50	110149.42	1.0000	1.85			
HS20 INV	COL K6	3.81	247.26	370.56	216.58	321.53	1720.00	1072.50	110149.42	1.0000	1.85			
HS20 INV	COL K6	3.81	247.26	371.00	216.58	320.49	1720.00	1072.50	110149.42	1.0000	1.85			
HS20 INV	COL K6	3.81	247.26	371.45	216.58	318.41	1720.00	1072.50	110149.42	1.0000	1.86			
HS20 INV	COL K6	3.81	247.26	371.89	216.58	317.36	1720.00	1072.50	110149.42	1.0000	1.86			
HS20 INV	COL K6	3.81	247.26	372.34	216.58	316.32	1720.00	1072.50	110149.42	1.0000	1.86			
HS20 INV	COL K6	3.81	247.26	372.77	216.58	315.28	1720.00	1072.50	110149.42	1.0000	1.86			
HS20 INV	COL K6	3.81	247.26	373.21	216.58	314.24	1720.00	1072.50	110149.42	1.0000	1.86			
HS20 INV	COL K6	3.81	247.26	367.23	216.58	313.20	1720.00	1072.50	110149.42	1.0000	1.88			
HS20 INV	COL K6	3.81	247.26	373.65	216.58	312.16	1720.00	1072.50	110149.42	1.0000	1.87			
HS20 INV	COL K6	3.81	247.26	374.07	216.58	311.12	1720.00	1072.50	110149.42	1.0000	1.87			
HS20 INV	COL K6	3.81	247.26	374.50	216.58	310.08	1720.00	1072.50	110149.42	1.0000	1.87			
HS20 INV	COL K6	3.81	247.26	374.93	216.58	309.04	1720.00	1072.50	110149.42	1.0000	1.87			
HS20 INV	COL K6	3.81	247.26	375.35	216.58	308.00	1720.00	1072.50	110149.42	1.0000	1.87			
HS20 INV	COL K6	3.81	247.26	375.78	216.58	306.96	1720.00	1072.50	110149.42	1.0000	1.87			
HS20 INV	COL K6	3.81	247.26	376.20	216.58	305.92	1720.00	1072.50	110149.42	1.0000	1.88			
HS20 INV	COL K6	3.81	247.26	369.25	216.58	304.88	1720.00	1072.50	110149.42	1.0000	1.90			
HS20 INV	COL K6	3.81	247.26	376.33	216.58	303.84	1720.00	1072.50	110149.42	1.0000	1.88			
HS20 INV	COL K6	3.81	247.26	376.48	216.58	301.76	1720.00	1072.50	110149.42	1.0000	1.89			
HS20 INV	COL K6	3.81	247.26	370.22	216.58	300.72	1720.00	1072.50	110149.42	1.0000	1.91			
HS20 INV	COL K6	3.81	247.26	376.61	216.58	299.68	1720.00	1072.50	110149.42	1.0000	1.89			
HS20 INV	COL K6	3.81	247.26	376.75	216.58	297.59	1720.00	1072.50	110149.42	1.0000	1.90			
HS20 INV	COL K6	3.81	247.26	371.17	216.58	296.55	1720.00	1072.50	110149.42	1.0000	1.92			
HS20 INV	COL K6	3.81	247.26	376.88	216.58	295.51	1720.00	1072.50	110149.42	1.0000	1.90			
HS20 INV	COL K6	3.81	247.26	377.01	216.58	293.43	1720.00	1072.50	110149.42	1.0000	1.91			
HS20 INV	COL K6	3.81	247.26	372.11	216.58	292.39	1720.00	1072.50	110149.42	1.0000	1.92			
HS20 INV	COL K6	3.81	247.26	377.14	216.58	291.35	1720.00	1072.50	110149.42	1.0000	1.91			
HS20 INV	COL K6	3.81	247.26	377.27	216.58	289.27	1720.00	1072.50	110149.42	1.0000	1.92			
HS20 INV	COL K6	3.81	247.26	377.39	216.58	288.23	1720.00	1072.50	110149.42	1.0000	1.92			
HS20 INV	COL K6	3.81	247.26	373.31	216.58	287.19	1720.00	1072.50	110149.42	1.0000	1.94			
HS20 INV	COL K6	3.81	247.26	377.51	216.58	286.15	1720.00	1072.50	110149.42	1.0000	1.93			
HS20 INV	COL K6	3.81	247.26	373.61	216.58	285.11	1720.00	1072.50	110149.42	1.0000	1.94			
HS20 INV	COL K6	3.81	247.26	377.63	216.58	284.07	1720.00	1072.50	110149.42	1.0000	1.93			

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{cx}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K6	3.81	247.26	374.19	216.58	283.03	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K6	3.81	247.26	377.75	216.58	281.99	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K6	3.81	247.26	374.48	216.58	280.95	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K6	3.81	247.26	377.85	216.58	279.91	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K6	3.81	247.26	375.04	216.58	278.86	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K6	3.81	247.26	377.97	216.58	277.82	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K6	3.81	247.26	378.07	216.58	275.74	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K6	3.81	247.26	378.17	216.58	274.70	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K6	3.81	247.26	376.14	216.58	273.66	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K6	3.81	247.26	378.28	216.58	272.62	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K6	3.81	247.26	376.40	216.58	271.58	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K6	3.81	247.26	378.37	216.58	270.54	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K6	3.81	247.26	376.94	216.58	269.50	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K6	3.81	247.26	378.47	216.58	268.46	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K6	3.81	247.26	378.56	216.58	266.38	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K6	3.81	247.26	377.71	216.58	265.34	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K6	3.81	247.26	378.64	216.58	264.30	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K6	3.81	247.26	378.20	216.58	263.26	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K6	3.81	247.26	378.74	216.58	262.22	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K6	3.81	247.26	378.81	216.58	261.18	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K6	3.81	247.26	378.69	216.58	260.13	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K6	3.81	247.26	378.93	216.58	259.09	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K6	3.81	247.26	379.16	216.58	258.05	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K6	3.81	247.26	378.96	216.58	257.01	1720.00	1072.50	110149.42	1.0000	2.01		
HS20 INV	COL K6	3.81	247.26	379.40	216.58	255.97	1720.00	1072.50	110149.42	1.0000	2.01		
HS20 INV	COL K6	3.81	247.26	379.63	216.58	254.93	1720.00	1072.50	110149.42	1.0000	2.01		
HS20 INV	COL K6	3.81	247.26	379.86	216.58	253.89	1720.00	1072.50	110149.42	1.0000	2.02		
HS20 INV	COL K6	3.81	247.26	380.08	216.58	252.85	1720.00	1072.50	110149.42	1.0000	2.02		
HS20 INV	COL K6	3.81	247.26	380.30	216.58	251.81	1720.00	1072.50	110149.42	1.0000	2.02		
HS20 INV	COL K6	3.81	247.26	380.51	216.58	249.73	1720.00	1072.50	110149.42	1.0000	2.03		
HS20 INV	COL K6	3.81	247.26	380.73	216.58	248.69	1720.00	1072.50	110149.42	1.0000	2.03		
HS20 INV	COL K6	3.81	247.26	380.94	216.58	247.65	1720.00	1072.50	110149.42	1.0000	2.03		
HS20 INV	COL K6	3.81	247.26	381.16	216.58	246.61	1720.00	1072.50	110149.42	1.0000	2.03		
HS20 INV	COL K6	3.81	247.26	381.36	216.58	245.57	1720.00	1072.50	110149.42	1.0000	2.04		
HS20 INV	COL K6	3.81	247.26	381.57	216.58	243.49	1720.00	1072.50	110149.42	1.0000	2.04		
HS20 INV	COL K6	3.81	247.26	381.75	216.58	242.45	1720.00	1072.50	110149.42	1.0000	2.05		
HS20 INV	COL K6	3.81	247.26	381.68	216.58	240.36	1720.00	1072.50	110149.42	1.0000	2.05		
HS20 INV	COL K6	3.81	247.26	381.60	216.58	238.28	1720.00	1072.50	110149.42	1.0000	2.06		
HS20 OPER	COL K6	3.81	247.26	170.98	216.58	285.32	1720.00	1072.50	110149.42	1.0000	2.82		
HS20 OPER	COL K6	3.81	247.26	175.59	216.58	284.69	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	178.66	216.58	284.07	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	181.22	216.58	283.44	1720.00	1072.50	110149.42	1.0000	2.77		
HS20 OPER	COL K6	3.81	247.26	181.57	216.58	282.82	1720.00	1072.50	110149.42	1.0000	2.77		
HS20 OPER	COL K6	3.81	247.26	181.92	216.58	282.19	1720.00	1072.50	110149.42	1.0000	2.77		
HS20 OPER	COL K6	3.81	247.26	182.27	216.58	281.57	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	182.61	216.58	280.95	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	182.96	216.58	280.32	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	183.31	216.58	279.70	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	183.66	216.58	279.07	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	184.01	216.58	278.45	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	184.36	216.58	277.82	1720.00	1072.50	110149.42	1.0000	2.78		
HS20 OPER	COL K6	3.81	247.26	184.71	216.58	277.20	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	185.06	216.58	276.58	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	185.41	216.58	275.95	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	185.76	216.58	275.33	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	186.10	216.58	274.70	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	186.45	216.58	274.08	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	186.80	216.58	273.45	1720.00	1072.50	110149.42	1.0000	2.80		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL K6	3.81	247.26	187.15	216.58	272.83	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	187.50	216.58	272.21	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	187.85	216.58	271.58	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	188.19	216.58	270.96	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	188.83	216.58	270.33	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	189.29	216.58	269.71	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	190.19	216.58	269.08	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	191.11	216.58	268.46	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	192.01	216.58	267.83	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	192.92	216.58	267.21	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	193.82	216.58	266.59	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	194.72	216.58	265.96	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	195.17	216.58	265.34	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	196.07	216.58	264.71	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	196.97	216.58	264.09	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	197.87	216.58	263.46	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	198.31	216.58	262.84	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	198.59	216.58	262.22	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	193.04	216.58	261.59	1720.00	1072.50	110149.42	1.0000	2.83		
HS20 OPER	COL K6	3.81	247.26	198.88	216.58	260.97	1720.00	1072.50	110149.42	1.0000	2.79		
HS20 OPER	COL K6	3.81	247.26	199.16	216.58	260.34	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	199.44	216.58	259.72	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	194.08	216.58	259.09	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K6	3.81	247.26	199.72	216.58	258.47	1720.00	1072.50	110149.42	1.0000	2.80		
HS20 OPER	COL K6	3.81	247.26	200.00	216.58	257.85	1720.00	1072.50	110149.42	1.0000	2.81		
HS20 OPER	COL K6	3.81	247.26	200.28	216.58	257.22	1720.00	1072.50	110149.42	1.0000	2.81		
HS20 OPER	COL K6	3.81	247.26	195.44	216.58	256.60	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K6	3.81	247.26	200.56	216.58	255.97	1720.00	1072.50	110149.42	1.0000	2.81		
HS20 OPER	COL K6	3.81	247.26	200.84	216.58	255.35	1720.00	1072.50	110149.42	1.0000	2.82		
HS20 OPER	COL K6	3.81	247.26	201.13	216.58	254.72	1720.00	1072.50	110149.42	1.0000	2.82		
HS20 OPER	COL K6	3.81	247.26	201.41	216.58	253.48	1720.00	1072.50	110149.42	1.0000	2.82		
HS20 OPER	COL K6	3.81	247.26	201.68	216.58	252.85	1720.00	1072.50	110149.42	1.0000	2.83		
HS20 OPER	COL K6	3.81	247.26	201.96	216.58	252.23	1720.00	1072.50	110149.42	1.0000	2.83		
HS20 OPER	COL K6	3.81	247.26	197.84	216.58	251.60	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K6	3.81	247.26	202.24	216.58	250.98	1720.00	1072.50	110149.42	1.0000	2.83		
HS20 OPER	COL K6	3.81	247.26	202.52	216.58	250.35	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K6	3.81	247.26	198.85	216.58	249.73	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K6	3.81	247.26	202.79	216.58	249.11	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K6	3.81	247.26	203.07	216.58	248.48	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K6	3.81	247.26	203.35	216.58	247.86	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K6	3.81	247.26	199.86	216.58	247.23	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K6	3.81	247.26	203.62	216.58	246.61	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K6	3.81	247.26	203.90	216.58	245.98	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K6	3.81	247.26	204.17	216.58	245.36	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K6	3.81	247.26	204.45	216.58	244.11	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K6	3.81	247.26	204.72	216.58	243.49	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K6	3.81	247.26	204.99	216.58	242.86	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K6	3.81	247.26	202.21	216.58	242.24	1720.00	1072.50	110149.42	1.0000	2.89		
HS20 OPER	COL K6	3.81	247.26	205.27	216.58	241.61	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K6	3.81	247.26	205.53	216.58	240.99	1720.00	1072.50	110149.42	1.0000	2.88		
HS20 OPER	COL K6	3.81	247.26	205.81	216.58	239.74	1720.00	1072.50	110149.42	1.0000	2.88		
HS20 OPER	COL K6	3.81	247.26	206.08	216.58	239.12	1720.00	1072.50	110149.42	1.0000	2.88		
HS20 OPER	COL K6	3.81	247.26	206.35	216.58	238.49	1720.00	1072.50	110149.42	1.0000	2.89		
HS20 OPER	COL K6	3.81	247.26	204.19	216.58	237.87	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K6	3.81	247.26	206.61	216.58	237.24	1720.00	1072.50	110149.42	1.0000	2.89		
HS20 OPER	COL K6	3.81	247.26	206.88	216.58	236.62	1720.00	1072.50	110149.42	1.0000	2.89		
HS20 OPER	COL K6	3.81	247.26	204.85	216.58	235.99	1720.00	1072.50	110149.42	1.0000	2.91		
HS20 OPER	COL K6	3.81	247.26	207.15	216.58	235.37	1720.00	1072.50	110149.42	1.0000	2.90		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL K6	3.81	247.26	207.41	216.58	234.75	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K6	3.81	247.26	207.68	216.58	234.12	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K6	3.81	247.26	206.15	216.58	233.50	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K6	3.81	247.26	207.94	216.58	232.87	1720.00	1072.50	110149.42	1.0000	2.91		
HS20 OPER	COL K6	3.81	247.26	208.21	216.58	232.25	1720.00	1072.50	110149.42	1.0000	2.91		
HS20 OPER	COL K6	3.81	247.26	206.80	216.58	231.62	1720.00	1072.50	110149.42	1.0000	2.93		
HS20 OPER	COL K6	3.81	247.26	208.47	216.58	231.00	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K6	3.81	247.26	208.74	216.58	230.38	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K6	3.81	247.26	209.00	216.58	229.75	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K6	3.81	247.26	209.26	216.58	228.50	1720.00	1072.50	110149.42	1.0000	2.93		
HS20 OPER	COL K6	3.81	247.26	209.52	216.58	227.88	1720.00	1072.50	110149.42	1.0000	2.93		
HS20 OPER	COL K6	3.81	247.26	208.72	216.58	227.25	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K6	3.81	247.26	209.78	216.58	226.63	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K6	3.81	247.26	210.03	216.58	226.01	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K6	3.81	247.26	210.29	216.58	225.38	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K6	3.81	247.26	209.68	216.58	224.76	1720.00	1072.50	110149.42	1.0000	2.95		
HS20 OPER	COL K6	3.81	247.26	210.55	216.58	224.13	1720.00	1072.50	110149.42	1.0000	2.95		
HS20 OPER	COL K6	3.81	247.26	210.80	216.58	223.51	1720.00	1072.50	110149.42	1.0000	2.95		
HS20 OPER	COL K6	3.81	247.26	210.62	216.58	222.88	1720.00	1072.50	110149.42	1.0000	2.96		
HS20 OPER	COL K6	3.81	247.26	211.06	216.58	222.26	1720.00	1072.50	110149.42	1.0000	2.96		
HS20 OPER	COL K6	3.81	247.26	211.31	216.58	221.63	1720.00	1072.50	110149.42	1.0000	2.96		
HS20 OPER	COL K6	3.81	247.26	211.56	216.58	221.01	1720.00	1072.50	110149.42	1.0000	2.96		
HS20 OPER	COL K6	3.81	247.26	211.56	216.58	220.39	1720.00	1072.50	110149.42	1.0000	2.97		
HS20 OPER	COL K6	3.81	247.26	211.86	216.58	219.76	1720.00	1072.50	110149.42	1.0000	2.97		
HS20 OPER	COL K6	3.81	247.26	212.18	216.58	219.14	1720.00	1072.50	110149.42	1.0000	2.97		
HS20 OPER	COL K6	3.81	247.26	212.48	216.58	218.51	1720.00	1072.50	110149.42	1.0000	2.97		
HS20 OPER	COL K6	3.81	247.26	212.32	216.58	217.89	1720.00	1072.50	110149.42	1.0000	2.98		
HS20 OPER	COL K6	3.81	247.26	212.79	216.58	217.26	1720.00	1072.50	110149.42	1.0000	2.98		
HS20 OPER	COL K6	3.81	247.26	213.10	216.58	216.64	1720.00	1072.50	110149.42	1.0000	2.98		
HS20 OPER	COL K6	3.81	247.26	213.41	216.58	216.02	1720.00	1072.50	110149.42	1.0000	2.99		
HS20 OPER	COL K6	3.81	247.26	213.71	216.58	215.39	1720.00	1072.50	110149.42	1.0000	2.99		
HS20 OPER	COL K6	3.81	247.26	213.31	216.58	214.77	1720.00	1072.50	110149.42	1.0000	2.99		
HS20 OPER	COL K6	3.81	247.26	214.01	216.58	214.14	1720.00	1072.50	110149.42	1.0000	2.99		
HS20 OPER	COL K6	3.81	247.26	214.32	216.58	213.52	1720.00	1072.50	110149.42	1.0000	3.00		
HS20 OPER	COL K6	3.81	247.26	214.62	216.58	212.89	1720.00	1072.50	110149.42	1.0000	3.00		
HS20 OPER	COL K6	3.81	247.26	214.92	216.58	212.27	1720.00	1072.50	110149.42	1.0000	3.00		
HS20 OPER	COL K6	3.81	247.26	215.22	216.58	211.65	1720.00	1072.50	110149.42	1.0000	3.00		
HS20 OPER	COL K6	3.81	247.26	214.28	216.58	211.02	1720.00	1072.50	110149.42	1.0000	3.01		
HS20 OPER	COL K6	3.81	247.26	215.52	216.58	210.40	1720.00	1072.50	110149.42	1.0000	3.01		
HS20 OPER	COL K6	3.81	247.26	215.81	216.58	209.77	1720.00	1072.50	110149.42	1.0000	3.01		
HS20 OPER	COL K6	3.81	247.26	216.11	216.58	209.15	1720.00	1072.50	110149.42	1.0000	3.01		
HS20 OPER	COL K6	3.81	247.26	216.40	216.58	208.52	1720.00	1072.50	110149.42	1.0000	3.02		
HS20 OPER	COL K6	3.81	247.26	216.70	216.58	207.90	1720.00	1072.50	110149.42	1.0000	3.02		
HS20 OPER	COL K6	3.81	247.26	216.99	216.58	206.65	1720.00	1072.50	110149.42	1.0000	3.02		
HS20 OPER	COL K6	3.81	247.26	217.28	216.58	206.03	1720.00	1072.50	110149.42	1.0000	3.03		
HS20 OPER	COL K6	3.81	247.26	217.58	216.58	205.40	1720.00	1072.50	110149.42	1.0000	3.03		
HS20 OPER	COL K6	3.81	247.26	217.86	216.58	204.78	1720.00	1072.50	110149.42	1.0000	3.03		
HS20 OPER	COL K6	3.81	247.26	218.15	216.58	204.15	1720.00	1072.50	110149.42	1.0000	3.03		
HS20 OPER	COL K6	3.81	247.26	216.40	216.58	203.53	1720.00	1072.50	110149.42	1.0000	3.05		
HS20 OPER	COL K6	3.81	247.26	218.44	216.58	202.91	1720.00	1072.50	110149.42	1.0000	3.04		
HS20 OPER	COL K6	3.81	247.26	218.73	216.58	202.28	1720.00	1072.50	110149.42	1.0000	3.04		
HS20 OPER	COL K6	3.81	247.26	219.01	216.58	201.66	1720.00	1072.50	110149.42	1.0000	3.04		
HS20 OPER	COL K6	3.81	247.26	219.29	216.58	201.03	1720.00	1072.50	110149.42	1.0000	3.05		
HS20 OPER	COL K6	3.81	247.26	219.57	216.58	200.41	1720.00	1072.50	110149.42	1.0000	3.05		
HS20 OPER	COL K6	3.81	247.26	217.31	216.58	199.78	1720.00	1072.50	110149.42	1.0000	3.07		
HS20 OPER	COL K6	3.81	247.26	219.86	216.58	199.16	1720.00	1072.50	110149.42	1.0000	3.06		
HS20 OPER	COL K6	3.81	247.26	220.14	216.58	198.53	1720.00	1072.50	110149.42	1.0000	3.06		
HS20 OPER	COL K6	3.81	247.26	220.42	216.58	197.91	1720.00	1072.50	110149.42	1.0000	3.06		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL K6	3.81	247.26	220.69	216.58	197.29	1720.00	1072.50	110149.42	1.0000	3.06		
HS20 OPER	COL K6	3.81	247.26	220.97	216.58	196.66	1720.00	1072.50	110149.42	1.0000	3.07		
HS20 OPER	COL K6	3.81	247.26	221.25	216.58	195.41	1720.00	1072.50	110149.42	1.0000	3.07		
HS20 OPER	COL K6	3.81	247.26	221.52	216.58	194.79	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K6	3.81	247.26	221.79	216.58	194.16	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K6	3.81	247.26	222.07	216.58	193.54	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K6	3.81	247.26	222.33	216.58	192.92	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K6	3.81	247.26	222.60	216.58	192.29	1720.00	1072.50	110149.42	1.0000	3.09		
HS20 OPER	COL K6	3.81	247.26	222.87	216.58	191.04	1720.00	1072.50	110149.42	1.0000	3.09		
HS20 OPER	COL K6	3.81	247.26	223.13	216.58	190.42	1720.00	1072.50	110149.42	1.0000	3.09		
HS20 OPER	COL K6	3.81	247.26	223.40	216.58	189.79	1720.00	1072.50	110149.42	1.0000	3.10		
HS20 OPER	COL K6	3.81	247.26	223.66	216.58	189.17	1720.00	1072.50	110149.42	1.0000	3.10		
HS20 OPER	COL K6	3.81	247.26	223.93	216.58	188.55	1720.00	1072.50	110149.42	1.0000	3.10		
HS20 OPER	COL K6	3.81	247.26	220.34	216.58	187.92	1720.00	1072.50	110149.42	1.0000	3.14		
HS20 OPER	COL K6	3.81	247.26	224.19	216.58	187.30	1720.00	1072.50	110149.42	1.0000	3.11		
HS20 OPER	COL K6	3.81	247.26	224.44	216.58	186.67	1720.00	1072.50	110149.42	1.0000	3.11		
HS20 OPER	COL K6	3.81	247.26	224.70	216.58	186.05	1720.00	1072.50	110149.42	1.0000	3.12		
HS20 OPER	COL K6	3.81	247.26	224.96	216.58	185.42	1720.00	1072.50	110149.42	1.0000	3.12		
HS20 OPER	COL K6	3.81	247.26	225.21	216.58	184.80	1720.00	1072.50	110149.42	1.0000	3.12		
HS20 OPER	COL K6	3.81	247.26	225.47	216.58	184.18	1720.00	1072.50	110149.42	1.0000	3.12		
HS20 OPER	COL K6	3.81	247.26	225.72	216.58	183.55	1720.00	1072.50	110149.42	1.0000	3.13		
HS20 OPER	COL K6	3.81	247.26	221.55	216.58	182.93	1720.00	1072.50	110149.42	1.0000	3.16		
HS20 OPER	COL K6	3.81	247.26	225.80	216.58	182.30	1720.00	1072.50	110149.42	1.0000	3.13		
HS20 OPER	COL K6	3.81	247.26	225.89	216.58	181.05	1720.00	1072.50	110149.42	1.0000	3.14		
HS20 OPER	COL K6	3.81	247.26	222.13	216.58	180.43	1720.00	1072.50	110149.42	1.0000	3.18		
HS20 OPER	COL K6	3.81	247.26	225.97	216.58	179.81	1720.00	1072.50	110149.42	1.0000	3.15		
HS20 OPER	COL K6	3.81	247.26	226.05	216.58	178.56	1720.00	1072.50	110149.42	1.0000	3.16		
HS20 OPER	COL K6	3.81	247.26	222.70	216.58	177.93	1720.00	1072.50	110149.42	1.0000	3.19		
HS20 OPER	COL K6	3.81	247.26	226.13	216.58	177.31	1720.00	1072.50	110149.42	1.0000	3.17		
HS20 OPER	COL K6	3.81	247.26	226.20	216.58	176.06	1720.00	1072.50	110149.42	1.0000	3.18		
HS20 OPER	COL K6	3.81	247.26	223.26	216.58	175.43	1720.00	1072.50	110149.42	1.0000	3.21		
HS20 OPER	COL K6	3.81	247.26	226.29	216.58	174.81	1720.00	1072.50	110149.42	1.0000	3.19		
HS20 OPER	COL K6	3.81	247.26	226.36	216.58	173.56	1720.00	1072.50	110149.42	1.0000	3.20		
HS20 OPER	COL K6	3.81	247.26	226.44	216.58	172.94	1720.00	1072.50	110149.42	1.0000	3.20		
HS20 OPER	COL K6	3.81	247.26	223.99	216.58	172.31	1720.00	1072.50	110149.42	1.0000	3.23		
HS20 OPER	COL K6	3.81	247.26	226.50	216.58	171.69	1720.00	1072.50	110149.42	1.0000	3.21		
HS20 OPER	COL K6	3.81	247.26	224.16	216.58	171.06	1720.00	1072.50	110149.42	1.0000	3.24		
HS20 OPER	COL K6	3.81	247.26	226.58	216.58	170.44	1720.00	1072.50	110149.42	1.0000	3.22		
HS20 OPER	COL K6	3.81	247.26	224.51	216.58	169.82	1720.00	1072.50	110149.42	1.0000	3.24		
HS20 OPER	COL K6	3.81	247.26	226.65	216.58	169.19	1720.00	1072.50	110149.42	1.0000	3.23		
HS20 OPER	COL K6	3.81	247.26	224.69	216.58	168.57	1720.00	1072.50	110149.42	1.0000	3.25		
HS20 OPER	COL K6	3.81	247.26	226.71	216.58	167.94	1720.00	1072.50	110149.42	1.0000	3.24		
HS20 OPER	COL K6	3.81	247.26	225.02	216.58	167.32	1720.00	1072.50	110149.42	1.0000	3.26		
HS20 OPER	COL K6	3.81	247.26	226.78	216.58	166.69	1720.00	1072.50	110149.42	1.0000	3.25		
HS20 OPER	COL K6	3.81	247.26	226.84	216.58	165.45	1720.00	1072.50	110149.42	1.0000	3.26		
HS20 OPER	COL K6	3.81	247.26	226.90	216.58	164.82	1720.00	1072.50	110149.42	1.0000	3.26		
HS20 OPER	COL K6	3.81	247.26	225.69	216.58	164.20	1720.00	1072.50	110149.42	1.0000	3.28		
HS20 OPER	COL K6	3.81	247.26	226.97	216.58	163.57	1720.00	1072.50	110149.42	1.0000	3.27		
HS20 OPER	COL K6	3.81	247.26	225.84	216.58	162.95	1720.00	1072.50	110149.42	1.0000	3.29		
HS20 OPER	COL K6	3.81	247.26	227.02	216.58	162.32	1720.00	1072.50	110149.42	1.0000	3.28		
HS20 OPER	COL K6	3.81	247.26	226.16	216.58	161.70	1720.00	1072.50	110149.42	1.0000	3.29		
HS20 OPER	COL K6	3.81	247.26	227.08	216.58	161.08	1720.00	1072.50	110149.42	1.0000	3.29		
HS20 OPER	COL K6	3.81	247.26	227.14	216.58	159.83	1720.00	1072.50	110149.42	1.0000	3.30		
HS20 OPER	COL K6	3.81	247.26	226.62	216.58	159.20	1720.00	1072.50	110149.42	1.0000	3.31		
HS20 OPER	COL K6	3.81	247.26	227.19	216.58	158.58	1720.00	1072.50	110149.42	1.0000	3.31		
HS20 OPER	COL K6	3.81	247.26	226.92	216.58	157.95	1720.00	1072.50	110149.42	1.0000	3.32		
HS20 OPER	COL K6	3.81	247.26	227.24	216.58	157.33	1720.00	1072.50	110149.42	1.0000	3.32		
HS20 OPER	COL K6	3.81	247.26	227.29	216.58	156.71	1720.00	1072.50	110149.42	1.0000	3.33		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _c			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
HS20 OPER	COL K6	3.81	247.26	227.22	216.58	156.08	1720.00	1072.50	110149.42	1.0000	3.33				
HS20 OPER	COL K6	3.81	247.26	227.36	216.58	155.46	1720.00	1072.50	110149.42	1.0000	3.34				
HS20 OPER	COL K6	3.81	247.26	227.50	216.58	154.83	1720.00	1072.50	110149.42	1.0000	3.34				
HS20 OPER	COL K6	3.81	247.26	227.38	216.58	154.21	1720.00	1072.50	110149.42	1.0000	3.35				
HS20 OPER	COL K6	3.81	247.26	227.64	216.58	153.58	1720.00	1072.50	110149.42	1.0000	3.35				
HS20 OPER	COL K6	3.81	247.26	227.78	216.58	152.96	1720.00	1072.50	110149.42	1.0000	3.35				
HS20 OPER	COL K6	3.81	247.26	227.92	216.58	152.33	1720.00	1072.50	110149.42	1.0000	3.36				
HS20 OPER	COL K6	3.81	247.26	228.05	216.58	151.71	1720.00	1072.50	110149.42	1.0000	3.36				
HS20 OPER	COL K6	3.81	247.26	228.18	216.58	151.09	1720.00	1072.50	110149.42	1.0000	3.37				
HS20 OPER	COL K6	3.81	247.26	228.31	216.58	149.84	1720.00	1072.50	110149.42	1.0000	3.38				
HS20 OPER	COL K6	3.81	247.26	228.44	216.58	149.21	1720.00	1072.50	110149.42	1.0000	3.38				
HS20 OPER	COL K6	3.81	247.26	228.56	216.58	148.59	1720.00	1072.50	110149.42	1.0000	3.39				
HS20 OPER	COL K6	3.81	247.26	228.70	216.58	147.96	1720.00	1072.50	110149.42	1.0000	3.39				
HS20 OPER	COL K6	3.81	247.26	228.81	216.58	147.34	1720.00	1072.50	110149.42	1.0000	3.39				
HS20 OPER	COL K6	3.81	247.26	228.94	216.58	146.09	1720.00	1072.50	110149.42	1.0000	3.40				
HS20 OPER	COL K6	3.81	247.26	229.05	216.58	145.47	1720.00	1072.50	110149.42	1.0000	3.41				
HS20 OPER	COL K6	3.81	247.26	229.01	216.58	144.22	1720.00	1072.50	110149.42	1.0000	3.42				
HS20 OPER	COL K6	3.81	247.26	228.96	216.58	142.97	1720.00	1072.50	110149.42	1.0000	3.43				
2F1	COL K6	3.81	247.26	67.93	216.58	126.74	1720.00	1072.50	110149.42	1.0000	6.62				
2F1	COL K6	3.81	247.26	70.50	216.58	126.11	1720.00	1072.50	110149.42	1.0000	6.56				
2F1	COL K6	3.81	247.26	72.21	216.58	125.49	1720.00	1072.50	110149.42	1.0000	6.52				
2F1	COL K6	3.81	247.26	73.92	216.58	124.86	1720.00	1072.50	110149.42	1.0000	6.48				
2F1	COL K6	3.81	247.26	75.21	216.58	124.24	1720.00	1072.50	110149.42	1.0000	6.46				
2F1	COL K6	3.81	247.26	76.49	216.58	123.62	1720.00	1072.50	110149.42	1.0000	6.44				
2F1	COL K6	3.81	247.26	77.77	216.58	122.99	1720.00	1072.50	110149.42	1.0000	6.41				
2F1	COL K6	3.81	247.26	78.85	216.58	122.37	1720.00	1072.50	110149.42	1.0000	6.40				
2F1	COL K6	3.81	247.26	79.91	216.58	121.74	1720.00	1072.50	110149.42	1.0000	6.38				
2F1	COL K6	3.81	247.26	80.98	216.58	121.12	1720.00	1072.50	110149.42	1.0000	6.37				
2F1	COL K6	3.81	247.26	81.36	216.58	120.49	1720.00	1072.50	110149.42	1.0000	6.37				
2F1	COL K6	3.81	247.26	82.34	216.58	119.87	1720.00	1072.50	110149.42	1.0000	6.36				
2F1	COL K6	3.81	247.26	83.20	216.58	119.25	1720.00	1072.50	110149.42	1.0000	6.35				
2F1	COL K6	3.81	247.26	84.05	216.58	118.62	1720.00	1072.50	110149.42	1.0000	6.35				
2F1	COL K6	3.81	247.26	85.13	216.58	118.00	1720.00	1072.50	110149.42	1.0000	6.33				
2F1	COL K6	3.81	247.26	85.98	216.58	117.37	1720.00	1072.50	110149.42	1.0000	6.32				
2F1	COL K6	3.81	247.26	86.84	216.58	116.75	1720.00	1072.50	110149.42	1.0000	6.31				
2F1	COL K6	3.81	247.26	87.69	216.58	116.12	1720.00	1072.50	110149.42	1.0000	6.31				
2F1	COL K6	3.81	247.26	88.34	216.58	115.50	1720.00	1072.50	110149.42	1.0000	6.30				
2F1	COL K6	3.81	247.26	88.44	216.58	114.88	1720.00	1072.50	110149.42	1.0000	6.32				
2F1	COL K6	3.81	247.26	88.67	216.58	114.25	1720.00	1072.50	110149.42	1.0000	6.33				
2F1	COL K6	3.81	247.26	88.78	216.58	113.63	1720.00	1072.50	110149.42	1.0000	6.35				
2F1	COL K6	3.81	247.26	88.89	216.58	113.00	1720.00	1072.50	110149.42	1.0000	6.36				
2F1	COL K6	3.81	247.26	89.11	216.58	112.38	1720.00	1072.50	110149.42	1.0000	6.38				
2F1	COL K6	3.81	247.26	89.22	216.58	111.75	1720.00	1072.50	110149.42	1.0000	6.39				
2F1	COL K6	3.81	247.26	89.45	216.58	111.13	1720.00	1072.50	110149.42	1.0000	6.40				
2F1	COL K6	3.81	247.26	89.56	216.58	110.51	1720.00	1072.50	110149.42	1.0000	6.42				
2F1	COL K6	3.81	247.26	89.67	216.58	109.88	1720.00	1072.50	110149.42	1.0000	6.44				
2F1	COL K6	3.81	247.26	89.89	216.58	109.26	1720.00	1072.50	110149.42	1.0000	6.45				
2F1	COL K6	3.81	247.26	90.00	216.58	108.63	1720.00	1072.50	110149.42	1.0000	6.46				
2F1	COL K6	3.81	247.26	90.11	216.58	108.01	1720.00	1072.50	110149.42	1.0000	6.48				
2F1	COL K6	3.81	247.26	90.33	216.58	107.38	1720.00	1072.50	110149.42	1.0000	6.49				
2F1	COL K6	3.81	247.26	90.45	216.58	106.76	1720.00	1072.50	110149.42	1.0000	6.51				
2F1	COL K6	3.81	247.26	90.67	216.58	106.14	1720.00	1072.50	110149.42	1.0000	6.52				
2F1	COL K6	3.81	247.26	90.78	216.58	105.51	1720.00	1072.50	110149.42	1.0000	6.54				
2F1	COL K6	3.81	247.26	90.89	216.58	104.89	1720.00	1072.50	110149.42	1.0000	6.56				
2F1	COL K6	3.81	247.26	91.11	216.58	104.26	1720.00	1072.50	110149.42	1.0000	6.57				
2F1	COL K6	3.81	247.26	91.22	216.58	103.64	1720.00	1072.50	110149.42	1.0000	6.59				
2F1	COL K6	3.81	247.26	91.33	216.58	103.01	1720.00	1072.50	110149.42	1.0000	6.60				
2F1	COL K6	3.81	247.26	91.55	216.58	102.39	1720.00	1072.50	110149.42	1.0000	6.62				

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

Impact	DL Factor	LL Factor	LLDF	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
2F1	COL K6	3.81	247.26	91.66	216.58	101.76	1720.00	1072.50	110149.42	1.0000	6.63	
2F1	COL K6	3.81	247.26	91.77	216.58	101.14	1720.00	1072.50	110149.42	1.0000	6.65	
2F1	COL K6	3.81	247.26	91.99	216.58	100.52	1720.00	1072.50	110149.42	1.0000	6.66	
2F1	COL K6	3.81	247.26	92.29	216.58	99.89	1720.00	1072.50	110149.42	1.0000	6.68	
2F1	COL K6	3.81	247.26	92.59	216.58	99.27	1720.00	1072.50	110149.42	1.0000	6.69	
2F1	COL K6	3.81	247.26	92.91	216.58	98.64	1720.00	1072.50	110149.42	1.0000	6.70	
2F1	COL K6	3.81	247.26	93.22	216.58	98.02	1720.00	1072.50	110149.42	1.0000	6.71	
2F1	COL K6	3.81	247.26	93.52	216.58	97.39	1720.00	1072.50	110149.42	1.0000	6.72	
2F1	COL K6	3.81	247.26	93.84	216.58	96.77	1720.00	1072.50	110149.42	1.0000	6.73	
2F1	COL K6	3.81	247.26	94.14	216.58	96.15	1720.00	1072.50	110149.42	1.0000	6.74	
2F1	COL K6	3.81	247.26	94.45	216.58	95.52	1720.00	1072.50	110149.42	1.0000	6.75	
2F1	COL K6	3.81	247.26	94.75	216.58	94.90	1720.00	1072.50	110149.42	1.0000	6.76	
2F1	COL K6	3.81	247.26	95.05	216.58	94.27	1720.00	1072.50	110149.42	1.0000	6.77	
2F1	COL K6	3.81	247.26	95.36	216.58	93.65	1720.00	1072.50	110149.42	1.0000	6.78	
2F1	COL K6	3.81	247.26	95.66	216.58	93.02	1720.00	1072.50	110149.42	1.0000	6.79	
2F1	COL K6	3.81	247.26	95.96	216.58	92.40	1720.00	1072.50	110149.42	1.0000	6.80	
2F1	COL K6	3.81	247.26	96.26	216.58	91.78	1720.00	1072.50	110149.42	1.0000	6.81	
2F1	COL K6	3.81	247.26	96.56	216.58	91.15	1720.00	1072.50	110149.42	1.0000	6.83	
2F1	COL K6	3.81	247.26	96.85	216.58	90.53	1720.00	1072.50	110149.42	1.0000	6.84	
2F1	COL K6	3.81	247.26	97.00	216.58	89.90	1720.00	1072.50	110149.42	1.0000	6.85	
2F1	COL K6	3.81	247.26	97.04	216.58	89.28	1720.00	1072.50	110149.42	1.0000	6.87	
2F1	COL K6	3.81	247.26	97.13	216.58	88.65	1720.00	1072.50	110149.42	1.0000	6.89	
2F1	COL K6	3.81	247.26	97.18	216.58	88.03	1720.00	1072.50	110149.42	1.0000	6.91	
2F1	COL K6	3.81	247.26	97.22	216.58	87.41	1720.00	1072.50	110149.42	1.0000	6.94	
2F1	COL K6	3.81	247.26	97.26	216.58	86.78	1720.00	1072.50	110149.42	1.0000	6.96	
2F1	COL K6	3.81	247.26	97.31	216.58	86.16	1720.00	1072.50	110149.42	1.0000	6.98	
2F1	COL K6	3.81	247.26	97.35	216.58	85.53	1720.00	1072.50	110149.42	1.0000	7.00	
2F1	COL K6	3.81	247.26	97.39	216.58	84.91	1720.00	1072.50	110149.42	1.0000	7.02	
2F1	COL K6	3.81	247.26	97.43	216.58	84.28	1720.00	1072.50	110149.42	1.0000	7.04	
2F1	COL K6	3.81	247.26	97.48	216.58	83.66	1720.00	1072.50	110149.42	1.0000	7.07	
2F1	COL K6	3.81	247.26	97.51	216.58	83.04	1720.00	1072.50	110149.42	1.0000	7.09	
2F1	COL K6	3.81	247.26	97.56	216.58	82.41	1720.00	1072.50	110149.42	1.0000	7.11	
2F1	COL K6	3.81	247.26	97.59	216.58	81.79	1720.00	1072.50	110149.42	1.0000	7.13	
2F1	COL K6	3.81	247.26	97.63	216.58	81.16	1720.00	1072.50	110149.42	1.0000	7.16	
2F1	COL K6	3.81	247.26	97.68	216.58	80.54	1720.00	1072.50	110149.42	1.0000	7.18	
2F1	COL K6	3.81	247.26	97.71	216.58	79.91	1720.00	1072.50	110149.42	1.0000	7.20	
2F1	COL K6	3.81	247.26	97.75	216.58	79.29	1720.00	1072.50	110149.42	1.0000	7.23	
2F1	COL K6	3.81	247.26	97.79	216.58	78.66	1720.00	1072.50	110149.42	1.0000	7.25	
2F1	COL K6	3.81	247.26	97.83	216.58	78.04	1720.00	1072.50	110149.42	1.0000	7.27	
2F1	COL K6	3.81	247.26	97.90	216.58	77.42	1720.00	1072.50	110149.42	1.0000	7.30	
2F1	COL K6	3.81	247.26	97.94	216.58	76.79	1720.00	1072.50	110149.42	1.0000	7.32	
2F1	COL K6	3.81	247.26	97.97	216.58	76.17	1720.00	1072.50	110149.42	1.0000	7.34	
2F1	COL K6	3.81	247.26	98.01	216.58	75.54	1720.00	1072.50	110149.42	1.0000	7.37	
2F1	COL K6	3.81	247.26	98.04	216.58	74.92	1720.00	1072.50	110149.42	1.0000	7.39	
2F1	COL K6	3.81	247.26	98.08	216.58	74.29	1720.00	1072.50	110149.42	1.0000	7.42	
2F1	COL K6	3.81	247.26	98.11	216.58	73.67	1720.00	1072.50	110149.42	1.0000	7.44	
2F1	COL K6	3.81	247.26	98.14	216.58	73.05	1720.00	1072.50	110149.42	1.0000	7.47	
2F1	COL K6	3.81	247.26	98.17	216.58	72.42	1720.00	1072.50	110149.42	1.0000	7.49	
2F1	COL K6	3.81	247.26	98.28	216.58	71.80	1720.00	1072.50	110149.42	1.0000	7.52	
2F1	COL K6	3.81	247.26	98.20	216.58	71.80	1720.00	1072.50	110149.42	1.0000	7.52	
2F1	COL K6	3.81	247.26	98.37	216.58	71.17	1720.00	1072.50	110149.42	1.0000	7.54	
2F1	COL K6	3.81	247.26	98.45	216.58	70.55	1720.00	1072.50	110149.42	1.0000	7.56	
2F1	COL K6	3.81	247.26	98.56	216.58	69.92	1720.00	1072.50	110149.42	1.0000	7.58	
2F1	COL K6	3.81	247.26	98.59	216.58	69.30	1720.00	1072.50	110149.42	1.0000	7.61	
2F1	COL K6	3.81	247.26	98.61	216.58	68.68	1720.00	1072.50	110149.42	1.0000	7.64	
2F1	COL K6	3.81	247.26	98.64	216.58	68.05	1720.00	1072.50	110149.42	1.0000	7.66	
2F1	COL K6	3.81	247.26	98.67	216.58	67.43	1720.00	1072.50	110149.42	1.0000	7.69	
2F1	COL K6	3.81	247.26	98.69	216.58	66.80	1720.00	1072.50	110149.42	1.0000	7.72	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _c		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
2F1	COL K6	3.81	247.26	98.72	216.58	66.18	1720.00	1072.50	110149.42	1.0000	7.75		
2F1	COL K6	3.81	247.26	98.74	216.58	65.55	1720.00	1072.50	110149.42	1.0000	7.77		
2F1	COL K6	3.81	247.26	98.77	216.58	64.93	1720.00	1072.50	110149.42	1.0000	7.80		
2F1	COL K6	3.81	247.26	98.79	216.58	64.31	1720.00	1072.50	110149.42	1.0000	7.83		
2F1	COL K6	3.81	247.26	98.84	216.58	63.68	1720.00	1072.50	110149.42	1.0000	7.86		
2F1	COL K6	3.81	247.26	98.86	216.58	63.06	1720.00	1072.50	110149.42	1.0000	7.88		
2F1	COL K6	3.81	247.26	98.88	216.58	62.43	1720.00	1072.50	110149.42	1.0000	7.91		
2F1	COL K6	3.81	247.26	98.90	216.58	61.81	1720.00	1072.50	110149.42	1.0000	7.94		
2F1	COL K6	3.81	247.26	98.92	216.58	61.18	1720.00	1072.50	110149.42	1.0000	7.97		
2F1	COL K6	3.81	247.26	98.94	216.58	60.56	1720.00	1072.50	110149.42	1.0000	8.00		
2F1	COL K6	3.81	247.26	98.96	216.58	59.94	1720.00	1072.50	110149.42	1.0000	8.03		
2F1	COL K6	3.81	247.26	98.97	216.58	59.31	1720.00	1072.50	110149.42	1.0000	8.06		
2F1	COL K6	3.81	247.26	98.99	216.58	58.69	1720.00	1072.50	110149.42	1.0000	8.09		
2F1	COL K6	3.81	247.26	99.01	216.58	58.06	1720.00	1072.50	110149.42	1.0000	8.12		
2F1	COL K6	3.81	247.26	99.02	216.58	57.44	1720.00	1072.50	110149.42	1.0000	8.15		
2F1	COL K6	3.81	247.26	99.04	216.58	56.81	1720.00	1072.50	110149.42	1.0000	8.18		
2F1	COL K6	3.81	247.26	99.05	216.58	56.19	1720.00	1072.50	110149.42	1.0000	8.22		
2F1	COL K6	3.81	247.26	99.06	216.58	55.56	1720.00	1072.50	110149.42	1.0000	8.25		
2F1	COL K6	3.81	247.26	99.07	216.58	54.94	1720.00	1072.50	110149.42	1.0000	8.28		
2F1	COL K6	3.81	247.26	99.08	216.58	54.32	1720.00	1072.50	110149.42	1.0000	8.31		
2F1	COL K6	3.81	247.26	99.09	216.58	53.69	1720.00	1072.50	110149.42	1.0000	8.34		
2F1	COL K6	3.81	247.26	99.10	216.58	53.07	1720.00	1072.50	110149.42	1.0000	8.38		
2F1	COL K6	3.81	247.26	99.11	216.58	52.44	1720.00	1072.50	110149.42	1.0000	8.41		
2F1	COL K6	3.81	247.26	99.11	216.58	51.82	1720.00	1072.50	110149.42	1.0000	8.45		
2F1	COL K6	3.81	247.26	99.11	216.58	51.19	1720.00	1072.50	110149.42	1.0000	8.48		
2F1	COL K6	3.81	247.26	99.11	216.58	50.57	1720.00	1072.50	110149.42	1.0000	8.51		
2F1	COL K6	3.81	247.26	98.86	216.58	50.57	1720.00	1072.50	110149.42	1.0000	8.53		
2F1	COL K6	3.81	247.26	99.12	216.58	49.95	1720.00	1072.50	110149.42	1.0000	8.55		
2F1	COL K6	3.81	247.26	99.12	216.58	49.95	1720.00	1072.50	110149.42	1.0000	8.55		
2F1	COL K6	3.81	247.26	99.12	216.58	49.32	1720.00	1072.50	110149.42	1.0000	8.58		
2F1	COL K6	3.81	247.26	99.11	216.58	48.70	1720.00	1072.50	110149.42	1.0000	8.62		
3F1	COL K6	3.81	247.26	100.56	216.58	193.54	1720.00	1072.50	110149.42	1.0000	4.39		
3F1	COL K6	3.81	247.26	105.14	216.58	192.92	1720.00	1072.50	110149.42	1.0000	4.33		
3F1	COL K6	3.81	247.26	107.76	216.58	192.29	1720.00	1072.50	110149.42	1.0000	4.30		
3F1	COL K6	3.81	247.26	110.06	216.58	191.67	1720.00	1072.50	110149.42	1.0000	4.27		
3F1	COL K6	3.81	247.26	111.70	216.58	191.04	1720.00	1072.50	110149.42	1.0000	4.26		
3F1	COL K6	3.81	247.26	113.34	216.58	190.42	1720.00	1072.50	110149.42	1.0000	4.24		
3F1	COL K6	3.81	247.26	114.98	216.58	189.79	1720.00	1072.50	110149.42	1.0000	4.23		
3F1	COL K6	3.81	247.26	116.29	216.58	189.17	1720.00	1072.50	110149.42	1.0000	4.22		
3F1	COL K6	3.81	247.26	117.27	216.58	188.55	1720.00	1072.50	110149.42	1.0000	4.21		
3F1	COL K6	3.81	247.26	117.81	216.58	187.92	1720.00	1072.50	110149.42	1.0000	4.21		
3F1	COL K6	3.81	247.26	118.34	216.58	187.30	1720.00	1072.50	110149.42	1.0000	4.21		
3F1	COL K6	3.81	247.26	119.38	216.58	186.67	1720.00	1072.50	110149.42	1.0000	4.21		
3F1	COL K6	3.81	247.26	120.36	216.58	186.05	1720.00	1072.50	110149.42	1.0000	4.20		
3F1	COL K6	3.81	247.26	121.67	216.58	185.42	1720.00	1072.50	110149.42	1.0000	4.19		
3F1	COL K6	3.81	247.26	122.65	216.58	184.80	1720.00	1072.50	110149.42	1.0000	4.19		
3F1	COL K6	3.81	247.26	123.97	216.58	184.18	1720.00	1072.50	110149.42	1.0000	4.18		
3F1	COL K6	3.81	247.26	124.95	216.58	183.55	1720.00	1072.50	110149.42	1.0000	4.17		
3F1	COL K6	3.81	247.26	125.94	216.58	182.93	1720.00	1072.50	110149.42	1.0000	4.17		
3F1	COL K6	3.81	247.26	126.93	216.58	182.30	1720.00	1072.50	110149.42	1.0000	4.16		
3F1	COL K6	3.81	247.26	127.91	216.58	181.68	1720.00	1072.50	110149.42	1.0000	4.15		
3F1	COL K6	3.81	247.26	128.89	216.58	181.05	1720.00	1072.50	110149.42	1.0000	4.15		
3F1	COL K6	3.81	247.26	129.55	216.58	180.43	1720.00	1072.50	110149.42	1.0000	4.15		
3F1	COL K6	3.81	247.26	129.79	216.58	179.81	1720.00	1072.50	110149.42	1.0000	4.15		
3F1	COL K6	3.81	247.26	130.27	216.58	179.18	1720.00	1072.50	110149.42	1.0000	4.16		
3F1	COL K6	3.81	247.26	130.51	216.58	178.56	1720.00	1072.50	110149.42	1.0000	4.16		
3F1	COL K6	3.81	247.26	130.75	216.58	177.93	1720.00	1072.50	110149.42	1.0000	4.16		
3F1	COL K6	3.81	247.26	131.23	216.58	177.31	1720.00	1072.50	110149.42	1.0000	4.17		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
3F1	COL K6	3.81	247.26	131.48	216.58	176.68	1720.00	1072.50	110149.42	1.0000	4.17		
3F1	COL K6	3.81	247.26	131.71	216.58	176.06	1720.00	1072.50	110149.42	1.0000	4.18		
3F1	COL K6	3.81	247.26	132.20	216.58	175.43	1720.00	1072.50	110149.42	1.0000	4.18		
3F1	COL K6	3.81	247.26	132.44	216.58	174.81	1720.00	1072.50	110149.42	1.0000	4.18		
3F1	COL K6	3.81	247.26	132.68	216.58	174.19	1720.00	1072.50	110149.42	1.0000	4.19		
3F1	COL K6	3.81	247.26	133.16	216.58	173.56	1720.00	1072.50	110149.42	1.0000	4.19		
3F1	COL K6	3.81	247.26	133.40	216.58	172.94	1720.00	1072.50	110149.42	1.0000	4.19		
3F1	COL K6	3.81	247.26	133.64	216.58	172.31	1720.00	1072.50	110149.42	1.0000	4.20		
3F1	COL K6	3.81	247.26	134.12	216.58	171.69	1720.00	1072.50	110149.42	1.0000	4.20		
3F1	COL K6	3.81	247.26	134.36	216.58	171.06	1720.00	1072.50	110149.42	1.0000	4.21		
3F1	COL K6	3.81	247.26	134.60	216.58	170.44	1720.00	1072.50	110149.42	1.0000	4.21		
3F1	COL K6	3.81	247.26	134.84	216.58	169.82	1720.00	1072.50	110149.42	1.0000	4.22		
3F1	COL K6	3.81	247.26	135.32	216.58	169.19	1720.00	1072.50	110149.42	1.0000	4.22		
3F1	COL K6	3.81	247.26	135.57	216.58	168.57	1720.00	1072.50	110149.42	1.0000	4.22		
3F1	COL K6	3.81	247.26	135.80	216.58	167.94	1720.00	1072.50	110149.42	1.0000	4.23		
3F1	COL K6	3.81	247.26	136.28	216.58	167.32	1720.00	1072.50	110149.42	1.0000	4.23		
3F1	COL K6	3.81	247.26	136.52	216.58	166.69	1720.00	1072.50	110149.42	1.0000	4.24		
3F1	COL K6	3.81	247.26	136.76	216.58	166.07	1720.00	1072.50	110149.42	1.0000	4.24		
3F1	COL K6	3.81	247.26	137.00	216.58	165.45	1720.00	1072.50	110149.42	1.0000	4.25		
3F1	COL K6	3.81	247.26	137.48	216.58	164.82	1720.00	1072.50	110149.42	1.0000	4.25		
3F1	COL K6	3.81	247.26	137.72	216.58	164.20	1720.00	1072.50	110149.42	1.0000	4.25		
3F1	COL K6	3.81	247.26	137.96	216.58	163.57	1720.00	1072.50	110149.42	1.0000	4.26		
3F1	COL K6	3.81	247.26	138.44	216.58	162.95	1720.00	1072.50	110149.42	1.0000	4.26		
3F1	COL K6	3.81	247.26	138.67	216.58	162.32	1720.00	1072.50	110149.42	1.0000	4.27		
3F1	COL K6	3.81	247.26	138.91	216.58	161.70	1720.00	1072.50	110149.42	1.0000	4.27		
3F1	COL K6	3.81	247.26	139.15	216.58	161.08	1720.00	1072.50	110149.42	1.0000	4.28		
3F1	COL K6	3.81	247.26	139.30	216.58	160.45	1720.00	1072.50	110149.42	1.0000	4.28		
3F1	COL K6	3.81	247.26	139.45	216.58	159.83	1720.00	1072.50	110149.42	1.0000	4.29		
3F1	COL K6	3.81	247.26	139.60	216.58	159.20	1720.00	1072.50	110149.42	1.0000	4.30		
3F1	COL K6	3.81	247.26	137.56	216.58	158.58	1720.00	1072.50	110149.42	1.0000	4.33		
3F1	COL K6	3.81	247.26	139.75	216.58	157.95	1720.00	1072.50	110149.42	1.0000	4.31		
3F1	COL K6	3.81	247.26	139.90	216.58	157.33	1720.00	1072.50	110149.42	1.0000	4.32		
3F1	COL K6	3.81	247.26	140.04	216.58	156.71	1720.00	1072.50	110149.42	1.0000	4.32		
3F1	COL K6	3.81	247.26	140.19	216.58	156.08	1720.00	1072.50	110149.42	1.0000	4.33		
3F1	COL K6	3.81	247.26	140.34	216.58	155.46	1720.00	1072.50	110149.42	1.0000	4.34		
3F1	COL K6	3.81	247.26	139.85	216.58	154.83	1720.00	1072.50	110149.42	1.0000	4.35		
3F1	COL K6	3.81	247.26	140.49	216.58	154.21	1720.00	1072.50	110149.42	1.0000	4.35		
3F1	COL K6	3.81	247.26	140.64	216.58	153.58	1720.00	1072.50	110149.42	1.0000	4.36		
3F1	COL K6	3.81	247.26	141.12	216.58	152.96	1720.00	1072.50	110149.42	1.0000	4.36		
3F1	COL K6	3.81	247.26	141.37	216.58	152.33	1720.00	1072.50	110149.42	1.0000	4.37		
3F1	COL K6	3.81	247.26	141.87	216.58	151.71	1720.00	1072.50	110149.42	1.0000	4.37		
3F1	COL K6	3.81	247.26	142.12	216.58	151.09	1720.00	1072.50	110149.42	1.0000	4.37		
3F1	COL K6	3.81	247.26	142.62	216.58	150.46	1720.00	1072.50	110149.42	1.0000	4.38		
3F1	COL K6	3.81	247.26	142.87	216.58	149.84	1720.00	1072.50	110149.42	1.0000	4.38		
3F1	COL K6	3.81	247.26	143.37	216.58	149.21	1720.00	1072.50	110149.42	1.0000	4.38		
3F1	COL K6	3.81	247.26	141.67	216.58	148.59	1720.00	1072.50	110149.42	1.0000	4.42		
3F1	COL K6	3.81	247.26	143.53	216.58	147.96	1720.00	1072.50	110149.42	1.0000	4.40		
3F1	COL K6	3.81	247.26	143.69	216.58	147.34	1720.00	1072.50	110149.42	1.0000	4.41		
3F1	COL K6	3.81	247.26	143.85	216.58	146.72	1720.00	1072.50	110149.42	1.0000	4.41		
3F1	COL K6	3.81	247.26	144.01	216.58	146.09	1720.00	1072.50	110149.42	1.0000	4.42		
3F1	COL K6	3.81	247.26	144.17	216.58	145.47	1720.00	1072.50	110149.42	1.0000	4.43		
3F1	COL K6	3.81	247.26	144.33	216.58	144.84	1720.00	1072.50	110149.42	1.0000	4.43		
3F1	COL K6	3.81	247.26	144.49	216.58	144.22	1720.00	1072.50	110149.42	1.0000	4.44		
3F1	COL K6	3.81	247.26	144.64	216.58	143.59	1720.00	1072.50	110149.42	1.0000	4.45		
3F1	COL K6	3.81	247.26	144.81	216.58	142.97	1720.00	1072.50	110149.42	1.0000	4.45		
3F1	COL K6	3.81	247.26	144.96	216.58	142.35	1720.00	1072.50	110149.42	1.0000	4.46		
3F1	COL K6	3.81	247.26	145.12	216.58	141.72	1720.00	1072.50	110149.42	1.0000	4.47		
3F1	COL K6	3.81	247.26	145.27	216.58	141.10	1720.00	1072.50	110149.42	1.0000	4.47		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
3F1	COL K6	3.81	247.26	145.43	216.58	140.47	1720.00	1072.50	110149.42	1.0000	4.48	
3F1	COL K6	3.81	247.26	145.59	216.58	139.85	1720.00	1072.50	110149.42	1.0000	4.49	
3F1	COL K6	3.81	247.26	145.74	216.58	139.22	1720.00	1072.50	110149.42	1.0000	4.50	
3F1	COL K6	3.81	247.26	143.53	216.58	138.60	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K6	3.81	247.26	145.90	216.58	137.98	1720.00	1072.50	110149.42	1.0000	4.51	
3F1	COL K6	3.81	247.26	146.05	216.58	137.35	1720.00	1072.50	110149.42	1.0000	4.52	
3F1	COL K6	3.81	247.26	146.20	216.58	136.73	1720.00	1072.50	110149.42	1.0000	4.53	
3F1	COL K6	3.81	247.26	146.35	216.58	136.10	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K6	3.81	247.26	146.51	216.58	135.48	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K6	3.81	247.26	146.66	216.58	134.85	1720.00	1072.50	110149.42	1.0000	4.55	
3F1	COL K6	3.81	247.26	146.81	216.58	134.23	1720.00	1072.50	110149.42	1.0000	4.56	
3F1	COL K6	3.81	247.26	146.97	216.58	133.61	1720.00	1072.50	110149.42	1.0000	4.56	
3F1	COL K6	3.81	247.26	147.12	216.58	132.98	1720.00	1072.50	110149.42	1.0000	4.57	
3F1	COL K6	3.81	247.26	147.27	216.58	132.36	1720.00	1072.50	110149.42	1.0000	4.58	
3F1	COL K6	3.81	247.26	147.41	216.58	131.73	1720.00	1072.50	110149.42	1.0000	4.59	
3F1	COL K6	3.81	247.26	147.56	216.58	131.11	1720.00	1072.50	110149.42	1.0000	4.59	
3F1	COL K6	3.81	247.26	147.71	216.58	130.48	1720.00	1072.50	110149.42	1.0000	4.60	
3F1	COL K6	3.81	247.26	147.85	216.58	129.86	1720.00	1072.50	110149.42	1.0000	4.61	
3F1	COL K6	3.81	247.26	148.00	216.58	129.24	1720.00	1072.50	110149.42	1.0000	4.62	
3F1	COL K6	3.81	247.26	148.15	216.58	128.61	1720.00	1072.50	110149.42	1.0000	4.63	
3F1	COL K6	3.81	247.26	148.30	216.58	127.99	1720.00	1072.50	110149.42	1.0000	4.63	
3F1	COL K6	3.81	247.26	148.44	216.58	127.36	1720.00	1072.50	110149.42	1.0000	4.64	
3F1	COL K6	3.81	247.26	148.58	216.58	126.74	1720.00	1072.50	110149.42	1.0000	4.65	
3F1	COL K6	3.81	247.26	145.83	216.58	126.11	1720.00	1072.50	110149.42	1.0000	4.71	
3F1	COL K6	3.81	247.26	148.73	216.58	125.49	1720.00	1072.50	110149.42	1.0000	4.67	
3F1	COL K6	3.81	247.26	148.87	216.58	124.86	1720.00	1072.50	110149.42	1.0000	4.68	
3F1	COL K6	3.81	247.26	149.01	216.58	124.24	1720.00	1072.50	110149.42	1.0000	4.68	
3F1	COL K6	3.81	247.26	149.15	216.58	123.62	1720.00	1072.50	110149.42	1.0000	4.69	
3F1	COL K6	3.81	247.26	149.29	216.58	122.99	1720.00	1072.50	110149.42	1.0000	4.70	
3F1	COL K6	3.81	247.26	149.43	216.58	122.37	1720.00	1072.50	110149.42	1.0000	4.71	
3F1	COL K6	3.81	247.26	149.48	216.58	121.74	1720.00	1072.50	110149.42	1.0000	4.72	
3F1	COL K6	3.81	247.26	146.72	216.58	121.12	1720.00	1072.50	110149.42	1.0000	4.78	
3F1	COL K6	3.81	247.26	149.53	216.58	120.49	1720.00	1072.50	110149.42	1.0000	4.74	
3F1	COL K6	3.81	247.26	149.58	216.58	119.87	1720.00	1072.50	110149.42	1.0000	4.75	
3F1	COL K6	3.81	247.26	149.63	216.58	119.25	1720.00	1072.50	110149.42	1.0000	4.76	
3F1	COL K6	3.81	247.26	147.21	216.58	118.62	1720.00	1072.50	110149.42	1.0000	4.81	
3F1	COL K6	3.81	247.26	149.68	216.58	118.00	1720.00	1072.50	110149.42	1.0000	4.78	
3F1	COL K6	3.81	247.26	149.73	216.58	117.37	1720.00	1072.50	110149.42	1.0000	4.79	
3F1	COL K6	3.81	247.26	147.45	216.58	116.75	1720.00	1072.50	110149.42	1.0000	4.84	
3F1	COL K6	3.81	247.26	149.77	216.58	116.12	1720.00	1072.50	110149.42	1.0000	4.81	
3F1	COL K6	3.81	247.26	149.82	216.58	115.50	1720.00	1072.50	110149.42	1.0000	4.82	
3F1	COL K6	3.81	247.26	149.86	216.58	114.88	1720.00	1072.50	110149.42	1.0000	4.83	
3F1	COL K6	3.81	247.26	147.92	216.58	114.25	1720.00	1072.50	110149.42	1.0000	4.88	
3F1	COL K6	3.81	247.26	149.91	216.58	113.63	1720.00	1072.50	110149.42	1.0000	4.85	
3F1	COL K6	3.81	247.26	149.95	216.58	113.00	1720.00	1072.50	110149.42	1.0000	4.86	
3F1	COL K6	3.81	247.26	148.15	216.58	112.38	1720.00	1072.50	110149.42	1.0000	4.91	
3F1	COL K6	3.81	247.26	149.99	216.58	111.75	1720.00	1072.50	110149.42	1.0000	4.88	
3F1	COL K6	3.81	247.26	150.03	216.58	111.13	1720.00	1072.50	110149.42	1.0000	4.89	
3F1	COL K6	3.81	247.26	150.07	216.58	110.51	1720.00	1072.50	110149.42	1.0000	4.91	
3F1	COL K6	3.81	247.26	148.60	216.58	109.88	1720.00	1072.50	110149.42	1.0000	4.95	
3F1	COL K6	3.81	247.26	150.11	216.58	109.26	1720.00	1072.50	110149.42	1.0000	4.93	
3F1	COL K6	3.81	247.26	150.16	216.58	108.63	1720.00	1072.50	110149.42	1.0000	4.94	
3F1	COL K6	3.81	247.26	150.19	216.58	107.38	1720.00	1072.50	110149.42	1.0000	4.96	
3F1	COL K6	3.81	247.26	150.22	216.58	106.76	1720.00	1072.50	110149.42	1.0000	4.97	
3F1	COL K6	3.81	247.26	150.26	216.58	106.14	1720.00	1072.50	110149.42	1.0000	4.98	
3F1	COL K6	3.81	247.26	149.24	216.58	105.51	1720.00	1072.50	110149.42	1.0000	5.02	
3F1	COL K6	3.81	247.26	150.30	216.58	104.89	1720.00	1072.50	110149.42	1.0000	5.01	
3F1	COL K6	3.81	247.26	150.33	216.58	104.26	1720.00	1072.50	110149.42	1.0000	5.02	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _e		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
3F1	COL K6	3.81	247.26	149.56	216.58	103.64	1720.00	1072.50	110149.42	1.0000	5.05
3F1	COL K6	3.81	247.26	150.36	216.58	103.01	1720.00	1072.50	110149.42	1.0000	5.04
3F1	COL K6	3.81	247.26	150.40	216.58	102.39	1720.00	1072.50	110149.42	1.0000	5.05
3F1	COL K6	3.81	247.26	150.42	216.58	101.76	1720.00	1072.50	110149.42	1.0000	5.06
3F1	COL K6	3.81	247.26	149.85	216.58	101.14	1720.00	1072.50	110149.42	1.0000	5.09
3F1	COL K6	3.81	247.26	150.46	216.58	100.52	1720.00	1072.50	110149.42	1.0000	5.09
3F1	COL K6	3.81	247.26	150.49	216.58	99.89	1720.00	1072.50	110149.42	1.0000	5.10
3F1	COL K6	3.81	247.26	150.51	216.58	99.27	1720.00	1072.50	110149.42	1.0000	5.11
3F1	COL K6	3.81	247.26	150.24	216.58	98.64	1720.00	1072.50	110149.42	1.0000	5.13
3F1	COL K6	3.81	247.26	150.54	216.58	98.02	1720.00	1072.50	110149.42	1.0000	5.14
3F1	COL K6	3.81	247.26	150.56	216.58	97.39	1720.00	1072.50	110149.42	1.0000	5.15
3F1	COL K6	3.81	247.26	150.59	216.58	96.77	1720.00	1072.50	110149.42	1.0000	5.16
3F1	COL K6	3.81	247.26	150.60	216.58	96.15	1720.00	1072.50	110149.42	1.0000	5.17
3F1	COL K6	3.81	247.26	150.69	216.58	95.52	1720.00	1072.50	110149.42	1.0000	5.19
3F1	COL K6	3.81	247.26	150.63	216.58	94.90	1720.00	1072.50	110149.42	1.0000	5.20
3F1	COL K6	3.81	247.26	150.77	216.58	94.27	1720.00	1072.50	110149.42	1.0000	5.21
3F1	COL K6	3.81	247.26	150.86	216.58	93.65	1720.00	1072.50	110149.42	1.0000	5.22
3F1	COL K6	3.81	247.26	150.94	216.58	93.02	1720.00	1072.50	110149.42	1.0000	5.23
3F1	COL K6	3.81	247.26	151.02	216.58	92.40	1720.00	1072.50	110149.42	1.0000	5.24
3F1	COL K6	3.81	247.26	151.11	216.58	91.78	1720.00	1072.50	110149.42	1.0000	5.25
3F1	COL K6	3.81	247.26	151.19	216.58	91.15	1720.00	1072.50	110149.42	1.0000	5.27
3F1	COL K6	3.81	247.26	151.27	216.58	90.53	1720.00	1072.50	110149.42	1.0000	5.28
3F1	COL K6	3.81	247.26	151.34	216.58	89.90	1720.00	1072.50	110149.42	1.0000	5.29
3F1	COL K6	3.81	247.26	151.42	216.58	89.28	1720.00	1072.50	110149.42	1.0000	5.30
3F1	COL K6	3.81	247.26	151.43	216.58	88.65	1720.00	1072.50	110149.42	1.0000	5.31
3F1	COL K6	3.81	247.26	150.76	216.58	88.03	1720.00	1072.50	110149.42	1.0000	5.34
3F1	COL K6	3.81	247.26	151.44	216.58	87.41	1720.00	1072.50	110149.42	1.0000	5.34
3F1	COL K6	3.81	247.26	151.45	216.58	86.78	1720.00	1072.50	110149.42	1.0000	5.35
3F1	COL K6	3.81	247.26	151.47	216.58	86.16	1720.00	1072.50	110149.42	1.0000	5.37
3F1	COL K6	3.81	247.26	150.78	216.58	85.53	1720.00	1072.50	110149.42	1.0000	5.40
3F1	COL K6	3.81	247.26	151.47	216.58	84.91	1720.00	1072.50	110149.42	1.0000	5.40
3F1	COL K6	3.81	247.26	151.48	216.58	84.28	1720.00	1072.50	110149.42	1.0000	5.41
3F1	COL K6	3.81	247.26	151.49	216.58	83.66	1720.00	1072.50	110149.42	1.0000	5.42
3F1	COL K6	3.81	247.26	150.79	216.58	83.04	1720.00	1072.50	110149.42	1.0000	5.45
3F1	COL K6	3.81	247.26	151.49	216.58	82.41	1720.00	1072.50	110149.42	1.0000	5.45
3F1	COL K6	3.81	247.26	151.49	216.58	81.79	1720.00	1072.50	110149.42	1.0000	5.47
3F1	COL K6	3.81	247.26	151.49	216.58	81.16	1720.00	1072.50	110149.42	1.0000	5.48
3F1	COL K6	3.81	247.26	150.79	216.58	80.54	1720.00	1072.50	110149.42	1.0000	5.51
3F1	COL K6	3.81	247.26	151.49	216.58	79.91	1720.00	1072.50	110149.42	1.0000	5.51
4F1	COL K6	3.81	247.26	123.36	216.58	224.76	1720.00	1072.50	110149.42	1.0000	3.70
4F1	COL K6	3.81	247.26	126.44	216.58	224.13	1720.00	1072.50	110149.42	1.0000	3.68
4F1	COL K6	3.81	247.26	129.14	216.58	223.51	1720.00	1072.50	110149.42	1.0000	3.65
4F1	COL K6	3.81	247.26	130.22	216.58	222.88	1720.00	1072.50	110149.42	1.0000	3.65
4F1	COL K6	3.81	247.26	130.87	216.58	222.26	1720.00	1072.50	110149.42	1.0000	3.65
4F1	COL K6	3.81	247.26	131.51	216.58	221.63	1720.00	1072.50	110149.42	1.0000	3.65
4F1	COL K6	3.81	247.26	132.16	216.58	221.01	1720.00	1072.50	110149.42	1.0000	3.65
4F1	COL K6	3.81	247.26	133.29	216.58	220.39	1720.00	1072.50	110149.42	1.0000	3.64
4F1	COL K6	3.81	247.26	134.83	216.58	219.76	1720.00	1072.50	110149.42	1.0000	3.63
4F1	COL K6	3.81	247.26	136.36	216.58	219.14	1720.00	1072.50	110149.42	1.0000	3.62
4F1	COL K6	3.81	247.26	137.91	216.58	218.51	1720.00	1072.50	110149.42	1.0000	3.61
4F1	COL K6	3.81	247.26	139.45	216.58	217.89	1720.00	1072.50	110149.42	1.0000	3.60
4F1	COL K6	3.81	247.26	140.60	216.58	217.26	1720.00	1072.50	110149.42	1.0000	3.60
4F1	COL K6	3.81	247.26	141.76	216.58	216.64	1720.00	1072.50	110149.42	1.0000	3.59
4F1	COL K6	3.81	247.26	143.30	216.58	216.02	1720.00	1072.50	110149.42	1.0000	3.58
4F1	COL K6	3.81	247.26	144.45	216.58	215.39	1720.00	1072.50	110149.42	1.0000	3.58
4F1	COL K6	3.81	247.26	144.77	216.58	214.77	1720.00	1072.50	110149.42	1.0000	3.58
4F1	COL K6	3.81	247.26	145.39	216.58	214.14	1720.00	1072.50	110149.42	1.0000	3.58
4F1	COL K6	3.81	247.26	145.70	216.58	213.52	1720.00	1072.50	110149.42	1.0000	3.58

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
4F1	COL K6	3.81	247.26	146.33	216.58	212.89	1720.00	1072.50	110149.42	1.0000	3.58		
4F1	COL K6	3.81	247.26	146.65	216.58	212.27	1720.00	1072.50	110149.42	1.0000	3.58		
4F1	COL K6	3.81	247.26	147.27	216.58	211.65	1720.00	1072.50	110149.42	1.0000	3.58		
4F1	COL K6	3.81	247.26	147.58	216.58	211.02	1720.00	1072.50	110149.42	1.0000	3.59		
4F1	COL K6	3.81	247.26	148.21	216.58	210.40	1720.00	1072.50	110149.42	1.0000	3.59		
4F1	COL K6	3.81	247.26	148.53	216.58	209.77	1720.00	1072.50	110149.42	1.0000	3.59		
4F1	COL K6	3.81	247.26	148.84	216.58	209.15	1720.00	1072.50	110149.42	1.0000	3.59		
4F1	COL K6	3.81	247.26	149.46	216.58	208.52	1720.00	1072.50	110149.42	1.0000	3.59		
4F1	COL K6	3.81	247.26	149.78	216.58	207.90	1720.00	1072.50	110149.42	1.0000	3.60		
4F1	COL K6	3.81	247.26	150.40	216.58	207.28	1720.00	1072.50	110149.42	1.0000	3.59		
4F1	COL K6	3.81	247.26	150.72	216.58	206.65	1720.00	1072.50	110149.42	1.0000	3.60		
4F1	COL K6	3.81	247.26	151.34	216.58	206.03	1720.00	1072.50	110149.42	1.0000	3.60		
4F1	COL K6	3.81	247.26	151.65	216.58	205.40	1720.00	1072.50	110149.42	1.0000	3.60		
4F1	COL K6	3.81	247.26	151.97	216.58	204.78	1720.00	1072.50	110149.42	1.0000	3.60		
4F1	COL K6	3.81	247.26	152.59	216.58	204.15	1720.00	1072.50	110149.42	1.0000	3.60		
4F1	COL K6	3.81	247.26	152.90	216.58	203.53	1720.00	1072.50	110149.42	1.0000	3.61		
4F1	COL K6	3.81	247.26	153.22	216.58	202.91	1720.00	1072.50	110149.42	1.0000	3.61		
4F1	COL K6	3.81	247.26	153.84	216.58	202.28	1720.00	1072.50	110149.42	1.0000	3.61		
4F1	COL K6	3.81	247.26	154.15	216.58	201.66	1720.00	1072.50	110149.42	1.0000	3.61		
4F1	COL K6	3.81	247.26	154.78	216.58	201.03	1720.00	1072.50	110149.42	1.0000	3.61		
4F1	COL K6	3.81	247.26	155.09	216.58	200.41	1720.00	1072.50	110149.42	1.0000	3.61		
4F1	COL K6	3.81	247.26	155.40	216.58	199.78	1720.00	1072.50	110149.42	1.0000	3.62		
4F1	COL K6	3.81	247.26	156.02	216.58	199.16	1720.00	1072.50	110149.42	1.0000	3.62		
4F1	COL K6	3.81	247.26	156.33	216.58	198.53	1720.00	1072.50	110149.42	1.0000	3.62		
4F1	COL K6	3.81	247.26	156.64	216.58	197.91	1720.00	1072.50	110149.42	1.0000	3.62		
4F1	COL K6	3.81	247.26	156.95	216.58	197.29	1720.00	1072.50	110149.42	1.0000	3.63		
4F1	COL K6	3.81	247.26	157.19	216.58	196.66	1720.00	1072.50	110149.42	1.0000	3.63		
4F1	COL K6	3.81	247.26	157.43	216.58	196.04	1720.00	1072.50	110149.42	1.0000	3.63		
4F1	COL K6	3.81	247.26	157.67	216.58	195.41	1720.00	1072.50	110149.42	1.0000	3.64		
4F1	COL K6	3.81	247.26	157.90	216.58	194.79	1720.00	1072.50	110149.42	1.0000	3.64		
4F1	COL K6	3.81	247.26	158.15	216.58	194.16	1720.00	1072.50	110149.42	1.0000	3.65		
4F1	COL K6	3.81	247.26	158.38	216.58	193.54	1720.00	1072.50	110149.42	1.0000	3.65		
4F1	COL K6	3.81	247.26	158.62	216.58	192.92	1720.00	1072.50	110149.42	1.0000	3.65		
4F1	COL K6	3.81	247.26	158.86	216.58	192.29	1720.00	1072.50	110149.42	1.0000	3.66		
4F1	COL K6	3.81	247.26	159.10	216.58	191.67	1720.00	1072.50	110149.42	1.0000	3.66		
4F1	COL K6	3.81	247.26	159.33	216.58	191.04	1720.00	1072.50	110149.42	1.0000	3.66		
4F1	COL K6	3.81	247.26	159.57	216.58	190.42	1720.00	1072.50	110149.42	1.0000	3.67		
4F1	COL K6	3.81	247.26	157.69	216.58	189.79	1720.00	1072.50	110149.42	1.0000	3.70		
4F1	COL K6	3.81	247.26	159.80	216.58	189.17	1720.00	1072.50	110149.42	1.0000	3.68		
4F1	COL K6	3.81	247.26	160.04	216.58	188.55	1720.00	1072.50	110149.42	1.0000	3.68		
4F1	COL K6	3.81	247.26	160.28	216.58	187.92	1720.00	1072.50	110149.42	1.0000	3.69		
4F1	COL K6	3.81	247.26	160.51	216.58	187.30	1720.00	1072.50	110149.42	1.0000	3.69		
4F1	COL K6	3.81	247.26	160.75	216.58	186.67	1720.00	1072.50	110149.42	1.0000	3.69		
4F1	COL K6	3.81	247.26	160.98	216.58	186.05	1720.00	1072.50	110149.42	1.0000	3.70		
4F1	COL K6	3.81	247.26	161.22	216.58	185.42	1720.00	1072.50	110149.42	1.0000	3.70		
4F1	COL K6	3.81	247.26	161.46	216.58	184.80	1720.00	1072.50	110149.42	1.0000	3.71		
4F1	COL K6	3.81	247.26	161.69	216.58	184.18	1720.00	1072.50	110149.42	1.0000	3.71		
4F1	COL K6	3.81	247.26	161.92	216.58	183.55	1720.00	1072.50	110149.42	1.0000	3.71		
4F1	COL K6	3.81	247.26	162.16	216.58	182.93	1720.00	1072.50	110149.42	1.0000	3.72		
4F1	COL K6	3.81	247.26	162.16	216.58	182.30	1720.00	1072.50	110149.42	1.0000	3.73		
4F1	COL K6	3.81	247.26	162.39	216.58	181.68	1720.00	1072.50	110149.42	1.0000	3.73		
4F1	COL K6	3.81	247.26	162.39	216.58	181.68	1720.00	1072.50	110149.42	1.0000	3.73		
4F1	COL K6	3.81	247.26	162.62	216.58	181.05	1720.00	1072.50	110149.42	1.0000	3.73		
4F1	COL K6	3.81	247.26	162.62	216.58	181.05	1720.00	1072.50	110149.42	1.0000	3.73		
4F1	COL K6	3.81	247.26	162.85	216.58	180.43	1720.00	1072.50	110149.42	1.0000	3.74		
4F1	COL K6	3.81	247.26	162.85	216.58	180.43	1720.00	1072.50	110149.42	1.0000	3.74		
4F1	COL K6	3.81	247.26	163.09	216.58	179.81	1720.00	1072.50	110149.42	1.0000	3.74		
4F1	COL K6	3.81	247.26	163.09	216.58	179.81	1720.00	1072.50	110149.42	1.0000	3.74		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
4F1	COL K6	3.81	247.26	163.32	216.58	179.18	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K6	3.81	247.26	163.32	216.58	179.18	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K6	3.81	247.26	163.55	216.58	178.56	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K6	3.81	247.26	163.55	216.58	178.56	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K6	3.81	247.26	163.78	216.58	177.93	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K6	3.81	247.26	163.78	216.58	177.93	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K6	3.81	247.26	164.01	216.58	177.31	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K6	3.81	247.26	164.01	216.58	177.31	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K6	3.81	247.26	164.24	216.58	176.68	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K6	3.81	247.26	164.47	216.58	176.06	1720.00	1072.50	110149.42	1.0000	3.77
4F1	COL K6	3.81	247.26	164.70	216.58	175.43	1720.00	1072.50	110149.42	1.0000	3.77
4F1	COL K6	3.81	247.26	164.92	216.58	174.81	1720.00	1072.50	110149.42	1.0000	3.78
4F1	COL K6	3.81	247.26	165.15	216.58	174.19	1720.00	1072.50	110149.42	1.0000	3.78
4F1	COL K6	3.81	247.26	165.38	216.58	173.56	1720.00	1072.50	110149.42	1.0000	3.78
4F1	COL K6	3.81	247.26	165.60	216.58	172.94	1720.00	1072.50	110149.42	1.0000	3.79
4F1	COL K6	3.81	247.26	165.83	216.58	172.31	1720.00	1072.50	110149.42	1.0000	3.79
4F1	COL K6	3.81	247.26	165.84	216.58	171.69	1720.00	1072.50	110149.42	1.0000	3.80
4F1	COL K6	3.81	247.26	166.07	216.58	171.06	1720.00	1072.50	110149.42	1.0000	3.80
4F1	COL K6	3.81	247.26	166.29	216.58	170.44	1720.00	1072.50	110149.42	1.0000	3.81
4F1	COL K6	3.81	247.26	166.51	216.58	169.82	1720.00	1072.50	110149.42	1.0000	3.81
4F1	COL K6	3.81	247.26	166.73	216.58	169.19	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K6	3.81	247.26	166.95	216.58	168.57	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K6	3.81	247.26	167.18	216.58	167.94	1720.00	1072.50	110149.42	1.0000	3.83
4F1	COL K6	3.81	247.26	167.40	216.58	167.32	1720.00	1072.50	110149.42	1.0000	3.83
4F1	COL K6	3.81	247.26	167.62	216.58	166.69	1720.00	1072.50	110149.42	1.0000	3.83
4F1	COL K6	3.81	247.26	167.84	216.58	166.07	1720.00	1072.50	110149.42	1.0000	3.84
4F1	COL K6	3.81	247.26	168.06	216.58	165.45	1720.00	1072.50	110149.42	1.0000	3.84
4F1	COL K6	3.81	247.26	168.28	216.58	164.82	1720.00	1072.50	110149.42	1.0000	3.85
4F1	COL K6	3.81	247.26	168.50	216.58	164.20	1720.00	1072.50	110149.42	1.0000	3.85
4F1	COL K6	3.81	247.26	168.72	216.58	163.57	1720.00	1072.50	110149.42	1.0000	3.86
4F1	COL K6	3.81	247.26	168.94	216.58	162.95	1720.00	1072.50	110149.42	1.0000	3.86
4F1	COL K6	3.81	247.26	169.15	216.58	162.32	1720.00	1072.50	110149.42	1.0000	3.87
4F1	COL K6	3.81	247.26	169.37	216.58	161.70	1720.00	1072.50	110149.42	1.0000	3.87
4F1	COL K6	3.81	247.26	169.59	216.58	161.08	1720.00	1072.50	110149.42	1.0000	3.87
4F1	COL K6	3.81	247.26	169.80	216.58	160.45	1720.00	1072.50	110149.42	1.0000	3.88
4F1	COL K6	3.81	247.26	170.02	216.58	159.83	1720.00	1072.50	110149.42	1.0000	3.88
4F1	COL K6	3.81	247.26	170.23	216.58	159.20	1720.00	1072.50	110149.42	1.0000	3.89
4F1	COL K6	3.81	247.26	170.45	216.58	158.58	1720.00	1072.50	110149.42	1.0000	3.89
4F1	COL K6	3.81	247.26	170.66	216.58	157.95	1720.00	1072.50	110149.42	1.0000	3.90
4F1	COL K6	3.81	247.26	168.54	216.58	157.33	1720.00	1072.50	110149.42	1.0000	3.93
4F1	COL K6	3.81	247.26	170.80	216.58	156.71	1720.00	1072.50	110149.42	1.0000	3.91
4F1	COL K6	3.81	247.26	170.93	216.58	156.08	1720.00	1072.50	110149.42	1.0000	3.92
4F1	COL K6	3.81	247.26	171.07	216.58	155.46	1720.00	1072.50	110149.42	1.0000	3.92
4F1	COL K6	3.81	247.26	171.21	216.58	154.84	1720.00	1072.50	110149.42	1.0000	3.94
4F1	COL K6	3.81	247.26	171.35	216.58	154.21	1720.00	1072.50	110149.42	1.0000	3.94
4F1	COL K6	3.81	247.26	171.48	216.58	153.58	1720.00	1072.50	110149.42	1.0000	3.95
4F1	COL K6	3.81	247.26	171.62	216.58	152.96	1720.00	1072.50	110149.42	1.0000	3.95
4F1	COL K6	3.81	247.26	171.76	216.58	152.33	1720.00	1072.50	110149.42	1.0000	3.96
4F1	COL K6	3.81	247.26	171.89	216.58	151.71	1720.00	1072.50	110149.42	1.0000	3.97
4F1	COL K6	3.81	247.26	172.02	216.58	151.09	1720.00	1072.50	110149.42	1.0000	3.98
4F1	COL K6	3.81	247.26	172.16	216.58	149.84	1720.00	1072.50	110149.42	1.0000	3.98
4F1	COL K6	3.81	247.26	172.29	216.58	149.21	1720.00	1072.50	110149.42	1.0000	3.99
4F1	COL K6	3.81	247.26	172.42	216.58	148.59	1720.00	1072.50	110149.42	1.0000	3.99
4F1	COL K6	3.81	247.26	172.54	216.58	148.96	1720.00	1072.50	110149.42	1.0000	4.03
4F1	COL K6	3.81	247.26	172.99	216.58	147.96	1720.00	1072.50	110149.42	1.0000	4.00
4F1	COL K6	3.81	247.26	173.29	216.58	147.34	1720.00	1072.50	110149.42	1.0000	4.00
4F1	COL K6	3.81	247.26	173.42	216.58	146.72	1720.00	1072.50	110149.42	1.0000	4.01
4F1	COL K6	3.81	247.26	173.54	216.58	146.09	1720.00	1072.50	110149.42	1.0000	4.02
4F1	COL K6	3.81	247.26	173.85	216.58	145.47	1720.00	1072.50	110149.42	1.0000	4.05
4F1	COL K6	3.81	247.26	174.15	216.58	144.84	1720.00	1072.50	110149.42	1.0000	4.03
4F1	COL K6	3.81	247.26	174.45	216.58	144.22	1720.00	1072.50	110149.42	1.0000	4.04

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
4F1	COL K6	3.81	247.26	172.93	216.58	143.59	1720.00	1072.50	110149.42	1.0000	4.04	
4F1	COL K6	3.81	247.26	170.75	216.58	142.97	1720.00	1072.50	110149.42	1.0000	4.08	
4F1	COL K6	3.81	247.26	173.06	216.58	142.35	1720.00	1072.50	110149.42	1.0000	4.06	
4F1	COL K6	3.81	247.26	173.18	216.58	141.72	1720.00	1072.50	110149.42	1.0000	4.06	
4F1	COL K6	3.81	247.26	173.31	216.58	141.10	1720.00	1072.50	110149.42	1.0000	4.07	
4F1	COL K6	3.81	247.26	171.15	216.58	140.47	1720.00	1072.50	110149.42	1.0000	4.11	
4F1	COL K6	3.81	247.26	173.43	216.58	139.85	1720.00	1072.50	110149.42	1.0000	4.08	
4F1	COL K6	3.81	247.26	173.55	216.58	139.22	1720.00	1072.50	110149.42	1.0000	4.09	
4F1	COL K6	3.81	247.26	173.67	216.58	138.60	1720.00	1072.50	110149.42	1.0000	4.10	
4F1	COL K6	3.81	247.26	173.79	216.58	137.98	1720.00	1072.50	110149.42	1.0000	4.10	
4F1	COL K6	3.81	247.26	173.91	216.58	136.73	1720.00	1072.50	110149.42	1.0000	4.12	
4F1	COL K6	3.81	247.26	174.03	216.58	136.10	1720.00	1072.50	110149.42	1.0000	4.12	
4F1	COL K6	3.81	247.26	174.15	216.58	135.48	1720.00	1072.50	110149.42	1.0000	4.13	
4F1	COL K6	3.81	247.26	174.27	216.58	134.23	1720.00	1072.50	110149.42	1.0000	4.15	
4F1	COL K6	3.81	247.26	174.38	216.58	133.61	1720.00	1072.50	110149.42	1.0000	4.15	
4F1	COL K6	3.81	247.26	174.49	216.58	132.98	1720.00	1072.50	110149.42	1.0000	4.16	
4F1	COL K6	3.81	247.26	172.26	216.58	132.36	1720.00	1072.50	110149.42	1.0000	4.20	
4F1	COL K6	3.81	247.26	174.60	216.58	131.73	1720.00	1072.50	110149.42	1.0000	4.17	
4F1	COL K6	3.81	247.26	174.72	216.58	131.11	1720.00	1072.50	110149.42	1.0000	4.18	
4F1	COL K6	3.81	247.26	174.83	216.58	130.48	1720.00	1072.50	110149.42	1.0000	4.19	
4F1	COL K6	3.81	247.26	174.94	216.58	129.86	1720.00	1072.50	110149.42	1.0000	4.19	
4F1	COL K6	3.81	247.26	172.73	216.58	129.24	1720.00	1072.50	110149.42	1.0000	4.23	
4F1	COL K6	3.81	247.26	175.05	216.58	128.61	1720.00	1072.50	110149.42	1.0000	4.21	
4F1	COL K6	3.81	247.26	175.15	216.58	127.99	1720.00	1072.50	110149.42	1.0000	4.22	
4F1	COL K6	3.81	247.26	175.26	216.58	127.36	1720.00	1072.50	110149.42	1.0000	4.22	
4F1	COL K6	3.81	247.26	173.07	216.58	126.74	1720.00	1072.50	110149.42	1.0000	4.26	
4F1	COL K6	3.81	247.26	175.37	216.58	126.11	1720.00	1072.50	110149.42	1.0000	4.24	
4F1	COL K6	3.81	247.26	175.47	216.58	125.49	1720.00	1072.50	110149.42	1.0000	4.25	
4F1	COL K6	3.81	247.26	175.57	216.58	124.86	1720.00	1072.50	110149.42	1.0000	4.25	
4F1	COL K6	3.81	247.26	173.40	216.58	124.24	1720.00	1072.50	110149.42	1.0000	4.29	
4F1	COL K6	3.81	247.26	175.60	216.58	123.62	1720.00	1072.50	110149.42	1.0000	4.27	
4F1	COL K6	3.81	247.26	175.63	216.58	122.99	1720.00	1072.50	110149.42	1.0000	4.28	
4F1	COL K6	3.81	247.26	173.61	216.58	122.37	1720.00	1072.50	110149.42	1.0000	4.32	
4F1	COL K6	3.81	247.26	175.65	216.58	121.74	1720.00	1072.50	110149.42	1.0000	4.30	
4F1	COL K6	3.81	247.26	173.82	216.58	121.12	1720.00	1072.50	110149.42	1.0000	4.33	
4F1	COL K6	3.81	247.26	175.68	216.58	120.49	1720.00	1072.50	110149.42	1.0000	4.31	
4F1	COL K6	3.81	247.26	175.70	216.58	119.87	1720.00	1072.50	110149.42	1.0000	4.32	
4F1	COL K6	3.81	247.26	174.02	216.58	119.25	1720.00	1072.50	110149.42	1.0000	4.36	
4F1	COL K6	3.81	247.26	175.73	216.58	118.62	1720.00	1072.50	110149.42	1.0000	4.34	
4F1	COL K6	3.81	247.26	175.75	216.58	118.00	1720.00	1072.50	110149.42	1.0000	4.35	
4F1	COL K6	3.81	247.26	174.22	216.58	117.37	1720.00	1072.50	110149.42	1.0000	4.38	
4F1	COL K6	3.81	247.26	175.77	216.58	116.75	1720.00	1072.50	110149.42	1.0000	4.37	
4F1	COL K6	3.81	247.26	175.79	216.58	116.12	1720.00	1072.50	110149.42	1.0000	4.37	
4F1	COL K6	3.81	247.26	175.80	216.58	114.88	1720.00	1072.50	110149.42	1.0000	4.39	
4F1	COL K6	3.81	247.26	174.60	216.58	114.25	1720.00	1072.50	110149.42	1.0000	4.42	
4F1	COL K6	3.81	247.26	175.82	216.58	113.63	1720.00	1072.50	110149.42	1.0000	4.41	
4F1	COL K6	3.81	247.26	175.83	216.58	113.00	1720.00	1072.50	110149.42	1.0000	4.42	
4F1	COL K6	3.81	247.26	174.77	216.58	112.38	1720.00	1072.50	110149.42	1.0000	4.45	
4F1	COL K6	3.81	247.26	175.85	216.58	111.75	1720.00	1072.50	110149.42	1.0000	4.44	
4F1	COL K6	3.81	247.26	175.86	216.58	111.13	1720.00	1072.50	110149.42	1.0000	4.45	
4F1	COL K6	3.81	247.26	175.87	216.58	109.88	1720.00	1072.50	110149.42	1.0000	4.47	
4F1	COL K6	3.81	247.26	175.88	216.58	109.26	1720.00	1072.50	110149.42	1.0000	4.48	
4F1	COL K6	3.81	247.26	175.20	216.58	108.63	1720.00	1072.50	110149.42	1.0000	4.50	
4F1	COL K6	3.81	247.26	175.89	216.58	108.01	1720.00	1072.50	110149.42	1.0000	4.50	
4F1	COL K6	3.81	247.26	175.90	216.58	107.38	1720.00	1072.50	110149.42	1.0000	4.51	
4F1	COL K6	3.81	247.26	175.36	216.58	106.76	1720.00	1072.50	110149.42	1.0000	4.52	
4F1	COL K6	3.81	247.26	175.90	216.58	106.14	1720.00	1072.50	110149.42	1.0000	4.52	
4F1	COL K6	3.81	247.26	175.52	216.58	105.51	1720.00	1072.50	110149.42	1.0000	4.54	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _e		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
4F1	COL K6	3.81	247.26	175.90	216.58	104.89	1720.00	1072.50	110149.42	1.0000	4.54
4F1	COL K6	3.81	247.26	175.90	216.58	104.26	1720.00	1072.50	110149.42	1.0000	4.55
4F1	COL K6	3.81	247.26	175.66	216.58	103.64	1720.00	1072.50	110149.42	1.0000	4.57
4F1	COL K6	3.81	247.26	175.90	216.58	103.01	1720.00	1072.50	110149.42	1.0000	4.57
4F1	COL K6	3.81	247.26	175.90	216.58	102.39	1720.00	1072.50	110149.42	1.0000	4.58
4F1	COL K6	3.81	247.26	175.90	216.58	101.14	1720.00	1072.50	110149.42	1.0000	4.60
4F1	COL K6	3.81	247.26	175.93	216.58	100.52	1720.00	1072.50	110149.42	1.0000	4.61
4F1	COL K6	3.81	247.26	176.00	216.58	99.89	1720.00	1072.50	110149.42	1.0000	4.62
4F1	COL K6	3.81	247.26	176.06	216.58	99.27	1720.00	1072.50	110149.42	1.0000	4.63
4F1	COL K6	3.81	247.26	175.88	216.58	98.64	1720.00	1072.50	110149.42	1.0000	4.65
4F1	COL K6	3.81	247.26	176.12	216.58	98.02	1720.00	1072.50	110149.42	1.0000	4.65
4F1	COL K6	3.81	247.26	176.18	216.58	97.39	1720.00	1072.50	110149.42	1.0000	4.66
4F1	COL K6	3.81	247.26	176.24	216.58	96.77	1720.00	1072.50	110149.42	1.0000	4.67
4F1	COL K6	3.81	247.26	176.30	216.58	96.15	1720.00	1072.50	110149.42	1.0000	4.68
4F1	COL K6	3.81	247.26	175.84	216.58	95.52	1720.00	1072.50	110149.42	1.0000	4.70
4F1	COL K6	3.81	247.26	176.35	216.58	94.90	1720.00	1072.50	110149.42	1.0000	4.70
4F1	COL K6	3.81	247.26	176.40	216.58	94.27	1720.00	1072.50	110149.42	1.0000	4.71
4F1	COL K6	3.81	247.26	176.45	216.58	93.65	1720.00	1072.50	110149.42	1.0000	4.72
4F1	COL K6	3.81	247.26	176.50	216.58	93.02	1720.00	1072.50	110149.42	1.0000	4.73
4F1	COL K6	3.81	247.26	176.55	216.58	91.78	1720.00	1072.50	110149.42	1.0000	4.75
4F1	COL K6	3.81	247.26	176.60	216.58	91.15	1720.00	1072.50	110149.42	1.0000	4.76
4F1	COL K6	3.81	247.26	176.64	216.58	90.53	1720.00	1072.50	110149.42	1.0000	4.77
4F1	COL K6	3.81	247.26	176.68	216.58	89.90	1720.00	1072.50	110149.42	1.0000	4.78
4F1	COL K6	3.81	247.26	176.72	216.58	89.28	1720.00	1072.50	110149.42	1.0000	4.79
4F1	COL K6	3.81	247.26	175.67	216.58	88.65	1720.00	1072.50	110149.42	1.0000	4.82
4F1	COL K6	3.81	247.26	176.76	216.58	88.03	1720.00	1072.50	110149.42	1.0000	4.81
4F1	COL K6	3.81	247.26	176.79	216.58	87.41	1720.00	1072.50	110149.42	1.0000	4.82
4F1	COL K6	3.81	247.26	176.82	216.58	86.78	1720.00	1072.50	110149.42	1.0000	4.83
4F1	COL K6	3.81	247.26	176.80	216.58	86.16	1720.00	1072.50	110149.42	1.0000	4.84
4F1	COL K6	3.81	247.26	175.57	216.58	85.53	1720.00	1072.50	110149.42	1.0000	4.88
5C1	COL K6	3.81	247.26	163.89	216.58	213.52	1720.00	1072.50	110149.42	1.0000	3.41
5C1	COL K6	3.81	247.26	170.38	216.58	212.89	1720.00	1072.50	110149.42	1.0000	3.35
5C1	COL K6	3.81	247.26	176.46	216.58	212.27	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	178.14	216.58	211.65	1720.00	1072.50	110149.42	1.0000	3.29
5C1	COL K6	3.81	247.26	178.67	216.58	211.02	1720.00	1072.50	110149.42	1.0000	3.29
5C1	COL K6	3.81	247.26	179.19	216.58	210.40	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	179.99	216.58	209.77	1720.00	1072.50	110149.42	1.0000	3.29
5C1	COL K6	3.81	247.26	180.50	216.58	209.15	1720.00	1072.50	110149.42	1.0000	3.29
5C1	COL K6	3.81	247.26	181.02	216.58	208.52	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	181.54	216.58	207.90	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	182.06	216.58	207.28	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	182.56	216.58	206.65	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	183.08	216.58	206.03	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	183.58	216.58	205.40	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	184.08	216.58	204.78	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	184.58	216.58	204.15	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	185.07	216.58	203.53	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	185.56	216.58	202.91	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	186.05	216.58	202.28	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	186.53	216.58	201.66	1720.00	1072.50	110149.42	1.0000	3.30
5C1	COL K6	3.81	247.26	187.00	216.58	201.03	1720.00	1072.50	110149.42	1.0000	3.31
5C1	COL K6	3.81	247.26	187.47	216.58	200.41	1720.00	1072.50	110149.42	1.0000	3.31
5C1	COL K6	3.81	247.26	187.94	216.58	199.78	1720.00	1072.50	110149.42	1.0000	3.31
5C1	COL K6	3.81	247.26	188.40	216.58	199.16	1720.00	1072.50	110149.42	1.0000	3.31
5C1	COL K6	3.81	247.26	188.86	216.58	198.53	1720.00	1072.50	110149.42	1.0000	3.31
5C1	COL K6	3.81	247.26	189.31	216.58	197.91	1720.00	1072.50	110149.42	1.0000	3.31
5C1	COL K6	3.81	247.26	189.76	216.58	197.29	1720.00	1072.50	110149.42	1.0000	3.31
5C1	COL K6	3.81	247.26	190.19	216.58	196.66	1720.00	1072.50	110149.42	1.0000	3.31

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
5C1	COL K6	3.81	247.26	190.63	216.58	196.04	1720.00	1072.50	110149.42	1.0000	3.32		
5C1	COL K6	3.81	247.26	190.84	216.58	195.41	1720.00	1072.50	110149.42	1.0000	3.32		
5C1	COL K6	3.81	247.26	191.27	216.58	194.79	1720.00	1072.50	110149.42	1.0000	3.32		
5C1	COL K6	3.81	247.26	191.69	216.58	194.16	1720.00	1072.50	110149.42	1.0000	3.32		
5C1	COL K6	3.81	247.26	192.10	216.58	193.54	1720.00	1072.50	110149.42	1.0000	3.32		
5C1	COL K6	3.81	247.26	192.51	216.58	192.92	1720.00	1072.50	110149.42	1.0000	3.33		
5C1	COL K6	3.81	247.26	192.94	216.58	192.29	1720.00	1072.50	110149.42	1.0000	3.33		
5C1	COL K6	3.81	247.26	193.43	216.58	191.67	1720.00	1072.50	110149.42	1.0000	3.33		
5C1	COL K6	3.81	247.26	193.11	216.58	191.67	1720.00	1072.50	110149.42	1.0000	3.33		
5C1	COL K6	3.81	247.26	193.90	216.58	191.04	1720.00	1072.50	110149.42	1.0000	3.33		
5C1	COL K6	3.81	247.26	194.36	216.58	190.42	1720.00	1072.50	110149.42	1.0000	3.33		
5C1	COL K6	3.81	247.26	194.65	216.58	189.79	1720.00	1072.50	110149.42	1.0000	3.33		
5C1	COL K6	3.81	247.26	195.06	216.58	189.17	1720.00	1072.50	110149.42	1.0000	3.34		
5C1	COL K6	3.81	247.26	195.46	216.58	188.55	1720.00	1072.50	110149.42	1.0000	3.34		
5C1	COL K6	3.81	247.26	195.84	216.58	187.92	1720.00	1072.50	110149.42	1.0000	3.34		
5C1	COL K6	3.81	247.26	196.21	216.58	187.30	1720.00	1072.50	110149.42	1.0000	3.34		
5C1	COL K6	3.81	247.26	196.55	216.58	186.67	1720.00	1072.50	110149.42	1.0000	3.34		
5C1	COL K6	3.81	247.26	196.77	216.58	186.05	1720.00	1072.50	110149.42	1.0000	3.35		
5C1	COL K6	3.81	247.26	197.07	216.58	185.42	1720.00	1072.50	110149.42	1.0000	3.35		
5C1	COL K6	3.81	247.26	197.37	216.58	184.80	1720.00	1072.50	110149.42	1.0000	3.35		
5C1	COL K6	3.81	247.26	197.64	216.58	184.18	1720.00	1072.50	110149.42	1.0000	3.36		
5C1	COL K6	3.81	247.26	197.80	216.58	183.55	1720.00	1072.50	110149.42	1.0000	3.36		
5C1	COL K6	3.81	247.26	198.04	216.58	182.93	1720.00	1072.50	110149.42	1.0000	3.36		
5C1	COL K6	3.81	247.26	198.26	216.58	182.30	1720.00	1072.50	110149.42	1.0000	3.37		
5C1	COL K6	3.81	247.26	198.47	216.58	181.68	1720.00	1072.50	110149.42	1.0000	3.37		
5C1	COL K6	3.81	247.26	198.59	216.58	181.05	1720.00	1072.50	110149.42	1.0000	3.37		
5C1	COL K6	3.81	247.26	198.76	216.58	180.43	1720.00	1072.50	110149.42	1.0000	3.38		
5C1	COL K6	3.81	247.26	198.92	216.58	179.81	1720.00	1072.50	110149.42	1.0000	3.38		
5C1	COL K6	3.81	247.26	199.01	216.58	179.18	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K6	3.81	247.26	199.13	216.58	178.56	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K6	3.81	247.26	199.24	216.58	177.93	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K6	3.81	247.26	199.44	216.58	177.31	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K6	3.81	247.26	199.57	216.58	176.68	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K6	3.81	247.26	199.81	216.58	176.06	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K6	3.81	247.26	199.93	216.58	175.43	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K6	3.81	247.26	200.16	216.58	174.81	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K6	3.81	247.26	200.27	216.58	174.19	1720.00	1072.50	110149.42	1.0000	3.42		
5C1	COL K6	3.81	247.26	200.49	216.58	173.56	1720.00	1072.50	110149.42	1.0000	3.42		
5C1	COL K6	3.81	247.26	199.55	216.58	173.56	1720.00	1072.50	110149.42	1.0000	3.43		
5C1	COL K6	3.81	247.26	200.70	216.58	172.94	1720.00	1072.50	110149.42	1.0000	3.43		
5C1	COL K6	3.81	247.26	200.79	216.58	172.31	1720.00	1072.50	110149.42	1.0000	3.43		
5C1	COL K6	3.81	247.26	200.99	216.58	171.69	1720.00	1072.50	110149.42	1.0000	3.43		
5C1	COL K6	3.81	247.26	201.09	216.58	171.06	1720.00	1072.50	110149.42	1.0000	3.44		
5C1	COL K6	3.81	247.26	201.28	216.58	170.44	1720.00	1072.50	110149.42	1.0000	3.44		
5C1	COL K6	3.81	247.26	201.36	216.58	169.82	1720.00	1072.50	110149.42	1.0000	3.45		
5C1	COL K6	3.81	247.26	201.53	216.58	169.19	1720.00	1072.50	110149.42	1.0000	3.45		
5C1	COL K6	3.81	247.26	201.61	216.58	168.57	1720.00	1072.50	110149.42	1.0000	3.46		
5C1	COL K6	3.81	247.26	201.77	216.58	167.94	1720.00	1072.50	110149.42	1.0000	3.46		
5C1	COL K6	3.81	247.26	201.84	216.58	167.32	1720.00	1072.50	110149.42	1.0000	3.47		
5C1	COL K6	3.81	247.26	201.99	216.58	166.69	1720.00	1072.50	110149.42	1.0000	3.47		
5C1	COL K6	3.81	247.26	202.06	216.58	166.07	1720.00	1072.50	110149.42	1.0000	3.48		
5C1	COL K6	3.81	247.26	202.19	216.58	165.45	1720.00	1072.50	110149.42	1.0000	3.48		
5C1	COL K6	3.81	247.26	202.25	216.58	164.82	1720.00	1072.50	110149.42	1.0000	3.49		
5C1	COL K6	3.81	247.26	202.37	216.58	164.20	1720.00	1072.50	110149.42	1.0000	3.49		
5C1	COL K6	3.81	247.26	202.42	216.58	163.57	1720.00	1072.50	110149.42	1.0000	3.50		
5C1	COL K6	3.81	247.26	202.52	216.58	162.95	1720.00	1072.50	110149.42	1.0000	3.50		
5C1	COL K6	3.81	247.26	202.57	216.58	162.32	1720.00	1072.50	110149.42	1.0000	3.51		
5C1	COL K6	3.81	247.26	202.66	216.58	161.70	1720.00	1072.50	110149.42	1.0000	3.51		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

Load Case	Member	LLDF	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
5C1	COL K6	3.81	247.26	202.71	216.58	161.08	1720.00	1072.50	110149.42	1.0000	3.52
5C1	COL K6	3.81	247.26	202.78	216.58	160.45	1720.00	1072.50	110149.42	1.0000	3.52
5C1	COL K6	3.81	247.26	202.81	216.58	159.83	1720.00	1072.50	110149.42	1.0000	3.53
5C1	COL K6	3.81	247.26	202.87	216.58	159.20	1720.00	1072.50	110149.42	1.0000	3.53
5C1	COL K6	3.81	247.26	202.92	216.58	158.58	1720.00	1072.50	110149.42	1.0000	3.54
5C1	COL K6	3.81	247.26	202.94	216.58	157.95	1720.00	1072.50	110149.42	1.0000	3.54
5C1	COL K6	3.81	247.26	202.98	216.58	157.33	1720.00	1072.50	110149.42	1.0000	3.55
5C1	COL K6	3.81	247.26	203.00	216.58	156.71	1720.00	1072.50	110149.42	1.0000	3.56
5C1	COL K6	3.81	247.26	203.02	216.58	156.08	1720.00	1072.50	110149.42	1.0000	3.56
5C1	COL K6	3.81	247.26	203.02	216.58	155.46	1720.00	1072.50	110149.42	1.0000	3.57
5C1	COL K6	3.81	247.26	203.03	216.58	154.83	1720.00	1072.50	110149.42	1.0000	3.57
5C1	COL K6	3.81	247.26	203.03	216.58	154.83	1720.00	1072.50	110149.42	1.0000	3.57
5C1	COL K6	3.81	247.26	203.03	216.58	154.21	1720.00	1072.50	110149.42	1.0000	3.58
5C1	COL K6	3.81	247.26	203.03	216.58	153.58	1720.00	1072.50	110149.42	1.0000	3.59
5C1	COL K6	3.81	247.26	203.02	216.58	152.96	1720.00	1072.50	110149.42	1.0000	3.59
5C1	COL K6	3.81	247.26	203.01	216.58	152.33	1720.00	1072.50	110149.42	1.0000	3.60
5C1	COL K6	3.81	247.26	202.97	216.58	151.71	1720.00	1072.50	110149.42	1.0000	3.60

Load Case	Controlling RF
HS20 INV	1.66
HS20 OPER	2.77
2F1	6.30
3F1	4.15
4F1	3.58
5C1	3.29

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K7	3.80	241.8	280.65	223.08	473.62	1720.00	1072.50	110149.42	1.0000	1.71		
HS20 INV	COL K7	3.80	241.8	286.51	223.08	472.58	1720.00	1072.50	110149.42	1.0000	1.70		
HS20 INV	COL K7	3.80	241.8	296.85	223.08	471.54	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K7	3.80	241.8	301.50	223.08	470.51	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K7	3.80	241.8	305.30	223.08	469.47	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	308.31	223.08	468.44	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	310.54	223.08	467.40	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	313.47	223.08	466.36	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	314.91	223.08	465.33	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	317.10	223.08	464.29	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	317.83	223.08	463.25	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	319.30	223.08	462.22	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	320.75	223.08	461.18	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	321.48	223.08	460.14	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	322.92	223.08	459.11	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	323.64	223.08	458.07	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	325.07	223.08	457.04	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	326.47	223.08	456.00	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	327.18	223.08	454.96	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	327.87	223.08	453.93	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	329.26	223.08	452.89	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	329.96	223.08	451.85	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	331.33	223.08	450.82	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	332.01	223.08	449.78	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	332.68	223.08	448.75	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	334.03	223.08	447.71	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	334.69	223.08	446.67	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	335.36	223.08	445.64	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	336.02	223.08	444.60	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	337.34	223.08	443.56	1720.00	1072.50	110149.42	1.0000	1.64		
HS20 INV	COL K7	3.80	241.8	337.99	223.08	442.53	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	338.64	223.08	441.49	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	339.28	223.08	440.45	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	339.93	223.08	439.42	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	341.20	223.08	438.38	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	341.83	223.08	437.35	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	342.47	223.08	436.31	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	343.09	223.08	435.27	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	343.71	223.08	434.24	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	344.33	223.08	433.20	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	344.94	223.08	432.16	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	345.56	223.08	431.13	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	346.22	223.08	430.09	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	347.38	223.08	429.05	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	347.98	223.08	428.02	1720.00	1072.50	110149.42	1.0000	1.65		
HS20 INV	COL K7	3.80	241.8	348.57	223.08	426.98	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	349.16	223.08	425.95	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	349.75	223.08	424.91	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	350.33	223.08	423.87	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	350.91	223.08	422.84	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	351.49	223.08	421.80	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	352.06	223.08	420.76	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	352.63	223.08	419.73	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	353.20	223.08	418.69	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	353.76	223.08	417.65	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	354.32	223.08	416.62	1720.00	1072.50	110149.42	1.0000	1.66		
HS20 INV	COL K7	3.80	241.8	354.88	223.08	415.58	1720.00	1072.50	110149.42	1.0000	1.67		
HS20 INV	COL K7	3.80	241.8	355.43	223.08	414.55	1720.00	1072.50	110149.42	1.0000	1.67		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation			
1.30	2.17 INV	1.26	241.8	355.78	223.08	413.51	1720.00	1072.50	110149.42	1.0000	1.67
1.30 OPER			241.8	356.31	223.08	412.47	1720.00	1072.50	110149.42	1.0000	1.67
			241.8	356.83	223.08	411.44	1720.00	1072.50	110149.42	1.0000	1.67
			241.8	357.36	223.08	410.40	1720.00	1072.50	110149.42	1.0000	1.67
			241.8	357.88	223.08	409.36	1720.00	1072.50	110149.42	1.0000	1.67
			241.8	358.38	223.08	408.33	1720.00	1072.50	110149.42	1.0000	1.67
			241.8	358.89	223.08	407.29	1720.00	1072.50	110149.42	1.0000	1.67
			241.8	359.40	223.08	406.25	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	359.71	223.08	405.22	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	360.23	223.08	404.18	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	360.75	223.08	403.15	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	360.90	223.08	402.11	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	361.39	223.08	401.07	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	361.88	223.08	400.04	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	362.35	223.08	399.00	1720.00	1072.50	110149.42	1.0000	1.68
			241.8	362.84	223.08	397.96	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	363.31	223.08	396.93	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	363.78	223.08	395.89	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	364.25	223.08	394.85	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	364.71	223.08	393.82	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	364.72	223.08	392.78	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	365.19	223.08	391.75	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	365.67	223.08	390.71	1720.00	1072.50	110149.42	1.0000	1.69
			241.8	366.14	223.08	389.67	1720.00	1072.50	110149.42	1.0000	1.70
			241.8	366.60	223.08	388.64	1720.00	1072.50	110149.42	1.0000	1.70
			241.8	366.97	223.08	387.60	1720.00	1072.50	110149.42	1.0000	1.70
			241.8	367.40	223.08	386.56	1720.00	1072.50	110149.42	1.0000	1.70
			241.8	367.53	223.08	385.53	1720.00	1072.50	110149.42	1.0000	1.70
			241.8	367.98	223.08	384.49	1720.00	1072.50	110149.42	1.0000	1.70
			241.8	368.43	223.08	383.45	1720.00	1072.50	110149.42	1.0000	1.70
			241.8	368.69	223.08	382.42	1720.00	1072.50	110149.42	1.0000	1.71
			241.8	369.11	223.08	381.38	1720.00	1072.50	110149.42	1.0000	1.71
			241.8	369.53	223.08	380.35	1720.00	1072.50	110149.42	1.0000	1.71
			241.8	369.94	223.08	379.31	1720.00	1072.50	110149.42	1.0000	1.71
			241.8	370.19	223.08	378.27	1720.00	1072.50	110149.42	1.0000	1.71
			241.8	370.34	223.08	377.24	1720.00	1072.50	110149.42	1.0000	1.71
			241.8	370.75	223.08	376.20	1720.00	1072.50	110149.42	1.0000	1.72
			241.8	371.15	223.08	375.16	1720.00	1072.50	110149.42	1.0000	1.72
			241.8	371.55	223.08	374.13	1720.00	1072.50	110149.42	1.0000	1.72
			241.8	371.94	223.08	372.05	1720.00	1072.50	110149.42	1.0000	1.72
			241.8	372.32	223.08	371.02	1720.00	1072.50	110149.42	1.0000	1.72
			241.8	372.71	223.08	369.98	1720.00	1072.50	110149.42	1.0000	1.72
			241.8	373.10	223.08	368.95	1720.00	1072.50	110149.42	1.0000	1.73
			241.8	373.51	223.08	366.87	1720.00	1072.50	110149.42	1.0000	1.73
			241.8	373.90	223.08	365.84	1720.00	1072.50	110149.42	1.0000	1.73
			241.8	374.29	223.08	364.80	1720.00	1072.50	110149.42	1.0000	1.73
			241.8	374.55	223.08	363.76	1720.00	1072.50	110149.42	1.0000	1.73
			241.8	374.68	223.08	362.73	1720.00	1072.50	110149.42	1.0000	1.74
			241.8	375.06	223.08	361.69	1720.00	1072.50	110149.42	1.0000	1.74
			241.8	375.26	223.08	360.65	1720.00	1072.50	110149.42	1.0000	1.74
			241.8	375.61	223.08	359.62	1720.00	1072.50	110149.42	1.0000	1.74
			241.8	375.81	223.08	358.58	1720.00	1072.50	110149.42	1.0000	1.74
			241.8	376.18	223.08	357.55	1720.00	1072.50	110149.42	1.0000	1.75
			241.8	376.28	223.08	356.51	1720.00	1072.50	110149.42	1.0000	1.75
			241.8	376.61	223.08	355.47	1720.00	1072.50	110149.42	1.0000	1.75
			241.8	376.90	223.08	354.44	1720.00	1072.50	110149.42	1.0000	1.75
			241.8	377.26	223.08	353.40	1720.00	1072.50	110149.42	1.0000	1.75
			241.8	377.27	223.08	352.36	1720.00	1072.50	110149.42	1.0000	1.75

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 INV	COL K7	3.80	241.8	377.61	223.08	351.33	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K7	3.80	241.8	377.95	223.08	350.29	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K7	3.80	241.8	377.90	223.08	349.25	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K7	3.80	241.8	378.29	223.08	348.22	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K7	3.80	241.8	378.64	223.08	347.18	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K7	3.80	241.8	378.97	223.08	346.15	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K7	3.80	241.8	378.82	223.08	345.11	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K7	3.80	241.8	379.29	223.08	344.07	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K7	3.80	241.8	379.62	223.08	343.04	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K7	3.80	241.8	379.93	223.08	340.96	1720.00	1072.50	110149.42	1.0000	1.78
HS20 INV	COL K7	3.80	241.8	380.25	223.08	339.93	1720.00	1072.50	110149.42	1.0000	1.78
HS20 INV	COL K7	3.80	241.8	380.25	223.08	338.89	1720.00	1072.50	110149.42	1.0000	1.78
HS20 INV	COL K7	3.80	241.8	380.56	223.08	337.85	1720.00	1072.50	110149.42	1.0000	1.78
HS20 INV	COL K7	3.80	241.8	380.86	223.08	336.82	1720.00	1072.50	110149.42	1.0000	1.78
HS20 INV	COL K7	3.80	241.8	380.79	223.08	335.78	1720.00	1072.50	110149.42	1.0000	1.79
HS20 INV	COL K7	3.80	241.8	381.16	223.08	334.75	1720.00	1072.50	110149.42	1.0000	1.79
HS20 INV	COL K7	3.80	241.8	381.46	223.08	333.71	1720.00	1072.50	110149.42	1.0000	1.79
HS20 INV	COL K7	3.80	241.8	381.31	223.08	332.67	1720.00	1072.50	110149.42	1.0000	1.79
HS20 INV	COL K7	3.80	241.8	381.75	223.08	331.64	1720.00	1072.50	110149.42	1.0000	1.79
HS20 INV	COL K7	3.80	241.8	382.03	223.08	330.60	1720.00	1072.50	110149.42	1.0000	1.80
HS20 INV	COL K7	3.80	241.8	381.82	223.08	329.56	1720.00	1072.50	110149.42	1.0000	1.80
HS20 INV	COL K7	3.80	241.8	382.31	223.08	328.53	1720.00	1072.50	110149.42	1.0000	1.80
HS20 INV	COL K7	3.80	241.8	382.59	223.08	327.49	1720.00	1072.50	110149.42	1.0000	1.80
HS20 INV	COL K7	3.80	241.8	382.29	223.08	326.45	1720.00	1072.50	110149.42	1.0000	1.80
HS20 INV	COL K7	3.80	241.8	382.87	223.08	325.42	1720.00	1072.50	110149.42	1.0000	1.81
HS20 INV	COL K7	3.80	241.8	383.13	223.08	324.38	1720.00	1072.50	110149.42	1.0000	1.81
HS20 INV	COL K7	3.80	241.8	383.40	223.08	322.31	1720.00	1072.50	110149.42	1.0000	1.81
HS20 INV	COL K7	3.80	241.8	383.66	223.08	321.27	1720.00	1072.50	110149.42	1.0000	1.81
HS20 INV	COL K7	3.80	241.8	383.91	223.08	319.20	1720.00	1072.50	110149.42	1.0000	1.82
HS20 INV	COL K7	3.80	241.8	384.16	223.08	318.16	1720.00	1072.50	110149.42	1.0000	1.82
HS20 INV	COL K7	3.80	241.8	384.41	223.08	316.09	1720.00	1072.50	110149.42	1.0000	1.83
HS20 INV	COL K7	3.80	241.8	384.65	223.08	315.05	1720.00	1072.50	110149.42	1.0000	1.83
HS20 INV	COL K7	3.80	241.8	384.87	223.08	312.98	1720.00	1072.50	110149.42	1.0000	1.83
HS20 INV	COL K7	3.80	241.8	385.10	223.08	311.95	1720.00	1072.50	110149.42	1.0000	1.83
HS20 INV	COL K7	3.80	241.8	384.59	223.08	310.91	1720.00	1072.50	110149.42	1.0000	1.84
HS20 INV	COL K7	3.80	241.8	385.33	223.08	309.87	1720.00	1072.50	110149.42	1.0000	1.84
HS20 INV	COL K7	3.80	241.8	385.55	223.08	308.84	1720.00	1072.50	110149.42	1.0000	1.84
HS20 INV	COL K7	3.80	241.8	384.96	223.08	307.80	1720.00	1072.50	110149.42	1.0000	1.85
HS20 INV	COL K7	3.80	241.8	385.77	223.08	306.76	1720.00	1072.50	110149.42	1.0000	1.85
HS20 INV	COL K7	3.80	241.8	385.12	223.08	305.73	1720.00	1072.50	110149.42	1.0000	1.85
HS20 INV	COL K7	3.80	241.8	385.97	223.08	304.69	1720.00	1072.50	110149.42	1.0000	1.85
HS20 INV	COL K7	3.80	241.8	386.18	223.08	303.65	1720.00	1072.50	110149.42	1.0000	1.85
HS20 INV	COL K7	3.80	241.8	385.44	223.08	302.62	1720.00	1072.50	110149.42	1.0000	1.86
HS20 INV	COL K7	3.80	241.8	386.38	223.08	301.58	1720.00	1072.50	110149.42	1.0000	1.86
HS20 INV	COL K7	3.80	241.8	386.57	223.08	300.55	1720.00	1072.50	110149.42	1.0000	1.86
HS20 INV	COL K7	3.80	241.8	385.75	223.08	299.51	1720.00	1072.50	110149.42	1.0000	1.87
HS20 INV	COL K7	3.80	241.8	386.76	223.08	298.47	1720.00	1072.50	110149.42	1.0000	1.87
HS20 INV	COL K7	3.80	241.8	386.95	223.08	297.44	1720.00	1072.50	110149.42	1.0000	1.87
HS20 INV	COL K7	3.80	241.8	386.03	223.08	296.40	1720.00	1072.50	110149.42	1.0000	1.87
HS20 INV	COL K7	3.80	241.8	387.12	223.08	295.36	1720.00	1072.50	110149.42	1.0000	1.87
HS20 INV	COL K7	3.80	241.8	387.30	223.08	293.29	1720.00	1072.50	110149.42	1.0000	1.88
HS20 INV	COL K7	3.80	241.8	387.46	223.08	292.25	1720.00	1072.50	110149.42	1.0000	1.88
HS20 INV	COL K7	3.80	241.8	386.43	223.08	291.22	1720.00	1072.50	110149.42	1.0000	1.89
HS20 INV	COL K7	3.80	241.8	387.63	223.08	290.18	1720.00	1072.50	110149.42	1.0000	1.88
HS20 INV	COL K7	3.80	241.8	387.79	223.08	289.15	1720.00	1072.50	110149.42	1.0000	1.89
HS20 INV	COL K7	3.80	241.8	386.66	223.08	288.11	1720.00	1072.50	110149.42	1.0000	1.89
HS20 INV	COL K7	3.80	241.8	387.94	223.08	287.07	1720.00	1072.50	110149.42	1.0000	1.89
HS20 INV	COL K7	3.80	241.8	388.10	223.08	285.00	1720.00	1072.50	110149.42	1.0000	1.90

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 OPER	COL K7	3.80	241.8	196.31	223.08	272.98	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	196.72	223.08	272.36	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	197.56	223.08	271.73	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	197.97	223.08	271.11	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	198.80	223.08	270.49	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	199.21	223.08	269.87	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	199.61	223.08	269.25	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	200.42	223.08	268.63	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	200.82	223.08	268.00	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	201.21	223.08	267.38	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	201.61	223.08	266.76	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	202.40	223.08	266.14	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	202.79	223.08	265.52	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	203.19	223.08	264.89	1720.00	1072.50	110149.42	1.0000	2.74
HS20 OPER	COL K7	3.80	241.8	203.57	223.08	264.27	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	203.96	223.08	263.65	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	204.72	223.08	263.03	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	205.10	223.08	262.41	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	205.48	223.08	261.79	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	205.85	223.08	261.16	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	206.23	223.08	260.54	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	206.60	223.08	259.92	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	206.97	223.08	259.30	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	207.34	223.08	258.68	1720.00	1072.50	110149.42	1.0000	2.75
HS20 OPER	COL K7	3.80	241.8	207.73	223.08	258.05	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	208.43	223.08	257.43	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	208.79	223.08	256.81	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	209.14	223.08	256.19	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	209.50	223.08	255.57	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	209.85	223.08	254.95	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	210.20	223.08	254.32	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	210.55	223.08	253.70	1720.00	1072.50	110149.42	1.0000	2.76
HS20 OPER	COL K7	3.80	241.8	210.90	223.08	253.08	1720.00	1072.50	110149.42	1.0000	2.77
HS20 OPER	COL K7	3.80	241.8	211.24	223.08	252.46	1720.00	1072.50	110149.42	1.0000	2.77
HS20 OPER	COL K7	3.80	241.8	211.58	223.08	251.84	1720.00	1072.50	110149.42	1.0000	2.77
HS20 OPER	COL K7	3.80	241.8	211.92	223.08	251.21	1720.00	1072.50	110149.42	1.0000	2.77
HS20 OPER	COL K7	3.80	241.8	212.26	223.08	250.59	1720.00	1072.50	110149.42	1.0000	2.77
HS20 OPER	COL K7	3.80	241.8	212.59	223.08	249.97	1720.00	1072.50	110149.42	1.0000	2.77
HS20 OPER	COL K7	3.80	241.8	212.93	223.08	249.35	1720.00	1072.50	110149.42	1.0000	2.78
HS20 OPER	COL K7	3.80	241.8	213.26	223.08	248.73	1720.00	1072.50	110149.42	1.0000	2.78
HS20 OPER	COL K7	3.80	241.8	213.47	223.08	248.11	1720.00	1072.50	110149.42	1.0000	2.78
HS20 OPER	COL K7	3.80	241.8	213.79	223.08	247.48	1720.00	1072.50	110149.42	1.0000	2.78
HS20 OPER	COL K7	3.80	241.8	214.10	223.08	246.86	1720.00	1072.50	110149.42	1.0000	2.78
HS20 OPER	COL K7	3.80	241.8	214.42	223.08	246.24	1720.00	1072.50	110149.42	1.0000	2.78
HS20 OPER	COL K7	3.80	241.8	214.73	223.08	245.62	1720.00	1072.50	110149.42	1.0000	2.79
HS20 OPER	COL K7	3.80	241.8	215.03	223.08	245.00	1720.00	1072.50	110149.42	1.0000	2.79
HS20 OPER	COL K7	3.80	241.8	215.34	223.08	244.37	1720.00	1072.50	110149.42	1.0000	2.79
HS20 OPER	COL K7	3.80	241.8	215.64	223.08	243.75	1720.00	1072.50	110149.42	1.0000	2.79
HS20 OPER	COL K7	3.80	241.8	215.83	223.08	243.13	1720.00	1072.50	110149.42	1.0000	2.79
HS20 OPER	COL K7	3.80	241.8	216.14	223.08	242.51	1720.00	1072.50	110149.42	1.0000	2.80
HS20 OPER	COL K7	3.80	241.8	216.45	223.08	241.89	1720.00	1072.50	110149.42	1.0000	2.80
HS20 OPER	COL K7	3.80	241.8	216.54	223.08	241.27	1720.00	1072.50	110149.42	1.0000	2.80
HS20 OPER	COL K7	3.80	241.8	216.83	223.08	240.64	1720.00	1072.50	110149.42	1.0000	2.80
HS20 OPER	COL K7	3.80	241.8	217.13	223.08	240.02	1720.00	1072.50	110149.42	1.0000	2.80
HS20 OPER	COL K7	3.80	241.8	217.41	223.08	239.40	1720.00	1072.50	110149.42	1.0000	2.81
HS20 OPER	COL K7	3.80	241.8	217.70	223.08	238.78	1720.00	1072.50	110149.42	1.0000	2.81
HS20 OPER	COL K7	3.80	241.8	217.98	223.08	238.16	1720.00	1072.50	110149.42	1.0000	2.81
HS20 OPER	COL K7	3.80	241.8	218.27	223.08	237.53	1720.00	1072.50	110149.42	1.0000	2.81

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 OPER	COL K7	3.80	241.8	218.55	223.08	236.91	1720.00	1072.50	110149.42	1.0000	2.81
HS20 OPER	COL K7	3.80	241.8	218.82	223.08	236.29	1720.00	1072.50	110149.42	1.0000	2.82
HS20 OPER	COL K7	3.80	241.8	218.83	223.08	235.67	1720.00	1072.50	110149.42	1.0000	2.82
HS20 OPER	COL K7	3.80	241.8	219.12	223.08	235.05	1720.00	1072.50	110149.42	1.0000	2.82
HS20 OPER	COL K7	3.80	241.8	219.40	223.08	234.43	1720.00	1072.50	110149.42	1.0000	2.82
HS20 OPER	COL K7	3.80	241.8	219.68	223.08	233.80	1720.00	1072.50	110149.42	1.0000	2.83
HS20 OPER	COL K7	3.80	241.8	219.96	223.08	233.18	1720.00	1072.50	110149.42	1.0000	2.83
HS20 OPER	COL K7	3.80	241.8	220.18	223.08	232.56	1720.00	1072.50	110149.42	1.0000	2.83
HS20 OPER	COL K7	3.80	241.8	220.44	223.08	231.94	1720.00	1072.50	110149.42	1.0000	2.83
HS20 OPER	COL K7	3.80	241.8	220.52	223.08	231.32	1720.00	1072.50	110149.42	1.0000	2.84
HS20 OPER	COL K7	3.80	241.8	220.79	223.08	230.69	1720.00	1072.50	110149.42	1.0000	2.84
HS20 OPER	COL K7	3.80	241.8	221.06	223.08	230.07	1720.00	1072.50	110149.42	1.0000	2.84
HS20 OPER	COL K7	3.80	241.8	221.21	223.08	229.45	1720.00	1072.50	110149.42	1.0000	2.84
HS20 OPER	COL K7	3.80	241.8	221.47	223.08	228.83	1720.00	1072.50	110149.42	1.0000	2.85
HS20 OPER	COL K7	3.80	241.8	221.72	223.08	228.21	1720.00	1072.50	110149.42	1.0000	2.85
HS20 OPER	COL K7	3.80	241.8	221.96	223.08	227.59	1720.00	1072.50	110149.42	1.0000	2.85
HS20 OPER	COL K7	3.80	241.8	222.11	223.08	226.96	1720.00	1072.50	110149.42	1.0000	2.85
HS20 OPER	COL K7	3.80	241.8	222.21	223.08	226.34	1720.00	1072.50	110149.42	1.0000	2.86
HS20 OPER	COL K7	3.80	241.8	222.45	223.08	225.72	1720.00	1072.50	110149.42	1.0000	2.86
HS20 OPER	COL K7	3.80	241.8	222.69	223.08	225.10	1720.00	1072.50	110149.42	1.0000	2.86
HS20 OPER	COL K7	3.80	241.8	222.93	223.08	224.48	1720.00	1072.50	110149.42	1.0000	2.86
HS20 OPER	COL K7	3.80	241.8	223.16	223.08	223.23	1720.00	1072.50	110149.42	1.0000	2.87
HS20 OPER	COL K7	3.80	241.8	223.39	223.08	222.61	1720.00	1072.50	110149.42	1.0000	2.87
HS20 OPER	COL K7	3.80	241.8	223.62	223.08	221.99	1720.00	1072.50	110149.42	1.0000	2.87
HS20 OPER	COL K7	3.80	241.8	223.86	223.08	221.37	1720.00	1072.50	110149.42	1.0000	2.88
HS20 OPER	COL K7	3.80	241.8	224.10	223.08	220.75	1720.00	1072.50	110149.42	1.0000	2.88
HS20 OPER	COL K7	3.80	241.8	224.34	223.08	220.13	1720.00	1072.50	110149.42	1.0000	2.88
HS20 OPER	COL K7	3.80	241.8	224.58	223.08	219.51	1720.00	1072.50	110149.42	1.0000	2.89
HS20 OPER	COL K7	3.80	241.8	224.81	223.08	218.89	1720.00	1072.50	110149.42	1.0000	2.89
HS20 OPER	COL K7	3.80	241.8	225.04	223.08	218.27	1720.00	1072.50	110149.42	1.0000	2.89
HS20 OPER	COL K7	3.80	241.8	225.28	223.08	217.65	1720.00	1072.50	110149.42	1.0000	2.90
HS20 OPER	COL K7	3.80	241.8	225.51	223.08	217.03	1720.00	1072.50	110149.42	1.0000	2.90
HS20 OPER	COL K7	3.80	241.8	225.75	223.08	216.41	1720.00	1072.50	110149.42	1.0000	2.90
HS20 OPER	COL K7	3.80	241.8	225.98	223.08	215.79	1720.00	1072.50	110149.42	1.0000	2.91
HS20 OPER	COL K7	3.80	241.8	226.22	223.08	215.17	1720.00	1072.50	110149.42	1.0000	2.91
HS20 OPER	COL K7	3.80	241.8	226.45	223.08	214.55	1720.00	1072.50	110149.42	1.0000	2.91
HS20 OPER	COL K7	3.80	241.8	226.69	223.08	213.93	1720.00	1072.50	110149.42	1.0000	2.91
HS20 OPER	COL K7	3.80	241.8	226.92	223.08	213.31	1720.00	1072.50	110149.42	1.0000	2.91
HS20 OPER	COL K7	3.80	241.8	227.16	223.08	212.69	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K7	3.80	241.8	227.39	223.08	212.07	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K7	3.80	241.8	227.63	223.08	211.45	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K7	3.80	241.8	227.86	223.08	210.83	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K7	3.80	241.8	228.10	223.08	210.21	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K7	3.80	241.8	228.33	223.08	209.59	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K7	3.80	241.8	228.57	223.08	208.97	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K7	3.80	241.8	228.80	223.08	208.35	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K7	3.80	241.8	229.04	223.08	207.73	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K7	3.80	241.8	229.27	223.08	207.11	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K7	3.80	241.8	229.51	223.08	206.49	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K7	3.80	241.8	229.74	223.08	205.87	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K7	3.80	241.8	229.98	223.08	205.25	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K7	3.80	241.8	230.21	223.08	204.63	1720.00	1072.50	110149.42	1.0000	2.96
HS20 OPER	COL K7	3.80	241.8	230.45	223.08	204.01	1720.00	1072.50	110149.42	1.0000	2.96
HS20 OPER	COL K7	3.80	241.8	230.68	223.08	203.39	1720.00	1072.50	110149.42	1.0000	2.96
HS20 OPER	COL K7	3.80	241.8	230.92	223.08	202.77	1720.00	1072.50	110149.42	1.0000	2.97
HS20 OPER	COL K7	3.80	241.8	231.15	223.08	202.15	1720.00	1072.50	110149.42	1.0000	2.97
HS20 OPER	COL K7	3.80	241.8	231.39	223.08	201.53	1720.00	1072.50	110149.42	1.0000	2.97
HS20 OPER	COL K7	3.80	241.8	231.62	223.08	200.91	1720.00	1072.50	110149.42	1.0000	2.97
HS20 OPER	COL K7	3.80	241.8	231.86	223.08	200.29	1720.00	1072.50	110149.42	1.0000	2.97
HS20 OPER	COL K7	3.80	241.8	232.09	223.08	199.67	1720.00	1072.50	110149.42	1.0000	2.98
HS20 OPER	COL K7	3.80	241.8	232.33	223.08	199.05	1720.00	1072.50	110149.42	1.0000	2.98
HS20 OPER	COL K7	3.80	241.8	232.56	223.08	198.43	1720.00	1072.50	110149.42	1.0000	2.98
HS20 OPER	COL K7	3.80	241.8	232.80	223.08	197.81	1720.00	1072.50	110149.42	1.0000	2.98
HS20 OPER	COL K7	3.80	241.8	233.03	223.08	197.19	1720.00	1072.50	110149.42	1.0000	2.98
HS20 OPER	COL K7	3.80	241.8	233.27	223.08	196.57	1720.00	1072.50	110149.42	1.0000	2.99
HS20 OPER	COL K7	3.80	241.8	233.50	223.08	195.95	1720.00	1072.50	110149.42	1.0000	2.99

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL K7	3.80	241.8	229.05	223.08	198.98	1720.00	1072.50	110149.42	1.0000	2.99		
HS20 OPER	COL K7	3.80	241.8	229.22	223.08	198.36	1720.00	1072.50	110149.42	1.0000	2.99		
HS20 OPER	COL K7	3.80	241.8	229.09	223.08	197.74	1720.00	1072.50	110149.42	1.0000	3.00		
HS20 OPER	COL K7	3.80	241.8	229.39	223.08	197.12	1720.00	1072.50	110149.42	1.0000	3.00		
HS20 OPER	COL K7	3.80	241.8	229.56	223.08	196.49	1720.00	1072.50	110149.42	1.0000	3.00		
HS20 OPER	COL K7	3.80	241.8	229.38	223.08	195.87	1720.00	1072.50	110149.42	1.0000	3.01		
HS20 OPER	COL K7	3.80	241.8	229.72	223.08	195.25	1720.00	1072.50	110149.42	1.0000	3.01		
HS20 OPER	COL K7	3.80	241.8	229.88	223.08	194.63	1720.00	1072.50	110149.42	1.0000	3.01		
HS20 OPER	COL K7	3.80	241.8	230.04	223.08	193.39	1720.00	1072.50	110149.42	1.0000	3.02		
HS20 OPER	COL K7	3.80	241.8	230.20	223.08	192.76	1720.00	1072.50	110149.42	1.0000	3.02		
HS20 OPER	COL K7	3.80	241.8	230.35	223.08	191.52	1720.00	1072.50	110149.42	1.0000	3.03		
HS20 OPER	COL K7	3.80	241.8	230.50	223.08	190.90	1720.00	1072.50	110149.42	1.0000	3.03		
HS20 OPER	COL K7	3.80	241.8	230.64	223.08	189.65	1720.00	1072.50	110149.42	1.0000	3.04		
HS20 OPER	COL K7	3.80	241.8	230.79	223.08	189.03	1720.00	1072.50	110149.42	1.0000	3.05		
HS20 OPER	COL K7	3.80	241.8	230.92	223.08	187.79	1720.00	1072.50	110149.42	1.0000	3.05		
HS20 OPER	COL K7	3.80	241.8	231.06	223.08	187.17	1720.00	1072.50	110149.42	1.0000	3.06		
HS20 OPER	COL K7	3.80	241.8	230.76	223.08	186.55	1720.00	1072.50	110149.42	1.0000	3.06		
HS20 OPER	COL K7	3.80	241.8	231.20	223.08	185.92	1720.00	1072.50	110149.42	1.0000	3.06		
HS20 OPER	COL K7	3.80	241.8	231.33	223.08	185.30	1720.00	1072.50	110149.42	1.0000	3.07		
HS20 OPER	COL K7	3.80	241.8	230.97	223.08	184.68	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K7	3.80	241.8	231.46	223.08	184.06	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K7	3.80	241.8	231.07	223.08	183.44	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K7	3.80	241.8	231.58	223.08	182.81	1720.00	1072.50	110149.42	1.0000	3.08		
HS20 OPER	COL K7	3.80	241.8	231.71	223.08	182.19	1720.00	1072.50	110149.42	1.0000	3.09		
HS20 OPER	COL K7	3.80	241.8	231.27	223.08	181.57	1720.00	1072.50	110149.42	1.0000	3.10		
HS20 OPER	COL K7	3.80	241.8	231.83	223.08	180.95	1720.00	1072.50	110149.42	1.0000	3.10		
HS20 OPER	COL K7	3.80	241.8	231.94	223.08	180.33	1720.00	1072.50	110149.42	1.0000	3.10		
HS20 OPER	COL K7	3.80	241.8	231.45	223.08	179.71	1720.00	1072.50	110149.42	1.0000	3.11		
HS20 OPER	COL K7	3.80	241.8	232.06	223.08	179.08	1720.00	1072.50	110149.42	1.0000	3.11		
HS20 OPER	COL K7	3.80	241.8	232.17	223.08	178.46	1720.00	1072.50	110149.42	1.0000	3.11		
HS20 OPER	COL K7	3.80	241.8	231.62	223.08	177.84	1720.00	1072.50	110149.42	1.0000	3.12		
HS20 OPER	COL K7	3.80	241.8	232.27	223.08	177.22	1720.00	1072.50	110149.42	1.0000	3.12		
HS20 OPER	COL K7	3.80	241.8	232.38	223.08	175.97	1720.00	1072.50	110149.42	1.0000	3.13		
HS20 OPER	COL K7	3.80	241.8	232.48	223.08	175.35	1720.00	1072.50	110149.42	1.0000	3.13		
HS20 OPER	COL K7	3.80	241.8	231.86	223.08	174.73	1720.00	1072.50	110149.42	1.0000	3.14		
HS20 OPER	COL K7	3.80	241.8	232.58	223.08	174.11	1720.00	1072.50	110149.42	1.0000	3.14		
HS20 OPER	COL K7	3.80	241.8	232.67	223.08	173.49	1720.00	1072.50	110149.42	1.0000	3.15		
HS20 OPER	COL K7	3.80	241.8	231.99	223.08	172.87	1720.00	1072.50	110149.42	1.0000	3.16		
HS20 OPER	COL K7	3.80	241.8	232.76	223.08	172.24	1720.00	1072.50	110149.42	1.0000	3.15		
HS20 OPER	COL K7	3.80	241.8	232.86	223.08	171.00	1720.00	1072.50	110149.42	1.0000	3.16		
HS20 OPER	COL K7	3.80	241.8	232.94	223.08	170.38	1720.00	1072.50	110149.42	1.0000	3.17		
HS20 OPER	COL K7	3.80	241.8	233.03	223.08	169.13	1720.00	1072.50	110149.42	1.0000	3.18		
HS20 OPER	COL K7	3.80	241.8	233.11	223.08	168.51	1720.00	1072.50	110149.42	1.0000	3.18		
HS20 OPER	COL K7	3.80	241.8	233.18	223.08	167.27	1720.00	1072.50	110149.42	1.0000	3.19		
HS20 OPER	COL K7	3.80	241.8	232.39	223.08	166.65	1720.00	1072.50	110149.42	1.0000	3.20		
HS20 OPER	COL K7	3.80	241.8	233.26	223.08	166.03	1720.00	1072.50	110149.42	1.0000	3.20		
HS20 OPER	COL K7	3.80	241.8	233.32	223.08	165.40	1720.00	1072.50	110149.42	1.0000	3.20		
HS20 OPER	COL K7	3.80	241.8	233.39	223.08	164.16	1720.00	1072.50	110149.42	1.0000	3.21		
HS20 OPER	COL K7	3.80	241.8	233.46	223.08	163.54	1720.00	1072.50	110149.42	1.0000	3.22		
HS20 OPER	COL K7	3.80	241.8	233.52	223.08	162.29	1720.00	1072.50	110149.42	1.0000	3.23		
HS20 OPER	COL K7	3.80	241.8	232.58	223.08	161.67	1720.00	1072.50	110149.42	1.0000	3.24		
HS20 OPER	COL K7	3.80	241.8	233.57	223.08	161.05	1720.00	1072.50	110149.42	1.0000	3.24		
HS20 OPER	COL K7	3.80	241.8	233.63	223.08	160.43	1720.00	1072.50	110149.42	1.0000	3.24		
HS20 OPER	COL K7	3.80	241.8	233.68	223.08	159.19	1720.00	1072.50	110149.42	1.0000	3.25		
HS20 OPER	COL K7	3.80	241.8	232.65	223.08	158.56	1720.00	1072.50	110149.42	1.0000	3.26		
HS20 OPER	COL K7	3.80	241.8	233.73	223.08	157.94	1720.00	1072.50	110149.42	1.0000	3.26		
HS20 OPER	COL K7	3.80	241.8	233.77	223.08	157.32	1720.00	1072.50	110149.42	1.0000	3.26		
HS20 OPER	COL K7	3.80	241.8	232.68	223.08	156.70	1720.00	1072.50	110149.42	1.0000	3.28		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _c		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation			
1.30	2.17 INV	1.26									
1.30 OPER											
HS20 OPER	COL K7	3.80	241.8	233.82	223.08	156.08	1720.00	1072.50	110149.42	1.0000	3.27
HS20 OPER	COL K7	3.80	241.8	233.85	223.08	155.45	1720.00	1072.50	110149.42	1.0000	3.28
HS20 OPER	COL K7	3.80	241.8	233.88	223.08	154.21	1720.00	1072.50	110149.42	1.0000	3.29
HS20 OPER	COL K7	3.80	241.8	232.72	223.08	153.59	1720.00	1072.50	110149.42	1.0000	3.30
HS20 OPER	COL K7	3.80	241.8	233.92	223.08	152.97	1720.00	1072.50	110149.42	1.0000	3.30
HS20 OPER	COL K7	3.80	241.8	233.95	223.08	152.35	1720.00	1072.50	110149.42	1.0000	3.30
HS20 OPER	COL K7	3.80	241.8	232.72	223.08	151.72	1720.00	1072.50	110149.42	1.0000	3.32
HS20 OPER	COL K7	3.80	241.8	233.97	223.08	151.10	1720.00	1072.50	110149.42	1.0000	3.31
HS20 OPER	COL K7	3.80	241.8	232.72	223.08	150.48	1720.00	1072.50	110149.42	1.0000	3.33
HS20 OPER	COL K7	3.80	241.8	233.99	223.08	149.86	1720.00	1072.50	110149.42	1.0000	3.32
HS20 OPER	COL K7	3.80	241.8	234.01	223.08	149.24	1720.00	1072.50	110149.42	1.0000	3.33
HS20 OPER	COL K7	3.80	241.8	232.70	223.08	148.61	1720.00	1072.50	110149.42	1.0000	3.35
HS20 OPER	COL K7	3.80	241.8	234.03	223.08	147.99	1720.00	1072.50	110149.42	1.0000	3.34
HS20 OPER	COL K7	3.80	241.8	232.68	223.08	147.37	1720.00	1072.50	110149.42	1.0000	3.36
HS20 OPER	COL K7	3.80	241.8	234.03	223.08	146.75	1720.00	1072.50	110149.42	1.0000	3.35
HS20 OPER	COL K7	3.80	241.8	234.05	223.08	146.13	1720.00	1072.50	110149.42	1.0000	3.36
HS20 OPER	COL K7	3.80	241.8	232.65	223.08	145.51	1720.00	1072.50	110149.42	1.0000	3.37
HS20 OPER	COL K7	3.80	241.8	234.05	223.08	144.88	1720.00	1072.50	110149.42	1.0000	3.37
HS20 OPER	COL K7	3.80	241.8	234.05	223.08	144.26	1720.00	1072.50	110149.42	1.0000	3.37
HS20 OPER	COL K7	3.80	241.8	232.60	223.08	143.64	1720.00	1072.50	110149.42	1.0000	3.39
HS20 OPER	COL K7	3.80	241.8	234.05	223.08	143.02	1720.00	1072.50	110149.42	1.0000	3.38
HS20 OPER	COL K7	3.80	241.8	232.57	223.08	142.40	1720.00	1072.50	110149.42	1.0000	3.40
2F1	COL K7	3.80	241.8	77.02	223.08	126.23	1720.00	1072.50	110149.42	1.0000	6.33
2F1	COL K7	3.80	241.8	79.30	223.08	125.61	1720.00	1072.50	110149.42	1.0000	6.28
2F1	COL K7	3.80	241.8	80.71	223.08	124.99	1720.00	1072.50	110149.42	1.0000	6.25
2F1	COL K7	3.80	241.8	81.89	223.08	124.36	1720.00	1072.50	110149.42	1.0000	6.24
2F1	COL K7	3.80	241.8	82.86	223.08	123.74	1720.00	1072.50	110149.42	1.0000	6.22
2F1	COL K7	3.80	241.8	83.80	223.08	123.12	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	84.55	223.08	122.50	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	85.28	223.08	121.88	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	85.82	223.08	121.25	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	86.53	223.08	120.63	1720.00	1072.50	110149.42	1.0000	6.20
2F1	COL K7	3.80	241.8	87.05	223.08	120.01	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	87.57	223.08	119.39	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	88.08	223.08	118.77	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	88.58	223.08	118.15	1720.00	1072.50	110149.42	1.0000	6.21
2F1	COL K7	3.80	241.8	88.92	223.08	117.52	1720.00	1072.50	110149.42	1.0000	6.22
2F1	COL K7	3.80	241.8	89.40	223.08	116.90	1720.00	1072.50	110149.42	1.0000	6.23
2F1	COL K7	3.80	241.8	89.73	223.08	116.28	1720.00	1072.50	110149.42	1.0000	6.23
2F1	COL K7	3.80	241.8	90.21	223.08	115.66	1720.00	1072.50	110149.42	1.0000	6.24
2F1	COL K7	3.80	241.8	90.52	223.08	115.04	1720.00	1072.50	110149.42	1.0000	6.25
2F1	COL K7	3.80	241.8	90.85	223.08	114.41	1720.00	1072.50	110149.42	1.0000	6.25
2F1	COL K7	3.80	241.8	91.30	223.08	113.79	1720.00	1072.50	110149.42	1.0000	6.26
2F1	COL K7	3.80	241.8	91.59	223.08	113.17	1720.00	1072.50	110149.42	1.0000	6.27
2F1	COL K7	3.80	241.8	91.90	223.08	112.55	1720.00	1072.50	110149.42	1.0000	6.28
2F1	COL K7	3.80	241.8	92.20	223.08	111.93	1720.00	1072.50	110149.42	1.0000	6.29
2F1	COL K7	3.80	241.8	92.49	223.08	111.31	1720.00	1072.50	110149.42	1.0000	6.30
2F1	COL K7	3.80	241.8	92.78	223.08	110.68	1720.00	1072.50	110149.42	1.0000	6.31
2F1	COL K7	3.80	241.8	93.05	223.08	110.06	1720.00	1072.50	110149.42	1.0000	6.32
2F1	COL K7	3.80	241.8	93.33	223.08	109.44	1720.00	1072.50	110149.42	1.0000	6.33
2F1	COL K7	3.80	241.8	93.19	223.08	109.44	1720.00	1072.50	110149.42	1.0000	6.33
2F1	COL K7	3.80	241.8	93.61	223.08	108.82	1720.00	1072.50	110149.42	1.0000	6.34
2F1	COL K7	3.80	241.8	93.88	223.08	108.20	1720.00	1072.50	110149.42	1.0000	6.35
2F1	COL K7	3.80	241.8	93.88	223.08	108.20	1720.00	1072.50	110149.42	1.0000	6.35
2F1	COL K7	3.80	241.8	93.74	223.08	108.20	1720.00	1072.50	110149.42	1.0000	6.35
2F1	COL K7	3.80	241.8	94.14	223.08	107.57	1720.00	1072.50	110149.42	1.0000	6.36
2F1	COL K7	3.80	241.8	94.40	223.08	106.95	1720.00	1072.50	110149.42	1.0000	6.37
2F1	COL K7	3.80	241.8	94.66	223.08	106.33	1720.00	1072.50	110149.42	1.0000	6.38

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - North Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

Impact	DL Factor	LL Factor	LLDF	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
2F1	COL K7	3.80	241.8	94.80	223.08	105.71	1720.00	1072.50	110149.42	1.0000	6.40	
2F1	COL K7	3.80	241.8	95.04	223.08	105.09	1720.00	1072.50	110149.42	1.0000	6.41	
2F1	COL K7	3.80	241.8	95.29	223.08	104.47	1720.00	1072.50	110149.42	1.0000	6.42	
2F1	COL K7	3.80	241.8	95.53	223.08	103.84	1720.00	1072.50	110149.42	1.0000	6.43	
2F1	COL K7	3.80	241.8	95.77	223.08	103.22	1720.00	1072.50	110149.42	1.0000	6.44	
2F1	COL K7	3.80	241.8	95.89	223.08	102.60	1720.00	1072.50	110149.42	1.0000	6.46	
2F1	COL K7	3.80	241.8	96.13	223.08	101.98	1720.00	1072.50	110149.42	1.0000	6.47	
2F1	COL K7	3.80	241.8	96.35	223.08	101.36	1720.00	1072.50	110149.42	1.0000	6.48	
2F1	COL K7	3.80	241.8	96.47	223.08	100.73	1720.00	1072.50	110149.42	1.0000	6.50	
2F1	COL K7	3.80	241.8	96.69	223.08	100.11	1720.00	1072.50	110149.42	1.0000	6.51	
2F1	COL K7	3.80	241.8	96.80	223.08	99.49	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K7	3.80	241.8	97.02	223.08	98.87	1720.00	1072.50	110149.42	1.0000	6.54	
2F1	COL K7	3.80	241.8	97.23	223.08	98.25	1720.00	1072.50	110149.42	1.0000	6.55	
2F1	COL K7	3.80	241.8	97.33	223.08	97.63	1720.00	1072.50	110149.42	1.0000	6.57	
2F1	COL K7	3.80	241.8	97.54	223.08	97.00	1720.00	1072.50	110149.42	1.0000	6.58	
2F1	COL K7	3.80	241.8	97.64	223.08	96.38	1720.00	1072.50	110149.42	1.0000	6.60	
2F1	COL K7	3.80	241.8	97.84	223.08	95.76	1720.00	1072.50	110149.42	1.0000	6.62	
2F1	COL K7	3.80	241.8	97.94	223.08	95.14	1720.00	1072.50	110149.42	1.0000	6.63	
2F1	COL K7	3.80	241.8	98.13	223.08	94.52	1720.00	1072.50	110149.42	1.0000	6.65	
2F1	COL K7	3.80	241.8	98.22	223.08	93.89	1720.00	1072.50	110149.42	1.0000	6.67	
2F1	COL K7	3.80	241.8	98.32	223.08	93.27	1720.00	1072.50	110149.42	1.0000	6.68	
2F1	COL K7	3.80	241.8	98.50	223.08	92.65	1720.00	1072.50	110149.42	1.0000	6.70	
2F1	COL K7	3.80	241.8	98.59	223.08	92.03	1720.00	1072.50	110149.42	1.0000	6.72	
2F1	COL K7	3.80	241.8	98.76	223.08	91.41	1720.00	1072.50	110149.42	1.0000	6.73	
2F1	COL K7	3.80	241.8	98.85	223.08	90.79	1720.00	1072.50	110149.42	1.0000	6.75	
2F1	COL K7	3.80	241.8	99.02	223.08	90.16	1720.00	1072.50	110149.42	1.0000	6.77	
2F1	COL K7	3.80	241.8	99.11	223.08	89.54	1720.00	1072.50	110149.42	1.0000	6.78	
2F1	COL K7	3.80	241.8	99.19	223.08	88.92	1720.00	1072.50	110149.42	1.0000	6.80	
2F1	COL K7	3.80	241.8	99.35	223.08	88.30	1720.00	1072.50	110149.42	1.0000	6.82	
2F1	COL K7	3.80	241.8	99.43	223.08	87.68	1720.00	1072.50	110149.42	1.0000	6.84	
2F1	COL K7	3.80	241.8	99.50	223.08	87.05	1720.00	1072.50	110149.42	1.0000	6.86	
2F1	COL K7	3.80	241.8	99.65	223.08	86.43	1720.00	1072.50	110149.42	1.0000	6.87	
2F1	COL K7	3.80	241.8	99.73	223.08	85.81	1720.00	1072.50	110149.42	1.0000	6.89	
2F1	COL K7	3.80	241.8	99.80	223.08	85.19	1720.00	1072.50	110149.42	1.0000	6.91	
2F1	COL K7	3.80	241.8	99.94	223.08	84.57	1720.00	1072.50	110149.42	1.0000	6.93	
2F1	COL K7	3.80	241.8	100.01	223.08	83.95	1720.00	1072.50	110149.42	1.0000	6.95	
2F1	COL K7	3.80	241.8	100.08	223.08	83.32	1720.00	1072.50	110149.42	1.0000	6.97	
2F1	COL K7	3.80	241.8	100.21	223.08	82.70	1720.00	1072.50	110149.42	1.0000	6.99	
2F1	COL K7	3.80	241.8	100.21	223.08	82.70	1720.00	1072.50	110149.42	1.0000	6.99	
2F1	COL K7	3.80	241.8	100.14	223.08	82.70	1720.00	1072.50	110149.42	1.0000	6.99	
2F1	COL K7	3.80	241.8	100.28	223.08	82.08	1720.00	1072.50	110149.42	1.0000	7.01	
2F1	COL K7	3.80	241.8	100.34	223.08	81.46	1720.00	1072.50	110149.42	1.0000	7.03	
2F1	COL K7	3.80	241.8	100.47	223.08	80.84	1720.00	1072.50	110149.42	1.0000	7.05	
2F1	COL K7	3.80	241.8	100.53	223.08	80.21	1720.00	1072.50	110149.42	1.0000	7.07	
2F1	COL K7	3.80	241.8	100.59	223.08	79.59	1720.00	1072.50	110149.42	1.0000	7.09	
2F1	COL K7	3.80	241.8	100.65	223.08	78.97	1720.00	1072.50	110149.42	1.0000	7.12	
2F1	COL K7	3.80	241.8	100.77	223.08	78.35	1720.00	1072.50	110149.42	1.0000	7.14	
2F1	COL K7	3.80	241.8	100.82	223.08	77.73	1720.00	1072.50	110149.42	1.0000	7.16	
2F1	COL K7	3.80	241.8	100.87	223.08	77.11	1720.00	1072.50	110149.42	1.0000	7.18	
2F1	COL K7	3.80	241.8	100.93	223.08	76.48	1720.00	1072.50	110149.42	1.0000	7.20	
2F1	COL K7	3.80	241.8	101.03	223.08	75.86	1720.00	1072.50	110149.42	1.0000	7.22	
2F1	COL K7	3.80	241.8	101.08	223.08	75.24	1720.00	1072.50	110149.42	1.0000	7.25	
2F1	COL K7	3.80	241.8	101.12	223.08	74.62	1720.00	1072.50	110149.42	1.0000	7.27	
2F1	COL K7	3.80	241.8	101.21	223.08	74.00	1720.00	1072.50	110149.42	1.0000	7.29	
2F1	COL K7	3.80	241.8	101.26	223.08	73.37	1720.00	1072.50	110149.42	1.0000	7.31	
2F1	COL K7	3.80	241.8	101.29	223.08	72.75	1720.00	1072.50	110149.42	1.0000	7.34	
2F1	COL K7	3.80	241.8	101.34	223.08	72.13	1720.00	1072.50	110149.42	1.0000	7.36	
2F1	COL K7	3.80	241.8	101.37	223.08	71.51	1720.00	1072.50	110149.42	1.0000	7.39	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _e		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
2F1	COL K7	3.80	241.8	101.45	223.08	70.89	1720.00	1072.50	110149.42	1.0000	7.41	
2F1	COL K7	3.80	241.8	101.49	223.08	70.27	1720.00	1072.50	110149.42	1.0000	7.43	
2F1	COL K7	3.80	241.8	101.52	223.08	69.64	1720.00	1072.50	110149.42	1.0000	7.46	
2F1	COL K7	3.80	241.8	101.56	223.08	69.02	1720.00	1072.50	110149.42	1.0000	7.48	
2F1	COL K7	3.80	241.8	101.62	223.08	68.40	1720.00	1072.50	110149.42	1.0000	7.51	
2F1	COL K7	3.80	241.8	101.64	223.08	67.78	1720.00	1072.50	110149.42	1.0000	7.53	
2F1	COL K7	3.80	241.8	101.67	223.08	67.16	1720.00	1072.50	110149.42	1.0000	7.56	
2F1	COL K7	3.80	241.8	101.70	223.08	66.53	1720.00	1072.50	110149.42	1.0000	7.59	
2F1	COL K7	3.80	241.8	101.72	223.08	65.91	1720.00	1072.50	110149.42	1.0000	7.61	
2F1	COL K7	3.80	241.8	101.77	223.08	65.29	1720.00	1072.50	110149.42	1.0000	7.64	
2F1	COL K7	3.80	241.8	101.79	223.08	64.67	1720.00	1072.50	110149.42	1.0000	7.66	
2F1	COL K7	3.80	241.8	101.80	223.08	64.05	1720.00	1072.50	110149.42	1.0000	7.69	
2F1	COL K7	3.80	241.8	101.82	223.08	63.43	1720.00	1072.50	110149.42	1.0000	7.72	
2F1	COL K7	3.80	241.8	101.85	223.08	62.80	1720.00	1072.50	110149.42	1.0000	7.75	
2F1	COL K7	3.80	241.8	101.87	223.08	62.18	1720.00	1072.50	110149.42	1.0000	7.77	
2F1	COL K7	3.80	241.8	101.88	223.08	61.56	1720.00	1072.50	110149.42	1.0000	7.80	
2F1	COL K7	3.80	241.8	101.89	223.08	60.94	1720.00	1072.50	110149.42	1.0000	7.83	
2F1	COL K7	3.80	241.8	101.90	223.08	60.32	1720.00	1072.50	110149.42	1.0000	7.86	
2F1	COL K7	3.80	241.8	101.91	223.08	59.69	1720.00	1072.50	110149.42	1.0000	7.89	
2F1	COL K7	3.80	241.8	101.92	223.08	59.07	1720.00	1072.50	110149.42	1.0000	7.92	
2F1	COL K7	3.80	241.8	101.92	223.08	58.45	1720.00	1072.50	110149.42	1.0000	7.95	
3F1	COL K7	3.80	241.8	112.52	223.08	192.76	1720.00	1072.50	110149.42	1.0000	4.22	
3F1	COL K7	3.80	241.8	117.13	223.08	192.14	1720.00	1072.50	110149.42	1.0000	4.16	
3F1	COL K7	3.80	241.8	119.36	223.08	191.52	1720.00	1072.50	110149.42	1.0000	4.14	
3F1	COL K7	3.80	241.8	121.24	223.08	190.90	1720.00	1072.50	110149.42	1.0000	4.12	
3F1	COL K7	3.80	241.8	122.47	223.08	190.28	1720.00	1072.50	110149.42	1.0000	4.11	
3F1	COL K7	3.80	241.8	123.68	223.08	189.65	1720.00	1072.50	110149.42	1.0000	4.11	
3F1	COL K7	3.80	241.8	124.87	223.08	189.03	1720.00	1072.50	110149.42	1.0000	4.10	
3F1	COL K7	3.80	241.8	125.76	223.08	188.41	1720.00	1072.50	110149.42	1.0000	4.09	
3F1	COL K7	3.80	241.8	126.64	223.08	187.79	1720.00	1072.50	110149.42	1.0000	4.09	
3F1	COL K7	3.80	241.8	127.51	223.08	187.17	1720.00	1072.50	110149.42	1.0000	4.09	
3F1	COL K7	3.80	241.8	128.36	223.08	186.55	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	129.21	223.08	185.92	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	129.77	223.08	185.30	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	130.33	223.08	184.68	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	131.15	223.08	184.06	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	131.69	223.08	183.44	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	132.23	223.08	182.81	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	132.76	223.08	182.19	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	133.29	223.08	181.57	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	133.81	223.08	180.95	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	134.33	223.08	180.33	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	134.84	223.08	179.71	1720.00	1072.50	110149.42	1.0000	4.08	
3F1	COL K7	3.80	241.8	135.10	223.08	179.08	1720.00	1072.50	110149.42	1.0000	4.09	
3F1	COL K7	3.80	241.8	135.60	223.08	178.46	1720.00	1072.50	110149.42	1.0000	4.09	
3F1	COL K7	3.80	241.8	136.10	223.08	177.84	1720.00	1072.50	110149.42	1.0000	4.09	
3F1	COL K7	3.80	241.8	136.35	223.08	177.22	1720.00	1072.50	110149.42	1.0000	4.10	
3F1	COL K7	3.80	241.8	136.84	223.08	176.60	1720.00	1072.50	110149.42	1.0000	4.10	
3F1	COL K7	3.80	241.8	137.33	223.08	175.97	1720.00	1072.50	110149.42	1.0000	4.10	
3F1	COL K7	3.80	241.8	137.57	223.08	175.35	1720.00	1072.50	110149.42	1.0000	4.10	
3F1	COL K7	3.80	241.8	138.05	223.08	174.73	1720.00	1072.50	110149.42	1.0000	4.10	
3F1	COL K7	3.80	241.8	138.29	223.08	174.11	1720.00	1072.50	110149.42	1.0000	4.11	
3F1	COL K7	3.80	241.8	138.76	223.08	173.49	1720.00	1072.50	110149.42	1.0000	4.11	
3F1	COL K7	3.80	241.8	138.99	223.08	172.87	1720.00	1072.50	110149.42	1.0000	4.12	
3F1	COL K7	3.80	241.8	139.46	223.08	172.24	1720.00	1072.50	110149.42	1.0000	4.12	
3F1	COL K7	3.80	241.8	139.69	223.08	171.62	1720.00	1072.50	110149.42	1.0000	4.12	
3F1	COL K7	3.80	241.8	140.03	223.08	171.00	1720.00	1072.50	110149.42	1.0000	4.13	
3F1	COL K7	3.80	241.8	140.37	223.08	170.38	1720.00	1072.50	110149.42	1.0000	4.13	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
3F1	COL K7	3.80	241.8	140.70	223.08	169.76	1720.00	1072.50	110149.42	1.0000	4.13	
3F1	COL K7	3.80	241.8	140.92	223.08	169.13	1720.00	1072.50	110149.42	1.0000	4.14	
3F1	COL K7	3.80	241.8	141.25	223.08	168.51	1720.00	1072.50	110149.42	1.0000	4.14	
3F1	COL K7	3.80	241.8	141.58	223.08	167.89	1720.00	1072.50	110149.42	1.0000	4.15	
3F1	COL K7	3.80	241.8	141.79	223.08	167.27	1720.00	1072.50	110149.42	1.0000	4.15	
3F1	COL K7	3.80	241.8	142.21	223.08	166.65	1720.00	1072.50	110149.42	1.0000	4.15	
3F1	COL K7	3.80	241.8	142.42	223.08	166.03	1720.00	1072.50	110149.42	1.0000	4.16	
3F1	COL K7	3.80	241.8	142.63	223.08	165.40	1720.00	1072.50	110149.42	1.0000	4.16	
3F1	COL K7	3.80	241.8	143.04	223.08	164.78	1720.00	1072.50	110149.42	1.0000	4.17	
3F1	COL K7	3.80	241.8	143.24	223.08	164.16	1720.00	1072.50	110149.42	1.0000	4.17	
3F1	COL K7	3.80	241.8	143.45	223.08	163.54	1720.00	1072.50	110149.42	1.0000	4.18	
3F1	COL K7	3.80	241.8	143.65	223.08	162.92	1720.00	1072.50	110149.42	1.0000	4.18	
3F1	COL K7	3.80	241.8	144.04	223.08	162.29	1720.00	1072.50	110149.42	1.0000	4.19	
3F1	COL K7	3.80	241.8	144.24	223.08	161.67	1720.00	1072.50	110149.42	1.0000	4.19	
3F1	COL K7	3.80	241.8	144.43	223.08	161.05	1720.00	1072.50	110149.42	1.0000	4.20	
3F1	COL K7	3.80	241.8	144.62	223.08	160.43	1720.00	1072.50	110149.42	1.0000	4.20	
3F1	COL K7	3.80	241.8	145.01	223.08	159.81	1720.00	1072.50	110149.42	1.0000	4.21	
3F1	COL K7	3.80	241.8	145.19	223.08	159.19	1720.00	1072.50	110149.42	1.0000	4.21	
3F1	COL K7	3.80	241.8	145.38	223.08	158.56	1720.00	1072.50	110149.42	1.0000	4.22	
3F1	COL K7	3.80	241.8	145.57	223.08	157.94	1720.00	1072.50	110149.42	1.0000	4.22	
3F1	COL K7	3.80	241.8	145.75	223.08	157.32	1720.00	1072.50	110149.42	1.0000	4.23	
3F1	COL K7	3.80	241.8	145.93	223.08	156.70	1720.00	1072.50	110149.42	1.0000	4.24	
3F1	COL K7	3.80	241.8	146.29	223.08	156.08	1720.00	1072.50	110149.42	1.0000	4.24	
3F1	COL K7	3.80	241.8	146.47	223.08	155.45	1720.00	1072.50	110149.42	1.0000	4.25	
3F1	COL K7	3.80	241.8	146.64	223.08	154.83	1720.00	1072.50	110149.42	1.0000	4.25	
3F1	COL K7	3.80	241.8	146.82	223.08	154.21	1720.00	1072.50	110149.42	1.0000	4.26	
3F1	COL K7	3.80	241.8	146.99	223.08	153.59	1720.00	1072.50	110149.42	1.0000	4.26	
3F1	COL K7	3.80	241.8	147.16	223.08	152.97	1720.00	1072.50	110149.42	1.0000	4.27	
3F1	COL K7	3.80	241.8	147.33	223.08	152.35	1720.00	1072.50	110149.42	1.0000	4.28	
3F1	COL K7	3.80	241.8	147.50	223.08	151.72	1720.00	1072.50	110149.42	1.0000	4.28	
3F1	COL K7	3.80	241.8	147.66	223.08	151.10	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K7	3.80	241.8	147.82	223.08	150.48	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K7	3.80	241.8	147.99	223.08	149.86	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K7	3.80	241.8	148.15	223.08	149.24	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K7	3.80	241.8	148.47	223.08	148.61	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K7	3.80	241.8	148.62	223.08	147.99	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K7	3.80	241.8	148.78	223.08	147.37	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K7	3.80	241.8	148.93	223.08	146.75	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K7	3.80	241.8	149.08	223.08	146.13	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K7	3.80	241.8	149.23	223.08	145.51	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K7	3.80	241.8	149.37	223.08	144.88	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K7	3.80	241.8	149.52	223.08	144.26	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K7	3.80	241.8	149.67	223.08	143.64	1720.00	1072.50	110149.42	1.0000	4.37	
3F1	COL K7	3.80	241.8	149.81	223.08	143.02	1720.00	1072.50	110149.42	1.0000	4.37	
3F1	COL K7	3.80	241.8	149.95	223.08	142.40	1720.00	1072.50	110149.42	1.0000	4.38	
3F1	COL K7	3.80	241.8	150.09	223.08	141.77	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K7	3.80	241.8	150.22	223.08	141.15	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K7	3.80	241.8	150.15	223.08	140.53	1720.00	1072.50	110149.42	1.0000	4.40	
3F1	COL K7	3.80	241.8	150.36	223.08	139.91	1720.00	1072.50	110149.42	1.0000	4.41	
3F1	COL K7	3.80	241.8	150.49	223.08	139.29	1720.00	1072.50	110149.42	1.0000	4.42	
3F1	COL K7	3.80	241.8	150.62	223.08	138.67	1720.00	1072.50	110149.42	1.0000	4.42	
3F1	COL K7	3.80	241.8	150.75	223.08	138.04	1720.00	1072.50	110149.42	1.0000	4.43	
3F1	COL K7	3.80	241.8	150.88	223.08	137.42	1720.00	1072.50	110149.42	1.0000	4.44	
3F1	COL K7	3.80	241.8	151.01	223.08	136.80	1720.00	1072.50	110149.42	1.0000	4.45	
3F1	COL K7	3.80	241.8	151.13	223.08	136.18	1720.00	1072.50	110149.42	1.0000	4.45	
3F1	COL K7	3.80	241.8	151.26	223.08	135.56	1720.00	1072.50	110149.42	1.0000	4.46	
3F1	COL K7	3.80	241.8	151.38	223.08	134.93	1720.00	1072.50	110149.42	1.0000	4.47	
3F1	COL K7	3.80	241.8	151.49	223.08	134.31	1720.00	1072.50	110149.42	1.0000	4.48	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
3F1	COL K7	3.80	241.8	151.61	223.08	133.69	1720.00	1072.50	110149.42	1.0000	4.48	
3F1	COL K7	3.80	241.8	151.73	223.08	133.07	1720.00	1072.50	110149.42	1.0000	4.49	
3F1	COL K7	3.80	241.8	151.84	223.08	132.45	1720.00	1072.50	110149.42	1.0000	4.50	
3F1	COL K7	3.80	241.8	151.84	223.08	131.83	1720.00	1072.50	110149.42	1.0000	4.51	
3F1	COL K7	3.80	241.8	151.96	223.08	131.20	1720.00	1072.50	110149.42	1.0000	4.52	
3F1	COL K7	3.80	241.8	152.07	223.08	130.58	1720.00	1072.50	110149.42	1.0000	4.53	
3F1	COL K7	3.80	241.8	152.19	223.08	129.96	1720.00	1072.50	110149.42	1.0000	4.53	
3F1	COL K7	3.80	241.8	152.30	223.08	129.34	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K7	3.80	241.8	152.38	223.08	128.72	1720.00	1072.50	110149.42	1.0000	4.55	
3F1	COL K7	3.80	241.8	152.49	223.08	128.09	1720.00	1072.50	110149.42	1.0000	4.56	
3F1	COL K7	3.80	241.8	152.59	223.08	127.47	1720.00	1072.50	110149.42	1.0000	4.57	
3F1	COL K7	3.80	241.8	152.69	223.08	126.85	1720.00	1072.50	110149.42	1.0000	4.57	
3F1	COL K7	3.80	241.8	152.73	223.08	126.23	1720.00	1072.50	110149.42	1.0000	4.58	
3F1	COL K7	3.80	241.8	152.83	223.08	125.61	1720.00	1072.50	110149.42	1.0000	4.59	
3F1	COL K7	3.80	241.8	152.93	223.08	124.99	1720.00	1072.50	110149.42	1.0000	4.60	
3F1	COL K7	3.80	241.8	153.03	223.08	124.36	1720.00	1072.50	110149.42	1.0000	4.61	
3F1	COL K7	3.80	241.8	153.13	223.08	123.74	1720.00	1072.50	110149.42	1.0000	4.62	
3F1	COL K7	3.80	241.8	153.15	223.08	123.12	1720.00	1072.50	110149.42	1.0000	4.63	
3F1	COL K7	3.80	241.8	153.24	223.08	122.50	1720.00	1072.50	110149.42	1.0000	4.64	
3F1	COL K7	3.80	241.8	153.33	223.08	121.88	1720.00	1072.50	110149.42	1.0000	4.64	
3F1	COL K7	3.80	241.8	153.40	223.08	121.25	1720.00	1072.50	110149.42	1.0000	4.65	
3F1	COL K7	3.80	241.8	153.50	223.08	120.63	1720.00	1072.50	110149.42	1.0000	4.66	
3F1	COL K7	3.80	241.8	153.58	223.08	120.01	1720.00	1072.50	110149.42	1.0000	4.67	
3F1	COL K7	3.80	241.8	153.66	223.08	119.39	1720.00	1072.50	110149.42	1.0000	4.68	
3F1	COL K7	3.80	241.8	153.65	223.08	118.77	1720.00	1072.50	110149.42	1.0000	4.69	
3F1	COL K7	3.80	241.8	153.75	223.08	118.15	1720.00	1072.50	110149.42	1.0000	4.70	
3F1	COL K7	3.80	241.8	153.83	223.08	117.52	1720.00	1072.50	110149.42	1.0000	4.71	
3F1	COL K7	3.80	241.8	153.91	223.08	116.90	1720.00	1072.50	110149.42	1.0000	4.72	
3F1	COL K7	3.80	241.8	153.99	223.08	116.28	1720.00	1072.50	110149.42	1.0000	4.73	
3F1	COL K7	3.80	241.8	154.06	223.08	115.66	1720.00	1072.50	110149.42	1.0000	4.74	
3F1	COL K7	3.80	241.8	154.14	223.08	115.04	1720.00	1072.50	110149.42	1.0000	4.75	
3F1	COL K7	3.80	241.8	154.07	223.08	114.41	1720.00	1072.50	110149.42	1.0000	4.76	
3F1	COL K7	3.80	241.8	154.20	223.08	113.79	1720.00	1072.50	110149.42	1.0000	4.77	
3F1	COL K7	3.80	241.8	154.28	223.08	113.17	1720.00	1072.50	110149.42	1.0000	4.78	
3F1	COL K7	3.80	241.8	154.34	223.08	112.55	1720.00	1072.50	110149.42	1.0000	4.79	
3F1	COL K7	3.80	241.8	154.41	223.08	111.93	1720.00	1072.50	110149.42	1.0000	4.80	
3F1	COL K7	3.80	241.8	154.47	223.08	111.31	1720.00	1072.50	110149.42	1.0000	4.81	
3F1	COL K7	3.80	241.8	154.38	223.08	110.68	1720.00	1072.50	110149.42	1.0000	4.82	
3F1	COL K7	3.80	241.8	154.53	223.08	110.06	1720.00	1072.50	110149.42	1.0000	4.83	
3F1	COL K7	3.80	241.8	154.59	223.08	109.44	1720.00	1072.50	110149.42	1.0000	4.84	
3F1	COL K7	3.80	241.8	154.65	223.08	108.82	1720.00	1072.50	110149.42	1.0000	4.85	
3F1	COL K7	3.80	241.8	154.70	223.08	108.20	1720.00	1072.50	110149.42	1.0000	4.86	
3F1	COL K7	3.80	241.8	154.76	223.08	107.57	1720.00	1072.50	110149.42	1.0000	4.87	
3F1	COL K7	3.80	241.8	154.63	223.08	106.95	1720.00	1072.50	110149.42	1.0000	4.88	
3F1	COL K7	3.80	241.8	154.81	223.08	106.33	1720.00	1072.50	110149.42	1.0000	4.89	
3F1	COL K7	3.80	241.8	154.86	223.08	105.71	1720.00	1072.50	110149.42	1.0000	4.90	
3F1	COL K7	3.80	241.8	154.91	223.08	105.09	1720.00	1072.50	110149.42	1.0000	4.91	
3F1	COL K7	3.80	241.8	154.95	223.08	104.47	1720.00	1072.50	110149.42	1.0000	4.92	
3F1	COL K7	3.80	241.8	154.79	223.08	103.84	1720.00	1072.50	110149.42	1.0000	4.94	
3F1	COL K7	3.80	241.8	154.99	223.08	103.22	1720.00	1072.50	110149.42	1.0000	4.94	
3F1	COL K7	3.80	241.8	155.03	223.08	102.60	1720.00	1072.50	110149.42	1.0000	4.95	
3F1	COL K7	3.80	241.8	155.08	223.08	101.98	1720.00	1072.50	110149.42	1.0000	4.96	
3F1	COL K7	3.80	241.8	155.11	223.08	101.36	1720.00	1072.50	110149.42	1.0000	4.98	
3F1	COL K7	3.80	241.8	155.14	223.08	100.73	1720.00	1072.50	110149.42	1.0000	4.99	
3F1	COL K7	3.80	241.8	154.94	223.08	100.11	1720.00	1072.50	110149.42	1.0000	5.00	
3F1	COL K7	3.80	241.8	155.17	223.08	99.49	1720.00	1072.50	110149.42	1.0000	5.01	
3F1	COL K7	3.80	241.8	155.21	223.08	98.87	1720.00	1072.50	110149.42	1.0000	5.02	
3F1	COL K7	3.80	241.8	155.24	223.08	98.25	1720.00	1072.50	110149.42	1.0000	5.03	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
3F1	COL K7	3.80	241.8	155.26	223.08	97.63	1720.00	1072.50	110149.42	1.0000	5.04	
3F1	COL K7	3.80	241.8	155.03	223.08	97.00	1720.00	1072.50	110149.42	1.0000	5.06	
3F1	COL K7	3.80	241.8	155.29	223.08	96.38	1720.00	1072.50	110149.42	1.0000	5.07	
3F1	COL K7	3.80	241.8	155.31	223.08	95.76	1720.00	1072.50	110149.42	1.0000	5.08	
3F1	COL K7	3.80	241.8	155.32	223.08	95.14	1720.00	1072.50	110149.42	1.0000	5.09	
3F1	COL K7	3.80	241.8	155.34	223.08	94.52	1720.00	1072.50	110149.42	1.0000	5.10	
3F1	COL K7	3.80	241.8	155.36	223.08	93.89	1720.00	1072.50	110149.42	1.0000	5.12	
3F1	COL K7	3.80	241.8	155.09	223.08	93.27	1720.00	1072.50	110149.42	1.0000	5.13	
3F1	COL K7	3.80	241.8	155.37	223.08	92.65	1720.00	1072.50	110149.42	1.0000	5.14	
3F1	COL K7	3.80	241.8	155.38	223.08	92.03	1720.00	1072.50	110149.42	1.0000	5.15	
3F1	COL K7	3.80	241.8	155.39	223.08	91.41	1720.00	1072.50	110149.42	1.0000	5.17	
3F1	COL K7	3.80	241.8	155.40	223.08	90.79	1720.00	1072.50	110149.42	1.0000	5.18	
3F1	COL K7	3.80	241.8	155.09	223.08	90.16	1720.00	1072.50	110149.42	1.0000	5.20	
3F1	COL K7	3.80	241.8	155.40	223.08	89.54	1720.00	1072.50	110149.42	1.0000	5.20	
3F1	COL K7	3.80	241.8	155.40	223.08	88.92	1720.00	1072.50	110149.42	1.0000	5.22	
4F1	COL K7	3.80	241.8	133.59	223.08	223.85	1720.00	1072.50	110149.42	1.0000	3.60	
4F1	COL K7	3.80	241.8	136.63	223.08	223.23	1720.00	1072.50	110149.42	1.0000	3.58	
4F1	COL K7	3.80	241.8	138.49	223.08	222.61	1720.00	1072.50	110149.42	1.0000	3.56	
4F1	COL K7	3.80	241.8	140.33	223.08	221.99	1720.00	1072.50	110149.42	1.0000	3.55	
4F1	COL K7	3.80	241.8	141.77	223.08	221.37	1720.00	1072.50	110149.42	1.0000	3.54	
4F1	COL K7	3.80	241.8	143.20	223.08	220.75	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	144.26	223.08	220.12	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	145.31	223.08	219.50	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	146.34	223.08	218.88	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	147.03	223.08	218.26	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	148.05	223.08	217.64	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	148.72	223.08	217.01	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	149.39	223.08	216.39	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	150.38	223.08	215.77	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	151.03	223.08	215.15	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	151.68	223.08	214.53	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	152.32	223.08	213.91	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	152.96	223.08	213.28	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	153.28	223.08	212.66	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	153.91	223.08	212.04	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	154.53	223.08	211.42	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	155.14	223.08	210.80	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	155.45	223.08	210.17	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	156.06	223.08	209.55	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	156.67	223.08	208.93	1720.00	1072.50	110149.42	1.0000	3.51	
4F1	COL K7	3.80	241.8	156.97	223.08	208.31	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	157.56	223.08	207.69	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	157.85	223.08	207.07	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	158.44	223.08	206.44	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	158.73	223.08	205.82	1720.00	1072.50	110149.42	1.0000	3.52	
4F1	COL K7	3.80	241.8	159.02	223.08	205.20	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	159.59	223.08	204.58	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	159.88	223.08	203.96	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	160.44	223.08	203.33	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	160.71	223.08	202.71	1720.00	1072.50	110149.42	1.0000	3.53	
4F1	COL K7	3.80	241.8	160.99	223.08	202.09	1720.00	1072.50	110149.42	1.0000	3.54	
4F1	COL K7	3.80	241.8	161.27	223.08	201.47	1720.00	1072.50	110149.42	1.0000	3.54	
4F1	COL K7	3.80	241.8	161.82	223.08	200.85	1720.00	1072.50	110149.42	1.0000	3.54	
4F1	COL K7	3.80	241.8	162.09	223.08	200.23	1720.00	1072.50	110149.42	1.0000	3.54	
4F1	COL K7	3.80	241.8	162.36	223.08	199.60	1720.00	1072.50	110149.42	1.0000	3.55	
4F1	COL K7	3.80	241.8	162.63	223.08	198.98	1720.00	1072.50	110149.42	1.0000	3.55	
4F1	COL K7	3.80	241.8	163.16	223.08	198.36	1720.00	1072.50	110149.42	1.0000	3.55	
4F1	COL K7	3.80	241.8	163.43	223.08	197.74	1720.00	1072.50	110149.42	1.0000	3.55	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
4F1	COL K7	3.80	241.8	163.69	223.08	197.12	1720.00	1072.50	110149.42	1.0000	3.56	
4F1	COL K7	3.80	241.8	164.10	223.08	196.49	1720.00	1072.50	110149.42	1.0000	3.56	
4F1	COL K7	3.80	241.8	164.35	223.08	195.87	1720.00	1072.50	110149.42	1.0000	3.56	
4F1	COL K7	3.80	241.8	164.72	223.08	195.25	1720.00	1072.50	110149.42	1.0000	3.56	
4F1	COL K7	3.80	241.8	164.97	223.08	194.63	1720.00	1072.50	110149.42	1.0000	3.57	
4F1	COL K7	3.80	241.8	165.22	223.08	194.01	1720.00	1072.50	110149.42	1.0000	3.57	
4F1	COL K7	3.80	241.8	165.60	223.08	193.39	1720.00	1072.50	110149.42	1.0000	3.57	
4F1	COL K7	3.80	241.8	165.84	223.08	192.76	1720.00	1072.50	110149.42	1.0000	3.58	
4F1	COL K7	3.80	241.8	166.09	223.08	192.14	1720.00	1072.50	110149.42	1.0000	3.58	
4F1	COL K7	3.80	241.8	166.32	223.08	191.52	1720.00	1072.50	110149.42	1.0000	3.58	
4F1	COL K7	3.80	241.8	166.57	223.08	190.90	1720.00	1072.50	110149.42	1.0000	3.59	
4F1	COL K7	3.80	241.8	166.80	223.08	190.28	1720.00	1072.50	110149.42	1.0000	3.59	
4F1	COL K7	3.80	241.8	167.27	223.08	189.65	1720.00	1072.50	110149.42	1.0000	3.59	
4F1	COL K7	3.80	241.8	167.50	223.08	189.03	1720.00	1072.50	110149.42	1.0000	3.60	
4F1	COL K7	3.80	241.8	167.73	223.08	188.41	1720.00	1072.50	110149.42	1.0000	3.60	
4F1	COL K7	3.80	241.8	167.96	223.08	187.79	1720.00	1072.50	110149.42	1.0000	3.60	
4F1	COL K7	3.80	241.8	168.18	223.08	187.17	1720.00	1072.50	110149.42	1.0000	3.61	
4F1	COL K7	3.80	241.8	168.41	223.08	186.55	1720.00	1072.50	110149.42	1.0000	3.61	
4F1	COL K7	3.80	241.8	168.63	223.08	185.92	1720.00	1072.50	110149.42	1.0000	3.62	
4F1	COL K7	3.80	241.8	168.85	223.08	185.30	1720.00	1072.50	110149.42	1.0000	3.62	
4F1	COL K7	3.80	241.8	169.07	223.08	184.68	1720.00	1072.50	110149.42	1.0000	3.62	
4F1	COL K7	3.80	241.8	169.29	223.08	184.06	1720.00	1072.50	110149.42	1.0000	3.63	
4F1	COL K7	3.80	241.8	169.51	223.08	183.44	1720.00	1072.50	110149.42	1.0000	3.63	
4F1	COL K7	3.80	241.8	169.72	223.08	182.81	1720.00	1072.50	110149.42	1.0000	3.64	
4F1	COL K7	3.80	241.8	169.93	223.08	182.19	1720.00	1072.50	110149.42	1.0000	3.64	
4F1	COL K7	3.80	241.8	170.14	223.08	181.57	1720.00	1072.50	110149.42	1.0000	3.64	
4F1	COL K7	3.80	241.8	170.35	223.08	180.95	1720.00	1072.50	110149.42	1.0000	3.65	
4F1	COL K7	3.80	241.8	170.55	223.08	180.33	1720.00	1072.50	110149.42	1.0000	3.65	
4F1	COL K7	3.80	241.8	170.76	223.08	179.71	1720.00	1072.50	110149.42	1.0000	3.66	
4F1	COL K7	3.80	241.8	170.96	223.08	179.08	1720.00	1072.50	110149.42	1.0000	3.66	
4F1	COL K7	3.80	241.8	171.16	223.08	178.46	1720.00	1072.50	110149.42	1.0000	3.67	
4F1	COL K7	3.80	241.8	171.36	223.08	177.84	1720.00	1072.50	110149.42	1.0000	3.67	
4F1	COL K7	3.80	241.8	171.55	223.08	177.22	1720.00	1072.50	110149.42	1.0000	3.67	
4F1	COL K7	3.80	241.8	171.75	223.08	176.60	1720.00	1072.50	110149.42	1.0000	3.68	
4F1	COL K7	3.80	241.8	171.94	223.08	175.97	1720.00	1072.50	110149.42	1.0000	3.68	
4F1	COL K7	3.80	241.8	172.13	223.08	175.35	1720.00	1072.50	110149.42	1.0000	3.69	
4F1	COL K7	3.80	241.8	172.32	223.08	174.73	1720.00	1072.50	110149.42	1.0000	3.69	
4F1	COL K7	3.80	241.8	172.51	223.08	174.11	1720.00	1072.50	110149.42	1.0000	3.70	
4F1	COL K7	3.80	241.8	172.69	223.08	173.49	1720.00	1072.50	110149.42	1.0000	3.70	
4F1	COL K7	3.80	241.8	172.88	223.08	172.87	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K7	3.80	241.8	173.06	223.08	172.24	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K7	3.80	241.8	173.24	223.08	171.62	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K7	3.80	241.8	173.41	223.08	171.00	1720.00	1072.50	110149.42	1.0000	3.72	
4F1	COL K7	3.80	241.8	173.29	223.08	170.38	1720.00	1072.50	110149.42	1.0000	3.73	
4F1	COL K7	3.80	241.8	173.59	223.08	169.76	1720.00	1072.50	110149.42	1.0000	3.73	
4F1	COL K7	3.80	241.8	173.76	223.08	169.13	1720.00	1072.50	110149.42	1.0000	3.73	
4F1	COL K7	3.80	241.8	173.93	223.08	168.51	1720.00	1072.50	110149.42	1.0000	3.74	
4F1	COL K7	3.80	241.8	174.10	223.08	167.89	1720.00	1072.50	110149.42	1.0000	3.74	
4F1	COL K7	3.80	241.8	174.27	223.08	167.27	1720.00	1072.50	110149.42	1.0000	3.75	
4F1	COL K7	3.80	241.8	174.43	223.08	166.65	1720.00	1072.50	110149.42	1.0000	3.75	
4F1	COL K7	3.80	241.8	174.59	223.08	166.03	1720.00	1072.50	110149.42	1.0000	3.76	
4F1	COL K7	3.80	241.8	174.76	223.08	165.40	1720.00	1072.50	110149.42	1.0000	3.76	
4F1	COL K7	3.80	241.8	174.70	223.08	164.78	1720.00	1072.50	110149.42	1.0000	3.77	
4F1	COL K7	3.80	241.8	174.92	223.08	164.16	1720.00	1072.50	110149.42	1.0000	3.78	
4F1	COL K7	3.80	241.8	175.07	223.08	163.54	1720.00	1072.50	110149.42	1.0000	3.78	
4F1	COL K7	3.80	241.8	175.23	223.08	162.92	1720.00	1072.50	110149.42	1.0000	3.79	
4F1	COL K7	3.80	241.8	175.38	223.08	162.29	1720.00	1072.50	110149.42	1.0000	3.79	
4F1	COL K7	3.80	241.8	175.53	223.08	161.67	1720.00	1072.50	110149.42	1.0000	3.80	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
				Axial Force		Moment		P _u	M _u	A _s F _{ex}	
				Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF
4F1	COL K7	3.80	241.8	175.51	223.08	161.05	1720.00	1072.50	110149.42	1.0000	3.80
4F1	COL K7	3.80	241.8	175.68	223.08	160.43	1720.00	1072.50	110149.42	1.0000	3.81
4F1	COL K7	3.80	241.8	175.83	223.08	159.81	1720.00	1072.50	110149.42	1.0000	3.81
4F1	COL K7	3.80	241.8	175.97	223.08	159.19	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K7	3.80	241.8	176.11	223.08	158.56	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K7	3.80	241.8	176.25	223.08	157.94	1720.00	1072.50	110149.42	1.0000	3.83
4F1	COL K7	3.80	241.8	176.39	223.08	156.70	1720.00	1072.50	110149.42	1.0000	3.84
4F1	COL K7	3.80	241.8	176.53	223.08	156.08	1720.00	1072.50	110149.42	1.0000	3.85
4F1	COL K7	3.80	241.8	176.66	223.08	155.45	1720.00	1072.50	110149.42	1.0000	3.85
4F1	COL K7	3.80	241.8	176.80	223.08	154.83	1720.00	1072.50	110149.42	1.0000	3.86
4F1	COL K7	3.80	241.8	176.92	223.08	154.21	1720.00	1072.50	110149.42	1.0000	3.86
4F1	COL K7	3.80	241.8	176.84	223.08	153.59	1720.00	1072.50	110149.42	1.0000	3.87
4F1	COL K7	3.80	241.8	177.05	223.08	152.97	1720.00	1072.50	110149.42	1.0000	3.88
4F1	COL K7	3.80	241.8	177.17	223.08	152.35	1720.00	1072.50	110149.42	1.0000	3.88
4F1	COL K7	3.80	241.8	177.30	223.08	151.72	1720.00	1072.50	110149.42	1.0000	3.89
4F1	COL K7	3.80	241.8	177.42	223.08	151.10	1720.00	1072.50	110149.42	1.0000	3.89
4F1	COL K7	3.80	241.8	177.39	223.08	150.48	1720.00	1072.50	110149.42	1.0000	3.90
4F1	COL K7	3.80	241.8	177.54	223.08	149.86	1720.00	1072.50	110149.42	1.0000	3.91
4F1	COL K7	3.80	241.8	177.65	223.08	149.24	1720.00	1072.50	110149.42	1.0000	3.91
4F1	COL K7	3.80	241.8	177.77	223.08	148.61	1720.00	1072.50	110149.42	1.0000	3.92
4F1	COL K7	3.80	241.8	177.77	223.08	148.61	1720.00	1072.50	110149.42	1.0000	3.92
4F1	COL K7	3.80	241.8	177.88	223.08	147.37	1720.00	1072.50	110149.42	1.0000	3.93
4F1	COL K7	3.80	241.8	178.00	223.08	146.75	1720.00	1072.50	110149.42	1.0000	3.94
4F1	COL K7	3.80	241.8	178.12	223.08	146.13	1720.00	1072.50	110149.42	1.0000	3.94
4F1	COL K7	3.80	241.8	178.20	223.08	145.51	1720.00	1072.50	110149.42	1.0000	3.95
4F1	COL K7	3.80	241.8	178.24	223.08	144.88	1720.00	1072.50	110149.42	1.0000	3.96
4F1	COL K7	3.80	241.8	178.35	223.08	144.26	1720.00	1072.50	110149.42	1.0000	3.96
4F1	COL K7	3.80	241.8	178.46	223.08	143.64	1720.00	1072.50	110149.42	1.0000	3.97
4F1	COL K7	3.80	241.8	178.57	223.08	143.02	1720.00	1072.50	110149.42	1.0000	3.98
4F1	COL K7	3.80	241.8	178.68	223.08	141.77	1720.00	1072.50	110149.42	1.0000	3.99
4F1	COL K7	3.80	241.8	178.78	223.08	141.15	1720.00	1072.50	110149.42	1.0000	4.00
4F1	COL K7	3.80	241.8	178.88	223.08	140.53	1720.00	1072.50	110149.42	1.0000	4.00
4F1	COL K7	3.80	241.8	178.98	223.08	139.29	1720.00	1072.50	110149.42	1.0000	4.02
4F1	COL K7	3.80	241.8	179.08	223.08	138.67	1720.00	1072.50	110149.42	1.0000	4.02
4F1	COL K7	3.80	241.8	179.18	223.08	138.04	1720.00	1072.50	110149.42	1.0000	4.03
4F1	COL K7	3.80	241.8	179.27	223.08	136.80	1720.00	1072.50	110149.42	1.0000	4.04
4F1	COL K7	3.80	241.8	179.36	223.08	136.18	1720.00	1072.50	110149.42	1.0000	4.05
4F1	COL K7	3.80	241.8	179.45	223.08	135.56	1720.00	1072.50	110149.42	1.0000	4.06
4F1	COL K7	3.80	241.8	179.53	223.08	134.31	1720.00	1072.50	110149.42	1.0000	4.07
4F1	COL K7	3.80	241.8	179.62	223.08	133.69	1720.00	1072.50	110149.42	1.0000	4.08
4F1	COL K7	3.80	241.8	179.70	223.08	133.07	1720.00	1072.50	110149.42	1.0000	4.08
4F1	COL K7	3.80	241.8	179.78	223.08	131.83	1720.00	1072.50	110149.42	1.0000	4.10
4F1	COL K7	3.80	241.8	179.85	223.08	131.20	1720.00	1072.50	110149.42	1.0000	4.11
4F1	COL K7	3.80	241.8	179.93	223.08	130.58	1720.00	1072.50	110149.42	1.0000	4.11
4F1	COL K7	3.80	241.8	180.00	223.08	129.34	1720.00	1072.50	110149.42	1.0000	4.13
4F1	COL K7	3.80	241.8	180.07	223.08	128.72	1720.00	1072.50	110149.42	1.0000	4.14
4F1	COL K7	3.80	241.8	179.89	223.08	128.09	1720.00	1072.50	110149.42	1.0000	4.15
4F1	COL K7	3.80	241.8	180.13	223.08	127.47	1720.00	1072.50	110149.42	1.0000	4.15
4F1	COL K7	3.80	241.8	180.20	223.08	126.85	1720.00	1072.50	110149.42	1.0000	4.16
4F1	COL K7	3.80	241.8	180.26	223.08	126.23	1720.00	1072.50	110149.42	1.0000	4.17
4F1	COL K7	3.80	241.8	180.33	223.08	124.99	1720.00	1072.50	110149.42	1.0000	4.18
4F1	COL K7	3.80	241.8	180.38	223.08	124.36	1720.00	1072.50	110149.42	1.0000	4.19
4F1	COL K7	3.80	241.8	180.44	223.08	123.74	1720.00	1072.50	110149.42	1.0000	4.20
4F1	COL K7	3.80	241.8	180.49	223.08	122.50	1720.00	1072.50	110149.42	1.0000	4.21
4F1	COL K7	3.80	241.8	180.54	223.08	121.88	1720.00	1072.50	110149.42	1.0000	4.22
4F1	COL K7	3.80	241.8	180.59	223.08	121.25	1720.00	1072.50	110149.42	1.0000	4.23
4F1	COL K7	3.80	241.8	180.63	223.08	120.01	1720.00	1072.50	110149.42	1.0000	4.25
4F1	COL K7	3.80	241.8	180.68	223.08	119.39	1720.00	1072.50	110149.42	1.0000	4.25

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation			
1.30	2.17 INV	1.26									
1.30 OPER											
4F1	COL K7	3.80	241.8	180.71	223.08	118.15	1720.00	1072.50	110149.42	1.0000	4.27
4F1	COL K7	3.80	241.8	180.76	223.08	117.52	1720.00	1072.50	110149.42	1.0000	4.28
4F1	COL K7	3.80	241.8	180.79	223.08	116.90	1720.00	1072.50	110149.42	1.0000	4.29
4F1	COL K7	3.80	241.8	180.82	223.08	115.66	1720.00	1072.50	110149.42	1.0000	4.30
4F1	COL K7	3.80	241.8	180.85	223.08	115.04	1720.00	1072.50	110149.42	1.0000	4.31
4F1	COL K7	3.80	241.8	180.88	223.08	113.79	1720.00	1072.50	110149.42	1.0000	4.33
4F1	COL K7	3.80	241.8	180.91	223.08	113.17	1720.00	1072.50	110149.42	1.0000	4.34
4F1	COL K7	3.80	241.8	180.93	223.08	112.55	1720.00	1072.50	110149.42	1.0000	4.35
4F1	COL K7	3.80	241.8	180.95	223.08	111.31	1720.00	1072.50	110149.42	1.0000	4.36
4F1	COL K7	3.80	241.8	180.97	223.08	110.68	1720.00	1072.50	110149.42	1.0000	4.37
4F1	COL K7	3.80	241.8	180.98	223.08	110.06	1720.00	1072.50	110149.42	1.0000	4.38
4F1	COL K7	3.80	241.8	180.51	223.08	109.44	1720.00	1072.50	110149.42	1.0000	4.40
4F1	COL K7	3.80	241.8	180.99	223.08	108.82	1720.00	1072.50	110149.42	1.0000	4.40
4F1	COL K7	3.80	241.8	181.00	223.08	108.20	1720.00	1072.50	110149.42	1.0000	4.41
4F1	COL K7	3.80	241.8	181.01	223.08	106.95	1720.00	1072.50	110149.42	1.0000	4.43
4F1	COL K7	3.80	241.8	181.02	223.08	106.33	1720.00	1072.50	110149.42	1.0000	4.44
4F1	COL K7	3.80	241.8	181.02	223.08	105.71	1720.00	1072.50	110149.42	1.0000	4.45
5C1	COL K7	3.80	241.8	169.14	223.08	212.66	1720.00	1072.50	110149.42	1.0000	3.36
5C1	COL K7	3.80	241.8	170.27	223.08	212.04	1720.00	1072.50	110149.42	1.0000	3.36
5C1	COL K7	3.80	241.8	171.39	223.08	211.42	1720.00	1072.50	110149.42	1.0000	3.35
5C1	COL K7	3.80	241.8	172.49	223.08	210.80	1720.00	1072.50	110149.42	1.0000	3.35
5C1	COL K7	3.80	241.8	173.58	223.08	210.17	1720.00	1072.50	110149.42	1.0000	3.34
5C1	COL K7	3.80	241.8	174.66	223.08	209.55	1720.00	1072.50	110149.42	1.0000	3.34
5C1	COL K7	3.80	241.8	175.71	223.08	208.93	1720.00	1072.50	110149.42	1.0000	3.34
5C1	COL K7	3.80	241.8	182.17	223.08	208.31	1720.00	1072.50	110149.42	1.0000	3.28
5C1	COL K7	3.80	241.8	187.00	223.08	207.69	1720.00	1072.50	110149.42	1.0000	3.25
5C1	COL K7	3.80	241.8	190.32	223.08	207.07	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	190.87	223.08	206.44	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	191.40	223.08	205.82	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	191.94	223.08	205.20	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	192.46	223.08	204.58	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	192.97	223.08	203.96	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	193.47	223.08	203.33	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	193.97	223.08	202.71	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	194.45	223.08	202.09	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	195.17	223.08	201.47	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	195.63	223.08	200.85	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	196.08	223.08	200.23	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	196.53	223.08	199.60	1720.00	1072.50	110149.42	1.0000	3.23
5C1	COL K7	3.80	241.8	196.97	223.08	198.98	1720.00	1072.50	110149.42	1.0000	3.24
5C1	COL K7	3.80	241.8	197.40	223.08	198.36	1720.00	1072.50	110149.42	1.0000	3.24
5C1	COL K7	3.80	241.8	198.02	223.08	197.74	1720.00	1072.50	110149.42	1.0000	3.24
5C1	COL K7	3.80	241.8	198.42	223.08	197.12	1720.00	1072.50	110149.42	1.0000	3.24
5C1	COL K7	3.80	241.8	198.81	223.08	196.49	1720.00	1072.50	110149.42	1.0000	3.24
5C1	COL K7	3.80	241.8	199.19	223.08	195.87	1720.00	1072.50	110149.42	1.0000	3.24
5C1	COL K7	3.80	241.8	199.57	223.08	195.25	1720.00	1072.50	110149.42	1.0000	3.24
5C1	COL K7	3.80	241.8	199.78	223.08	194.63	1720.00	1072.50	110149.42	1.0000	3.25
5C1	COL K7	3.80	241.8	200.00	223.08	194.01	1720.00	1072.50	110149.42	1.0000	3.25
5C1	COL K7	3.80	241.8	200.42	223.08	193.39	1720.00	1072.50	110149.42	1.0000	3.25
5C1	COL K7	3.80	241.8	200.74	223.08	192.76	1720.00	1072.50	110149.42	1.0000	3.25
5C1	COL K7	3.80	241.8	201.15	223.08	192.14	1720.00	1072.50	110149.42	1.0000	3.26
5C1	COL K7	3.80	241.8	201.43	223.08	191.52	1720.00	1072.50	110149.42	1.0000	3.26
5C1	COL K7	3.80	241.8	201.82	223.08	190.90	1720.00	1072.50	110149.42	1.0000	3.26
5C1	COL K7	3.80	241.8	202.07	223.08	190.28	1720.00	1072.50	110149.42	1.0000	3.26
5C1	COL K7	3.80	241.8	202.31	223.08	189.65	1720.00	1072.50	110149.42	1.0000	3.27
5C1	COL K7	3.80	241.8	202.64	223.08	189.03	1720.00	1072.50	110149.42	1.0000	3.27
5C1	COL K7	3.80	241.8	202.86	223.08	188.41	1720.00	1072.50	110149.42	1.0000	3.27
5C1	COL K7	3.80	241.8	203.15	223.08	187.79	1720.00	1072.50	110149.42	1.0000	3.27

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c} \right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
5C1	COL K7	3.80	241.8	203.33	223.08	187.17	1720.00	1072.50	110149.42	1.0000	3.28	
5C1	COL K7	3.80	241.8	203.59	223.08	186.55	1720.00	1072.50	110149.42	1.0000	3.28	
5C1	COL K7	3.80	241.8	203.74	223.08	185.92	1720.00	1072.50	110149.42	1.0000	3.28	
5C1	COL K7	3.80	241.8	203.95	223.08	185.30	1720.00	1072.50	110149.42	1.0000	3.29	
5C1	COL K7	3.80	241.8	204.14	223.08	184.68	1720.00	1072.50	110149.42	1.0000	3.29	
5C1	COL K7	3.80	241.8	204.25	223.08	184.06	1720.00	1072.50	110149.42	1.0000	3.30	
5C1	COL K7	3.80	241.8	204.40	223.08	183.44	1720.00	1072.50	110149.42	1.0000	3.30	
5C1	COL K7	3.80	241.8	204.48	223.08	182.81	1720.00	1072.50	110149.42	1.0000	3.30	
5C1	COL K7	3.80	241.8	204.58	223.08	182.19	1720.00	1072.50	110149.42	1.0000	3.31	
5C1	COL K7	3.80	241.8	204.66	223.08	181.57	1720.00	1072.50	110149.42	1.0000	3.31	
5C1	COL K7	3.80	241.8	204.70	223.08	180.95	1720.00	1072.50	110149.42	1.0000	3.32	
5C1	COL K7	3.80	241.8	204.83	223.08	180.33	1720.00	1072.50	110149.42	1.0000	3.32	
5C1	COL K7	3.80	241.8	205.11	223.08	179.71	1720.00	1072.50	110149.42	1.0000	3.32	
5C1	COL K7	3.80	241.8	204.75	223.08	179.71	1720.00	1072.50	110149.42	1.0000	3.33	
5C1	COL K7	3.80	241.8	205.24	223.08	179.08	1720.00	1072.50	110149.42	1.0000	3.33	
5C1	COL K7	3.80	241.8	205.38	223.08	178.46	1720.00	1072.50	110149.42	1.0000	3.33	
5C1	COL K7	3.80	241.8	205.51	223.08	177.84	1720.00	1072.50	110149.42	1.0000	3.34	
5C1	COL K7	3.80	241.8	205.77	223.08	177.22	1720.00	1072.50	110149.42	1.0000	3.34	
5C1	COL K7	3.80	241.8	205.90	223.08	176.60	1720.00	1072.50	110149.42	1.0000	3.34	
5C1	COL K7	3.80	241.8	206.01	223.08	175.97	1720.00	1072.50	110149.42	1.0000	3.35	
5C1	COL K7	3.80	241.8	206.25	223.08	175.35	1720.00	1072.50	110149.42	1.0000	3.35	
5C1	COL K7	3.80	241.8	206.36	223.08	174.73	1720.00	1072.50	110149.42	1.0000	3.36	
5C1	COL K7	3.80	241.8	206.47	223.08	174.11	1720.00	1072.50	110149.42	1.0000	3.36	
5C1	COL K7	3.80	241.8	206.69	223.08	173.49	1720.00	1072.50	110149.42	1.0000	3.36	
5C1	COL K7	3.80	241.8	206.79	223.08	172.87	1720.00	1072.50	110149.42	1.0000	3.37	
5C1	COL K7	3.80	241.8	206.89	223.08	172.24	1720.00	1072.50	110149.42	1.0000	3.37	
5C1	COL K7	3.80	241.8	207.08	223.08	171.62	1720.00	1072.50	110149.42	1.0000	3.38	
5C1	COL K7	3.80	241.8	207.18	223.08	171.00	1720.00	1072.50	110149.42	1.0000	3.38	
5C1	COL K7	3.80	241.8	207.26	223.08	170.38	1720.00	1072.50	110149.42	1.0000	3.39	
5C1	COL K7	3.80	241.8	207.43	223.08	169.76	1720.00	1072.50	110149.42	1.0000	3.39	
5C1	COL K7	3.80	241.8	207.51	223.08	169.13	1720.00	1072.50	110149.42	1.0000	3.39	
5C1	COL K7	3.80	241.8	207.59	223.08	168.51	1720.00	1072.50	110149.42	1.0000	3.40	
5C1	COL K7	3.80	241.8	207.74	223.08	167.89	1720.00	1072.50	110149.42	1.0000	3.40	
5C1	COL K7	3.80	241.8	207.81	223.08	167.27	1720.00	1072.50	110149.42	1.0000	3.41	
5C1	COL K7	3.80	241.8	207.88	223.08	166.65	1720.00	1072.50	110149.42	1.0000	3.41	
5C1	COL K7	3.80	241.8	208.00	223.08	166.03	1720.00	1072.50	110149.42	1.0000	3.42	
5C1	COL K7	3.80	241.8	208.06	223.08	165.40	1720.00	1072.50	110149.42	1.0000	3.42	
5C1	COL K7	3.80	241.8	208.17	223.08	164.78	1720.00	1072.50	110149.42	1.0000	3.43	
5C1	COL K7	3.80	241.8	208.22	223.08	164.16	1720.00	1072.50	110149.42	1.0000	3.43	
5C1	COL K7	3.80	241.8	208.32	223.08	163.54	1720.00	1072.50	110149.42	1.0000	3.44	
5C1	COL K7	3.80	241.8	208.35	223.08	162.92	1720.00	1072.50	110149.42	1.0000	3.44	
5C1	COL K7	3.80	241.8	208.39	223.08	162.29	1720.00	1072.50	110149.42	1.0000	3.45	
5C1	COL K7	3.80	241.8	208.46	223.08	161.67	1720.00	1072.50	110149.42	1.0000	3.45	
5C1	COL K7	3.80	241.8	208.49	223.08	161.05	1720.00	1072.50	110149.42	1.0000	3.46	
5C1	COL K7	3.80	241.8	208.54	223.08	160.43	1720.00	1072.50	110149.42	1.0000	3.46	
5C1	COL K7	3.80	241.8	208.56	223.08	159.81	1720.00	1072.50	110149.42	1.0000	3.47	
5C1	COL K7	3.80	241.8	208.59	223.08	159.19	1720.00	1072.50	110149.42	1.0000	3.47	
5C1	COL K7	3.80	241.8	208.61	223.08	158.56	1720.00	1072.50	110149.42	1.0000	3.48	
5C1	COL K7	3.80	241.8	208.63	223.08	157.94	1720.00	1072.50	110149.42	1.0000	3.49	
5C1	COL K7	3.80	241.8	208.63	223.08	157.32	1720.00	1072.50	110149.42	1.0000	3.49	
5C1	COL K7	3.80	241.8	208.63	223.08	156.70	1720.00	1072.50	110149.42	1.0000	3.50	
5C1	COL K7	3.80	241.8	208.62	223.08	156.08	1720.00	1072.50	110149.42	1.0000	3.50	
5C1	COL K7	3.80	241.8	208.61	223.08	155.45	1720.00	1072.50	110149.42	1.0000	3.51	

Load Case	Controlling RF
HS20 INV	1.64
HS20 OPER	2.74

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - North Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	1.30	LL Factor	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	
					Axial Force		Moment		P _u	M _u	A _s F _e		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Impact	1.26	Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF
												2F1	6.20
												3F1	4.08
												4F1	3.51
												5C1	3.23

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012

Checked: NRF 2/27/2012

DL Factor 1.30

LL Factor 2.17 INV 1.30 OPER

Impact 1.3

			Axial Forces From STAAD						Capacity	Rating Factors					
Member	LLDF	Centrifugal %	Dead Load	HS20 LL	2F1 LL	3F1 LL	4F1 LL	5C1	P _u	HS20	HS20	2F1	3F1	4F1	5C1
			kips	kips	kips	kips	kips	kips	kips	RF _{INV}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}
COL K1	3.3525	14.90	2.7	21.47	12.51	17.32	18	16.84	293.2	1.28	2.14	3.67	2.65	2.55	2.72
COL K4	3.3993	14.90	16.08	25.44	14.08	19.89	21.21	19.44	293.2	1.00	1.67	3.02	2.14	2.00	2.19

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _{ex}			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
HS20 INV	COL K2	3.61	250.77	297.44	221.26	449.50	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	302.47	221.26	448.52	1720.00	1072.50	110149.42	1.0000	1.70				
HS20 INV	COL K2	3.61	250.77	303.06	221.26	447.53	1720.00	1072.50	110149.42	1.0000	1.70				
HS20 INV	COL K2	3.61	250.77	303.60	221.26	446.54	1720.00	1072.50	110149.42	1.0000	1.70				
HS20 INV	COL K2	3.61	250.77	304.13	221.26	445.56	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	304.68	221.26	444.57	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	305.22	221.26	443.59	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	305.75	221.26	442.60	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	306.29	221.26	441.62	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	306.83	221.26	440.63	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	307.37	221.26	439.64	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	307.91	221.26	438.66	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	308.45	221.26	437.67	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	308.98	221.26	436.69	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	309.52	221.26	435.70	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	310.07	221.26	434.72	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	310.60	221.26	433.73	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	311.14	221.26	432.74	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	311.67	221.26	431.76	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	312.22	221.26	430.77	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	312.76	221.26	429.79	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	313.29	221.26	428.80	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	313.83	221.26	427.81	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	314.37	221.26	426.83	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	316.92	221.26	425.84	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	318.38	221.26	424.86	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	319.84	221.26	423.87	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	321.29	221.26	422.89	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	322.74	221.26	421.90	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	324.19	221.26	420.91	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	325.64	221.26	419.93	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	327.08	221.26	418.94	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	328.53	221.26	417.96	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	329.25	221.26	416.97	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	329.72	221.26	415.99	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	330.14	221.26	415.00	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	330.56	221.26	414.01	1720.00	1072.50	110149.42	1.0000	1.71				
HS20 INV	COL K2	3.61	250.77	321.30	221.26	413.03	1720.00	1072.50	110149.42	1.0000	1.74				
HS20 INV	COL K2	3.61	250.77	330.97	221.26	412.04	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	331.40	221.26	411.06	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	331.81	221.26	410.07	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	323.42	221.26	409.09	1720.00	1072.50	110149.42	1.0000	1.74				
HS20 INV	COL K2	3.61	250.77	332.23	221.26	408.10	1720.00	1072.50	110149.42	1.0000	1.72				
HS20 INV	COL K2	3.61	250.77	332.64	221.26	407.11	1720.00	1072.50	110149.42	1.0000	1.73				
HS20 INV	COL K2	3.61	250.77	333.05	221.26	406.13	1720.00	1072.50	110149.42	1.0000	1.73				
HS20 INV	COL K2	3.61	250.77	325.00	221.26	405.14	1720.00	1072.50	110149.42	1.0000	1.75				
HS20 INV	COL K2	3.61	250.77	333.47	221.26	404.16	1720.00	1072.50	110149.42	1.0000	1.73				
HS20 INV	COL K2	3.61	250.77	333.88	221.26	403.17	1720.00	1072.50	110149.42	1.0000	1.73				
HS20 INV	COL K2	3.61	250.77	326.58	221.26	402.19	1720.00	1072.50	110149.42	1.0000	1.75				
HS20 INV	COL K2	3.61	250.77	334.30	221.26	401.20	1720.00	1072.50	110149.42	1.0000	1.73				
HS20 INV	COL K2	3.61	250.77	334.71	221.26	400.21	1720.00	1072.50	110149.42	1.0000	1.74				
HS20 INV	COL K2	3.61	250.77	335.12	221.26	399.23	1720.00	1072.50	110149.42	1.0000	1.74				
HS20 INV	COL K2	3.61	250.77	328.67	221.26	398.24	1720.00	1072.50	110149.42	1.0000	1.76				
HS20 INV	COL K2	3.61	250.77	335.53	221.26	397.26	1720.00	1072.50	110149.42	1.0000	1.74				
HS20 INV	COL K2	3.61	250.77	335.94	221.26	396.27	1720.00	1072.50	110149.42	1.0000	1.74				
HS20 INV	COL K2	3.61	250.77	336.35	221.26	395.29	1720.00	1072.50	110149.42	1.0000	1.74				
HS20 INV	COL K2	3.61	250.77	330.23	221.26	394.30	1720.00	1072.50	110149.42	1.0000	1.76				
HS20 INV	COL K2	3.61	250.77	336.75	221.26	393.31	1720.00	1072.50	110149.42	1.0000	1.75				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K2	3.61	250.77	337.17	221.26	392.33	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K2	3.61	250.77	337.57	221.26	391.34	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K2	3.61	250.77	332.30	221.26	390.36	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	337.97	221.26	389.37	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K2	3.61	250.77	338.38	221.26	388.38	1720.00	1072.50	110149.42	1.0000	1.75		
HS20 INV	COL K2	3.61	250.77	333.32	221.26	387.40	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	338.77	221.26	386.41	1720.00	1072.50	110149.42	1.0000	1.76		
HS20 INV	COL K2	3.61	250.77	339.18	221.26	385.43	1720.00	1072.50	110149.42	1.0000	1.76		
HS20 INV	COL K2	3.61	250.77	339.58	221.26	384.44	1720.00	1072.50	110149.42	1.0000	1.76		
HS20 INV	COL K2	3.61	250.77	335.36	221.26	383.46	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	339.97	221.26	382.47	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	340.37	221.26	381.48	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	340.77	221.26	380.50	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	336.89	221.26	379.51	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K2	3.61	250.77	341.17	221.26	378.53	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	341.56	221.26	377.54	1720.00	1072.50	110149.42	1.0000	1.77		
HS20 INV	COL K2	3.61	250.77	338.40	221.26	376.56	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K2	3.61	250.77	341.96	221.26	375.57	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K2	3.61	250.77	342.34	221.26	374.58	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K2	3.61	250.77	342.73	221.26	373.60	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K2	3.61	250.77	339.90	221.26	372.61	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K2	3.61	250.77	343.12	221.26	371.63	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K2	3.61	250.77	343.51	221.26	370.64	1720.00	1072.50	110149.42	1.0000	1.78		
HS20 INV	COL K2	3.61	250.77	341.38	221.26	369.66	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K2	3.61	250.77	343.90	221.26	368.67	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K2	3.61	250.77	344.28	221.26	367.68	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K2	3.61	250.77	344.67	221.26	366.70	1720.00	1072.50	110149.42	1.0000	1.79		
HS20 INV	COL K2	3.61	250.77	342.85	221.26	365.71	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K2	3.61	250.77	345.04	221.26	364.73	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K2	3.61	250.77	345.43	221.26	363.74	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K2	3.61	250.77	345.81	221.26	362.76	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K2	3.61	250.77	346.18	221.26	360.78	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K2	3.61	250.77	346.56	221.26	359.80	1720.00	1072.50	110149.42	1.0000	1.80		
HS20 INV	COL K2	3.61	250.77	345.77	221.26	358.81	1720.00	1072.50	110149.42	1.0000	1.81		
HS20 INV	COL K2	3.61	250.77	346.93	221.26	357.83	1720.00	1072.50	110149.42	1.0000	1.81		
HS20 INV	COL K2	3.61	250.77	347.31	221.26	356.84	1720.00	1072.50	110149.42	1.0000	1.81		
HS20 INV	COL K2	3.61	250.77	347.67	221.26	355.86	1720.00	1072.50	110149.42	1.0000	1.81		
HS20 INV	COL K2	3.61	250.77	347.21	221.26	354.87	1720.00	1072.50	110149.42	1.0000	1.81		
HS20 INV	COL K2	3.61	250.77	348.05	221.26	353.88	1720.00	1072.50	110149.42	1.0000	1.81		
HS20 INV	COL K2	3.61	250.77	348.41	221.26	352.90	1720.00	1072.50	110149.42	1.0000	1.82		
HS20 INV	COL K2	3.61	250.77	348.63	221.26	351.91	1720.00	1072.50	110149.42	1.0000	1.82		
HS20 INV	COL K2	3.61	250.77	349.10	221.26	350.93	1720.00	1072.50	110149.42	1.0000	1.82		
HS20 INV	COL K2	3.61	250.77	349.58	221.26	349.94	1720.00	1072.50	110149.42	1.0000	1.82		
HS20 INV	COL K2	3.61	250.77	349.51	221.26	348.95	1720.00	1072.50	110149.42	1.0000	1.82		
HS20 INV	COL K2	3.61	250.77	350.04	221.26	347.97	1720.00	1072.50	110149.42	1.0000	1.82		
HS20 INV	COL K2	3.61	250.77	350.51	221.26	346.98	1720.00	1072.50	110149.42	1.0000	1.83		
HS20 INV	COL K2	3.61	250.77	350.98	221.26	346.00	1720.00	1072.50	110149.42	1.0000	1.83		
HS20 INV	COL K2	3.61	250.77	351.44	221.26	345.01	1720.00	1072.50	110149.42	1.0000	1.83		
HS20 INV	COL K2	3.61	250.77	351.90	221.26	344.03	1720.00	1072.50	110149.42	1.0000	1.83		
HS20 INV	COL K2	3.61	250.77	350.95	221.26	343.04	1720.00	1072.50	110149.42	1.0000	1.83		
HS20 INV	COL K2	3.61	250.77	352.36	221.26	342.05	1720.00	1072.50	110149.42	1.0000	1.83		
HS20 INV	COL K2	3.61	250.77	352.82	221.26	341.07	1720.00	1072.50	110149.42	1.0000	1.83		
HS20 INV	COL K2	3.61	250.77	353.27	221.26	340.08	1720.00	1072.50	110149.42	1.0000	1.84		
HS20 INV	COL K2	3.61	250.77	353.73	221.26	339.10	1720.00	1072.50	110149.42	1.0000	1.84		
HS20 INV	COL K2	3.61	250.77	354.18	221.26	338.11	1720.00	1072.50	110149.42	1.0000	1.84		
HS20 INV	COL K2	3.61	250.77	354.63	221.26	337.13	1720.00	1072.50	110149.42	1.0000	1.84		
HS20 INV	COL K2	3.61	250.77	352.69	221.26	336.14	1720.00	1072.50	110149.42	1.0000	1.85		
HS20 INV	COL K2	3.61	250.77	355.08	221.26	335.15	1720.00	1072.50	110149.42	1.0000	1.84		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K2	3.61	250.77	355.53	221.26	334.17	1720.00	1072.50	110149.42	1.0000	1.85		
HS20 INV	COL K2	3.61	250.77	355.97	221.26	333.18	1720.00	1072.50	110149.42	1.0000	1.85		
HS20 INV	COL K2	3.61	250.77	356.42	221.26	332.20	1720.00	1072.50	110149.42	1.0000	1.85		
HS20 INV	COL K2	3.61	250.77	356.86	221.26	331.21	1720.00	1072.50	110149.42	1.0000	1.85		
HS20 INV	COL K2	3.61	250.77	357.29	221.26	330.23	1720.00	1072.50	110149.42	1.0000	1.85		
HS20 INV	COL K2	3.61	250.77	354.40	221.26	329.24	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K2	3.61	250.77	357.74	221.26	328.25	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K2	3.61	250.77	358.17	221.26	327.27	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K2	3.61	250.77	358.61	221.26	326.28	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K2	3.61	250.77	359.04	221.26	325.30	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K2	3.61	250.77	359.46	221.26	324.31	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K2	3.61	250.77	359.90	221.26	322.34	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K2	3.61	250.77	360.32	221.26	321.35	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K2	3.61	250.77	360.74	221.26	320.37	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K2	3.61	250.77	361.17	221.26	319.38	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K2	3.61	250.77	361.58	221.26	318.40	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K2	3.61	250.77	362.00	221.26	317.41	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K2	3.61	250.77	362.41	221.26	316.43	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K2	3.61	250.77	362.82	221.26	314.45	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K2	3.61	250.77	363.24	221.26	313.47	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K2	3.61	250.77	363.64	221.26	312.48	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K2	3.61	250.77	364.06	221.26	311.50	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K2	3.61	250.77	364.46	221.26	310.51	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K2	3.61	250.77	364.86	221.26	309.52	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K2	3.61	250.77	359.47	221.26	308.54	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K2	3.61	250.77	365.26	221.26	307.55	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K2	3.61	250.77	365.65	221.26	306.57	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K2	3.61	250.77	366.05	221.26	305.58	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K2	3.61	250.77	366.44	221.26	304.60	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K2	3.61	250.77	366.83	221.26	303.61	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K2	3.61	250.77	367.22	221.26	302.62	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K2	3.61	250.77	367.61	221.26	301.64	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K2	3.61	250.77	367.99	221.26	300.65	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K2	3.61	250.77	361.23	221.26	299.67	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K2	3.61	250.77	368.36	221.26	298.68	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K2	3.61	250.77	368.75	221.26	297.70	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K2	3.61	250.77	369.12	221.26	296.71	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K2	3.61	250.77	369.49	221.26	295.72	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K2	3.61	250.77	369.86	221.26	294.74	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K2	3.61	250.77	370.23	221.26	293.75	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K2	3.61	250.77	362.89	221.26	292.77	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K2	3.61	250.77	370.35	221.26	291.78	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K2	3.61	250.77	363.16	221.26	290.80	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K2	3.61	250.77	370.41	221.26	289.81	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K2	3.61	250.77	363.69	221.26	288.82	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K2	3.61	250.77	370.47	221.26	287.84	1720.00	1072.50	110149.42	1.0000	1.93		
HS20 INV	COL K2	3.61	250.77	363.95	221.26	286.85	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K2	3.61	250.77	370.53	221.26	285.87	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K2	3.61	250.77	364.47	221.26	284.88	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K2	3.61	250.77	370.59	221.26	283.90	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K2	3.61	250.77	364.72	221.26	282.91	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K2	3.61	250.77	370.64	221.26	281.92	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K2	3.61	250.77	370.69	221.26	280.94	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K2	3.61	250.77	370.74	221.26	278.97	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K2	3.61	250.77	365.70	221.26	277.98	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K2	3.61	250.77	370.78	221.26	277.00	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K2	3.61	250.77	366.18	221.26	276.01	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K2	3.61	250.77	370.83	221.26	275.02	1720.00	1072.50	110149.42	1.0000	1.97		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K2	3.61	250.77	366.41	221.26	274.04	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K2	3.61	250.77	370.87	221.26	273.05	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K2	3.61	250.77	366.88	221.26	272.07	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K2	3.61	250.77	370.90	221.26	271.08	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K2	3.61	250.77	370.94	221.26	269.11	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K2	3.61	250.77	367.55	221.26	268.12	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K2	3.61	250.77	370.97	221.26	267.14	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K2	3.61	250.77	371.00	221.26	265.17	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K2	3.61	250.77	368.19	221.26	264.18	1720.00	1072.50	110149.42	1.0000	2.01		
HS20 INV	COL K2	3.61	250.77	371.02	221.26	263.19	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K2	3.61	250.77	371.04	221.26	262.21	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K2	3.61	250.77	368.81	221.26	261.22	1720.00	1072.50	110149.42	1.0000	2.02		
HS20 INV	COL K2	3.61	250.77	371.06	221.26	260.24	1720.00	1072.50	110149.42	1.0000	2.01		
HS20 INV	COL K2	3.61	250.77	369.01	221.26	259.25	1720.00	1072.50	110149.42	1.0000	2.02		
HS20 INV	COL K2	3.61	250.77	371.08	221.26	258.27	1720.00	1072.50	110149.42	1.0000	2.02		
HS20 INV	COL K2	3.61	250.77	369.40	221.26	257.28	1720.00	1072.50	110149.42	1.0000	2.03		
HS20 INV	COL K2	3.61	250.77	371.08	221.26	256.29	1720.00	1072.50	110149.42	1.0000	2.02		
HS20 INV	COL K2	3.61	250.77	371.09	221.26	254.32	1720.00	1072.50	110149.42	1.0000	2.03		
HS20 INV	COL K2	3.61	250.77	369.96	221.26	253.34	1720.00	1072.50	110149.42	1.0000	2.04		
HS20 INV	COL K2	3.61	250.77	371.10	221.26	252.35	1720.00	1072.50	110149.42	1.0000	2.04		
HS20 INV	COL K2	3.61	250.77	370.33	221.26	251.37	1720.00	1072.50	110149.42	1.0000	2.04		
HS20 INV	COL K2	3.61	250.77	371.10	221.26	250.38	1720.00	1072.50	110149.42	1.0000	2.04		
HS20 INV	COL K2	3.61	250.77	371.10	221.26	248.41	1720.00	1072.50	110149.42	1.0000	2.05		
HS20 INV	COL K2	3.61	250.77	371.09	221.26	247.42	1720.00	1072.50	110149.42	1.0000	2.05		
HS20 INV	COL K2	3.61	250.77	371.01	221.26	246.44	1720.00	1072.50	110149.42	1.0000	2.06		
HS20 INV	COL K2	3.61	250.77	371.17	221.26	245.45	1720.00	1072.50	110149.42	1.0000	2.06		
HS20 INV	COL K2	3.61	250.77	371.33	221.26	244.47	1720.00	1072.50	110149.42	1.0000	2.06		
HS20 INV	COL K2	3.61	250.77	371.08	221.26	243.48	1720.00	1072.50	110149.42	1.0000	2.06		
HS20 INV	COL K2	3.61	250.77	371.49	221.26	242.49	1720.00	1072.50	110149.42	1.0000	2.07		
HS20 INV	COL K2	3.61	250.77	371.65	221.26	241.51	1720.00	1072.50	110149.42	1.0000	2.07		
HS20 INV	COL K2	3.61	250.77	371.79	221.26	240.52	1720.00	1072.50	110149.42	1.0000	2.07		
HS20 INV	COL K2	3.61	250.77	371.94	221.26	239.54	1720.00	1072.50	110149.42	1.0000	2.07		
HS20 INV	COL K2	3.61	250.77	372.09	221.26	238.55	1720.00	1072.50	110149.42	1.0000	2.08		
HS20 INV	COL K2	3.61	250.77	372.23	221.26	237.57	1720.00	1072.50	110149.42	1.0000	2.08		
HS20 INV	COL K2	3.61	250.77	371.01	221.26	236.58	1720.00	1072.50	110149.42	1.0000	2.09		
HS20 INV	COL K2	3.61	250.77	372.37	221.26	235.59	1720.00	1072.50	110149.42	1.0000	2.09		
HS20 INV	COL K2	3.61	250.77	372.50	221.26	234.61	1720.00	1072.50	110149.42	1.0000	2.09		
HS20 INV	COL K2	3.61	250.77	372.39	221.26	232.64	1720.00	1072.50	110149.42	1.0000	2.10		
HS20 INV	COL K2	3.61	250.77	372.22	221.26	231.65	1720.00	1072.50	110149.42	1.0000	2.10		
HS20 INV	COL K2	3.61	250.77	370.91	221.26	230.67	1720.00	1072.50	110149.42	1.0000	2.11		
HS20 INV	COL K2	3.61	250.77	372.05	221.26	229.68	1720.00	1072.50	110149.42	1.0000	2.11		
HS20 INV	COL K2	3.61	250.77	370.87	221.26	228.69	1720.00	1072.50	110149.42	1.0000	2.12		
HS20 INV	COL K2	3.61	250.77	371.87	221.26	227.71	1720.00	1072.50	110149.42	1.0000	2.11		
HS20 INV	COL K2	3.61	250.77	370.82	221.26	226.72	1720.00	1072.50	110149.42	1.0000	2.12		
HS20 INV	COL K2	3.61	250.77	371.69	221.26	225.74	1720.00	1072.50	110149.42	1.0000	2.12		
HS20 OPER	COL K2	3.61	250.77	178.46	221.26	269.70	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	181.48	221.26	269.11	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K2	3.61	250.77	181.84	221.26	268.52	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K2	3.61	250.77	182.16	221.26	267.93	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K2	3.61	250.77	182.48	221.26	267.33	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K2	3.61	250.77	182.81	221.26	266.74	1720.00	1072.50	110149.42	1.0000	2.84		
HS20 OPER	COL K2	3.61	250.77	183.13	221.26	266.15	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	183.45	221.26	265.56	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	183.78	221.26	264.97	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	184.10	221.26	264.38	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	184.42	221.26	263.79	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	184.75	221.26	263.19	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	185.07	221.26	262.60	1720.00	1072.50	110149.42	1.0000	2.85		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{ex}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL K2	3.61	250.77	185.39	221.26	262.01	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	185.71	221.26	261.42	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	186.04	221.26	260.83	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	186.36	221.26	260.24	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	186.68	221.26	259.65	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	187.00	221.26	259.05	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	187.33	221.26	258.46	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	187.65	221.26	257.87	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	187.97	221.26	257.28	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	188.30	221.26	256.69	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	188.64	221.26	256.10	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	190.15	221.26	255.51	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	191.03	221.26	254.91	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	191.90	221.26	254.32	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	192.78	221.26	253.73	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	193.65	221.26	253.14	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	194.52	221.26	252.55	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	195.39	221.26	251.96	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	196.25	221.26	251.37	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	197.12	221.26	250.77	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	197.55	221.26	250.18	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	197.83	221.26	249.59	1720.00	1072.50	110149.42	1.0000	2.85		
HS20 OPER	COL K2	3.61	250.77	198.08	221.26	249.00	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	198.34	221.26	248.41	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	192.78	221.26	247.82	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K2	3.61	250.77	198.58	221.26	247.23	1720.00	1072.50	110149.42	1.0000	2.86		
HS20 OPER	COL K2	3.61	250.77	198.84	221.26	246.63	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	199.09	221.26	246.04	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	194.05	221.26	245.45	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K2	3.61	250.77	199.34	221.26	244.86	1720.00	1072.50	110149.42	1.0000	2.87		
HS20 OPER	COL K2	3.61	250.77	199.58	221.26	244.27	1720.00	1072.50	110149.42	1.0000	2.88		
HS20 OPER	COL K2	3.61	250.77	199.83	221.26	243.68	1720.00	1072.50	110149.42	1.0000	2.88		
HS20 OPER	COL K2	3.61	250.77	195.00	221.26	243.09	1720.00	1072.50	110149.42	1.0000	2.91		
HS20 OPER	COL K2	3.61	250.77	200.08	221.26	242.49	1720.00	1072.50	110149.42	1.0000	2.88		
HS20 OPER	COL K2	3.61	250.77	200.33	221.26	241.90	1720.00	1072.50	110149.42	1.0000	2.89		
HS20 OPER	COL K2	3.61	250.77	195.95	221.26	241.31	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K2	3.61	250.77	200.58	221.26	240.72	1720.00	1072.50	110149.42	1.0000	2.89		
HS20 OPER	COL K2	3.61	250.77	200.83	221.26	240.13	1720.00	1072.50	110149.42	1.0000	2.89		
HS20 OPER	COL K2	3.61	250.77	201.07	221.26	239.54	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K2	3.61	250.77	197.20	221.26	238.95	1720.00	1072.50	110149.42	1.0000	2.93		
HS20 OPER	COL K2	3.61	250.77	201.32	221.26	238.35	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K2	3.61	250.77	201.57	221.26	237.76	1720.00	1072.50	110149.42	1.0000	2.90		
HS20 OPER	COL K2	3.61	250.77	201.81	221.26	237.17	1720.00	1072.50	110149.42	1.0000	2.91		
HS20 OPER	COL K2	3.61	250.77	198.14	221.26	236.58	1720.00	1072.50	110149.42	1.0000	2.93		
HS20 OPER	COL K2	3.61	250.77	202.05	221.26	235.99	1720.00	1072.50	110149.42	1.0000	2.91		
HS20 OPER	COL K2	3.61	250.77	202.30	221.26	235.40	1720.00	1072.50	110149.42	1.0000	2.91		
HS20 OPER	COL K2	3.61	250.77	202.54	221.26	234.81	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K2	3.61	250.77	199.38	221.26	234.21	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K2	3.61	250.77	202.78	221.26	233.62	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K2	3.61	250.77	203.03	221.26	233.03	1720.00	1072.50	110149.42	1.0000	2.92		
HS20 OPER	COL K2	3.61	250.77	199.99	221.26	232.44	1720.00	1072.50	110149.42	1.0000	2.95		
HS20 OPER	COL K2	3.61	250.77	203.26	221.26	231.85	1720.00	1072.50	110149.42	1.0000	2.93		
HS20 OPER	COL K2	3.61	250.77	203.51	221.26	231.26	1720.00	1072.50	110149.42	1.0000	2.93		
HS20 OPER	COL K2	3.61	250.77	203.75	221.26	230.67	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K2	3.61	250.77	201.22	221.26	230.07	1720.00	1072.50	110149.42	1.0000	2.96		
HS20 OPER	COL K2	3.61	250.77	203.98	221.26	229.48	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K2	3.61	250.77	204.22	221.26	228.89	1720.00	1072.50	110149.42	1.0000	2.94		
HS20 OPER	COL K2	3.61	250.77	204.46	221.26	228.30	1720.00	1072.50	110149.42	1.0000	2.95		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
					Axial Force		Moment		P _u	M _u	A _s F _{ex}	
					Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
HS20 OPER	COL K2	3.61	250.77	202.13	221.26	227.71	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K2	3.61	250.77	204.70	221.26	227.12	1720.00	1072.50	110149.42	1.0000	2.95	
HS20 OPER	COL K2	3.61	250.77	204.94	221.26	226.52	1720.00	1072.50	110149.42	1.0000	2.95	
HS20 OPER	COL K2	3.61	250.77	203.04	221.26	225.93	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K2	3.61	250.77	205.17	221.26	225.34	1720.00	1072.50	110149.42	1.0000	2.96	
HS20 OPER	COL K2	3.61	250.77	205.40	221.26	224.75	1720.00	1072.50	110149.42	1.0000	2.96	
HS20 OPER	COL K2	3.61	250.77	205.64	221.26	224.16	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K2	3.61	250.77	203.94	221.26	223.57	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K2	3.61	250.77	205.87	221.26	222.98	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K2	3.61	250.77	206.11	221.26	222.38	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K2	3.61	250.77	204.83	221.26	221.79	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K2	3.61	250.77	206.34	221.26	221.20	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K2	3.61	250.77	206.57	221.26	220.61	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K2	3.61	250.77	206.80	221.26	220.02	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K2	3.61	250.77	205.71	221.26	219.43	1720.00	1072.50	110149.42	1.0000	3.00	
HS20 OPER	COL K2	3.61	250.77	207.02	221.26	218.84	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K2	3.61	250.77	207.26	221.26	218.24	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K2	3.61	250.77	207.49	221.26	217.65	1720.00	1072.50	110149.42	1.0000	3.00	
HS20 OPER	COL K2	3.61	250.77	207.71	221.26	216.47	1720.00	1072.50	110149.42	1.0000	3.00	
HS20 OPER	COL K2	3.61	250.77	207.94	221.26	215.88	1720.00	1072.50	110149.42	1.0000	3.01	
HS20 OPER	COL K2	3.61	250.77	207.46	221.26	215.29	1720.00	1072.50	110149.42	1.0000	3.01	
HS20 OPER	COL K2	3.61	250.77	208.16	221.26	214.70	1720.00	1072.50	110149.42	1.0000	3.01	
HS20 OPER	COL K2	3.61	250.77	208.39	221.26	214.10	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K2	3.61	250.77	208.60	221.26	213.51	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K2	3.61	250.77	208.33	221.26	212.92	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K2	3.61	250.77	208.83	221.26	212.33	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K2	3.61	250.77	209.05	221.26	211.74	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K2	3.61	250.77	209.18	221.26	211.15	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K2	3.61	250.77	209.46	221.26	210.56	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K2	3.61	250.77	209.75	221.26	209.96	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K2	3.61	250.77	209.70	221.26	209.37	1720.00	1072.50	110149.42	1.0000	3.04	
HS20 OPER	COL K2	3.61	250.77	210.02	221.26	208.78	1720.00	1072.50	110149.42	1.0000	3.04	
HS20 OPER	COL K2	3.61	250.77	210.31	221.26	208.19	1720.00	1072.50	110149.42	1.0000	3.04	
HS20 OPER	COL K2	3.61	250.77	210.59	221.26	207.60	1720.00	1072.50	110149.42	1.0000	3.05	
HS20 OPER	COL K2	3.61	250.77	210.86	221.26	207.01	1720.00	1072.50	110149.42	1.0000	3.05	
HS20 OPER	COL K2	3.61	250.77	211.14	221.26	206.42	1720.00	1072.50	110149.42	1.0000	3.05	
HS20 OPER	COL K2	3.61	250.77	210.57	221.26	205.82	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K2	3.61	250.77	211.41	221.26	205.23	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K2	3.61	250.77	211.69	221.26	204.64	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K2	3.61	250.77	211.96	221.26	204.05	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K2	3.61	250.77	212.24	221.26	203.46	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K2	3.61	250.77	212.51	221.26	202.87	1720.00	1072.50	110149.42	1.0000	3.07	
HS20 OPER	COL K2	3.61	250.77	212.78	221.26	202.28	1720.00	1072.50	110149.42	1.0000	3.07	
HS20 OPER	COL K2	3.61	250.77	211.61	221.26	201.68	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K2	3.61	250.77	213.05	221.26	201.09	1720.00	1072.50	110149.42	1.0000	3.07	
HS20 OPER	COL K2	3.61	250.77	213.32	221.26	200.50	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K2	3.61	250.77	213.58	221.26	199.91	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K2	3.61	250.77	213.85	221.26	199.32	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K2	3.61	250.77	214.12	221.26	198.73	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K2	3.61	250.77	214.38	221.26	198.14	1720.00	1072.50	110149.42	1.0000	3.09	
HS20 OPER	COL K2	3.61	250.77	212.64	221.26	197.54	1720.00	1072.50	110149.42	1.0000	3.10	
HS20 OPER	COL K2	3.61	250.77	214.64	221.26	196.95	1720.00	1072.50	110149.42	1.0000	3.09	
HS20 OPER	COL K2	3.61	250.77	214.90	221.26	196.36	1720.00	1072.50	110149.42	1.0000	3.09	
HS20 OPER	COL K2	3.61	250.77	215.16	221.26	195.77	1720.00	1072.50	110149.42	1.0000	3.10	
HS20 OPER	COL K2	3.61	250.77	215.42	221.26	195.18	1720.00	1072.50	110149.42	1.0000	3.10	
HS20 OPER	COL K2	3.61	250.77	215.68	221.26	194.59	1720.00	1072.50	110149.42	1.0000	3.10	
HS20 OPER	COL K2	3.61	250.77	215.94	221.26	193.40	1720.00	1072.50	110149.42	1.0000	3.11	
HS20 OPER	COL K2	3.61	250.77	216.19	221.26	192.81	1720.00	1072.50	110149.42	1.0000	3.11	

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
HS20 OPER	COL K2	3.61	250.77	216.45	221.26	192.22	1720.00	1072.50	110149.42	1.0000	3.11	
HS20 OPER	COL K2	3.61	250.77	216.70	221.26	191.63	1720.00	1072.50	110149.42	1.0000	3.12	
HS20 OPER	COL K2	3.61	250.77	216.95	221.26	191.04	1720.00	1072.50	110149.42	1.0000	3.12	
HS20 OPER	COL K2	3.61	250.77	217.20	221.26	190.45	1720.00	1072.50	110149.42	1.0000	3.12	
HS20 OPER	COL K2	3.61	250.77	217.45	221.26	189.86	1720.00	1072.50	110149.42	1.0000	3.12	
HS20 OPER	COL K2	3.61	250.77	217.69	221.26	188.67	1720.00	1072.50	110149.42	1.0000	3.13	
HS20 OPER	COL K2	3.61	250.77	217.94	221.26	188.08	1720.00	1072.50	110149.42	1.0000	3.13	
HS20 OPER	COL K2	3.61	250.77	218.19	221.26	187.49	1720.00	1072.50	110149.42	1.0000	3.14	
HS20 OPER	COL K2	3.61	250.77	218.43	221.26	186.90	1720.00	1072.50	110149.42	1.0000	3.14	
HS20 OPER	COL K2	3.61	250.77	218.68	221.26	186.31	1720.00	1072.50	110149.42	1.0000	3.14	
HS20 OPER	COL K2	3.61	250.77	218.91	221.26	185.71	1720.00	1072.50	110149.42	1.0000	3.14	
HS20 OPER	COL K2	3.61	250.77	215.68	221.26	185.12	1720.00	1072.50	110149.42	1.0000	3.17	
HS20 OPER	COL K2	3.61	250.77	219.16	221.26	184.53	1720.00	1072.50	110149.42	1.0000	3.15	
HS20 OPER	COL K2	3.61	250.77	219.39	221.26	183.94	1720.00	1072.50	110149.42	1.0000	3.15	
HS20 OPER	COL K2	3.61	250.77	219.63	221.26	183.35	1720.00	1072.50	110149.42	1.0000	3.16	
HS20 OPER	COL K2	3.61	250.77	219.87	221.26	182.76	1720.00	1072.50	110149.42	1.0000	3.16	
HS20 OPER	COL K2	3.61	250.77	220.10	221.26	182.17	1720.00	1072.50	110149.42	1.0000	3.16	
HS20 OPER	COL K2	3.61	250.77	220.33	221.26	181.57	1720.00	1072.50	110149.42	1.0000	3.16	
HS20 OPER	COL K2	3.61	250.77	220.56	221.26	180.98	1720.00	1072.50	110149.42	1.0000	3.17	
HS20 OPER	COL K2	3.61	250.77	220.79	221.26	180.39	1720.00	1072.50	110149.42	1.0000	3.17	
HS20 OPER	COL K2	3.61	250.77	216.74	221.26	179.80	1720.00	1072.50	110149.42	1.0000	3.21	
HS20 OPER	COL K2	3.61	250.77	221.02	221.26	179.21	1720.00	1072.50	110149.42	1.0000	3.18	
HS20 OPER	COL K2	3.61	250.77	221.25	221.26	178.62	1720.00	1072.50	110149.42	1.0000	3.18	
HS20 OPER	COL K2	3.61	250.77	221.47	221.26	178.03	1720.00	1072.50	110149.42	1.0000	3.18	
HS20 OPER	COL K2	3.61	250.77	221.69	221.26	177.43	1720.00	1072.50	110149.42	1.0000	3.18	
HS20 OPER	COL K2	3.61	250.77	221.92	221.26	176.84	1720.00	1072.50	110149.42	1.0000	3.19	
HS20 OPER	COL K2	3.61	250.77	222.14	221.26	176.25	1720.00	1072.50	110149.42	1.0000	3.19	
HS20 OPER	COL K2	3.61	250.77	217.74	221.26	175.66	1720.00	1072.50	110149.42	1.0000	3.23	
HS20 OPER	COL K2	3.61	250.77	222.21	221.26	175.07	1720.00	1072.50	110149.42	1.0000	3.20	
HS20 OPER	COL K2	3.61	250.77	217.90	221.26	174.48	1720.00	1072.50	110149.42	1.0000	3.24	
HS20 OPER	COL K2	3.61	250.77	222.25	221.26	173.89	1720.00	1072.50	110149.42	1.0000	3.21	
HS20 OPER	COL K2	3.61	250.77	218.22	221.26	173.29	1720.00	1072.50	110149.42	1.0000	3.25	
HS20 OPER	COL K2	3.61	250.77	222.28	221.26	172.70	1720.00	1072.50	110149.42	1.0000	3.22	
HS20 OPER	COL K2	3.61	250.77	218.37	221.26	172.11	1720.00	1072.50	110149.42	1.0000	3.25	
HS20 OPER	COL K2	3.61	250.77	222.32	221.26	171.52	1720.00	1072.50	110149.42	1.0000	3.23	
HS20 OPER	COL K2	3.61	250.77	218.68	221.26	170.93	1720.00	1072.50	110149.42	1.0000	3.26	
HS20 OPER	COL K2	3.61	250.77	222.36	221.26	170.34	1720.00	1072.50	110149.42	1.0000	3.24	
HS20 OPER	COL K2	3.61	250.77	218.83	221.26	169.75	1720.00	1072.50	110149.42	1.0000	3.27	
HS20 OPER	COL K2	3.61	250.77	222.38	221.26	169.15	1720.00	1072.50	110149.42	1.0000	3.24	
HS20 OPER	COL K2	3.61	250.77	222.41	221.26	168.56	1720.00	1072.50	110149.42	1.0000	3.25	
HS20 OPER	COL K2	3.61	250.77	222.44	221.26	167.97	1720.00	1072.50	110149.42	1.0000	3.26	
HS20 OPER	COL K2	3.61	250.77	219.42	221.26	167.38	1720.00	1072.50	110149.42	1.0000	3.29	
HS20 OPER	COL K2	3.61	250.77	222.47	221.26	166.79	1720.00	1072.50	110149.42	1.0000	3.27	
HS20 OPER	COL K2	3.61	250.77	219.71	221.26	166.20	1720.00	1072.50	110149.42	1.0000	3.27	
HS20 OPER	COL K2	3.61	250.77	222.50	221.26	165.61	1720.00	1072.50	110149.42	1.0000	3.30	
HS20 OPER	COL K2	3.61	250.77	219.85	221.26	165.01	1720.00	1072.50	110149.42	1.0000	3.28	
HS20 OPER	COL K2	3.61	250.77	222.52	221.26	164.42	1720.00	1072.50	110149.42	1.0000	3.31	
HS20 OPER	COL K2	3.61	250.77	220.13	221.26	163.83	1720.00	1072.50	110149.42	1.0000	3.29	
HS20 OPER	COL K2	3.61	250.77	222.54	221.26	163.24	1720.00	1072.50	110149.42	1.0000	3.31	
HS20 OPER	COL K2	3.61	250.77	222.56	221.26	162.65	1720.00	1072.50	110149.42	1.0000	3.30	
HS20 OPER	COL K2	3.61	250.77	220.53	221.26	161.47	1720.00	1072.50	110149.42	1.0000	3.31	
HS20 OPER	COL K2	3.61	250.77	222.58	221.26	160.87	1720.00	1072.50	110149.42	1.0000	3.33	
HS20 OPER	COL K2	3.61	250.77	222.60	221.26	160.28	1720.00	1072.50	110149.42	1.0000	3.32	
HS20 OPER	COL K2	3.61	250.77	220.91	221.26	159.10	1720.00	1072.50	110149.42	1.0000	3.33	
HS20 OPER	COL K2	3.61	250.77	222.61	221.26	158.51	1720.00	1072.50	110149.42	1.0000	3.35	
HS20 OPER	COL K2	3.61	250.77	222.62	221.26	157.92	1720.00	1072.50	110149.42	1.0000	3.34	
HS20 OPER	COL K2	3.61	250.77	221.28	221.26	157.33	1720.00	1072.50	110149.42	1.0000	3.34	
HS20 OPER	COL K2	3.61	250.77	222.63	221.26	156.73	1720.00	1072.50	110149.42	1.0000	3.36	
HS20 OPER	COL K2	3.61	250.77	222.63	221.26	156.14	1720.00	1072.50	110149.42	1.0000	3.35	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{cx}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
HS20 OPER	COL K2	3.61	250.77	221.40	221.26	155.55	1720.00	1072.50	110149.42	1.0000	3.37	
HS20 OPER	COL K2	3.61	250.77	222.65	221.26	154.96	1720.00	1072.50	110149.42	1.0000	3.36	
HS20 OPER	COL K2	3.61	250.77	221.64	221.26	154.37	1720.00	1072.50	110149.42	1.0000	3.38	
HS20 OPER	COL K2	3.61	250.77	222.65	221.26	153.78	1720.00	1072.50	110149.42	1.0000	3.37	
HS20 OPER	COL K2	3.61	250.77	222.66	221.26	152.59	1720.00	1072.50	110149.42	1.0000	3.38	
HS20 OPER	COL K2	3.61	250.77	221.98	221.26	152.00	1720.00	1072.50	110149.42	1.0000	3.39	
HS20 OPER	COL K2	3.61	250.77	222.66	221.26	151.41	1720.00	1072.50	110149.42	1.0000	3.39	
HS20 OPER	COL K2	3.61	250.77	222.20	221.26	150.82	1720.00	1072.50	110149.42	1.0000	3.40	
HS20 OPER	COL K2	3.61	250.77	222.66	221.26	150.23	1720.00	1072.50	110149.42	1.0000	3.40	
HS20 OPER	COL K2	3.61	250.77	222.66	221.26	149.05	1720.00	1072.50	110149.42	1.0000	3.41	
HS20 OPER	COL K2	3.61	250.77	222.66	221.26	148.45	1720.00	1072.50	110149.42	1.0000	3.42	
HS20 OPER	COL K2	3.61	250.77	222.60	221.26	147.86	1720.00	1072.50	110149.42	1.0000	3.43	
HS20 OPER	COL K2	3.61	250.77	222.70	221.26	147.27	1720.00	1072.50	110149.42	1.0000	3.43	
HS20 OPER	COL K2	3.61	250.77	222.80	221.26	146.68	1720.00	1072.50	110149.42	1.0000	3.43	
HS20 OPER	COL K2	3.61	250.77	222.65	221.26	146.09	1720.00	1072.50	110149.42	1.0000	3.44	
HS20 OPER	COL K2	3.61	250.77	222.89	221.26	145.50	1720.00	1072.50	110149.42	1.0000	3.44	
HS20 OPER	COL K2	3.61	250.77	222.99	221.26	144.91	1720.00	1072.50	110149.42	1.0000	3.45	
HS20 OPER	COL K2	3.61	250.77	223.08	221.26	144.31	1720.00	1072.50	110149.42	1.0000	3.45	
HS20 OPER	COL K2	3.61	250.77	223.17	221.26	143.72	1720.00	1072.50	110149.42	1.0000	3.46	
HS20 OPER	COL K2	3.61	250.77	223.25	221.26	143.13	1720.00	1072.50	110149.42	1.0000	3.46	
HS20 OPER	COL K2	3.61	250.77	223.34	221.26	142.54	1720.00	1072.50	110149.42	1.0000	3.47	
HS20 OPER	COL K2	3.61	250.77	222.60	221.26	141.95	1720.00	1072.50	110149.42	1.0000	3.48	
HS20 OPER	COL K2	3.61	250.77	223.42	221.26	141.36	1720.00	1072.50	110149.42	1.0000	3.48	
HS20 OPER	COL K2	3.61	250.77	223.50	221.26	140.76	1720.00	1072.50	110149.42	1.0000	3.48	
HS20 OPER	COL K2	3.61	250.77	223.43	221.26	139.58	1720.00	1072.50	110149.42	1.0000	3.49	
HS20 OPER	COL K2	3.61	250.77	223.33	221.26	138.99	1720.00	1072.50	110149.42	1.0000	3.50	
HS20 OPER	COL K2	3.61	250.77	222.54	221.26	138.40	1720.00	1072.50	110149.42	1.0000	3.51	
HS20 OPER	COL K2	3.61	250.77	223.23	221.26	137.81	1720.00	1072.50	110149.42	1.0000	3.51	
HS20 OPER	COL K2	3.61	250.77	222.52	221.26	137.22	1720.00	1072.50	110149.42	1.0000	3.53	
HS20 OPER	COL K2	3.61	250.77	223.12	221.26	136.62	1720.00	1072.50	110149.42	1.0000	3.52	
HS20 OPER	COL K2	3.61	250.77	222.49	221.26	136.03	1720.00	1072.50	110149.42	1.0000	3.54	
HS20 OPER	COL K2	3.61	250.77	223.01	221.26	135.44	1720.00	1072.50	110149.42	1.0000	3.54	
2F1	COL K2	3.61	250.77	66.79	221.26	120.66	1720.00	1072.50	110149.42	1.0000	6.83	
2F1	COL K2	3.61	250.77	68.87	221.26	120.06	1720.00	1072.50	110149.42	1.0000	6.78	
2F1	COL K2	3.61	250.77	70.54	221.26	119.47	1720.00	1072.50	110149.42	1.0000	6.74	
2F1	COL K2	3.61	250.77	71.99	221.26	118.88	1720.00	1072.50	110149.42	1.0000	6.71	
2F1	COL K2	3.61	250.77	73.24	221.26	118.29	1720.00	1072.50	110149.42	1.0000	6.68	
2F1	COL K2	3.61	250.77	74.27	221.26	117.70	1720.00	1072.50	110149.42	1.0000	6.66	
2F1	COL K2	3.61	250.77	75.32	221.26	117.11	1720.00	1072.50	110149.42	1.0000	6.65	
2F1	COL K2	3.61	250.77	76.36	221.26	116.52	1720.00	1072.50	110149.42	1.0000	6.63	
2F1	COL K2	3.61	250.77	77.39	221.26	115.92	1720.00	1072.50	110149.42	1.0000	6.61	
2F1	COL K2	3.61	250.77	78.23	221.26	115.33	1720.00	1072.50	110149.42	1.0000	6.61	
2F1	COL K2	3.61	250.77	79.26	221.26	114.74	1720.00	1072.50	110149.42	1.0000	6.59	
2F1	COL K2	3.61	250.77	80.09	221.26	114.15	1720.00	1072.50	110149.42	1.0000	6.58	
2F1	COL K2	3.61	250.77	80.92	221.26	113.56	1720.00	1072.50	110149.42	1.0000	6.57	
2F1	COL K2	3.61	250.77	81.24	221.26	112.97	1720.00	1072.50	110149.42	1.0000	6.58	
2F1	COL K2	3.61	250.77	82.02	221.26	112.38	1720.00	1072.50	110149.42	1.0000	6.57	
2F1	COL K2	3.61	250.77	82.65	221.26	111.78	1720.00	1072.50	110149.42	1.0000	6.57	
2F1	COL K2	3.61	250.77	83.48	221.26	111.19	1720.00	1072.50	110149.42	1.0000	6.56	
2F1	COL K2	3.61	250.77	84.31	221.26	110.60	1720.00	1072.50	110149.42	1.0000	6.55	
2F1	COL K2	3.61	250.77	84.93	221.26	110.01	1720.00	1072.50	110149.42	1.0000	6.55	
2F1	COL K2	3.61	250.77	85.76	221.26	109.42	1720.00	1072.50	110149.42	1.0000	6.54	
2F1	COL K2	3.61	250.77	86.38	221.26	108.83	1720.00	1072.50	110149.42	1.0000	6.54	
2F1	COL K2	3.61	250.77	87.21	221.26	108.24	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K2	3.61	250.77	87.83	221.26	107.64	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K2	3.61	250.77	87.95	221.26	107.05	1720.00	1072.50	110149.42	1.0000	6.54	
2F1	COL K2	3.61	250.77	88.14	221.26	106.46	1720.00	1072.50	110149.42	1.0000	6.56	
2F1	COL K2	3.61	250.77	88.24	221.26	105.87	1720.00	1072.50	110149.42	1.0000	6.57	

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

Impact	DL Factor	LL Factor	1.30 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
					Axial Force		Moment		P _u	M _u	A _s F _c			Condition Equation
					Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF			
2F1	COL K2	3.61	250.77	88.44	221.26	105.28	1720.00	1072.50	110149.42	1.0000	6.59			
2F1	COL K2	3.61	250.77	88.53	221.26	104.69	1720.00	1072.50	110149.42	1.0000	6.60			
2F1	COL K2	3.61	250.77	88.63	221.26	104.10	1720.00	1072.50	110149.42	1.0000	6.62			
2F1	COL K2	3.61	250.77	88.83	221.26	103.50	1720.00	1072.50	110149.42	1.0000	6.63			
2F1	COL K2	3.61	250.77	88.93	221.26	102.91	1720.00	1072.50	110149.42	1.0000	6.65			
2F1	COL K2	3.61	250.77	89.02	221.26	102.32	1720.00	1072.50	110149.42	1.0000	6.67			
2F1	COL K2	3.61	250.77	89.22	221.26	101.73	1720.00	1072.50	110149.42	1.0000	6.68			
2F1	COL K2	3.61	250.77	89.32	221.26	101.14	1720.00	1072.50	110149.42	1.0000	6.70			
2F1	COL K2	3.61	250.77	89.42	221.26	100.55	1720.00	1072.50	110149.42	1.0000	6.71			
2F1	COL K2	3.61	250.77	89.61	221.26	99.95	1720.00	1072.50	110149.42	1.0000	6.73			
2F1	COL K2	3.61	250.77	89.71	221.26	99.36	1720.00	1072.50	110149.42	1.0000	6.74			
2F1	COL K2	3.61	250.77	89.91	221.26	98.77	1720.00	1072.50	110149.42	1.0000	6.76			
2F1	COL K2	3.61	250.77	90.00	221.26	98.18	1720.00	1072.50	110149.42	1.0000	6.77			
2F1	COL K2	3.61	250.77	90.10	221.26	97.59	1720.00	1072.50	110149.42	1.0000	6.79			
2F1	COL K2	3.61	250.77	90.29	221.26	97.00	1720.00	1072.50	110149.42	1.0000	6.81			
2F1	COL K2	3.61	250.77	90.39	221.26	96.41	1720.00	1072.50	110149.42	1.0000	6.82			
2F1	COL K2	3.61	250.77	90.49	221.26	95.81	1720.00	1072.50	110149.42	1.0000	6.84			
2F1	COL K2	3.61	250.77	90.68	221.26	95.22	1720.00	1072.50	110149.42	1.0000	6.85			
2F1	COL K2	3.61	250.77	90.78	221.26	94.63	1720.00	1072.50	110149.42	1.0000	6.87			
2F1	COL K2	3.61	250.77	90.87	221.26	94.04	1720.00	1072.50	110149.42	1.0000	6.89			
2F1	COL K2	3.61	250.77	91.06	221.26	93.45	1720.00	1072.50	110149.42	1.0000	6.90			
2F1	COL K2	3.61	250.77	91.32	221.26	92.86	1720.00	1072.50	110149.42	1.0000	6.92			
2F1	COL K2	3.61	250.77	91.61	221.26	92.27	1720.00	1072.50	110149.42	1.0000	6.93			
2F1	COL K2	3.61	250.77	91.90	221.26	91.67	1720.00	1072.50	110149.42	1.0000	6.94			
2F1	COL K2	3.61	250.77	92.18	221.26	91.08	1720.00	1072.50	110149.42	1.0000	6.95			
2F1	COL K2	3.61	250.77	92.47	221.26	90.49	1720.00	1072.50	110149.42	1.0000	6.96			
2F1	COL K2	3.61	250.77	92.76	221.26	89.90	1720.00	1072.50	110149.42	1.0000	6.97			
2F1	COL K2	3.61	250.77	93.05	221.26	89.31	1720.00	1072.50	110149.42	1.0000	6.98			
2F1	COL K2	3.61	250.77	93.19	221.26	88.72	1720.00	1072.50	110149.42	1.0000	7.00			
2F1	COL K2	3.61	250.77	93.47	221.26	88.13	1720.00	1072.50	110149.42	1.0000	7.01			
2F1	COL K2	3.61	250.77	93.76	221.26	87.53	1720.00	1072.50	110149.42	1.0000	7.02			
2F1	COL K2	3.61	250.77	94.03	221.26	86.94	1720.00	1072.50	110149.42	1.0000	7.03			
2F1	COL K2	3.61	250.77	94.32	221.26	86.35	1720.00	1072.50	110149.42	1.0000	7.04			
2F1	COL K2	3.61	250.77	94.60	221.26	85.76	1720.00	1072.50	110149.42	1.0000	7.06			
2F1	COL K2	3.61	250.77	94.87	221.26	85.17	1720.00	1072.50	110149.42	1.0000	7.07			
2F1	COL K2	3.61	250.77	95.15	221.26	84.58	1720.00	1072.50	110149.42	1.0000	7.08			
2F1	COL K2	3.61	250.77	95.42	221.26	83.99	1720.00	1072.50	110149.42	1.0000	7.09			
2F1	COL K2	3.61	250.77	95.70	221.26	83.39	1720.00	1072.50	110149.42	1.0000	7.10			
2F1	COL K2	3.61	250.77	95.74	221.26	82.80	1720.00	1072.50	110149.42	1.0000	7.12			
2F1	COL K2	3.61	250.77	95.77	221.26	82.21	1720.00	1072.50	110149.42	1.0000	7.15			
2F1	COL K2	3.61	250.77	95.80	221.26	81.62	1720.00	1072.50	110149.42	1.0000	7.17			
2F1	COL K2	3.61	250.77	95.83	221.26	81.03	1720.00	1072.50	110149.42	1.0000	7.19			
2F1	COL K2	3.61	250.77	95.85	221.26	80.44	1720.00	1072.50	110149.42	1.0000	7.21			
2F1	COL K2	3.61	250.77	95.88	221.26	79.85	1720.00	1072.50	110149.42	1.0000	7.24			
2F1	COL K2	3.61	250.77	95.90	221.26	79.25	1720.00	1072.50	110149.42	1.0000	7.26			
2F1	COL K2	3.61	250.77	95.93	221.26	78.66	1720.00	1072.50	110149.42	1.0000	7.28			
2F1	COL K2	3.61	250.77	95.95	221.26	78.07	1720.00	1072.50	110149.42	1.0000	7.31			
2F1	COL K2	3.61	250.77	96.00	221.26	77.48	1720.00	1072.50	110149.42	1.0000	7.33			
2F1	COL K2	3.61	250.77	96.02	221.26	76.89	1720.00	1072.50	110149.42	1.0000	7.35			
2F1	COL K2	3.61	250.77	96.05	221.26	76.30	1720.00	1072.50	110149.42	1.0000	7.37			
2F1	COL K2	3.61	250.77	96.07	221.26	75.71	1720.00	1072.50	110149.42	1.0000	7.40			
2F1	COL K2	3.61	250.77	96.09	221.26	75.11	1720.00	1072.50	110149.42	1.0000	7.42			
2F1	COL K2	3.61	250.77	96.11	221.26	74.52	1720.00	1072.50	110149.42	1.0000	7.45			
2F1	COL K2	3.61	250.77	96.13	221.26	73.93	1720.00	1072.50	110149.42	1.0000	7.47			
2F1	COL K2	3.61	250.77	96.15	221.26	73.34	1720.00	1072.50	110149.42	1.0000	7.50			
2F1	COL K2	3.61	250.77	96.18	221.26	72.75	1720.00	1072.50	110149.42	1.0000	7.52			
2F1	COL K2	3.61	250.77	96.19	221.26	72.16	1720.00	1072.50	110149.42	1.0000	7.55			
2F1	COL K2	3.61	250.77	96.21	221.26	71.57	1720.00	1072.50	110149.42	1.0000	7.57			

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _e		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
2F1	COL K2	3.61	250.77	96.23	221.26	70.97	1720.00	1072.50	110149.42	1.0000	7.60	
2F1	COL K2	3.61	250.77	96.26	221.26	70.38	1720.00	1072.50	110149.42	1.0000	7.62	
2F1	COL K2	3.61	250.77	96.28	221.26	69.79	1720.00	1072.50	110149.42	1.0000	7.65	
2F1	COL K2	3.61	250.77	96.30	221.26	69.20	1720.00	1072.50	110149.42	1.0000	7.67	
2F1	COL K2	3.61	250.77	96.32	221.26	68.61	1720.00	1072.50	110149.42	1.0000	7.70	
2F1	COL K2	3.61	250.77	96.33	221.26	68.02	1720.00	1072.50	110149.42	1.0000	7.73	
2F1	COL K2	3.61	250.77	96.35	221.26	67.43	1720.00	1072.50	110149.42	1.0000	7.75	
2F1	COL K2	3.61	250.77	96.36	221.26	66.83	1720.00	1072.50	110149.42	1.0000	7.78	
2F1	COL K2	3.61	250.77	96.46	221.26	66.24	1720.00	1072.50	110149.42	1.0000	7.80	
2F1	COL K2	3.61	250.77	96.52	221.26	65.65	1720.00	1072.50	110149.42	1.0000	7.83	
2F1	COL K2	3.61	250.77	96.59	221.26	65.06	1720.00	1072.50	110149.42	1.0000	7.85	
2F1	COL K2	3.61	250.77	96.68	221.26	64.47	1720.00	1072.50	110149.42	1.0000	7.87	
2F1	COL K2	3.61	250.77	96.69	221.26	63.88	1720.00	1072.50	110149.42	1.0000	7.90	
2F1	COL K2	3.61	250.77	96.70	221.26	63.29	1720.00	1072.50	110149.42	1.0000	7.93	
2F1	COL K2	3.61	250.77	96.71	221.26	62.69	1720.00	1072.50	110149.42	1.0000	7.96	
2F1	COL K2	3.61	250.77	96.72	221.26	62.10	1720.00	1072.50	110149.42	1.0000	7.99	
2F1	COL K2	3.61	250.77	96.73	221.26	61.51	1720.00	1072.50	110149.42	1.0000	8.02	
2F1	COL K2	3.61	250.77	96.73	221.26	60.92	1720.00	1072.50	110149.42	1.0000	8.05	
2F1	COL K2	3.61	250.77	96.74	221.26	60.33	1720.00	1072.50	110149.42	1.0000	8.07	
2F1	COL K2	3.61	250.77	96.75	221.26	59.74	1720.00	1072.50	110149.42	1.0000	8.10	
2F1	COL K2	3.61	250.77	96.76	221.26	59.14	1720.00	1072.50	110149.42	1.0000	8.13	
2F1	COL K2	3.61	250.77	96.76	221.26	58.55	1720.00	1072.50	110149.42	1.0000	8.16	
2F1	COL K2	3.61	250.77	96.76	221.26	57.96	1720.00	1072.50	110149.42	1.0000	8.19	
2F1	COL K2	3.61	250.77	96.76	221.26	57.37	1720.00	1072.50	110149.42	1.0000	8.23	
2F1	COL K2	3.61	250.77	96.76	221.26	56.78	1720.00	1072.50	110149.42	1.0000	8.26	
2F1	COL K2	3.61	250.77	96.76	221.26	56.19	1720.00	1072.50	110149.42	1.0000	8.29	
2F1	COL K2	3.61	250.77	96.76	221.26	55.60	1720.00	1072.50	110149.42	1.0000	8.32	
2F1	COL K2	3.61	250.77	96.76	221.26	55.00	1720.00	1072.50	110149.42	1.0000	8.32	
2F1	COL K2	3.61	250.77	96.49	221.26	55.60	1720.00	1072.50	110149.42	1.0000	8.33	
2F1	COL K2	3.61	250.77	96.76	221.26	55.00	1720.00	1072.50	110149.42	1.0000	8.35	
2F1	COL K2	3.61	250.77	96.76	221.26	54.41	1720.00	1072.50	110149.42	1.0000	8.38	
3F1	COL K2	3.61	250.77	101.11	221.26	183.94	1720.00	1072.50	110149.42	1.0000	4.49	
3F1	COL K2	3.61	250.77	103.99	221.26	183.35	1720.00	1072.50	110149.42	1.0000	4.46	
3F1	COL K2	3.61	250.77	106.22	221.26	182.76	1720.00	1072.50	110149.42	1.0000	4.43	
3F1	COL K2	3.61	250.77	108.13	221.26	182.17	1720.00	1072.50	110149.42	1.0000	4.41	
3F1	COL K2	3.61	250.77	109.41	221.26	181.57	1720.00	1072.50	110149.42	1.0000	4.40	
3F1	COL K2	3.61	250.77	111.01	221.26	180.98	1720.00	1072.50	110149.42	1.0000	4.38	
3F1	COL K2	3.61	250.77	112.28	221.26	180.39	1720.00	1072.50	110149.42	1.0000	4.37	
3F1	COL K2	3.61	250.77	113.56	221.26	179.80	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K2	3.61	250.77	114.83	221.26	179.21	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K2	3.61	250.77	115.79	221.26	178.62	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K2	3.61	250.77	116.74	221.26	178.03	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K2	3.61	250.77	117.33	221.26	177.43	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K2	3.61	250.77	117.83	221.26	176.84	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K2	3.61	250.77	118.34	221.26	176.25	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K2	3.61	250.77	119.09	221.26	175.66	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K2	3.61	250.77	120.05	221.26	175.07	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K2	3.61	250.77	121.00	221.26	174.48	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K2	3.61	250.77	121.96	221.26	173.89	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K2	3.61	250.77	122.91	221.26	173.29	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K2	3.61	250.77	123.55	221.26	172.70	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K2	3.61	250.77	124.50	221.26	172.11	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K2	3.61	250.77	125.45	221.26	171.52	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K2	3.61	250.77	126.09	221.26	170.93	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K2	3.61	250.77	127.04	221.26	170.34	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K2	3.61	250.77	128.00	221.26	169.75	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K2	3.61	250.77	128.63	221.26	169.15	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K2	3.61	250.77	129.20	221.26	168.56	1720.00	1072.50	110149.42	1.0000	4.29	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{cx}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
3F1	COL K2	3.61	250.77	129.42	221.26	167.97	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K2	3.61	250.77	129.65	221.26	167.38	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K2	3.61	250.77	130.10	221.26	166.79	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K2	3.61	250.77	130.32	221.26	166.20	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K2	3.61	250.77	130.54	221.26	165.61	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K2	3.61	250.77	130.77	221.26	165.01	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K2	3.61	250.77	131.22	221.26	164.42	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K2	3.61	250.77	131.45	221.26	163.83	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K2	3.61	250.77	131.67	221.26	163.24	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K2	3.61	250.77	131.90	221.26	162.65	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K2	3.61	250.77	132.35	221.26	162.06	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K2	3.61	250.77	132.57	221.26	161.47	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K2	3.61	250.77	132.80	221.26	160.87	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K2	3.61	250.77	133.25	221.26	160.28	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K2	3.61	250.77	133.47	221.26	159.69	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K2	3.61	250.77	133.70	221.26	159.10	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K2	3.61	250.77	133.92	221.26	158.51	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K2	3.61	250.77	134.37	221.26	157.92	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K2	3.61	250.77	134.59	221.26	157.33	1720.00	1072.50	110149.42	1.0000	4.37	
3F1	COL K2	3.61	250.77	134.81	221.26	156.73	1720.00	1072.50	110149.42	1.0000	4.38	
3F1	COL K2	3.61	250.77	135.04	221.26	156.14	1720.00	1072.50	110149.42	1.0000	4.38	
3F1	COL K2	3.61	250.77	135.26	221.26	155.55	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K2	3.61	250.77	135.71	221.26	154.96	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K2	3.61	250.77	135.93	221.26	154.37	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K2	3.61	250.77	136.16	221.26	153.78	1720.00	1072.50	110149.42	1.0000	4.40	
3F1	COL K2	3.61	250.77	136.38	221.26	153.19	1720.00	1072.50	110149.42	1.0000	4.40	
3F1	COL K2	3.61	250.77	136.83	221.26	152.59	1720.00	1072.50	110149.42	1.0000	4.41	
3F1	COL K2	3.61	250.77	137.04	221.26	152.00	1720.00	1072.50	110149.42	1.0000	4.41	
3F1	COL K2	3.61	250.77	137.27	221.26	151.41	1720.00	1072.50	110149.42	1.0000	4.42	
3F1	COL K2	3.61	250.77	137.49	221.26	150.82	1720.00	1072.50	110149.42	1.0000	4.42	
3F1	COL K2	3.61	250.77	137.94	221.26	150.23	1720.00	1072.50	110149.42	1.0000	4.42	
3F1	COL K2	3.61	250.77	135.29	221.26	149.64	1720.00	1072.50	110149.42	1.0000	4.47	
3F1	COL K2	3.61	250.77	138.08	221.26	149.05	1720.00	1072.50	110149.42	1.0000	4.44	
3F1	COL K2	3.61	250.77	138.21	221.26	148.45	1720.00	1072.50	110149.42	1.0000	4.45	
3F1	COL K2	3.61	250.77	138.33	221.26	147.86	1720.00	1072.50	110149.42	1.0000	4.45	
3F1	COL K2	3.61	250.77	138.46	221.26	147.27	1720.00	1072.50	110149.42	1.0000	4.46	
3F1	COL K2	3.61	250.77	138.59	221.26	146.68	1720.00	1072.50	110149.42	1.0000	4.47	
3F1	COL K2	3.61	250.77	138.72	221.26	146.09	1720.00	1072.50	110149.42	1.0000	4.47	
3F1	COL K2	3.61	250.77	137.71	221.26	145.50	1720.00	1072.50	110149.42	1.0000	4.50	
3F1	COL K2	3.61	250.77	138.85	221.26	144.91	1720.00	1072.50	110149.42	1.0000	4.49	
3F1	COL K2	3.61	250.77	138.97	221.26	144.31	1720.00	1072.50	110149.42	1.0000	4.50	
3F1	COL K2	3.61	250.77	139.10	221.26	143.72	1720.00	1072.50	110149.42	1.0000	4.50	
3F1	COL K2	3.61	250.77	139.23	221.26	143.13	1720.00	1072.50	110149.42	1.0000	4.51	
3F1	COL K2	3.61	250.77	139.37	221.26	142.54	1720.00	1072.50	110149.42	1.0000	4.52	
3F1	COL K2	3.61	250.77	139.61	221.26	141.95	1720.00	1072.50	110149.42	1.0000	4.52	
3F1	COL K2	3.61	250.77	140.08	221.26	141.36	1720.00	1072.50	110149.42	1.0000	4.53	
3F1	COL K2	3.61	250.77	140.32	221.26	140.76	1720.00	1072.50	110149.42	1.0000	4.53	
3F1	COL K2	3.61	250.77	140.55	221.26	140.17	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K2	3.61	250.77	141.03	221.26	139.58	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K2	3.61	250.77	141.26	221.26	138.99	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K2	3.61	250.77	141.72	221.26	138.40	1720.00	1072.50	110149.42	1.0000	4.55	
3F1	COL K2	3.61	250.77	141.88	221.26	137.81	1720.00	1072.50	110149.42	1.0000	4.55	
3F1	COL K2	3.61	250.77	142.02	221.26	137.22	1720.00	1072.50	110149.42	1.0000	4.56	
3F1	COL K2	3.61	250.77	140.35	221.26	136.62	1720.00	1072.50	110149.42	1.0000	4.60	
3F1	COL K2	3.61	250.77	142.16	221.26	136.03	1720.00	1072.50	110149.42	1.0000	4.58	
3F1	COL K2	3.61	250.77	142.30	221.26	135.44	1720.00	1072.50	110149.42	1.0000	4.58	
3F1	COL K2	3.61	250.77	142.44	221.26	134.85	1720.00	1072.50	110149.42	1.0000	4.59	
3F1	COL K2	3.61	250.77	142.57	221.26	134.26	1720.00	1072.50	110149.42	1.0000	4.60	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
3F1	COL K2	3.61	250.77	142.71	221.26	133.67	1720.00	1072.50	110149.42	1.0000	4.61		
3F1	COL K2	3.61	250.77	142.85	221.26	133.08	1720.00	1072.50	110149.42	1.0000	4.61		
3F1	COL K2	3.61	250.77	142.99	221.26	132.48	1720.00	1072.50	110149.42	1.0000	4.62		
3F1	COL K2	3.61	250.77	143.12	221.26	131.89	1720.00	1072.50	110149.42	1.0000	4.63		
3F1	COL K2	3.61	250.77	143.26	221.26	131.30	1720.00	1072.50	110149.42	1.0000	4.64		
3F1	COL K2	3.61	250.77	143.39	221.26	130.71	1720.00	1072.50	110149.42	1.0000	4.64		
3F1	COL K2	3.61	250.77	143.53	221.26	130.12	1720.00	1072.50	110149.42	1.0000	4.65		
3F1	COL K2	3.61	250.77	143.66	221.26	129.53	1720.00	1072.50	110149.42	1.0000	4.66		
3F1	COL K2	3.61	250.77	143.80	221.26	128.94	1720.00	1072.50	110149.42	1.0000	4.67		
3F1	COL K2	3.61	250.77	143.93	221.26	128.34	1720.00	1072.50	110149.42	1.0000	4.67		
3F1	COL K2	3.61	250.77	141.91	221.26	127.75	1720.00	1072.50	110149.42	1.0000	4.72		
3F1	COL K2	3.61	250.77	144.06	221.26	127.16	1720.00	1072.50	110149.42	1.0000	4.69		
3F1	COL K2	3.61	250.77	144.20	221.26	126.57	1720.00	1072.50	110149.42	1.0000	4.70		
3F1	COL K2	3.61	250.77	144.33	221.26	125.98	1720.00	1072.50	110149.42	1.0000	4.71		
3F1	COL K2	3.61	250.77	144.46	221.26	125.39	1720.00	1072.50	110149.42	1.0000	4.71		
3F1	COL K2	3.61	250.77	144.59	221.26	124.80	1720.00	1072.50	110149.42	1.0000	4.72		
3F1	COL K2	3.61	250.77	144.72	221.26	124.20	1720.00	1072.50	110149.42	1.0000	4.73		
3F1	COL K2	3.61	250.77	144.85	221.26	123.61	1720.00	1072.50	110149.42	1.0000	4.74		
3F1	COL K2	3.61	250.77	144.98	221.26	123.02	1720.00	1072.50	110149.42	1.0000	4.75		
3F1	COL K2	3.61	250.77	145.10	221.26	122.43	1720.00	1072.50	110149.42	1.0000	4.75		
3F1	COL K2	3.61	250.77	145.23	221.26	121.84	1720.00	1072.50	110149.42	1.0000	4.76		
3F1	COL K2	3.61	250.77	145.35	221.26	121.25	1720.00	1072.50	110149.42	1.0000	4.77		
3F1	COL K2	3.61	250.77	145.48	221.26	120.66	1720.00	1072.50	110149.42	1.0000	4.78		
3F1	COL K2	3.61	250.77	145.61	221.26	120.06	1720.00	1072.50	110149.42	1.0000	4.79		
3F1	COL K2	3.61	250.77	145.73	221.26	119.47	1720.00	1072.50	110149.42	1.0000	4.79		
3F1	COL K2	3.61	250.77	145.86	221.26	118.88	1720.00	1072.50	110149.42	1.0000	4.80		
3F1	COL K2	3.61	250.77	145.98	221.26	118.29	1720.00	1072.50	110149.42	1.0000	4.81		
3F1	COL K2	3.61	250.77	146.11	221.26	117.70	1720.00	1072.50	110149.42	1.0000	4.82		
3F1	COL K2	3.61	250.77	146.22	221.26	117.11	1720.00	1072.50	110149.42	1.0000	4.83		
3F1	COL K2	3.61	250.77	143.70	221.26	116.52	1720.00	1072.50	110149.42	1.0000	4.89		
3F1	COL K2	3.61	250.77	146.35	221.26	115.92	1720.00	1072.50	110149.42	1.0000	4.85		
3F1	COL K2	3.61	250.77	146.47	221.26	115.33	1720.00	1072.50	110149.42	1.0000	4.85		
3F1	COL K2	3.61	250.77	146.58	221.26	114.74	1720.00	1072.50	110149.42	1.0000	4.86		
3F1	COL K2	3.61	250.77	146.71	221.26	114.15	1720.00	1072.50	110149.42	1.0000	4.87		
3F1	COL K2	3.61	250.77	146.83	221.26	113.56	1720.00	1072.50	110149.42	1.0000	4.88		
3F1	COL K2	3.61	250.77	146.94	221.26	112.97	1720.00	1072.50	110149.42	1.0000	4.89		
3F1	COL K2	3.61	250.77	146.98	221.26	112.38	1720.00	1072.50	110149.42	1.0000	4.90		
3F1	COL K2	3.61	250.77	147.00	221.26	111.78	1720.00	1072.50	110149.42	1.0000	4.91		
3F1	COL K2	3.61	250.77	144.52	221.26	111.19	1720.00	1072.50	110149.42	1.0000	4.97		
3F1	COL K2	3.61	250.77	147.03	221.26	110.60	1720.00	1072.50	110149.42	1.0000	4.93		
3F1	COL K2	3.61	250.77	147.05	221.26	110.01	1720.00	1072.50	110149.42	1.0000	4.94		
3F1	COL K2	3.61	250.77	144.72	221.26	109.42	1720.00	1072.50	110149.42	1.0000	5.00		
3F1	COL K2	3.61	250.77	147.07	221.26	108.83	1720.00	1072.50	110149.42	1.0000	4.96		
3F1	COL K2	3.61	250.77	147.09	221.26	108.24	1720.00	1072.50	110149.42	1.0000	4.97		
3F1	COL K2	3.61	250.77	147.11	221.26	107.64	1720.00	1072.50	110149.42	1.0000	4.99		
3F1	COL K2	3.61	250.77	145.11	221.26	107.05	1720.00	1072.50	110149.42	1.0000	5.04		
3F1	COL K2	3.61	250.77	147.13	221.26	106.46	1720.00	1072.50	110149.42	1.0000	5.01		
3F1	COL K2	3.61	250.77	147.15	221.26	105.87	1720.00	1072.50	110149.42	1.0000	5.02		
3F1	COL K2	3.61	250.77	147.16	221.26	105.28	1720.00	1072.50	110149.42	1.0000	5.03		
3F1	COL K2	3.61	250.77	145.38	221.26	104.69	1720.00	1072.50	110149.42	1.0000	5.08		
3F1	COL K2	3.61	250.77	147.18	221.26	104.10	1720.00	1072.50	110149.42	1.0000	5.05		
3F1	COL K2	3.61	250.77	147.19	221.26	103.50	1720.00	1072.50	110149.42	1.0000	5.06		
3F1	COL K2	3.61	250.77	145.66	221.26	102.91	1720.00	1072.50	110149.42	1.0000	5.11		
3F1	COL K2	3.61	250.77	147.21	221.26	102.32	1720.00	1072.50	110149.42	1.0000	5.09		
3F1	COL K2	3.61	250.77	147.22	221.26	101.73	1720.00	1072.50	110149.42	1.0000	5.10		
3F1	COL K2	3.61	250.77	147.23	221.26	101.14	1720.00	1072.50	110149.42	1.0000	5.11		
3F1	COL K2	3.61	250.77	146.00	221.26	100.55	1720.00	1072.50	110149.42	1.0000	5.15		
3F1	COL K2	3.61	250.77	147.24	221.26	99.95	1720.00	1072.50	110149.42	1.0000	5.13		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _e		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF
3F1	COL K2	3.61	250.77	147.25	221.26	99.36	1720.00	1072.50	110149.42	1.0000	5.15
3F1	COL K2	3.61	250.77	147.26	221.26	98.77	1720.00	1072.50	110149.42	1.0000	5.16
3F1	COL K2	3.61	250.77	146.25	221.26	98.18	1720.00	1072.50	110149.42	1.0000	5.19
3F1	COL K2	3.61	250.77	147.26	221.26	97.59	1720.00	1072.50	110149.42	1.0000	5.18
3F1	COL K2	3.61	250.77	147.27	221.26	97.00	1720.00	1072.50	110149.42	1.0000	5.19
3F1	COL K2	3.61	250.77	147.28	221.26	96.41	1720.00	1072.50	110149.42	1.0000	5.21
3F1	COL K2	3.61	250.77	146.57	221.26	95.81	1720.00	1072.50	110149.42	1.0000	5.23
3F1	COL K2	3.61	250.77	147.28	221.26	95.22	1720.00	1072.50	110149.42	1.0000	5.23
3F1	COL K2	3.61	250.77	147.28	221.26	94.63	1720.00	1072.50	110149.42	1.0000	5.24
3F1	COL K2	3.61	250.77	147.28	221.26	94.04	1720.00	1072.50	110149.42	1.0000	5.26
3F1	COL K2	3.61	250.77	146.79	221.26	93.45	1720.00	1072.50	110149.42	1.0000	5.28
3F1	COL K2	3.61	250.77	147.29	221.26	92.86	1720.00	1072.50	110149.42	1.0000	5.28
3F1	COL K2	3.61	250.77	147.29	221.26	92.27	1720.00	1072.50	110149.42	1.0000	5.29
3F1	COL K2	3.61	250.77	147.28	221.26	91.67	1720.00	1072.50	110149.42	1.0000	5.31
3F1	COL K2	3.61	250.77	147.08	221.26	91.08	1720.00	1072.50	110149.42	1.0000	5.33
3F1	COL K2	3.61	250.77	147.28	221.26	90.49	1720.00	1072.50	110149.42	1.0000	5.33
3F1	COL K2	3.61	250.77	147.28	221.26	89.90	1720.00	1072.50	110149.42	1.0000	5.35
3F1	COL K2	3.61	250.77	147.28	221.26	89.31	1720.00	1072.50	110149.42	1.0000	5.36
3F1	COL K2	3.61	250.77	147.34	221.26	88.72	1720.00	1072.50	110149.42	1.0000	5.37
3F1	COL K2	3.61	250.77	147.41	221.26	88.13	1720.00	1072.50	110149.42	1.0000	5.38
3F1	COL K2	3.61	250.77	147.47	221.26	87.53	1720.00	1072.50	110149.42	1.0000	5.39
3F1	COL K2	3.61	250.77	147.25	221.26	86.94	1720.00	1072.50	110149.42	1.0000	5.41
3F1	COL K2	3.61	250.77	147.53	221.26	86.35	1720.00	1072.50	110149.42	1.0000	5.42
3F1	COL K2	3.61	250.77	147.58	221.26	85.76	1720.00	1072.50	110149.42	1.0000	5.43
3F1	COL K2	3.61	250.77	147.64	221.26	85.17	1720.00	1072.50	110149.42	1.0000	5.44
3F1	COL K2	3.61	250.77	147.70	221.26	84.58	1720.00	1072.50	110149.42	1.0000	5.46
3F1	COL K2	3.61	250.77	147.76	221.26	83.99	1720.00	1072.50	110149.42	1.0000	5.47
3F1	COL K2	3.61	250.77	147.81	221.26	83.39	1720.00	1072.50	110149.42	1.0000	5.48
3F1	COL K2	3.61	250.77	147.86	221.26	82.80	1720.00	1072.50	110149.42	1.0000	5.49
3F1	COL K2	3.61	250.77	147.91	221.26	82.21	1720.00	1072.50	110149.42	1.0000	5.51
3F1	COL K2	3.61	250.77	147.91	221.26	81.62	1720.00	1072.50	110149.42	1.0000	5.52
3F1	COL K2	3.61	250.77	147.89	221.26	81.03	1720.00	1072.50	110149.42	1.0000	5.53
4F1	COL K2	3.61	250.77	117.48	221.26	214.10	1720.00	1072.50	110149.42	1.0000	3.86
4F1	COL K2	3.61	250.77	121.61	221.26	213.51	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K2	3.61	250.77	124.23	221.26	212.92	1720.00	1072.50	110149.42	1.0000	3.80
4F1	COL K2	3.61	250.77	126.48	221.26	212.33	1720.00	1072.50	110149.42	1.0000	3.78
4F1	COL K2	3.61	250.77	128.36	221.26	211.74	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K2	3.61	250.77	129.85	221.26	211.15	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K2	3.61	250.77	130.49	221.26	210.56	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K2	3.61	250.77	131.10	221.26	209.96	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K2	3.61	250.77	131.72	221.26	209.37	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K2	3.61	250.77	132.34	221.26	208.78	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K2	3.61	250.77	132.95	221.26	208.19	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K2	3.61	250.77	134.25	221.26	207.60	1720.00	1072.50	110149.42	1.0000	3.74
4F1	COL K2	3.61	250.77	135.37	221.26	207.01	1720.00	1072.50	110149.42	1.0000	3.74
4F1	COL K2	3.61	250.77	136.49	221.26	206.42	1720.00	1072.50	110149.42	1.0000	3.73
4F1	COL K2	3.61	250.77	137.62	221.26	205.82	1720.00	1072.50	110149.42	1.0000	3.72
4F1	COL K2	3.61	250.77	138.74	221.26	205.23	1720.00	1072.50	110149.42	1.0000	3.72
4F1	COL K2	3.61	250.77	139.86	221.26	204.64	1720.00	1072.50	110149.42	1.0000	3.71
4F1	COL K2	3.61	250.77	140.98	221.26	204.05	1720.00	1072.50	110149.42	1.0000	3.70
4F1	COL K2	3.61	250.77	141.73	221.26	203.46	1720.00	1072.50	110149.42	1.0000	3.70
4F1	COL K2	3.61	250.77	142.85	221.26	202.87	1720.00	1072.50	110149.42	1.0000	3.70
4F1	COL K2	3.61	250.77	143.97	221.26	202.28	1720.00	1072.50	110149.42	1.0000	3.69
4F1	COL K2	3.61	250.77	144.28	221.26	201.68	1720.00	1072.50	110149.42	1.0000	3.69
4F1	COL K2	3.61	250.77	144.88	221.26	201.09	1720.00	1072.50	110149.42	1.0000	3.69
4F1	COL K2	3.61	250.77	145.18	221.26	200.50	1720.00	1072.50	110149.42	1.0000	3.70
4F1	COL K2	3.61	250.77	145.47	221.26	199.91	1720.00	1072.50	110149.42	1.0000	3.70
4F1	COL K2	3.61	250.77	146.06	221.26	199.32	1720.00	1072.50	110149.42	1.0000	3.70

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
					Axial Force		Moment		P _u	M _u	A _s F _c	
					Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
4F1	COL K2	3.61	250.77	146.37	221.26	198.73	1720.00	1072.50	110149.42	1.0000	3.70	
4F1	COL K2	3.61	250.77	146.96	221.26	198.14	1720.00	1072.50	110149.42	1.0000	3.70	
4F1	COL K2	3.61	250.77	147.25	221.26	197.54	1720.00	1072.50	110149.42	1.0000	3.70	
4F1	COL K2	3.61	250.77	147.55	221.26	196.95	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K2	3.61	250.77	148.15	221.26	196.36	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K2	3.61	250.77	148.44	221.26	195.77	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K2	3.61	250.77	148.74	221.26	195.18	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K2	3.61	250.77	149.33	221.26	194.59	1720.00	1072.50	110149.42	1.0000	3.71	
4F1	COL K2	3.61	250.77	149.63	221.26	194.00	1720.00	1072.50	110149.42	1.0000	3.72	
4F1	COL K2	3.61	250.77	149.93	221.26	193.40	1720.00	1072.50	110149.42	1.0000	3.72	
4F1	COL K2	3.61	250.77	150.52	221.26	192.81	1720.00	1072.50	110149.42	1.0000	3.72	
4F1	COL K2	3.61	250.77	150.82	221.26	192.22	1720.00	1072.50	110149.42	1.0000	3.72	
4F1	COL K2	3.61	250.77	151.12	221.26	191.63	1720.00	1072.50	110149.42	1.0000	3.72	
4F1	COL K2	3.61	250.77	151.71	221.26	191.04	1720.00	1072.50	110149.42	1.0000	3.72	
4F1	COL K2	3.61	250.77	152.00	221.26	190.45	1720.00	1072.50	110149.42	1.0000	3.73	
4F1	COL K2	3.61	250.77	152.30	221.26	189.86	1720.00	1072.50	110149.42	1.0000	3.73	
4F1	COL K2	3.61	250.77	152.89	221.26	189.26	1720.00	1072.50	110149.42	1.0000	3.73	
4F1	COL K2	3.61	250.77	153.19	221.26	188.67	1720.00	1072.50	110149.42	1.0000	3.73	
4F1	COL K2	3.61	250.77	153.48	221.26	188.08	1720.00	1072.50	110149.42	1.0000	3.74	
4F1	COL K2	3.61	250.77	154.07	221.26	187.49	1720.00	1072.50	110149.42	1.0000	3.74	
4F1	COL K2	3.61	250.77	154.36	221.26	186.90	1720.00	1072.50	110149.42	1.0000	3.74	
4F1	COL K2	3.61	250.77	154.66	221.26	186.31	1720.00	1072.50	110149.42	1.0000	3.74	
4F1	COL K2	3.61	250.77	154.95	221.26	185.71	1720.00	1072.50	110149.42	1.0000	3.75	
4F1	COL K2	3.61	250.77	155.55	221.26	185.12	1720.00	1072.50	110149.42	1.0000	3.75	
4F1	COL K2	3.61	250.77	155.83	221.26	184.53	1720.00	1072.50	110149.42	1.0000	3.75	
4F1	COL K2	3.61	250.77	156.07	221.26	183.94	1720.00	1072.50	110149.42	1.0000	3.75	
4F1	COL K2	3.61	250.77	156.28	221.26	183.35	1720.00	1072.50	110149.42	1.0000	3.76	
4F1	COL K2	3.61	250.77	156.50	221.26	182.76	1720.00	1072.50	110149.42	1.0000	3.76	
4F1	COL K2	3.61	250.77	156.72	221.26	182.17	1720.00	1072.50	110149.42	1.0000	3.76	
4F1	COL K2	3.61	250.77	153.34	221.26	181.57	1720.00	1072.50	110149.42	1.0000	3.81	
4F1	COL K2	3.61	250.77	156.94	221.26	180.98	1720.00	1072.50	110149.42	1.0000	3.77	
4F1	COL K2	3.61	250.77	157.15	221.26	180.39	1720.00	1072.50	110149.42	1.0000	3.78	
4F1	COL K2	3.61	250.77	157.37	221.26	179.80	1720.00	1072.50	110149.42	1.0000	3.78	
4F1	COL K2	3.61	250.77	157.59	221.26	179.21	1720.00	1072.50	110149.42	1.0000	3.79	
4F1	COL K2	3.61	250.77	157.80	221.26	178.62	1720.00	1072.50	110149.42	1.0000	3.79	
4F1	COL K2	3.61	250.77	158.02	221.26	178.03	1720.00	1072.50	110149.42	1.0000	3.79	
4F1	COL K2	3.61	250.77	158.23	221.26	177.43	1720.00	1072.50	110149.42	1.0000	3.80	
4F1	COL K2	3.61	250.77	158.44	221.26	176.84	1720.00	1072.50	110149.42	1.0000	3.80	
4F1	COL K2	3.61	250.77	158.66	221.26	176.25	1720.00	1072.50	110149.42	1.0000	3.81	
4F1	COL K2	3.61	250.77	158.88	221.26	175.66	1720.00	1072.50	110149.42	1.0000	3.81	
4F1	COL K2	3.61	250.77	157.76	221.26	175.07	1720.00	1072.50	110149.42	1.0000	3.83	
4F1	COL K2	3.61	250.77	159.09	221.26	174.48	1720.00	1072.50	110149.42	1.0000	3.82	
4F1	COL K2	3.61	250.77	159.30	221.26	173.89	1720.00	1072.50	110149.42	1.0000	3.83	
4F1	COL K2	3.61	250.77	159.52	221.26	173.29	1720.00	1072.50	110149.42	1.0000	3.83	
4F1	COL K2	3.61	250.77	159.73	221.26	172.70	1720.00	1072.50	110149.42	1.0000	3.83	
4F1	COL K2	3.61	250.77	159.95	221.26	172.11	1720.00	1072.50	110149.42	1.0000	3.84	
4F1	COL K2	3.61	250.77	160.16	221.26	171.52	1720.00	1072.50	110149.42	1.0000	3.84	
4F1	COL K2	3.61	250.77	160.37	221.26	170.93	1720.00	1072.50	110149.42	1.0000	3.85	
4F1	COL K2	3.61	250.77	160.58	221.26	170.34	1720.00	1072.50	110149.42	1.0000	3.85	
4F1	COL K2	3.61	250.77	160.79	221.26	169.75	1720.00	1072.50	110149.42	1.0000	3.86	
4F1	COL K2	3.61	250.77	161.00	221.26	169.15	1720.00	1072.50	110149.42	1.0000	3.86	
4F1	COL K2	3.61	250.77	160.94	221.26	168.56	1720.00	1072.50	110149.42	1.0000	3.87	
4F1	COL K2	3.61	250.77	161.21	221.26	167.97	1720.00	1072.50	110149.42	1.0000	3.87	
4F1	COL K2	3.61	250.77	161.42	221.26	167.38	1720.00	1072.50	110149.42	1.0000	3.88	
4F1	COL K2	3.61	250.77	161.64	221.26	166.79	1720.00	1072.50	110149.42	1.0000	3.88	
4F1	COL K2	3.61	250.77	161.84	221.26	166.20	1720.00	1072.50	110149.42	1.0000	3.88	
4F1	COL K2	3.61	250.77	162.05	221.26	165.61	1720.00	1072.50	110149.42	1.0000	3.89	
4F1	COL K2	3.61	250.77	162.26	221.26	165.01	1720.00	1072.50	110149.42	1.0000	3.89	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
4F1	COL K2	3.61	250.77	162.47	221.26	164.42	1720.00	1072.50	110149.42	1.0000	3.90		
4F1	COL K2	3.61	250.77	162.68	221.26	163.83	1720.00	1072.50	110149.42	1.0000	3.90		
4F1	COL K2	3.61	250.77	162.89	221.26	163.24	1720.00	1072.50	110149.42	1.0000	3.91		
4F1	COL K2	3.61	250.77	163.02	221.26	162.65	1720.00	1072.50	110149.42	1.0000	3.91		
4F1	COL K2	3.61	250.77	163.23	221.26	162.06	1720.00	1072.50	110149.42	1.0000	3.92		
4F1	COL K2	3.61	250.77	163.43	221.26	161.47	1720.00	1072.50	110149.42	1.0000	3.92		
4F1	COL K2	3.61	250.77	163.64	221.26	160.87	1720.00	1072.50	110149.42	1.0000	3.92		
4F1	COL K2	3.61	250.77	163.71	221.26	160.28	1720.00	1072.50	110149.42	1.0000	3.93		
4F1	COL K2	3.61	250.77	163.91	221.26	159.69	1720.00	1072.50	110149.42	1.0000	3.93		
4F1	COL K2	3.61	250.77	164.12	221.26	159.10	1720.00	1072.50	110149.42	1.0000	3.94		
4F1	COL K2	3.61	250.77	164.32	221.26	158.51	1720.00	1072.50	110149.42	1.0000	3.94		
4F1	COL K2	3.61	250.77	164.45	221.26	157.92	1720.00	1072.50	110149.42	1.0000	3.95		
4F1	COL K2	3.61	250.77	164.65	221.26	157.33	1720.00	1072.50	110149.42	1.0000	3.95		
4F1	COL K2	3.61	250.77	164.85	221.26	156.73	1720.00	1072.50	110149.42	1.0000	3.96		
4F1	COL K2	3.61	250.77	165.05	221.26	156.14	1720.00	1072.50	110149.42	1.0000	3.96		
4F1	COL K2	3.61	250.77	165.25	221.26	155.55	1720.00	1072.50	110149.42	1.0000	3.97		
4F1	COL K2	3.61	250.77	165.45	221.26	154.96	1720.00	1072.50	110149.42	1.0000	3.97		
4F1	COL K2	3.61	250.77	165.65	221.26	154.37	1720.00	1072.50	110149.42	1.0000	3.98		
4F1	COL K2	3.61	250.77	165.85	221.26	153.78	1720.00	1072.50	110149.42	1.0000	3.98		
4F1	COL K2	3.61	250.77	166.04	221.26	153.19	1720.00	1072.50	110149.42	1.0000	3.99		
4F1	COL K2	3.61	250.77	166.24	221.26	152.59	1720.00	1072.50	110149.42	1.0000	3.99		
4F1	COL K2	3.61	250.77	166.44	221.26	152.00	1720.00	1072.50	110149.42	1.0000	4.00		
4F1	COL K2	3.61	250.77	166.63	221.26	151.41	1720.00	1072.50	110149.42	1.0000	4.00		
4F1	COL K2	3.61	250.77	166.82	221.26	150.82	1720.00	1072.50	110149.42	1.0000	4.01		
4F1	COL K2	3.61	250.77	166.58	221.26	150.23	1720.00	1072.50	110149.42	1.0000	4.03		
4F1	COL K2	3.61	250.77	167.02	221.26	149.64	1720.00	1072.50	110149.42	1.0000	4.02		
4F1	COL K2	3.61	250.77	167.21	221.26	149.05	1720.00	1072.50	110149.42	1.0000	4.02		
4F1	COL K2	3.61	250.77	167.41	221.26	148.45	1720.00	1072.50	110149.42	1.0000	4.03		
4F1	COL K2	3.61	250.77	167.60	221.26	147.86	1720.00	1072.50	110149.42	1.0000	4.03		
4F1	COL K2	3.61	250.77	167.79	221.26	147.27	1720.00	1072.50	110149.42	1.0000	4.04		
4F1	COL K2	3.61	250.77	167.98	221.26	146.68	1720.00	1072.50	110149.42	1.0000	4.04		
4F1	COL K2	3.61	250.77	168.17	221.26	146.09	1720.00	1072.50	110149.42	1.0000	4.05		
4F1	COL K2	3.61	250.77	168.30	221.26	145.50	1720.00	1072.50	110149.42	1.0000	4.05		
4F1	COL K2	3.61	250.77	168.41	221.26	144.91	1720.00	1072.50	110149.42	1.0000	4.06		
4F1	COL K2	3.61	250.77	166.41	221.26	144.31	1720.00	1072.50	110149.42	1.0000	4.09		
4F1	COL K2	3.61	250.77	168.52	221.26	143.72	1720.00	1072.50	110149.42	1.0000	4.07		
4F1	COL K2	3.61	250.77	168.63	221.26	143.13	1720.00	1072.50	110149.42	1.0000	4.08		
4F1	COL K2	3.61	250.77	166.64	221.26	142.54	1720.00	1072.50	110149.42	1.0000	4.11		
4F1	COL K2	3.61	250.77	168.74	221.26	141.95	1720.00	1072.50	110149.42	1.0000	4.09		
4F1	COL K2	3.61	250.77	168.85	221.26	141.36	1720.00	1072.50	110149.42	1.0000	4.10		
4F1	COL K2	3.61	250.77	168.95	221.26	140.76	1720.00	1072.50	110149.42	1.0000	4.11		
4F1	COL K2	3.61	250.77	166.98	221.26	140.17	1720.00	1072.50	110149.42	1.0000	4.14		
4F1	COL K2	3.61	250.77	169.06	221.26	139.58	1720.00	1072.50	110149.42	1.0000	4.12		
4F1	COL K2	3.61	250.77	169.17	221.26	138.99	1720.00	1072.50	110149.42	1.0000	4.13		
4F1	COL K2	3.61	250.77	169.27	221.26	138.40	1720.00	1072.50	110149.42	1.0000	4.13		
4F1	COL K2	3.61	250.77	167.32	221.26	137.81	1720.00	1072.50	110149.42	1.0000	4.17		
4F1	COL K2	3.61	250.77	169.38	221.26	137.22	1720.00	1072.50	110149.42	1.0000	4.15		
4F1	COL K2	3.61	250.77	169.48	221.26	136.62	1720.00	1072.50	110149.42	1.0000	4.15		
4F1	COL K2	3.61	250.77	169.59	221.26	136.03	1720.00	1072.50	110149.42	1.0000	4.16		
4F1	COL K2	3.61	250.77	167.64	221.26	135.44	1720.00	1072.50	110149.42	1.0000	4.19		
4F1	COL K2	3.61	250.77	169.69	221.26	134.85	1720.00	1072.50	110149.42	1.0000	4.17		
4F1	COL K2	3.61	250.77	169.79	221.26	134.26	1720.00	1072.50	110149.42	1.0000	4.18		
4F1	COL K2	3.61	250.77	169.89	221.26	133.67	1720.00	1072.50	110149.42	1.0000	4.19		
4F1	COL K2	3.61	250.77	169.99	221.26	132.48	1720.00	1072.50	110149.42	1.0000	4.20		
4F1	COL K2	3.61	250.77	170.08	221.26	131.89	1720.00	1072.50	110149.42	1.0000	4.21		
4F1	COL K2	3.61	250.77	170.18	221.26	131.30	1720.00	1072.50	110149.42	1.0000	4.21		
4F1	COL K2	3.61	250.77	170.28	221.26	130.71	1720.00	1072.50	110149.42	1.0000	4.22		
4F1	COL K2	3.61	250.77	168.26	221.26	130.12	1720.00	1072.50	110149.42	1.0000	4.26		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _e	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
4F1	COL K2	3.61	250.77	170.37	221.26	129.53	1720.00	1072.50	110149.42	1.0000	4.24		
4F1	COL K2	3.61	250.77	170.47	221.26	128.94	1720.00	1072.50	110149.42	1.0000	4.24		
4F1	COL K2	3.61	250.77	170.56	221.26	128.34	1720.00	1072.50	110149.42	1.0000	4.25		
4F1	COL K2	3.61	250.77	168.56	221.26	127.75	1720.00	1072.50	110149.42	1.0000	4.29		
4F1	COL K2	3.61	250.77	170.65	221.26	127.16	1720.00	1072.50	110149.42	1.0000	4.27		
4F1	COL K2	3.61	250.77	170.75	221.26	126.57	1720.00	1072.50	110149.42	1.0000	4.27		
4F1	COL K2	3.61	250.77	170.83	221.26	125.98	1720.00	1072.50	110149.42	1.0000	4.28		
4F1	COL K2	3.61	250.77	168.85	221.26	125.39	1720.00	1072.50	110149.42	1.0000	4.32		
4F1	COL K2	3.61	250.77	170.92	221.26	124.80	1720.00	1072.50	110149.42	1.0000	4.29		
4F1	COL K2	3.61	250.77	171.01	221.26	124.20	1720.00	1072.50	110149.42	1.0000	4.30		
4F1	COL K2	3.61	250.77	171.09	221.26	123.61	1720.00	1072.50	110149.42	1.0000	4.31		
4F1	COL K2	3.61	250.77	171.18	221.26	123.02	1720.00	1072.50	110149.42	1.0000	4.32		
4F1	COL K2	3.61	250.77	169.21	221.26	122.43	1720.00	1072.50	110149.42	1.0000	4.35		
4F1	COL K2	3.61	250.77	171.27	221.26	121.84	1720.00	1072.50	110149.42	1.0000	4.33		
4F1	COL K2	3.61	250.77	171.35	221.26	121.25	1720.00	1072.50	110149.42	1.0000	4.34		
4F1	COL K2	3.61	250.77	171.43	221.26	120.66	1720.00	1072.50	110149.42	1.0000	4.35		
4F1	COL K2	3.61	250.77	169.48	221.26	120.06	1720.00	1072.50	110149.42	1.0000	4.39		
4F1	COL K2	3.61	250.77	171.51	221.26	119.47	1720.00	1072.50	110149.42	1.0000	4.36		
4F1	COL K2	3.61	250.77	171.59	221.26	118.88	1720.00	1072.50	110149.42	1.0000	4.37		
4F1	COL K2	3.61	250.77	171.67	221.26	118.29	1720.00	1072.50	110149.42	1.0000	4.38		
4F1	COL K2	3.61	250.77	171.74	221.26	117.70	1720.00	1072.50	110149.42	1.0000	4.39		
4F1	COL K2	3.61	250.77	171.82	221.26	116.52	1720.00	1072.50	110149.42	1.0000	4.40		
4F1	COL K2	3.61	250.77	171.90	221.26	115.92	1720.00	1072.50	110149.42	1.0000	4.41		
4F1	COL K2	3.61	250.77	171.97	221.26	115.33	1720.00	1072.50	110149.42	1.0000	4.42		
4F1	COL K2	3.61	250.77	171.98	221.26	114.15	1720.00	1072.50	110149.42	1.0000	4.43		
4F1	COL K2	3.61	250.77	171.97	221.26	113.56	1720.00	1072.50	110149.42	1.0000	4.44		
5C1	COL K2	3.61	250.77	164.73	221.26	201.09	1720.00	1072.50	110149.42	1.0000	3.49		
5C1	COL K2	3.61	250.77	172.21	221.26	200.50	1720.00	1072.50	110149.42	1.0000	3.42		
5C1	COL K2	3.61	250.77	176.15	221.26	199.91	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	176.63	221.26	199.32	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	177.10	221.26	198.73	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	177.81	221.26	198.14	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	178.27	221.26	197.54	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	178.74	221.26	196.95	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	179.43	221.26	196.36	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	179.89	221.26	195.77	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	180.34	221.26	195.18	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	180.79	221.26	194.59	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	181.46	221.26	194.00	1720.00	1072.50	110149.42	1.0000	3.39		
5C1	COL K2	3.61	250.77	181.90	221.26	193.40	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	182.34	221.26	192.81	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	182.77	221.26	192.22	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	183.20	221.26	191.63	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	183.62	221.26	191.04	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	184.24	221.26	190.45	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	184.65	221.26	189.86	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	185.05	221.26	189.26	1720.00	1072.50	110149.42	1.0000	3.40		
5C1	COL K2	3.61	250.77	185.45	221.26	188.67	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K2	3.61	250.77	185.84	221.26	188.08	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K2	3.61	250.77	186.23	221.26	187.49	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K2	3.61	250.77	186.61	221.26	186.90	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K2	3.61	250.77	186.98	221.26	186.31	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K2	3.61	250.77	187.35	221.26	185.71	1720.00	1072.50	110149.42	1.0000	3.41		
5C1	COL K2	3.61	250.77	187.71	221.26	185.12	1720.00	1072.50	110149.42	1.0000	3.42		
5C1	COL K2	3.61	250.77	188.07	221.26	184.53	1720.00	1072.50	110149.42	1.0000	3.42		
5C1	COL K2	3.61	250.77	188.42	221.26	183.94	1720.00	1072.50	110149.42	1.0000	3.42		
5C1	COL K2	3.61	250.77	188.76	221.26	183.35	1720.00	1072.50	110149.42	1.0000	3.42		
5C1	COL K2	3.61	250.77	189.09	221.26	182.76	1720.00	1072.50	110149.42	1.0000	3.42		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _{ex}			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
5C1	COL K2	3.61	250.77	189.42	221.26	182.17	1720.00	1072.50	110149.42	1.0000	3.43				
5C1	COL K2	3.61	250.77	189.58	221.26	181.57	1720.00	1072.50	110149.42	1.0000	3.43				
5C1	COL K2	3.61	250.77	189.90	221.26	180.98	1720.00	1072.50	110149.42	1.0000	3.43				
5C1	COL K2	3.61	250.77	190.20	221.26	180.39	1720.00	1072.50	110149.42	1.0000	3.44				
5C1	COL K2	3.61	250.77	190.51	221.26	179.80	1720.00	1072.50	110149.42	1.0000	3.44				
5C1	COL K2	3.61	250.77	190.80	221.26	179.21	1720.00	1072.50	110149.42	1.0000	3.44				
5C1	COL K2	3.61	250.77	191.09	221.26	178.62	1720.00	1072.50	110149.42	1.0000	3.44				
5C1	COL K2	3.61	250.77	191.23	221.26	178.03	1720.00	1072.50	110149.42	1.0000	3.45				
5C1	COL K2	3.61	250.77	191.51	221.26	177.43	1720.00	1072.50	110149.42	1.0000	3.45				
5C1	COL K2	3.61	250.77	191.78	221.26	176.84	1720.00	1072.50	110149.42	1.0000	3.45				
5C1	COL K2	3.61	250.77	192.04	221.26	176.25	1720.00	1072.50	110149.42	1.0000	3.46				
5C1	COL K2	3.61	250.77	192.16	221.26	175.66	1720.00	1072.50	110149.42	1.0000	3.46				
5C1	COL K2	3.61	250.77	192.41	221.26	175.07	1720.00	1072.50	110149.42	1.0000	3.46				
5C1	COL K2	3.61	250.77	192.65	221.26	174.48	1720.00	1072.50	110149.42	1.0000	3.47				
5C1	COL K2	3.61	250.77	192.88	221.26	173.89	1720.00	1072.50	110149.42	1.0000	3.47				
5C1	COL K2	3.61	250.77	193.00	221.26	173.29	1720.00	1072.50	110149.42	1.0000	3.47				
5C1	COL K2	3.61	250.77	193.22	221.26	172.70	1720.00	1072.50	110149.42	1.0000	3.48				
5C1	COL K2	3.61	250.77	193.43	221.26	172.11	1720.00	1072.50	110149.42	1.0000	3.48				
5C1	COL K2	3.61	250.77	193.53	221.26	171.52	1720.00	1072.50	110149.42	1.0000	3.49				
5C1	COL K2	3.61	250.77	193.74	221.26	170.93	1720.00	1072.50	110149.42	1.0000	3.49				
5C1	COL K2	3.61	250.77	191.85	221.26	170.93	1720.00	1072.50	110149.42	1.0000	3.51				
5C1	COL K2	3.61	250.77	193.92	221.26	170.34	1720.00	1072.50	110149.42	1.0000	3.49				
5C1	COL K2	3.61	250.77	191.84	221.26	170.34	1720.00	1072.50	110149.42	1.0000	3.51				
5C1	COL K2	3.61	250.77	194.02	221.26	169.75	1720.00	1072.50	110149.42	1.0000	3.50				
5C1	COL K2	3.61	250.77	194.20	221.26	169.15	1720.00	1072.50	110149.42	1.0000	3.50				
5C1	COL K2	3.61	250.77	194.29	221.26	168.56	1720.00	1072.50	110149.42	1.0000	3.51				
5C1	COL K2	3.61	250.77	194.45	221.26	167.97	1720.00	1072.50	110149.42	1.0000	3.51				
5C1	COL K2	3.61	250.77	194.60	221.26	167.38	1720.00	1072.50	110149.42	1.0000	3.51				
5C1	COL K2	3.61	250.77	194.68	221.26	166.79	1720.00	1072.50	110149.42	1.0000	3.52				
5C1	COL K2	3.61	250.77	194.82	221.26	166.20	1720.00	1072.50	110149.42	1.0000	3.52				
5C1	COL K2	3.61	250.77	194.89	221.26	165.61	1720.00	1072.50	110149.42	1.0000	3.53				
5C1	COL K2	3.61	250.77	195.02	221.26	165.01	1720.00	1072.50	110149.42	1.0000	3.53				
5C1	COL K2	3.61	250.77	195.14	221.26	164.42	1720.00	1072.50	110149.42	1.0000	3.54				
5C1	COL K2	3.61	250.77	195.20	221.26	163.83	1720.00	1072.50	110149.42	1.0000	3.54				
5C1	COL K2	3.61	250.77	195.31	221.26	163.24	1720.00	1072.50	110149.42	1.0000	3.55				
5C1	COL K2	3.61	250.77	195.36	221.26	162.65	1720.00	1072.50	110149.42	1.0000	3.55				
5C1	COL K2	3.61	250.77	195.46	221.26	162.06	1720.00	1072.50	110149.42	1.0000	3.56				
5C1	COL K2	3.61	250.77	195.50	221.26	161.47	1720.00	1072.50	110149.42	1.0000	3.56				
5C1	COL K2	3.61	250.77	195.58	221.26	160.87	1720.00	1072.50	110149.42	1.0000	3.57				
5C1	COL K2	3.61	250.77	195.65	221.26	160.28	1720.00	1072.50	110149.42	1.0000	3.57				
5C1	COL K2	3.61	250.77	195.68	221.26	159.69	1720.00	1072.50	110149.42	1.0000	3.58				
5C1	COL K2	3.61	250.77	195.74	221.26	159.10	1720.00	1072.50	110149.42	1.0000	3.58				
5C1	COL K2	3.61	250.77	195.76	221.26	158.51	1720.00	1072.50	110149.42	1.0000	3.59				
5C1	COL K2	3.61	250.77	195.81	221.26	157.92	1720.00	1072.50	110149.42	1.0000	3.59				
5C1	COL K2	3.61	250.77	195.82	221.26	157.33	1720.00	1072.50	110149.42	1.0000	3.60				
5C1	COL K2	3.61	250.77	195.85	221.26	156.73	1720.00	1072.50	110149.42	1.0000	3.60				
5C1	COL K2	3.61	250.77	195.86	221.26	156.14	1720.00	1072.50	110149.42	1.0000	3.61				
5C1	COL K2	3.61	250.77	195.88	221.26	155.55	1720.00	1072.50	110149.42	1.0000	3.62				
5C1	COL K2	3.61	250.77	195.88	221.26	154.96	1720.00	1072.50	110149.42	1.0000	3.62				
5C1	COL K2	3.61	250.77	195.88	221.26	154.37	1720.00	1072.50	110149.42	1.0000	3.63				
5C1	COL K2	3.61	250.77	195.88	221.26	154.37	1720.00	1072.50	110149.42	1.0000	3.63				
5C1	COL K2	3.61	250.77	195.87	221.26	153.78	1720.00	1072.50	110149.42	1.0000	3.63				
5C1	COL K2	3.61	250.77	195.85	221.26	153.19	1720.00	1072.50	110149.42	1.0000	3.64				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	1.30		Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
LL Factor	2.17 INV	1.30 OPER	Axial Force		Moment		P _u	M _u	A _s F _e		
Impact	1.26		Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF

Load Case	Controlling RF
HS20 INV	1.70
HS20 OPER	2.84
2F1	6.53
3F1	4.29
4F1	3.69
5C1	3.39

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 INV	COL K3	3.67	231.4	249.36	227.76	457.34	1720.00	1072.50	110149.42	1.0000	1.83
HS20 INV	COL K3	3.67	231.4	255.86	227.76	456.34	1720.00	1072.50	110149.42	1.0000	1.82
HS20 INV	COL K3	3.67	231.4	260.66	227.76	455.34	1720.00	1072.50	110149.42	1.0000	1.81
HS20 INV	COL K3	3.67	231.4	264.61	227.76	454.34	1720.00	1072.50	110149.42	1.0000	1.80
HS20 INV	COL K3	3.67	231.4	267.73	227.76	453.33	1720.00	1072.50	110149.42	1.0000	1.79
HS20 INV	COL K3	3.67	231.4	272.02	227.76	452.33	1720.00	1072.50	110149.42	1.0000	1.79
HS20 INV	COL K3	3.67	231.4	276.45	227.76	451.33	1720.00	1072.50	110149.42	1.0000	1.78
HS20 INV	COL K3	3.67	231.4	280.09	227.76	450.32	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	282.97	227.76	449.32	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	285.11	227.76	448.32	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	287.21	227.76	447.31	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	289.31	227.76	446.31	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	291.39	227.76	445.31	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	292.78	227.76	444.31	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	293.49	227.76	443.30	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	294.90	227.76	442.30	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	296.30	227.76	441.30	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	296.99	227.76	440.29	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	298.38	227.76	439.29	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	299.07	227.76	438.29	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	300.43	227.76	437.29	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	301.11	227.76	436.28	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	301.80	227.76	435.28	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	303.14	227.76	434.28	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	303.81	227.76	433.27	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	305.15	227.76	432.27	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	305.81	227.76	431.27	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	306.46	227.76	430.26	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	307.77	227.76	429.26	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	308.43	227.76	428.26	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	309.08	227.76	427.26	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	309.72	227.76	426.25	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	311.00	227.76	425.25	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	311.65	227.76	424.25	1720.00	1072.50	110149.42	1.0000	1.75
HS20 INV	COL K3	3.67	231.4	312.28	227.76	423.24	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	312.91	227.76	422.24	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	313.54	227.76	421.24	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	314.80	227.76	420.23	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	315.42	227.76	419.23	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	316.03	227.76	418.23	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	316.65	227.76	417.23	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	317.26	227.76	416.22	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	317.87	227.76	415.22	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	318.48	227.76	414.22	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	319.08	227.76	413.21	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	319.68	227.76	412.21	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	320.87	227.76	411.21	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	321.46	227.76	410.21	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	322.06	227.76	409.20	1720.00	1072.50	110149.42	1.0000	1.76
HS20 INV	COL K3	3.67	231.4	322.64	227.76	408.20	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	323.22	227.76	407.20	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	323.80	227.76	406.19	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	324.37	227.76	405.19	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	324.95	227.76	404.19	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	325.52	227.76	403.18	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	326.09	227.76	402.18	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	326.65	227.76	401.18	1720.00	1072.50	110149.42	1.0000	1.77
HS20 INV	COL K3	3.67	231.4	327.21	227.76	400.18	1720.00	1072.50	110149.42	1.0000	1.77

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _{ex}			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF				
HS20 INV	COL K3	3.67	231.4	327.77	227.76	399.17	1720.00	1072.50	110149.42	1.0000	1.77				
HS20 INV	COL K3	3.67	231.4	328.32	227.76	398.17	1720.00	1072.50	110149.42	1.0000	1.77				
HS20 INV	COL K3	3.67	231.4	328.88	227.76	397.17	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	329.43	227.76	396.16	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	329.97	227.76	395.16	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	330.04	227.76	394.16	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	330.56	227.76	393.16	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	331.09	227.76	392.15	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	331.61	227.76	391.15	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	332.13	227.76	390.15	1720.00	1072.50	110149.42	1.0000	1.78				
HS20 INV	COL K3	3.67	231.4	332.65	227.76	389.14	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	332.65	227.76	389.14	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	333.17	227.76	388.14	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	333.69	227.76	387.14	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	334.21	227.76	386.13	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	334.72	227.76	385.13	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	335.24	227.76	384.13	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	335.67	227.76	383.13	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	336.16	227.76	382.12	1720.00	1072.50	110149.42	1.0000	1.79				
HS20 INV	COL K3	3.67	231.4	336.64	227.76	381.12	1720.00	1072.50	110149.42	1.0000	1.80				
HS20 INV	COL K3	3.67	231.4	337.13	227.76	380.12	1720.00	1072.50	110149.42	1.0000	1.80				
HS20 INV	COL K3	3.67	231.4	337.61	227.76	379.11	1720.00	1072.50	110149.42	1.0000	1.80				
HS20 INV	COL K3	3.67	231.4	337.75	227.76	378.11	1720.00	1072.50	110149.42	1.0000	1.80				
HS20 INV	COL K3	3.67	231.4	338.24	227.76	377.11	1720.00	1072.50	110149.42	1.0000	1.80				
HS20 INV	COL K3	3.67	231.4	338.73	227.76	376.11	1720.00	1072.50	110149.42	1.0000	1.80				
HS20 INV	COL K3	3.67	231.4	339.03	227.76	375.10	1720.00	1072.50	110149.42	1.0000	1.80				
HS20 INV	COL K3	3.67	231.4	339.50	227.76	374.10	1720.00	1072.50	110149.42	1.0000	1.81				
HS20 INV	COL K3	3.67	231.4	339.96	227.76	373.10	1720.00	1072.50	110149.42	1.0000	1.81				
HS20 INV	COL K3	3.67	231.4	340.42	227.76	372.09	1720.00	1072.50	110149.42	1.0000	1.81				
HS20 INV	COL K3	3.67	231.4	340.88	227.76	371.09	1720.00	1072.50	110149.42	1.0000	1.81				
HS20 INV	COL K3	3.67	231.4	341.11	227.76	370.09	1720.00	1072.50	110149.42	1.0000	1.81				
HS20 INV	COL K3	3.67	231.4	341.33	227.76	369.08	1720.00	1072.50	110149.42	1.0000	1.81				
HS20 INV	COL K3	3.67	231.4	341.77	227.76	368.08	1720.00	1072.50	110149.42	1.0000	1.81				
HS20 INV	COL K3	3.67	231.4	342.23	227.76	367.08	1720.00	1072.50	110149.42	1.0000	1.82				
HS20 INV	COL K3	3.67	231.4	342.67	227.76	366.08	1720.00	1072.50	110149.42	1.0000	1.82				
HS20 INV	COL K3	3.67	231.4	343.11	227.76	365.07	1720.00	1072.50	110149.42	1.0000	1.82				
HS20 INV	COL K3	3.67	231.4	343.54	227.76	364.07	1720.00	1072.50	110149.42	1.0000	1.82				
HS20 INV	COL K3	3.67	231.4	343.42	227.76	363.07	1720.00	1072.50	110149.42	1.0000	1.82				
HS20 INV	COL K3	3.67	231.4	343.97	227.76	362.06	1720.00	1072.50	110149.42	1.0000	1.82				
HS20 INV	COL K3	3.67	231.4	344.40	227.76	361.06	1720.00	1072.50	110149.42	1.0000	1.83				
HS20 INV	COL K3	3.67	231.4	344.82	227.76	360.06	1720.00	1072.50	110149.42	1.0000	1.83				
HS20 INV	COL K3	3.67	231.4	345.24	227.76	359.06	1720.00	1072.50	110149.42	1.0000	1.83				
HS20 INV	COL K3	3.67	231.4	345.66	227.76	358.05	1720.00	1072.50	110149.42	1.0000	1.83				
HS20 INV	COL K3	3.67	231.4	345.63	227.76	357.05	1720.00	1072.50	110149.42	1.0000	1.83				
HS20 INV	COL K3	3.67	231.4	346.07	227.76	356.05	1720.00	1072.50	110149.42	1.0000	1.83				
HS20 INV	COL K3	3.67	231.4	346.48	227.76	355.04	1720.00	1072.50	110149.42	1.0000	1.84				
HS20 INV	COL K3	3.67	231.4	346.48	227.76	355.04	1720.00	1072.50	110149.42	1.0000	1.84				
HS20 INV	COL K3	3.67	231.4	346.88	227.76	354.04	1720.00	1072.50	110149.42	1.0000	1.84				
HS20 INV	COL K3	3.67	231.4	347.28	227.76	353.04	1720.00	1072.50	110149.42	1.0000	1.84				
HS20 INV	COL K3	3.67	231.4	347.32	227.76	352.03	1720.00	1072.50	110149.42	1.0000	1.84				
HS20 INV	COL K3	3.67	231.4	347.74	227.76	351.03	1720.00	1072.50	110149.42	1.0000	1.84				
HS20 INV	COL K3	3.67	231.4	348.07	227.76	350.03	1720.00	1072.50	110149.42	1.0000	1.84				
HS20 INV	COL K3	3.67	231.4	348.46	227.76	349.03	1720.00	1072.50	110149.42	1.0000	1.85				
HS20 INV	COL K3	3.67	231.4	348.85	227.76	348.02	1720.00	1072.50	110149.42	1.0000	1.85				
HS20 INV	COL K3	3.67	231.4	348.97	227.76	347.02	1720.00	1072.50	110149.42	1.0000	1.85				
HS20 INV	COL K3	3.67	231.4	349.23	227.76	346.02	1720.00	1072.50	110149.42	1.0000	1.85				
HS20 INV	COL K3	3.67	231.4	349.61	227.76	345.01	1720.00	1072.50	110149.42	1.0000	1.85				
HS20 INV	COL K3	3.67	231.4	349.98	227.76	344.01	1720.00	1072.50	110149.42	1.0000	1.85				

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _{cx}	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL K3	3.67	231.4	350.35	227.76	343.01	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K3	3.67	231.4	350.72	227.76	341.00	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K3	3.67	231.4	351.08	227.76	340.00	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K3	3.67	231.4	351.43	227.76	339.00	1720.00	1072.50	110149.42	1.0000	1.86		
HS20 INV	COL K3	3.67	231.4	351.79	227.76	336.99	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K3	3.67	231.4	352.14	227.76	335.99	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K3	3.67	231.4	352.49	227.76	334.98	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K3	3.67	231.4	352.43	227.76	333.98	1720.00	1072.50	110149.42	1.0000	1.87		
HS20 INV	COL K3	3.67	231.4	352.83	227.76	332.98	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K3	3.67	231.4	353.17	227.76	331.98	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K3	3.67	231.4	353.50	227.76	330.97	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K3	3.67	231.4	353.83	227.76	329.97	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K3	3.67	231.4	353.87	227.76	328.97	1720.00	1072.50	110149.42	1.0000	1.88		
HS20 INV	COL K3	3.67	231.4	354.16	227.76	327.96	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K3	3.67	231.4	354.48	227.76	326.96	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K3	3.67	231.4	354.56	227.76	325.96	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K3	3.67	231.4	354.90	227.76	324.95	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K3	3.67	231.4	355.11	227.76	323.95	1720.00	1072.50	110149.42	1.0000	1.89		
HS20 INV	COL K3	3.67	231.4	355.42	227.76	322.95	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K3	3.67	231.4	355.57	227.76	321.95	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K3	3.67	231.4	355.73	227.76	320.94	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K3	3.67	231.4	356.03	227.76	319.94	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K3	3.67	231.4	356.33	227.76	318.94	1720.00	1072.50	110149.42	1.0000	1.90		
HS20 INV	COL K3	3.67	231.4	356.62	227.76	316.93	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K3	3.67	231.4	356.91	227.76	315.93	1720.00	1072.50	110149.42	1.0000	1.91		
HS20 INV	COL K3	3.67	231.4	357.19	227.76	313.92	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K3	3.67	231.4	357.19	227.76	313.92	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K3	3.67	231.4	357.50	227.76	312.92	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K3	3.67	231.4	357.74	227.76	311.92	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K3	3.67	231.4	357.80	227.76	310.91	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K3	3.67	231.4	358.10	227.76	309.91	1720.00	1072.50	110149.42	1.0000	1.92		
HS20 INV	COL K3	3.67	231.4	358.28	227.76	308.91	1720.00	1072.50	110149.42	1.0000	1.93		
HS20 INV	COL K3	3.67	231.4	358.40	227.76	307.90	1720.00	1072.50	110149.42	1.0000	1.93		
HS20 INV	COL K3	3.67	231.4	358.69	227.76	306.90	1720.00	1072.50	110149.42	1.0000	1.93		
HS20 INV	COL K3	3.67	231.4	358.80	227.76	305.90	1720.00	1072.50	110149.42	1.0000	1.93		
HS20 INV	COL K3	3.67	231.4	359.07	227.76	304.90	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K3	3.67	231.4	359.27	227.76	303.89	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K3	3.67	231.4	359.32	227.76	302.89	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K3	3.67	231.4	359.56	227.76	301.89	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K3	3.67	231.4	359.83	227.76	300.88	1720.00	1072.50	110149.42	1.0000	1.94		
HS20 INV	COL K3	3.67	231.4	359.80	227.76	299.88	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K3	3.67	231.4	360.10	227.76	298.88	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K3	3.67	231.4	360.37	227.76	297.88	1720.00	1072.50	110149.42	1.0000	1.95		
HS20 INV	COL K3	3.67	231.4	360.27	227.76	296.87	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K3	3.67	231.4	360.63	227.76	295.87	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K3	3.67	231.4	360.89	227.76	294.87	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K3	3.67	231.4	361.14	227.76	292.86	1720.00	1072.50	110149.42	1.0000	1.96		
HS20 INV	COL K3	3.67	231.4	361.39	227.76	291.86	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K3	3.67	231.4	361.64	227.76	289.85	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K3	3.67	231.4	361.88	227.76	288.85	1720.00	1072.50	110149.42	1.0000	1.97		
HS20 INV	COL K3	3.67	231.4	362.12	227.76	286.84	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K3	3.67	231.4	362.35	227.76	285.84	1720.00	1072.50	110149.42	1.0000	1.98		
HS20 INV	COL K3	3.67	231.4	362.59	227.76	283.83	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K3	3.67	231.4	362.36	227.76	282.83	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K3	3.67	231.4	362.81	227.76	281.83	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K3	3.67	231.4	363.03	227.76	280.83	1720.00	1072.50	110149.42	1.0000	1.99		
HS20 INV	COL K3	3.67	231.4	362.74	227.76	279.82	1720.00	1072.50	110149.42	1.0000	2.00		
HS20 INV	COL K3	3.67	231.4	363.25	227.76	278.82	1720.00	1072.50	110149.42	1.0000	2.00		

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation			
1.30	2.17 INV	1.26	231.4	363.46	227.76	277.82	1720.00	1072.50	110149.42	1.0000	2.00
1.30 OPER			231.4	363.09	227.76	276.81	1720.00	1072.50	110149.42	1.0000	2.01
			231.4	363.66	227.76	275.81	1720.00	1072.50	110149.42	1.0000	2.01
			231.4	363.86	227.76	274.81	1720.00	1072.50	110149.42	1.0000	2.01
			231.4	363.41	227.76	273.80	1720.00	1072.50	110149.42	1.0000	2.01
			231.4	364.06	227.76	272.80	1720.00	1072.50	110149.42	1.0000	2.02
			231.4	364.25	227.76	271.80	1720.00	1072.50	110149.42	1.0000	2.02
			231.4	363.73	227.76	270.80	1720.00	1072.50	110149.42	1.0000	2.02
			231.4	364.44	227.76	269.79	1720.00	1072.50	110149.42	1.0000	2.02
			231.4	363.88	227.76	268.79	1720.00	1072.50	110149.42	1.0000	2.03
			231.4	364.63	227.76	267.79	1720.00	1072.50	110149.42	1.0000	2.03
			231.4	364.80	227.76	266.78	1720.00	1072.50	110149.42	1.0000	2.03
			231.4	364.16	227.76	265.78	1720.00	1072.50	110149.42	1.0000	2.04
			231.4	364.98	227.76	264.78	1720.00	1072.50	110149.42	1.0000	2.04
			231.4	365.15	227.76	263.78	1720.00	1072.50	110149.42	1.0000	2.04
			231.4	364.43	227.76	262.77	1720.00	1072.50	110149.42	1.0000	2.05
			231.4	365.31	227.76	261.77	1720.00	1072.50	110149.42	1.0000	2.05
			231.4	364.56	227.76	260.77	1720.00	1072.50	110149.42	1.0000	2.05
			231.4	365.48	227.76	259.76	1720.00	1072.50	110149.42	1.0000	2.05
			231.4	365.63	227.76	258.76	1720.00	1072.50	110149.42	1.0000	2.05
			231.4	364.80	227.76	257.76	1720.00	1072.50	110149.42	1.0000	2.06
			231.4	365.78	227.76	256.75	1720.00	1072.50	110149.42	1.0000	2.06
			231.4	365.94	227.76	255.75	1720.00	1072.50	110149.42	1.0000	2.06
			231.4	365.02	227.76	254.75	1720.00	1072.50	110149.42	1.0000	2.07
			231.4	366.08	227.76	253.75	1720.00	1072.50	110149.42	1.0000	2.07
			231.4	366.22	227.76	251.74	1720.00	1072.50	110149.42	1.0000	2.08
			231.4	366.35	227.76	250.74	1720.00	1072.50	110149.42	1.0000	2.08
			231.4	365.32	227.76	249.73	1720.00	1072.50	110149.42	1.0000	2.09
			231.4	366.48	227.76	248.73	1720.00	1072.50	110149.42	1.0000	2.08
			231.4	366.60	227.76	247.73	1720.00	1072.50	110149.42	1.0000	2.09
			231.4	365.49	227.76	246.73	1720.00	1072.50	110149.42	1.0000	2.09
			231.4	366.72	227.76	245.72	1720.00	1072.50	110149.42	1.0000	2.09
			231.4	366.84	227.76	243.72	1720.00	1072.50	110149.42	1.0000	2.10
			231.4	366.95	227.76	242.71	1720.00	1072.50	110149.42	1.0000	2.10
			231.4	365.72	227.76	241.71	1720.00	1072.50	110149.42	1.0000	2.11
			231.4	367.05	227.76	240.71	1720.00	1072.50	110149.42	1.0000	2.11
			231.4	367.15	227.76	239.70	1720.00	1072.50	110149.42	1.0000	2.11
			231.4	365.87	227.76	238.70	1720.00	1072.50	110149.42	1.0000	2.12
			231.4	367.24	227.76	237.70	1720.00	1072.50	110149.42	1.0000	2.12
			231.4	367.33	227.76	235.69	1720.00	1072.50	110149.42	1.0000	2.13
			231.4	367.42	227.76	234.69	1720.00	1072.50	110149.42	1.0000	2.13
			231.4	367.50	227.76	232.68	1720.00	1072.50	110149.42	1.0000	2.14
			231.4	367.57	227.76	230.68	1720.00	1072.50	110149.42	1.0000	2.14
			231.4	367.64	227.76	229.67	1720.00	1072.50	110149.42	1.0000	2.15
			231.4	367.71	227.76	227.67	1720.00	1072.50	110149.42	1.0000	2.15
			231.4	367.77	227.76	226.67	1720.00	1072.50	110149.42	1.0000	2.16
			231.4	366.20	227.76	225.66	1720.00	1072.50	110149.42	1.0000	2.17
			231.4	367.83	227.76	224.66	1720.00	1072.50	110149.42	1.0000	2.16
			231.4	367.88	227.76	222.65	1720.00	1072.50	110149.42	1.0000	2.17
			231.4	367.92	227.76	221.65	1720.00	1072.50	110149.42	1.0000	2.17
			231.4	367.96	227.76	219.65	1720.00	1072.50	110149.42	1.0000	2.18
			231.4	368.00	227.76	218.64	1720.00	1072.50	110149.42	1.0000	2.18
			231.4	366.26	227.76	217.64	1720.00	1072.50	110149.42	1.0000	2.19
			231.4	368.03	227.76	216.64	1720.00	1072.50	110149.42	1.0000	2.19
			231.4	368.05	227.76	214.63	1720.00	1072.50	110149.42	1.0000	2.20
			231.4	368.07	227.76	213.63	1720.00	1072.50	110149.42	1.0000	2.20
			231.4	368.09	227.76	211.62	1720.00	1072.50	110149.42	1.0000	2.21
			231.4	368.10	227.76	210.62	1720.00	1072.50	110149.42	1.0000	2.21

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 OPER	COL K3	3.67	231.4	149.62	227.76	274.41	1720.00	1072.50	110149.42	1.0000	3.05
HS20 OPER	COL K3	3.67	231.4	153.52	227.76	273.80	1720.00	1072.50	110149.42	1.0000	3.03
HS20 OPER	COL K3	3.67	231.4	156.39	227.76	273.20	1720.00	1072.50	110149.42	1.0000	3.01
HS20 OPER	COL K3	3.67	231.4	158.76	227.76	272.60	1720.00	1072.50	110149.42	1.0000	3.00
HS20 OPER	COL K3	3.67	231.4	160.64	227.76	272.00	1720.00	1072.50	110149.42	1.0000	2.99
HS20 OPER	COL K3	3.67	231.4	163.21	227.76	271.40	1720.00	1072.50	110149.42	1.0000	2.98
HS20 OPER	COL K3	3.67	231.4	165.87	227.76	270.80	1720.00	1072.50	110149.42	1.0000	2.96
HS20 OPER	COL K3	3.67	231.4	168.06	227.76	270.19	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K3	3.67	231.4	169.78	227.76	269.59	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	171.06	227.76	268.99	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	172.33	227.76	268.39	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	173.59	227.76	267.79	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	174.83	227.76	267.19	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	175.67	227.76	266.58	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	176.10	227.76	265.98	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	176.94	227.76	265.38	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	177.78	227.76	264.78	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	178.20	227.76	264.18	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	179.03	227.76	263.57	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	179.44	227.76	262.97	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	180.26	227.76	262.37	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	180.67	227.76	261.77	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	181.08	227.76	261.17	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	181.88	227.76	260.57	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	182.29	227.76	259.96	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	183.09	227.76	259.36	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	183.49	227.76	258.76	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	183.88	227.76	258.16	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	184.66	227.76	257.56	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	185.06	227.76	256.96	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	185.45	227.76	256.35	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	185.83	227.76	255.75	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	186.60	227.76	255.15	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	186.99	227.76	254.55	1720.00	1072.50	110149.42	1.0000	2.92
HS20 OPER	COL K3	3.67	231.4	187.37	227.76	253.95	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	187.75	227.76	253.34	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	188.12	227.76	252.74	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	188.88	227.76	252.14	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	189.25	227.76	251.54	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	189.62	227.76	250.94	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	189.99	227.76	250.34	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	190.36	227.76	249.73	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	190.72	227.76	249.13	1720.00	1072.50	110149.42	1.0000	2.93
HS20 OPER	COL K3	3.67	231.4	191.09	227.76	248.53	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	191.45	227.76	247.93	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	191.81	227.76	247.33	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	192.52	227.76	246.73	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	192.88	227.76	246.12	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	193.23	227.76	245.52	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	193.58	227.76	244.92	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	193.93	227.76	244.32	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	194.28	227.76	243.72	1720.00	1072.50	110149.42	1.0000	2.94
HS20 OPER	COL K3	3.67	231.4	194.62	227.76	243.11	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K3	3.67	231.4	194.97	227.76	242.51	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K3	3.67	231.4	195.31	227.76	241.91	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K3	3.67	231.4	195.65	227.76	241.31	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K3	3.67	231.4	195.99	227.76	240.71	1720.00	1072.50	110149.42	1.0000	2.95
HS20 OPER	COL K3	3.67	231.4	196.33	227.76	240.11	1720.00	1072.50	110149.42	1.0000	2.95

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
HS20 OPER	COL K3	3.67	231.4	196.66	227.76	239.50	1720.00	1072.50	110149.42	1.0000	2.96	
HS20 OPER	COL K3	3.67	231.4	196.99	227.76	238.90	1720.00	1072.50	110149.42	1.0000	2.96	
HS20 OPER	COL K3	3.67	231.4	197.33	227.76	238.30	1720.00	1072.50	110149.42	1.0000	2.96	
HS20 OPER	COL K3	3.67	231.4	197.66	227.76	237.70	1720.00	1072.50	110149.42	1.0000	2.96	
HS20 OPER	COL K3	3.67	231.4	197.98	227.76	237.10	1720.00	1072.50	110149.42	1.0000	2.96	
HS20 OPER	COL K3	3.67	231.4	198.02	227.76	236.49	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K3	3.67	231.4	198.34	227.76	235.89	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K3	3.67	231.4	198.66	227.76	235.29	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K3	3.67	231.4	198.97	227.76	234.69	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K3	3.67	231.4	199.28	227.76	234.09	1720.00	1072.50	110149.42	1.0000	2.97	
HS20 OPER	COL K3	3.67	231.4	199.59	227.76	233.49	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K3	3.67	231.4	199.59	227.76	233.49	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K3	3.67	231.4	199.90	227.76	232.88	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K3	3.67	231.4	200.21	227.76	232.28	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K3	3.67	231.4	200.53	227.76	231.68	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K3	3.67	231.4	200.83	227.76	231.08	1720.00	1072.50	110149.42	1.0000	2.98	
HS20 OPER	COL K3	3.67	231.4	201.14	227.76	230.48	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K3	3.67	231.4	201.40	227.76	229.88	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K3	3.67	231.4	201.69	227.76	229.27	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K3	3.67	231.4	201.98	227.76	228.67	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K3	3.67	231.4	202.28	227.76	228.07	1720.00	1072.50	110149.42	1.0000	2.99	
HS20 OPER	COL K3	3.67	231.4	202.57	227.76	227.47	1720.00	1072.50	110149.42	1.0000	3.00	
HS20 OPER	COL K3	3.67	231.4	202.65	227.76	226.87	1720.00	1072.50	110149.42	1.0000	3.00	
HS20 OPER	COL K3	3.67	231.4	202.95	227.76	226.26	1720.00	1072.50	110149.42	1.0000	3.00	
HS20 OPER	COL K3	3.67	231.4	203.24	227.76	225.66	1720.00	1072.50	110149.42	1.0000	3.00	
HS20 OPER	COL K3	3.67	231.4	203.42	227.76	225.06	1720.00	1072.50	110149.42	1.0000	3.01	
HS20 OPER	COL K3	3.67	231.4	203.70	227.76	224.46	1720.00	1072.50	110149.42	1.0000	3.01	
HS20 OPER	COL K3	3.67	231.4	203.98	227.76	223.86	1720.00	1072.50	110149.42	1.0000	3.01	
HS20 OPER	COL K3	3.67	231.4	204.25	227.76	223.26	1720.00	1072.50	110149.42	1.0000	3.01	
HS20 OPER	COL K3	3.67	231.4	204.53	227.76	222.65	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K3	3.67	231.4	204.67	227.76	222.05	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K3	3.67	231.4	204.80	227.76	221.45	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K3	3.67	231.4	205.06	227.76	220.85	1720.00	1072.50	110149.42	1.0000	3.02	
HS20 OPER	COL K3	3.67	231.4	205.34	227.76	220.25	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K3	3.67	231.4	205.60	227.76	219.65	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K3	3.67	231.4	205.86	227.76	219.04	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K3	3.67	231.4	206.12	227.76	218.44	1720.00	1072.50	110149.42	1.0000	3.03	
HS20 OPER	COL K3	3.67	231.4	206.05	227.76	217.84	1720.00	1072.50	110149.42	1.0000	3.04	
HS20 OPER	COL K3	3.67	231.4	206.38	227.76	217.24	1720.00	1072.50	110149.42	1.0000	3.04	
HS20 OPER	COL K3	3.67	231.4	206.64	227.76	216.64	1720.00	1072.50	110149.42	1.0000	3.04	
HS20 OPER	COL K3	3.67	231.4	206.89	227.76	216.03	1720.00	1072.50	110149.42	1.0000	3.04	
HS20 OPER	COL K3	3.67	231.4	207.15	227.76	215.43	1720.00	1072.50	110149.42	1.0000	3.05	
HS20 OPER	COL K3	3.67	231.4	207.39	227.76	214.83	1720.00	1072.50	110149.42	1.0000	3.05	
HS20 OPER	COL K3	3.67	231.4	207.38	227.76	214.23	1720.00	1072.50	110149.42	1.0000	3.05	
HS20 OPER	COL K3	3.67	231.4	207.64	227.76	213.63	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K3	3.67	231.4	207.89	227.76	213.03	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K3	3.67	231.4	207.89	227.76	213.03	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K3	3.67	231.4	208.13	227.76	212.42	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K3	3.67	231.4	208.37	227.76	211.82	1720.00	1072.50	110149.42	1.0000	3.06	
HS20 OPER	COL K3	3.67	231.4	208.39	227.76	211.22	1720.00	1072.50	110149.42	1.0000	3.07	
HS20 OPER	COL K3	3.67	231.4	208.65	227.76	210.62	1720.00	1072.50	110149.42	1.0000	3.07	
HS20 OPER	COL K3	3.67	231.4	208.84	227.76	210.02	1720.00	1072.50	110149.42	1.0000	3.07	
HS20 OPER	COL K3	3.67	231.4	209.08	227.76	209.42	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K3	3.67	231.4	209.31	227.76	208.81	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K3	3.67	231.4	209.38	227.76	208.21	1720.00	1072.50	110149.42	1.0000	3.08	
HS20 OPER	COL K3	3.67	231.4	209.54	227.76	207.61	1720.00	1072.50	110149.42	1.0000	3.09	
HS20 OPER	COL K3	3.67	231.4	209.76	227.76	207.01	1720.00	1072.50	110149.42	1.0000	3.09	
HS20 OPER	COL K3	3.67	231.4	209.99	227.76	206.41	1720.00	1072.50	110149.42	1.0000	3.09	

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
HS20 OPER	COL K3	3.67	231.4	210.21	227.76	205.80	1720.00	1072.50	110149.42	1.0000	3.09	
HS20 OPER	COL K3	3.67	231.4	210.43	227.76	204.60	1720.00	1072.50	110149.42	1.0000	3.10	
HS20 OPER	COL K3	3.67	231.4	210.65	227.76	204.00	1720.00	1072.50	110149.42	1.0000	3.10	
HS20 OPER	COL K3	3.67	231.4	210.86	227.76	203.40	1720.00	1072.50	110149.42	1.0000	3.11	
HS20 OPER	COL K3	3.67	231.4	211.08	227.76	202.19	1720.00	1072.50	110149.42	1.0000	3.11	
HS20 OPER	COL K3	3.67	231.4	211.29	227.76	201.59	1720.00	1072.50	110149.42	1.0000	3.12	
HS20 OPER	COL K3	3.67	231.4	211.49	227.76	200.99	1720.00	1072.50	110149.42	1.0000	3.12	
HS20 OPER	COL K3	3.67	231.4	211.46	227.76	200.39	1720.00	1072.50	110149.42	1.0000	3.12	
HS20 OPER	COL K3	3.67	231.4	211.70	227.76	199.79	1720.00	1072.50	110149.42	1.0000	3.13	
HS20 OPER	COL K3	3.67	231.4	211.90	227.76	199.19	1720.00	1072.50	110149.42	1.0000	3.13	
HS20 OPER	COL K3	3.67	231.4	212.10	227.76	198.58	1720.00	1072.50	110149.42	1.0000	3.13	
HS20 OPER	COL K3	3.67	231.4	212.30	227.76	197.98	1720.00	1072.50	110149.42	1.0000	3.13	
HS20 OPER	COL K3	3.67	231.4	212.32	227.76	197.38	1720.00	1072.50	110149.42	1.0000	3.14	
HS20 OPER	COL K3	3.67	231.4	212.50	227.76	196.78	1720.00	1072.50	110149.42	1.0000	3.14	
HS20 OPER	COL K3	3.67	231.4	212.69	227.76	196.18	1720.00	1072.50	110149.42	1.0000	3.15	
HS20 OPER	COL K3	3.67	231.4	212.74	227.76	195.57	1720.00	1072.50	110149.42	1.0000	3.15	
HS20 OPER	COL K3	3.67	231.4	212.94	227.76	194.97	1720.00	1072.50	110149.42	1.0000	3.15	
HS20 OPER	COL K3	3.67	231.4	213.07	227.76	194.37	1720.00	1072.50	110149.42	1.0000	3.16	
HS20 OPER	COL K3	3.67	231.4	213.25	227.76	193.77	1720.00	1072.50	110149.42	1.0000	3.16	
HS20 OPER	COL K3	3.67	231.4	213.34	227.76	193.17	1720.00	1072.50	110149.42	1.0000	3.16	
HS20 OPER	COL K3	3.67	231.4	213.44	227.76	192.57	1720.00	1072.50	110149.42	1.0000	3.17	
HS20 OPER	COL K3	3.67	231.4	213.62	227.76	191.96	1720.00	1072.50	110149.42	1.0000	3.17	
HS20 OPER	COL K3	3.67	231.4	213.80	227.76	191.36	1720.00	1072.50	110149.42	1.0000	3.17	
HS20 OPER	COL K3	3.67	231.4	213.97	227.76	190.16	1720.00	1072.50	110149.42	1.0000	3.18	
HS20 OPER	COL K3	3.67	231.4	214.15	227.76	189.56	1720.00	1072.50	110149.42	1.0000	3.18	
HS20 OPER	COL K3	3.67	231.4	214.31	227.76	188.35	1720.00	1072.50	110149.42	1.0000	3.19	
HS20 OPER	COL K3	3.67	231.4	214.31	227.76	188.35	1720.00	1072.50	110149.42	1.0000	3.19	
HS20 OPER	COL K3	3.67	231.4	214.50	227.76	187.75	1720.00	1072.50	110149.42	1.0000	3.20	
HS20 OPER	COL K3	3.67	231.4	214.64	227.76	187.15	1720.00	1072.50	110149.42	1.0000	3.20	
HS20 OPER	COL K3	3.67	231.4	214.68	227.76	186.55	1720.00	1072.50	110149.42	1.0000	3.20	
HS20 OPER	COL K3	3.67	231.4	214.86	227.76	185.95	1720.00	1072.50	110149.42	1.0000	3.21	
HS20 OPER	COL K3	3.67	231.4	214.97	227.76	185.34	1720.00	1072.50	110149.42	1.0000	3.21	
HS20 OPER	COL K3	3.67	231.4	215.04	227.76	184.74	1720.00	1072.50	110149.42	1.0000	3.21	
HS20 OPER	COL K3	3.67	231.4	215.22	227.76	184.14	1720.00	1072.50	110149.42	1.0000	3.22	
HS20 OPER	COL K3	3.67	231.4	215.28	227.76	183.54	1720.00	1072.50	110149.42	1.0000	3.22	
HS20 OPER	COL K3	3.67	231.4	215.44	227.76	182.94	1720.00	1072.50	110149.42	1.0000	3.23	
HS20 OPER	COL K3	3.67	231.4	215.56	227.76	182.34	1720.00	1072.50	110149.42	1.0000	3.23	
HS20 OPER	COL K3	3.67	231.4	215.59	227.76	181.73	1720.00	1072.50	110149.42	1.0000	3.23	
HS20 OPER	COL K3	3.67	231.4	215.73	227.76	181.13	1720.00	1072.50	110149.42	1.0000	3.24	
HS20 OPER	COL K3	3.67	231.4	215.90	227.76	180.53	1720.00	1072.50	110149.42	1.0000	3.24	
HS20 OPER	COL K3	3.67	231.4	215.88	227.76	179.93	1720.00	1072.50	110149.42	1.0000	3.25	
HS20 OPER	COL K3	3.67	231.4	216.06	227.76	179.33	1720.00	1072.50	110149.42	1.0000	3.25	
HS20 OPER	COL K3	3.67	231.4	216.22	227.76	178.73	1720.00	1072.50	110149.42	1.0000	3.25	
HS20 OPER	COL K3	3.67	231.4	216.16	227.76	178.12	1720.00	1072.50	110149.42	1.0000	3.26	
HS20 OPER	COL K3	3.67	231.4	216.38	227.76	177.52	1720.00	1072.50	110149.42	1.0000	3.26	
HS20 OPER	COL K3	3.67	231.4	216.53	227.76	176.92	1720.00	1072.50	110149.42	1.0000	3.27	
HS20 OPER	COL K3	3.67	231.4	216.68	227.76	175.72	1720.00	1072.50	110149.42	1.0000	3.27	
HS20 OPER	COL K3	3.67	231.4	216.84	227.76	175.11	1720.00	1072.50	110149.42	1.0000	3.28	
HS20 OPER	COL K3	3.67	231.4	216.99	227.76	173.91	1720.00	1072.50	110149.42	1.0000	3.29	
HS20 OPER	COL K3	3.67	231.4	217.13	227.76	173.31	1720.00	1072.50	110149.42	1.0000	3.29	
HS20 OPER	COL K3	3.67	231.4	217.27	227.76	172.11	1720.00	1072.50	110149.42	1.0000	3.30	
HS20 OPER	COL K3	3.67	231.4	217.41	227.76	171.50	1720.00	1072.50	110149.42	1.0000	3.30	
HS20 OPER	COL K3	3.67	231.4	217.55	227.76	170.30	1720.00	1072.50	110149.42	1.0000	3.31	
HS20 OPER	COL K3	3.67	231.4	217.42	227.76	169.70	1720.00	1072.50	110149.42	1.0000	3.32	
HS20 OPER	COL K3	3.67	231.4	217.68	227.76	169.10	1720.00	1072.50	110149.42	1.0000	3.32	
HS20 OPER	COL K3	3.67	231.4	217.82	227.76	168.50	1720.00	1072.50	110149.42	1.0000	3.32	
HS20 OPER	COL K3	3.67	231.4	217.64	227.76	167.89	1720.00	1072.50	110149.42	1.0000	3.33	
HS20 OPER	COL K3	3.67	231.4	217.95	227.76	167.29	1720.00	1072.50	110149.42	1.0000	3.33	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 OPER	COL K3	3.67	231.4	218.07	227.76	166.69	1720.00	1072.50	110149.42	1.0000	3.34
HS20 OPER	COL K3	3.67	231.4	217.85	227.76	166.09	1720.00	1072.50	110149.42	1.0000	3.34
HS20 OPER	COL K3	3.67	231.4	218.20	227.76	165.49	1720.00	1072.50	110149.42	1.0000	3.35
HS20 OPER	COL K3	3.67	231.4	218.32	227.76	164.88	1720.00	1072.50	110149.42	1.0000	3.35
HS20 OPER	COL K3	3.67	231.4	218.04	227.76	164.28	1720.00	1072.50	110149.42	1.0000	3.36
HS20 OPER	COL K3	3.67	231.4	218.44	227.76	163.68	1720.00	1072.50	110149.42	1.0000	3.36
HS20 OPER	COL K3	3.67	231.4	218.55	227.76	163.08	1720.00	1072.50	110149.42	1.0000	3.36
HS20 OPER	COL K3	3.67	231.4	218.24	227.76	162.48	1720.00	1072.50	110149.42	1.0000	3.37
HS20 OPER	COL K3	3.67	231.4	218.66	227.76	161.88	1720.00	1072.50	110149.42	1.0000	3.37
HS20 OPER	COL K3	3.67	231.4	218.33	227.76	161.27	1720.00	1072.50	110149.42	1.0000	3.38
HS20 OPER	COL K3	3.67	231.4	218.78	227.76	160.67	1720.00	1072.50	110149.42	1.0000	3.38
HS20 OPER	COL K3	3.67	231.4	218.88	227.76	160.07	1720.00	1072.50	110149.42	1.0000	3.39
HS20 OPER	COL K3	3.67	231.4	218.50	227.76	159.47	1720.00	1072.50	110149.42	1.0000	3.40
HS20 OPER	COL K3	3.67	231.4	218.99	227.76	158.87	1720.00	1072.50	110149.42	1.0000	3.40
HS20 OPER	COL K3	3.67	231.4	219.09	227.76	158.27	1720.00	1072.50	110149.42	1.0000	3.40
HS20 OPER	COL K3	3.67	231.4	218.66	227.76	157.66	1720.00	1072.50	110149.42	1.0000	3.41
HS20 OPER	COL K3	3.67	231.4	219.19	227.76	157.06	1720.00	1072.50	110149.42	1.0000	3.41
HS20 OPER	COL K3	3.67	231.4	218.74	227.76	156.46	1720.00	1072.50	110149.42	1.0000	3.42
HS20 OPER	COL K3	3.67	231.4	219.29	227.76	155.86	1720.00	1072.50	110149.42	1.0000	3.42
HS20 OPER	COL K3	3.67	231.4	219.38	227.76	155.26	1720.00	1072.50	110149.42	1.0000	3.42
HS20 OPER	COL K3	3.67	231.4	218.88	227.76	154.65	1720.00	1072.50	110149.42	1.0000	3.43
HS20 OPER	COL K3	3.67	231.4	219.47	227.76	154.05	1720.00	1072.50	110149.42	1.0000	3.43
HS20 OPER	COL K3	3.67	231.4	219.56	227.76	153.45	1720.00	1072.50	110149.42	1.0000	3.44
HS20 OPER	COL K3	3.67	231.4	219.01	227.76	152.85	1720.00	1072.50	110149.42	1.0000	3.45
HS20 OPER	COL K3	3.67	231.4	219.65	227.76	152.25	1720.00	1072.50	110149.42	1.0000	3.45
HS20 OPER	COL K3	3.67	231.4	219.73	227.76	151.64	1720.00	1072.50	110149.42	1.0000	3.46
HS20 OPER	COL K3	3.67	231.4	219.81	227.76	151.04	1720.00	1072.50	110149.42	1.0000	3.46
HS20 OPER	COL K3	3.67	231.4	219.19	227.76	149.84	1720.00	1072.50	110149.42	1.0000	3.48
HS20 OPER	COL K3	3.67	231.4	219.89	227.76	149.24	1720.00	1072.50	110149.42	1.0000	3.47
HS20 OPER	COL K3	3.67	231.4	219.96	227.76	148.64	1720.00	1072.50	110149.42	1.0000	3.48
HS20 OPER	COL K3	3.67	231.4	219.30	227.76	148.04	1720.00	1072.50	110149.42	1.0000	3.49
HS20 OPER	COL K3	3.67	231.4	220.03	227.76	147.43	1720.00	1072.50	110149.42	1.0000	3.49
HS20 OPER	COL K3	3.67	231.4	220.10	227.76	146.83	1720.00	1072.50	110149.42	1.0000	3.50
HS20 OPER	COL K3	3.67	231.4	220.17	227.76	146.23	1720.00	1072.50	110149.42	1.0000	3.51
HS20 OPER	COL K3	3.67	231.4	219.43	227.76	145.63	1720.00	1072.50	110149.42	1.0000	3.52
HS20 OPER	COL K3	3.67	231.4	220.23	227.76	145.03	1720.00	1072.50	110149.42	1.0000	3.52
HS20 OPER	COL K3	3.67	231.4	220.23	227.76	144.42	1720.00	1072.50	110149.42	1.0000	3.52
HS20 OPER	COL K3	3.67	231.4	220.29	227.76	143.82	1720.00	1072.50	110149.42	1.0000	3.52
HS20 OPER	COL K3	3.67	231.4	219.52	227.76	143.22	1720.00	1072.50	110149.42	1.0000	3.53
HS20 OPER	COL K3	3.67	231.4	220.34	227.76	142.62	1720.00	1072.50	110149.42	1.0000	3.53
HS20 OPER	COL K3	3.67	231.4	220.40	227.76	142.02	1720.00	1072.50	110149.42	1.0000	3.54
HS20 OPER	COL K3	3.67	231.4	220.45	227.76	141.42	1720.00	1072.50	110149.42	1.0000	3.54
HS20 OPER	COL K3	3.67	231.4	220.50	227.76	140.81	1720.00	1072.50	110149.42	1.0000	3.55
HS20 OPER	COL K3	3.67	231.4	220.50	227.76	139.61	1720.00	1072.50	110149.42	1.0000	3.56
HS20 OPER	COL K3	3.67	231.4	220.54	227.76	138.41	1720.00	1072.50	110149.42	1.0000	3.57
HS20 OPER	COL K3	3.67	231.4	220.58	227.76	137.21	1720.00	1072.50	110149.42	1.0000	3.58
HS20 OPER	COL K3	3.67	231.4	220.63	227.76	136.00	1720.00	1072.50	110149.42	1.0000	3.59
HS20 OPER	COL K3	3.67	231.4	220.66	227.76	134.80	1720.00	1072.50	110149.42	1.0000	3.59
HS20 OPER	COL K3	3.67	231.4	219.72	227.76	133.59	1720.00	1072.50	110149.42	1.0000	3.61
HS20 OPER	COL K3	3.67	231.4	220.70	227.76	132.39	1720.00	1072.50	110149.42	1.0000	3.61
HS20 OPER	COL K3	3.67	231.4	220.73	227.76	131.19	1720.00	1072.50	110149.42	1.0000	3.62
HS20 OPER	COL K3	3.67	231.4	220.75	227.76	130.00	1720.00	1072.50	110149.42	1.0000	3.62
HS20 OPER	COL K3	3.67	231.4	220.78	227.76	128.80	1720.00	1072.50	110149.42	1.0000	3.63
HS20 OPER	COL K3	3.67	231.4	220.80	227.76	127.60	1720.00	1072.50	110149.42	1.0000	3.63
HS20 OPER	COL K3	3.67	231.4	219.75	227.76	126.40	1720.00	1072.50	110149.42	1.0000	3.66
HS20 OPER	COL K3	3.67	231.4	220.82	227.76	125.20	1720.00	1072.50	110149.42	1.0000	3.66
HS20 OPER	COL K3	3.67	231.4	220.83	227.76	124.00	1720.00	1072.50	110149.42	1.0000	3.66
HS20 OPER	COL K3	3.67	231.4	220.83	227.76	122.80	1720.00	1072.50	110149.42	1.0000	3.66
HS20 OPER	COL K3	3.67	231.4	220.84	227.76	121.60	1720.00	1072.50	110149.42	1.0000	3.67
HS20 OPER	COL K3	3.67	231.4	220.84	227.76	120.40	1720.00	1072.50	110149.42	1.0000	3.67
HS20 OPER	COL K3	3.67	231.4	220.86	227.76	119.20	1720.00	1072.50	110149.42	1.0000	3.68
HS20 OPER	COL K3	3.67	231.4	220.86	227.76	118.00	1720.00	1072.50	110149.42	1.0000	3.68
HS20 OPER	COL K3	3.67	231.4	220.86	227.76	116.80	1720.00	1072.50	110149.42	1.0000	3.69

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section K - South Frame Column Ratings



Calculated: CTG 2/22/2012
 Checked: NRF 2/27/2012

Impact	DL Factor	LL Factor	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
2F1	COL K3	3.67	231.4	72.34	227.76	122.76	1720.00	1072.50	110149.42	1.0000	6.63	
2F1	COL K3	3.67	231.4	74.06	227.76	122.16	1720.00	1072.50	110149.42	1.0000	6.59	
2F1	COL K3	3.67	231.4	75.37	227.76	121.56	1720.00	1072.50	110149.42	1.0000	6.57	
2F1	COL K3	3.67	231.4	76.28	227.76	120.96	1720.00	1072.50	110149.42	1.0000	6.55	
2F1	COL K3	3.67	231.4	77.18	227.76	120.35	1720.00	1072.50	110149.42	1.0000	6.54	
2F1	COL K3	3.67	231.4	78.06	227.76	119.75	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K3	3.67	231.4	78.76	227.76	119.15	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K3	3.67	231.4	79.27	227.76	118.55	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K3	3.67	231.4	79.95	227.76	117.95	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K3	3.67	231.4	80.45	227.76	117.34	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K3	3.67	231.4	80.94	227.76	116.74	1720.00	1072.50	110149.42	1.0000	6.53	
2F1	COL K3	3.67	231.4	81.43	227.76	116.14	1720.00	1072.50	110149.42	1.0000	6.54	
2F1	COL K3	3.67	231.4	81.91	227.76	115.54	1720.00	1072.50	110149.42	1.0000	6.54	
2F1	COL K3	3.67	231.4	82.23	227.76	114.94	1720.00	1072.50	110149.42	1.0000	6.55	
2F1	COL K3	3.67	231.4	82.71	227.76	114.34	1720.00	1072.50	110149.42	1.0000	6.55	
2F1	COL K3	3.67	231.4	83.01	227.76	113.73	1720.00	1072.50	110149.42	1.0000	6.56	
2F1	COL K3	3.67	231.4	83.48	227.76	113.13	1720.00	1072.50	110149.42	1.0000	6.57	
2F1	COL K3	3.67	231.4	83.78	227.76	112.53	1720.00	1072.50	110149.42	1.0000	6.58	
2F1	COL K3	3.67	231.4	84.10	227.76	111.93	1720.00	1072.50	110149.42	1.0000	6.58	
2F1	COL K3	3.67	231.4	84.52	227.76	111.33	1720.00	1072.50	110149.42	1.0000	6.59	
2F1	COL K3	3.67	231.4	84.82	227.76	110.73	1720.00	1072.50	110149.42	1.0000	6.60	
2F1	COL K3	3.67	231.4	85.13	227.76	110.12	1720.00	1072.50	110149.42	1.0000	6.61	
2F1	COL K3	3.67	231.4	85.41	227.76	109.52	1720.00	1072.50	110149.42	1.0000	6.62	
2F1	COL K3	3.67	231.4	85.69	227.76	108.92	1720.00	1072.50	110149.42	1.0000	6.63	
2F1	COL K3	3.67	231.4	85.97	227.76	108.32	1720.00	1072.50	110149.42	1.0000	6.64	
2F1	COL K3	3.67	231.4	86.25	227.76	107.72	1720.00	1072.50	110149.42	1.0000	6.65	
2F1	COL K3	3.67	231.4	86.52	227.76	107.11	1720.00	1072.50	110149.42	1.0000	6.66	
2F1	COL K3	3.67	231.4	86.79	227.76	106.51	1720.00	1072.50	110149.42	1.0000	6.67	
2F1	COL K3	3.67	231.4	87.05	227.76	105.91	1720.00	1072.50	110149.42	1.0000	6.68	
2F1	COL K3	3.67	231.4	87.31	227.76	105.31	1720.00	1072.50	110149.42	1.0000	6.69	
2F1	COL K3	3.67	231.4	87.57	227.76	104.71	1720.00	1072.50	110149.42	1.0000	6.71	
2F1	COL K3	3.67	231.4	87.44	227.76	104.71	1720.00	1072.50	110149.42	1.0000	6.71	
2F1	COL K3	3.67	231.4	87.83	227.76	104.11	1720.00	1072.50	110149.42	1.0000	6.72	
2F1	COL K3	3.67	231.4	87.70	227.76	104.11	1720.00	1072.50	110149.42	1.0000	6.72	
2F1	COL K3	3.67	231.4	87.95	227.76	103.50	1720.00	1072.50	110149.42	1.0000	6.73	
2F1	COL K3	3.67	231.4	87.95	227.76	103.50	1720.00	1072.50	110149.42	1.0000	6.73	
2F1	COL K3	3.67	231.4	88.20	227.76	102.90	1720.00	1072.50	110149.42	1.0000	6.74	
2F1	COL K3	3.67	231.4	88.45	227.76	102.30	1720.00	1072.50	110149.42	1.0000	6.76	
2F1	COL K3	3.67	231.4	88.69	227.76	101.70	1720.00	1072.50	110149.42	1.0000	6.77	
2F1	COL K3	3.67	231.4	88.81	227.76	101.10	1720.00	1072.50	110149.42	1.0000	6.79	
2F1	COL K3	3.67	231.4	89.05	227.76	100.50	1720.00	1072.50	110149.42	1.0000	6.80	
2F1	COL K3	3.67	231.4	89.28	227.76	99.89	1720.00	1072.50	110149.42	1.0000	6.81	
2F1	COL K3	3.67	231.4	89.40	227.76	99.29	1720.00	1072.50	110149.42	1.0000	6.83	
2F1	COL K3	3.67	231.4	89.63	227.76	98.69	1720.00	1072.50	110149.42	1.0000	6.84	
2F1	COL K3	3.67	231.4	89.85	227.76	98.09	1720.00	1072.50	110149.42	1.0000	6.85	
2F1	COL K3	3.67	231.4	89.96	227.76	97.49	1720.00	1072.50	110149.42	1.0000	6.87	
2F1	COL K3	3.67	231.4	90.18	227.76	96.88	1720.00	1072.50	110149.42	1.0000	6.89	
2F1	COL K3	3.67	231.4	90.29	227.76	96.28	1720.00	1072.50	110149.42	1.0000	6.90	
2F1	COL K3	3.67	231.4	90.50	227.76	95.68	1720.00	1072.50	110149.42	1.0000	6.92	
2F1	COL K3	3.67	231.4	90.61	227.76	95.08	1720.00	1072.50	110149.42	1.0000	6.93	
2F1	COL K3	3.67	231.4	90.81	227.76	94.48	1720.00	1072.50	110149.42	1.0000	6.95	
2F1	COL K3	3.67	231.4	90.92	227.76	93.88	1720.00	1072.50	110149.42	1.0000	6.97	
2F1	COL K3	3.67	231.4	91.12	227.76	93.27	1720.00	1072.50	110149.42	1.0000	6.98	
2F1	COL K3	3.67	231.4	91.22	227.76	92.67	1720.00	1072.50	110149.42	1.0000	7.00	
2F1	COL K3	3.67	231.4	91.41	227.76	92.07	1720.00	1072.50	110149.42	1.0000	7.02	
2F1	COL K3	3.67	231.4	91.51	227.76	91.47	1720.00	1072.50	110149.42	1.0000	7.03	
2F1	COL K3	3.67	231.4	91.61	227.76	90.87	1720.00	1072.50	110149.42	1.0000	7.05	
2F1	COL K3	3.67	231.4	91.79	227.76	90.27	1720.00	1072.50	110149.42	1.0000	7.07	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
2F1	COL K3	3.67	231.4	91.89	227.76	89.66	1720.00	1072.50	110149.42	1.0000	7.09	
2F1	COL K3	3.67	231.4	92.07	227.76	89.06	1720.00	1072.50	110149.42	1.0000	7.10	
2F1	COL K3	3.67	231.4	92.16	227.76	88.46	1720.00	1072.50	110149.42	1.0000	7.12	
2F1	COL K3	3.67	231.4	92.25	227.76	87.86	1720.00	1072.50	110149.42	1.0000	7.14	
2F1	COL K3	3.67	231.4	92.43	227.76	87.26	1720.00	1072.50	110149.42	1.0000	7.16	
2F1	COL K3	3.67	231.4	92.51	227.76	86.65	1720.00	1072.50	110149.42	1.0000	7.18	
2F1	COL K3	3.67	231.4	92.59	227.76	86.05	1720.00	1072.50	110149.42	1.0000	7.20	
2F1	COL K3	3.67	231.4	92.76	227.76	85.45	1720.00	1072.50	110149.42	1.0000	7.22	
2F1	COL K3	3.67	231.4	92.85	227.76	84.85	1720.00	1072.50	110149.42	1.0000	7.24	
2F1	COL K3	3.67	231.4	92.93	227.76	84.25	1720.00	1072.50	110149.42	1.0000	7.26	
2F1	COL K3	3.67	231.4	93.08	227.76	83.65	1720.00	1072.50	110149.42	1.0000	7.28	
2F1	COL K3	3.67	231.4	93.16	227.76	83.04	1720.00	1072.50	110149.42	1.0000	7.30	
2F1	COL K3	3.67	231.4	93.24	227.76	82.44	1720.00	1072.50	110149.42	1.0000	7.32	
2F1	COL K3	3.67	231.4	93.39	227.76	81.84	1720.00	1072.50	110149.42	1.0000	7.34	
2F1	COL K3	3.67	231.4	93.46	227.76	81.24	1720.00	1072.50	110149.42	1.0000	7.36	
2F1	COL K3	3.67	231.4	93.53	227.76	80.64	1720.00	1072.50	110149.42	1.0000	7.38	
2F1	COL K3	3.67	231.4	93.61	227.76	80.04	1720.00	1072.50	110149.42	1.0000	7.40	
2F1	COL K3	3.67	231.4	93.74	227.76	79.43	1720.00	1072.50	110149.42	1.0000	7.42	
2F1	COL K3	3.67	231.4	93.81	227.76	78.83	1720.00	1072.50	110149.42	1.0000	7.44	
2F1	COL K3	3.67	231.4	93.88	227.76	78.23	1720.00	1072.50	110149.42	1.0000	7.47	
2F1	COL K3	3.67	231.4	94.01	227.76	77.63	1720.00	1072.50	110149.42	1.0000	7.49	
2F1	COL K3	3.67	231.4	94.07	227.76	77.03	1720.00	1072.50	110149.42	1.0000	7.51	
2F1	COL K3	3.67	231.4	94.13	227.76	76.42	1720.00	1072.50	110149.42	1.0000	7.53	
2F1	COL K3	3.67	231.4	94.13	227.76	76.42	1720.00	1072.50	110149.42	1.0000	7.53	
2F1	COL K3	3.67	231.4	94.20	227.76	75.82	1720.00	1072.50	110149.42	1.0000	7.55	
2F1	COL K3	3.67	231.4	94.32	227.76	75.22	1720.00	1072.50	110149.42	1.0000	7.58	
2F1	COL K3	3.67	231.4	94.38	227.76	74.62	1720.00	1072.50	110149.42	1.0000	7.60	
2F1	COL K3	3.67	231.4	94.44	227.76	74.02	1720.00	1072.50	110149.42	1.0000	7.62	
2F1	COL K3	3.67	231.4	94.50	227.76	73.42	1720.00	1072.50	110149.42	1.0000	7.65	
2F1	COL K3	3.67	231.4	94.56	227.76	72.81	1720.00	1072.50	110149.42	1.0000	7.67	
2F1	COL K3	3.67	231.4	94.66	227.76	72.21	1720.00	1072.50	110149.42	1.0000	7.69	
2F1	COL K3	3.67	231.4	94.72	227.76	71.61	1720.00	1072.50	110149.42	1.0000	7.72	
2F1	COL K3	3.67	231.4	94.77	227.76	71.01	1720.00	1072.50	110149.42	1.0000	7.74	
2F1	COL K3	3.67	231.4	94.82	227.76	70.41	1720.00	1072.50	110149.42	1.0000	7.77	
2F1	COL K3	3.67	231.4	94.92	227.76	69.81	1720.00	1072.50	110149.42	1.0000	7.79	
2F1	COL K3	3.67	231.4	94.97	227.76	69.20	1720.00	1072.50	110149.42	1.0000	7.82	
2F1	COL K3	3.67	231.4	95.01	227.76	68.60	1720.00	1072.50	110149.42	1.0000	7.84	
2F1	COL K3	3.67	231.4	95.06	227.76	68.00	1720.00	1072.50	110149.42	1.0000	7.87	
2F1	COL K3	3.67	231.4	95.10	227.76	67.40	1720.00	1072.50	110149.42	1.0000	7.90	
2F1	COL K3	3.67	231.4	95.19	227.76	66.80	1720.00	1072.50	110149.42	1.0000	7.92	
2F1	COL K3	3.67	231.4	95.15	227.76	66.80	1720.00	1072.50	110149.42	1.0000	7.92	
2F1	COL K3	3.67	231.4	95.22	227.76	66.19	1720.00	1072.50	110149.42	1.0000	7.95	
2F1	COL K3	3.67	231.4	95.27	227.76	65.59	1720.00	1072.50	110149.42	1.0000	7.97	
2F1	COL K3	3.67	231.4	95.30	227.76	64.99	1720.00	1072.50	110149.42	1.0000	8.00	
2F1	COL K3	3.67	231.4	95.34	227.76	64.39	1720.00	1072.50	110149.42	1.0000	8.03	
2F1	COL K3	3.67	231.4	95.41	227.76	63.79	1720.00	1072.50	110149.42	1.0000	8.06	
2F1	COL K3	3.67	231.4	95.44	227.76	63.19	1720.00	1072.50	110149.42	1.0000	8.08	
2F1	COL K3	3.67	231.4	95.48	227.76	62.58	1720.00	1072.50	110149.42	1.0000	8.11	
2F1	COL K3	3.67	231.4	95.51	227.76	61.98	1720.00	1072.50	110149.42	1.0000	8.14	
2F1	COL K3	3.67	231.4	95.54	227.76	61.38	1720.00	1072.50	110149.42	1.0000	8.17	
2F1	COL K3	3.67	231.4	95.59	227.76	60.78	1720.00	1072.50	110149.42	1.0000	8.20	
2F1	COL K3	3.67	231.4	95.61	227.76	60.18	1720.00	1072.50	110149.42	1.0000	8.23	
2F1	COL K3	3.67	231.4	95.64	227.76	59.58	1720.00	1072.50	110149.42	1.0000	8.26	
2F1	COL K3	3.67	231.4	95.66	227.76	58.97	1720.00	1072.50	110149.42	1.0000	8.29	
2F1	COL K3	3.67	231.4	95.69	227.76	58.37	1720.00	1072.50	110149.42	1.0000	8.32	
2F1	COL K3	3.67	231.4	95.71	227.76	57.77	1720.00	1072.50	110149.42	1.0000	8.35	
2F1	COL K3	3.67	231.4	95.74	227.76	57.17	1720.00	1072.50	110149.42	1.0000	8.38	
2F1	COL K3	3.67	231.4	95.76	227.76	56.57	1720.00	1072.50	110149.42	1.0000	8.41	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _e		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
2F1	COL K3	3.67	231.4	95.78	227.76	55.96	1720.00	1072.50	110149.42	1.0000	8.44	
2F1	COL K3	3.67	231.4	95.79	227.76	55.36	1720.00	1072.50	110149.42	1.0000	8.47	
2F1	COL K3	3.67	231.4	95.80	227.76	54.76	1720.00	1072.50	110149.42	1.0000	8.51	
2F1	COL K3	3.67	231.4	95.83	227.76	54.16	1720.00	1072.50	110149.42	1.0000	8.54	
2F1	COL K3	3.67	231.4	95.84	227.76	53.56	1720.00	1072.50	110149.42	1.0000	8.57	
2F1	COL K3	3.67	231.4	95.84	227.76	52.96	1720.00	1072.50	110149.42	1.0000	8.60	
2F1	COL K3	3.67	231.4	95.85	227.76	52.35	1720.00	1072.50	110149.42	1.0000	8.64	
2F1	COL K3	3.67	231.4	95.86	227.76	51.75	1720.00	1072.50	110149.42	1.0000	8.67	
2F1	COL K3	3.67	231.4	95.86	227.76	51.15	1720.00	1072.50	110149.42	1.0000	8.71	
2F1	COL K3	3.67	231.4	95.86	227.76	50.55	1720.00	1072.50	110149.42	1.0000	8.74	
2F1	COL K3	3.67	231.4	95.86	227.76	50.55	1720.00	1072.50	110149.42	1.0000	8.74	
2F1	COL K3	3.67	231.4	95.76	227.76	50.55	1720.00	1072.50	110149.42	1.0000	8.75	
3F1	COL K3	3.67	231.4	107.93	227.76	187.15	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K3	3.67	231.4	110.33	227.76	186.55	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K3	3.67	231.4	112.09	227.76	185.95	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K3	3.67	231.4	113.52	227.76	185.34	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K3	3.67	231.4	114.66	227.76	184.74	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K3	3.67	231.4	115.79	227.76	184.14	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K3	3.67	231.4	116.62	227.76	183.54	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K3	3.67	231.4	117.44	227.76	182.94	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	118.26	227.76	182.34	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	119.07	227.76	181.73	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	119.86	227.76	181.13	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K3	3.67	231.4	120.39	227.76	180.53	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K3	3.67	231.4	120.91	227.76	179.93	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K3	3.67	231.4	121.43	227.76	179.33	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	122.20	227.76	178.73	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K3	3.67	231.4	122.71	227.76	178.12	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K3	3.67	231.4	123.22	227.76	177.52	1720.00	1072.50	110149.42	1.0000	4.29	
3F1	COL K3	3.67	231.4	123.72	227.76	176.92	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	124.21	227.76	176.32	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	124.46	227.76	175.72	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	124.95	227.76	175.11	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	125.43	227.76	174.51	1720.00	1072.50	110149.42	1.0000	4.30	
3F1	COL K3	3.67	231.4	125.91	227.76	173.91	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K3	3.67	231.4	126.15	227.76	173.31	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K3	3.67	231.4	126.63	227.76	172.71	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K3	3.67	231.4	127.10	227.76	172.11	1720.00	1072.50	110149.42	1.0000	4.31	
3F1	COL K3	3.67	231.4	127.33	227.76	171.50	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K3	3.67	231.4	127.80	227.76	170.90	1720.00	1072.50	110149.42	1.0000	4.32	
3F1	COL K3	3.67	231.4	128.03	227.76	170.30	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K3	3.67	231.4	128.48	227.76	169.70	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K3	3.67	231.4	128.71	227.76	169.10	1720.00	1072.50	110149.42	1.0000	4.33	
3F1	COL K3	3.67	231.4	129.08	227.76	168.50	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K3	3.67	231.4	129.38	227.76	167.89	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K3	3.67	231.4	129.74	227.76	167.29	1720.00	1072.50	110149.42	1.0000	4.34	
3F1	COL K3	3.67	231.4	130.04	227.76	166.69	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K3	3.67	231.4	130.39	227.76	166.09	1720.00	1072.50	110149.42	1.0000	4.35	
3F1	COL K3	3.67	231.4	130.60	227.76	165.49	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K3	3.67	231.4	130.90	227.76	164.88	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K3	3.67	231.4	131.24	227.76	164.28	1720.00	1072.50	110149.42	1.0000	4.36	
3F1	COL K3	3.67	231.4	131.44	227.76	163.68	1720.00	1072.50	110149.42	1.0000	4.37	
3F1	COL K3	3.67	231.4	131.86	227.76	163.08	1720.00	1072.50	110149.42	1.0000	4.37	
3F1	COL K3	3.67	231.4	132.06	227.76	162.48	1720.00	1072.50	110149.42	1.0000	4.38	
3F1	COL K3	3.67	231.4	132.27	227.76	161.88	1720.00	1072.50	110149.42	1.0000	4.38	
3F1	COL K3	3.67	231.4	132.67	227.76	161.27	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K3	3.67	231.4	132.87	227.76	160.67	1720.00	1072.50	110149.42	1.0000	4.39	
3F1	COL K3	3.67	231.4	133.08	227.76	160.07	1720.00	1072.50	110149.42	1.0000	4.40	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
3F1	COL K3	3.67	231.4	133.27	227.76	159.47	1720.00	1072.50	110149.42	1.0000	4.40	
3F1	COL K3	3.67	231.4	133.66	227.76	158.87	1720.00	1072.50	110149.42	1.0000	4.41	
3F1	COL K3	3.67	231.4	133.86	227.76	158.27	1720.00	1072.50	110149.42	1.0000	4.41	
3F1	COL K3	3.67	231.4	134.04	227.76	157.66	1720.00	1072.50	110149.42	1.0000	4.42	
3F1	COL K3	3.67	231.4	134.24	227.76	157.06	1720.00	1072.50	110149.42	1.0000	4.43	
3F1	COL K3	3.67	231.4	134.43	227.76	156.46	1720.00	1072.50	110149.42	1.0000	4.43	
3F1	COL K3	3.67	231.4	134.80	227.76	155.86	1720.00	1072.50	110149.42	1.0000	4.43	
3F1	COL K3	3.67	231.4	134.99	227.76	155.26	1720.00	1072.50	110149.42	1.0000	4.44	
3F1	COL K3	3.67	231.4	135.18	227.76	154.65	1720.00	1072.50	110149.42	1.0000	4.45	
3F1	COL K3	3.67	231.4	135.36	227.76	154.05	1720.00	1072.50	110149.42	1.0000	4.45	
3F1	COL K3	3.67	231.4	135.54	227.76	153.45	1720.00	1072.50	110149.42	1.0000	4.46	
3F1	COL K3	3.67	231.4	135.72	227.76	152.85	1720.00	1072.50	110149.42	1.0000	4.47	
3F1	COL K3	3.67	231.4	135.90	227.76	152.25	1720.00	1072.50	110149.42	1.0000	4.47	
3F1	COL K3	3.67	231.4	136.25	227.76	151.65	1720.00	1072.50	110149.42	1.0000	4.48	
3F1	COL K3	3.67	231.4	136.43	227.76	151.04	1720.00	1072.50	110149.42	1.0000	4.48	
3F1	COL K3	3.67	231.4	136.60	227.76	150.44	1720.00	1072.50	110149.42	1.0000	4.49	
3F1	COL K3	3.67	231.4	136.77	227.76	149.84	1720.00	1072.50	110149.42	1.0000	4.49	
3F1	COL K3	3.67	231.4	136.94	227.76	149.24	1720.00	1072.50	110149.42	1.0000	4.50	
3F1	COL K3	3.67	231.4	137.11	227.76	148.64	1720.00	1072.50	110149.42	1.0000	4.51	
3F1	COL K3	3.67	231.4	137.28	227.76	148.04	1720.00	1072.50	110149.42	1.0000	4.51	
3F1	COL K3	3.67	231.4	137.44	227.76	147.43	1720.00	1072.50	110149.42	1.0000	4.52	
3F1	COL K3	3.67	231.4	137.61	227.76	146.83	1720.00	1072.50	110149.42	1.0000	4.53	
3F1	COL K3	3.67	231.4	137.77	227.76	146.23	1720.00	1072.50	110149.42	1.0000	4.53	
3F1	COL K3	3.67	231.4	137.93	227.76	145.63	1720.00	1072.50	110149.42	1.0000	4.54	
3F1	COL K3	3.67	231.4	138.09	227.76	145.03	1720.00	1072.50	110149.42	1.0000	4.55	
3F1	COL K3	3.67	231.4	138.26	227.76	144.42	1720.00	1072.50	110149.42	1.0000	4.55	
3F1	COL K3	3.67	231.4	138.41	227.76	143.82	1720.00	1072.50	110149.42	1.0000	4.56	
3F1	COL K3	3.67	231.4	138.57	227.76	143.22	1720.00	1072.50	110149.42	1.0000	4.57	
3F1	COL K3	3.67	231.4	138.72	227.76	142.62	1720.00	1072.50	110149.42	1.0000	4.58	
3F1	COL K3	3.67	231.4	138.88	227.76	142.02	1720.00	1072.50	110149.42	1.0000	4.58	
3F1	COL K3	3.67	231.4	139.03	227.76	141.42	1720.00	1072.50	110149.42	1.0000	4.59	
3F1	COL K3	3.67	231.4	139.18	227.76	140.81	1720.00	1072.50	110149.42	1.0000	4.60	
3F1	COL K3	3.67	231.4	139.33	227.76	140.21	1720.00	1072.50	110149.42	1.0000	4.60	
3F1	COL K3	3.67	231.4	139.47	227.76	139.61	1720.00	1072.50	110149.42	1.0000	4.61	
3F1	COL K3	3.67	231.4	139.62	227.76	139.01	1720.00	1072.50	110149.42	1.0000	4.62	
3F1	COL K3	3.67	231.4	139.76	227.76	138.41	1720.00	1072.50	110149.42	1.0000	4.63	
3F1	COL K3	3.67	231.4	139.91	227.76	137.80	1720.00	1072.50	110149.42	1.0000	4.63	
3F1	COL K3	3.67	231.4	140.05	227.76	137.20	1720.00	1072.50	110149.42	1.0000	4.64	
3F1	COL K3	3.67	231.4	140.19	227.76	136.60	1720.00	1072.50	110149.42	1.0000	4.65	
3F1	COL K3	3.67	231.4	140.33	227.76	136.00	1720.00	1072.50	110149.42	1.0000	4.66	
3F1	COL K3	3.67	231.4	140.46	227.76	135.40	1720.00	1072.50	110149.42	1.0000	4.66	
3F1	COL K3	3.67	231.4	140.60	227.76	134.80	1720.00	1072.50	110149.42	1.0000	4.67	
3F1	COL K3	3.67	231.4	140.73	227.76	134.19	1720.00	1072.50	110149.42	1.0000	4.68	
3F1	COL K3	3.67	231.4	140.86	227.76	133.59	1720.00	1072.50	110149.42	1.0000	4.69	
3F1	COL K3	3.67	231.4	140.79	227.76	132.99	1720.00	1072.50	110149.42	1.0000	4.70	
3F1	COL K3	3.67	231.4	140.99	227.76	132.39	1720.00	1072.50	110149.42	1.0000	4.71	
3F1	COL K3	3.67	231.4	141.12	227.76	131.79	1720.00	1072.50	110149.42	1.0000	4.71	
3F1	COL K3	3.67	231.4	141.25	227.76	131.19	1720.00	1072.50	110149.42	1.0000	4.72	
3F1	COL K3	3.67	231.4	141.37	227.76	130.58	1720.00	1072.50	110149.42	1.0000	4.73	
3F1	COL K3	3.67	231.4	141.50	227.76	129.98	1720.00	1072.50	110149.42	1.0000	4.74	
3F1	COL K3	3.67	231.4	141.62	227.76	129.38	1720.00	1072.50	110149.42	1.0000	4.75	
3F1	COL K3	3.67	231.4	141.75	227.76	128.78	1720.00	1072.50	110149.42	1.0000	4.75	
3F1	COL K3	3.67	231.4	141.86	227.76	128.18	1720.00	1072.50	110149.42	1.0000	4.76	
3F1	COL K3	3.67	231.4	141.82	227.76	127.57	1720.00	1072.50	110149.42	1.0000	4.77	
3F1	COL K3	3.67	231.4	141.98	227.76	126.97	1720.00	1072.50	110149.42	1.0000	4.78	
3F1	COL K3	3.67	231.4	142.10	227.76	126.37	1720.00	1072.50	110149.42	1.0000	4.79	
3F1	COL K3	3.67	231.4	142.21	227.76	125.77	1720.00	1072.50	110149.42	1.0000	4.80	
3F1	COL K3	3.67	231.4	142.32	227.76	125.17	1720.00	1072.50	110149.42	1.0000	4.81	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _e		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
3F1	COL K3	3.67	231.4	142.44	227.76	124.57	1720.00	1072.50	110149.42	1.0000	4.81	
3F1	COL K3	3.67	231.4	142.55	227.76	123.96	1720.00	1072.50	110149.42	1.0000	4.82	
3F1	COL K3	3.67	231.4	142.66	227.76	123.36	1720.00	1072.50	110149.42	1.0000	4.83	
3F1	COL K3	3.67	231.4	142.65	227.76	122.76	1720.00	1072.50	110149.42	1.0000	4.84	
3F1	COL K3	3.67	231.4	142.76	227.76	122.16	1720.00	1072.50	110149.42	1.0000	4.85	
3F1	COL K3	3.67	231.4	142.76	227.76	122.16	1720.00	1072.50	110149.42	1.0000	4.85	
3F1	COL K3	3.67	231.4	142.87	227.76	121.56	1720.00	1072.50	110149.42	1.0000	4.86	
3F1	COL K3	3.67	231.4	142.98	227.76	120.96	1720.00	1072.50	110149.42	1.0000	4.87	
3F1	COL K3	3.67	231.4	143.07	227.76	120.35	1720.00	1072.50	110149.42	1.0000	4.88	
3F1	COL K3	3.67	231.4	143.17	227.76	119.75	1720.00	1072.50	110149.42	1.0000	4.89	
3F1	COL K3	3.67	231.4	143.27	227.76	119.15	1720.00	1072.50	110149.42	1.0000	4.90	
3F1	COL K3	3.67	231.4	143.29	227.76	118.55	1720.00	1072.50	110149.42	1.0000	4.91	
3F1	COL K3	3.67	231.4	143.40	227.76	117.95	1720.00	1072.50	110149.42	1.0000	4.92	
3F1	COL K3	3.67	231.4	143.49	227.76	117.34	1720.00	1072.50	110149.42	1.0000	4.93	
3F1	COL K3	3.67	231.4	143.59	227.76	116.74	1720.00	1072.50	110149.42	1.0000	4.93	
3F1	COL K3	3.67	231.4	143.65	227.76	116.14	1720.00	1072.50	110149.42	1.0000	4.94	
3F1	COL K3	3.67	231.4	143.73	227.76	115.54	1720.00	1072.50	110149.42	1.0000	4.95	
3F1	COL K3	3.67	231.4	143.78	227.76	114.94	1720.00	1072.50	110149.42	1.0000	4.96	
3F1	COL K3	3.67	231.4	143.87	227.76	114.34	1720.00	1072.50	110149.42	1.0000	4.97	
3F1	COL K3	3.67	231.4	143.96	227.76	113.73	1720.00	1072.50	110149.42	1.0000	4.98	
3F1	COL K3	3.67	231.4	144.05	227.76	113.13	1720.00	1072.50	110149.42	1.0000	4.99	
3F1	COL K3	3.67	231.4	144.08	227.76	112.53	1720.00	1072.50	110149.42	1.0000	5.00	
3F1	COL K3	3.67	231.4	144.16	227.76	111.93	1720.00	1072.50	110149.42	1.0000	5.01	
3F1	COL K3	3.67	231.4	144.23	227.76	111.33	1720.00	1072.50	110149.42	1.0000	5.02	
3F1	COL K3	3.67	231.4	144.31	227.76	110.73	1720.00	1072.50	110149.42	1.0000	5.03	
3F1	COL K3	3.67	231.4	144.39	227.76	110.12	1720.00	1072.50	110149.42	1.0000	5.04	
3F1	COL K3	3.67	231.4	144.39	227.76	109.52	1720.00	1072.50	110149.42	1.0000	5.06	
3F1	COL K3	3.67	231.4	144.47	227.76	108.92	1720.00	1072.50	110149.42	1.0000	5.07	
3F1	COL K3	3.67	231.4	144.55	227.76	108.32	1720.00	1072.50	110149.42	1.0000	5.08	
3F1	COL K3	3.67	231.4	144.63	227.76	107.72	1720.00	1072.50	110149.42	1.0000	5.09	
3F1	COL K3	3.67	231.4	144.70	227.76	107.11	1720.00	1072.50	110149.42	1.0000	5.10	
3F1	COL K3	3.67	231.4	144.78	227.76	106.51	1720.00	1072.50	110149.42	1.0000	5.11	
3F1	COL K3	3.67	231.4	144.74	227.76	105.91	1720.00	1072.50	110149.42	1.0000	5.12	
3F1	COL K3	3.67	231.4	144.85	227.76	105.31	1720.00	1072.50	110149.42	1.0000	5.13	
3F1	COL K3	3.67	231.4	144.92	227.76	104.71	1720.00	1072.50	110149.42	1.0000	5.14	
3F1	COL K3	3.67	231.4	144.98	227.76	104.11	1720.00	1072.50	110149.42	1.0000	5.15	
3F1	COL K3	3.67	231.4	145.05	227.76	103.50	1720.00	1072.50	110149.42	1.0000	5.16	
3F1	COL K3	3.67	231.4	145.00	227.76	102.90	1720.00	1072.50	110149.42	1.0000	5.18	
3F1	COL K3	3.67	231.4	145.12	227.76	102.30	1720.00	1072.50	110149.42	1.0000	5.19	
3F1	COL K3	3.67	231.4	145.18	227.76	101.70	1720.00	1072.50	110149.42	1.0000	5.20	
3F1	COL K3	3.67	231.4	145.24	227.76	101.10	1720.00	1072.50	110149.42	1.0000	5.21	
3F1	COL K3	3.67	231.4	145.30	227.76	100.50	1720.00	1072.50	110149.42	1.0000	5.22	
3F1	COL K3	3.67	231.4	145.21	227.76	99.89	1720.00	1072.50	110149.42	1.0000	5.23	
3F1	COL K3	3.67	231.4	145.36	227.76	99.29	1720.00	1072.50	110149.42	1.0000	5.24	
3F1	COL K3	3.67	231.4	145.41	227.76	98.69	1720.00	1072.50	110149.42	1.0000	5.25	
3F1	COL K3	3.67	231.4	145.47	227.76	98.09	1720.00	1072.50	110149.42	1.0000	5.27	
3F1	COL K3	3.67	231.4	145.52	227.76	97.49	1720.00	1072.50	110149.42	1.0000	5.28	
3F1	COL K3	3.67	231.4	145.41	227.76	96.88	1720.00	1072.50	110149.42	1.0000	5.29	
3F1	COL K3	3.67	231.4	145.57	227.76	96.28	1720.00	1072.50	110149.42	1.0000	5.30	
3F1	COL K3	3.67	231.4	145.62	227.76	95.68	1720.00	1072.50	110149.42	1.0000	5.31	
3F1	COL K3	3.67	231.4	145.66	227.76	95.08	1720.00	1072.50	110149.42	1.0000	5.33	
3F1	COL K3	3.67	231.4	145.71	227.76	94.48	1720.00	1072.50	110149.42	1.0000	5.34	
3F1	COL K3	3.67	231.4	145.57	227.76	93.88	1720.00	1072.50	110149.42	1.0000	5.35	
3F1	COL K3	3.67	231.4	145.75	227.76	93.27	1720.00	1072.50	110149.42	1.0000	5.36	
3F1	COL K3	3.67	231.4	145.79	227.76	92.67	1720.00	1072.50	110149.42	1.0000	5.38	
3F1	COL K3	3.67	231.4	145.83	227.76	92.07	1720.00	1072.50	110149.42	1.0000	5.39	
3F1	COL K3	3.67	231.4	145.86	227.76	91.47	1720.00	1072.50	110149.42	1.0000	5.40	
3F1	COL K3	3.67	231.4	145.70	227.76	90.87	1720.00	1072.50	110149.42	1.0000	5.42	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
4F1	COL K3	3.67	231.4	149.62	227.76	196.78	1720.00	1072.50	110149.42	1.0000	3.73
4F1	COL K3	3.67	231.4	149.88	227.76	196.18	1720.00	1072.50	110149.42	1.0000	3.73
4F1	COL K3	3.67	231.4	150.15	227.76	195.57	1720.00	1072.50	110149.42	1.0000	3.73
4F1	COL K3	3.67	231.4	150.67	227.76	194.97	1720.00	1072.50	110149.42	1.0000	3.73
4F1	COL K3	3.67	231.4	150.93	227.76	194.37	1720.00	1072.50	110149.42	1.0000	3.74
4F1	COL K3	3.67	231.4	151.18	227.76	193.77	1720.00	1072.50	110149.42	1.0000	3.74
4F1	COL K3	3.67	231.4	151.44	227.76	193.17	1720.00	1072.50	110149.42	1.0000	3.74
4F1	COL K3	3.67	231.4	151.89	227.76	192.57	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K3	3.67	231.4	152.13	227.76	191.96	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K3	3.67	231.4	152.45	227.76	191.36	1720.00	1072.50	110149.42	1.0000	3.75
4F1	COL K3	3.67	231.4	152.70	227.76	190.76	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K3	3.67	231.4	153.11	227.76	190.16	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K3	3.67	231.4	153.36	227.76	189.56	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K3	3.67	231.4	153.60	227.76	188.96	1720.00	1072.50	110149.42	1.0000	3.76
4F1	COL K3	3.67	231.4	153.84	227.76	188.35	1720.00	1072.50	110149.42	1.0000	3.77
4F1	COL K3	3.67	231.4	154.08	227.76	187.75	1720.00	1072.50	110149.42	1.0000	3.77
4F1	COL K3	3.67	231.4	154.55	227.76	187.15	1720.00	1072.50	110149.42	1.0000	3.77
4F1	COL K3	3.67	231.4	154.78	227.76	186.55	1720.00	1072.50	110149.42	1.0000	3.78
4F1	COL K3	3.67	231.4	155.01	227.76	185.95	1720.00	1072.50	110149.42	1.0000	3.78
4F1	COL K3	3.67	231.4	155.24	227.76	185.34	1720.00	1072.50	110149.42	1.0000	3.79
4F1	COL K3	3.67	231.4	155.47	227.76	184.74	1720.00	1072.50	110149.42	1.0000	3.79
4F1	COL K3	3.67	231.4	155.70	227.76	184.14	1720.00	1072.50	110149.42	1.0000	3.79
4F1	COL K3	3.67	231.4	155.92	227.76	183.54	1720.00	1072.50	110149.42	1.0000	3.80
4F1	COL K3	3.67	231.4	156.15	227.76	182.94	1720.00	1072.50	110149.42	1.0000	3.80
4F1	COL K3	3.67	231.4	156.37	227.76	182.34	1720.00	1072.50	110149.42	1.0000	3.81
4F1	COL K3	3.67	231.4	156.59	227.76	181.73	1720.00	1072.50	110149.42	1.0000	3.81
4F1	COL K3	3.67	231.4	156.81	227.76	181.13	1720.00	1072.50	110149.42	1.0000	3.81
4F1	COL K3	3.67	231.4	157.24	227.76	180.53	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K3	3.67	231.4	157.46	227.76	179.93	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K3	3.67	231.4	157.67	227.76	179.33	1720.00	1072.50	110149.42	1.0000	3.82
4F1	COL K3	3.67	231.4	157.88	227.76	178.73	1720.00	1072.50	110149.42	1.0000	3.83
4F1	COL K3	3.67	231.4	158.09	227.76	178.12	1720.00	1072.50	110149.42	1.0000	3.83
4F1	COL K3	3.67	231.4	158.30	227.76	177.52	1720.00	1072.50	110149.42	1.0000	3.84
4F1	COL K3	3.67	231.4	158.51	227.76	176.92	1720.00	1072.50	110149.42	1.0000	3.84
4F1	COL K3	3.67	231.4	158.71	227.76	176.32	1720.00	1072.50	110149.42	1.0000	3.85
4F1	COL K3	3.67	231.4	158.92	227.76	175.72	1720.00	1072.50	110149.42	1.0000	3.85
4F1	COL K3	3.67	231.4	159.11	227.76	175.11	1720.00	1072.50	110149.42	1.0000	3.85
4F1	COL K3	3.67	231.4	158.87	227.76	174.51	1720.00	1072.50	110149.42	1.0000	3.86
4F1	COL K3	3.67	231.4	159.32	227.76	173.91	1720.00	1072.50	110149.42	1.0000	3.87
4F1	COL K3	3.67	231.4	159.52	227.76	173.31	1720.00	1072.50	110149.42	1.0000	3.87
4F1	COL K3	3.67	231.4	159.71	227.76	172.71	1720.00	1072.50	110149.42	1.0000	3.87
4F1	COL K3	3.67	231.4	159.91	227.76	172.11	1720.00	1072.50	110149.42	1.0000	3.88
4F1	COL K3	3.67	231.4	160.10	227.76	171.50	1720.00	1072.50	110149.42	1.0000	3.88
4F1	COL K3	3.67	231.4	160.29	227.76	170.90	1720.00	1072.50	110149.42	1.0000	3.89
4F1	COL K3	3.67	231.4	160.48	227.76	170.30	1720.00	1072.50	110149.42	1.0000	3.89
4F1	COL K3	3.67	231.4	160.67	227.76	169.70	1720.00	1072.50	110149.42	1.0000	3.90
4F1	COL K3	3.67	231.4	160.85	227.76	169.10	1720.00	1072.50	110149.42	1.0000	3.90
4F1	COL K3	3.67	231.4	161.04	227.76	168.50	1720.00	1072.50	110149.42	1.0000	3.91
4F1	COL K3	3.67	231.4	161.23	227.76	167.89	1720.00	1072.50	110149.42	1.0000	3.91
4F1	COL K3	3.67	231.4	161.41	227.76	167.29	1720.00	1072.50	110149.42	1.0000	3.92
4F1	COL K3	3.67	231.4	161.24	227.76	166.69	1720.00	1072.50	110149.42	1.0000	3.93
4F1	COL K3	3.67	231.4	161.59	227.76	166.09	1720.00	1072.50	110149.42	1.0000	3.93
4F1	COL K3	3.67	231.4	161.76	227.76	165.49	1720.00	1072.50	110149.42	1.0000	3.93
4F1	COL K3	3.67	231.4	161.94	227.76	164.88	1720.00	1072.50	110149.42	1.0000	3.94
4F1	COL K3	3.67	231.4	162.12	227.76	164.28	1720.00	1072.50	110149.42	1.0000	3.94
4F1	COL K3	3.67	231.4	162.28	227.76	163.68	1720.00	1072.50	110149.42	1.0000	3.95
4F1	COL K3	3.67	231.4	162.46	227.76	163.08	1720.00	1072.50	110149.42	1.0000	3.95
4F1	COL K3	3.67	231.4	162.63	227.76	162.48	1720.00	1072.50	110149.42	1.0000	3.96

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
4F1	COL K3	3.67	231.4	162.51	227.76	161.88	1720.00	1072.50	110149.42	1.0000	3.97	
4F1	COL K3	3.67	231.4	162.80	227.76	161.27	1720.00	1072.50	110149.42	1.0000	3.97	
4F1	COL K3	3.67	231.4	162.96	227.76	160.67	1720.00	1072.50	110149.42	1.0000	3.98	
4F1	COL K3	3.67	231.4	163.13	227.76	160.07	1720.00	1072.50	110149.42	1.0000	3.98	
4F1	COL K3	3.67	231.4	163.28	227.76	159.47	1720.00	1072.50	110149.42	1.0000	3.99	
4F1	COL K3	3.67	231.4	163.45	227.76	158.87	1720.00	1072.50	110149.42	1.0000	3.99	
4F1	COL K3	3.67	231.4	163.36	227.76	158.27	1720.00	1072.50	110149.42	1.0000	4.00	
4F1	COL K3	3.67	231.4	163.60	227.76	157.66	1720.00	1072.50	110149.42	1.0000	4.00	
4F1	COL K3	3.67	231.4	163.77	227.76	157.06	1720.00	1072.50	110149.42	1.0000	4.01	
4F1	COL K3	3.67	231.4	163.92	227.76	156.46	1720.00	1072.50	110149.42	1.0000	4.02	
4F1	COL K3	3.67	231.4	164.07	227.76	155.86	1720.00	1072.50	110149.42	1.0000	4.02	
4F1	COL K3	3.67	231.4	164.22	227.76	155.26	1720.00	1072.50	110149.42	1.0000	4.03	
4F1	COL K3	3.67	231.4	164.37	227.76	154.66	1720.00	1072.50	110149.42	1.0000	4.04	
4F1	COL K3	3.67	231.4	164.52	227.76	154.05	1720.00	1072.50	110149.42	1.0000	4.05	
4F1	COL K3	3.67	231.4	164.66	227.76	153.45	1720.00	1072.50	110149.42	1.0000	4.05	
4F1	COL K3	3.67	231.4	164.81	227.76	152.85	1720.00	1072.50	110149.42	1.0000	4.06	
4F1	COL K3	3.67	231.4	164.95	227.76	152.25	1720.00	1072.50	110149.42	1.0000	4.06	
4F1	COL K3	3.67	231.4	165.09	227.76	151.64	1720.00	1072.50	110149.42	1.0000	4.07	
4F1	COL K3	3.67	231.4	165.23	227.76	151.04	1720.00	1072.50	110149.42	1.0000	4.08	
4F1	COL K3	3.67	231.4	165.37	227.76	150.44	1720.00	1072.50	110149.42	1.0000	4.08	
4F1	COL K3	3.67	231.4	165.50	227.76	149.84	1720.00	1072.50	110149.42	1.0000	4.09	
4F1	COL K3	3.67	231.4	165.63	227.76	149.24	1720.00	1072.50	110149.42	1.0000	4.09	
4F1	COL K3	3.67	231.4	165.76	227.76	148.64	1720.00	1072.50	110149.42	1.0000	4.10	
4F1	COL K3	3.67	231.4	165.89	227.76	148.04	1720.00	1072.50	110149.42	1.0000	4.10	
4F1	COL K3	3.67	231.4	166.02	227.76	147.43	1720.00	1072.50	110149.42	1.0000	4.11	
4F1	COL K3	3.67	231.4	166.14	227.76	146.83	1720.00	1072.50	110149.42	1.0000	4.11	
4F1	COL K3	3.67	231.4	166.27	227.76	146.23	1720.00	1072.50	110149.42	1.0000	4.13	
4F1	COL K3	3.67	231.4	166.39	227.76	145.63	1720.00	1072.50	110149.42	1.0000	4.13	
4F1	COL K3	3.67	231.4	166.51	227.76	145.03	1720.00	1072.50	110149.42	1.0000	4.13	
4F1	COL K3	3.67	231.4	166.62	227.76	144.42	1720.00	1072.50	110149.42	1.0000	4.14	
4F1	COL K3	3.67	231.4	166.74	227.76	143.82	1720.00	1072.50	110149.42	1.0000	4.14	
4F1	COL K3	3.67	231.4	166.85	227.76	143.22	1720.00	1072.50	110149.42	1.0000	4.15	
4F1	COL K3	3.67	231.4	166.97	227.76	142.62	1720.00	1072.50	110149.42	1.0000	4.15	
4F1	COL K3	3.67	231.4	167.07	227.76	142.02	1720.00	1072.50	110149.42	1.0000	4.16	
4F1	COL K3	3.67	231.4	167.18	227.76	141.42	1720.00	1072.50	110149.42	1.0000	4.17	
4F1	COL K3	3.67	231.4	167.29	227.76	140.81	1720.00	1072.50	110149.42	1.0000	4.17	
4F1	COL K3	3.67	231.4	167.39	227.76	140.21	1720.00	1072.50	110149.42	1.0000	4.18	
4F1	COL K3	3.67	231.4	167.40	227.76	139.61	1720.00	1072.50	110149.42	1.0000	4.19	
4F1	COL K3	3.67	231.4	167.51	227.76	139.01	1720.00	1072.50	110149.42	1.0000	4.19	
4F1	COL K3	3.67	231.4	167.59	227.76	138.41	1720.00	1072.50	110149.42	1.0000	4.20	
4F1	COL K3	3.67	231.4	167.62	227.76	137.80	1720.00	1072.50	110149.42	1.0000	4.21	
4F1	COL K3	3.67	231.4	167.72	227.76	137.20	1720.00	1072.50	110149.42	1.0000	4.21	
4F1	COL K3	3.67	231.4	167.83	227.76	136.60	1720.00	1072.50	110149.42	1.0000	4.22	
4F1	COL K3	3.67	231.4	167.94	227.76	136.00	1720.00	1072.50	110149.42	1.0000	4.23	
4F1	COL K3	3.67	231.4	168.03	227.76	135.40	1720.00	1072.50	110149.42	1.0000	4.24	
4F1	COL K3	3.67	231.4	168.13	227.76	134.80	1720.00	1072.50	110149.42	1.0000	4.24	
4F1	COL K3	3.67	231.4	168.23	227.76	134.19	1720.00	1072.50	110149.42	1.0000	4.25	
4F1	COL K3	3.67	231.4	168.32	227.76	133.59	1720.00	1072.50	110149.42	1.0000	4.26	
4F1	COL K3	3.67	231.4	168.31	227.76	132.99	1720.00	1072.50	110149.42	1.0000	4.26	
4F1	COL K3	3.67	231.4	168.42	227.76	132.39	1720.00	1072.50	110149.42	1.0000	4.27	
4F1	COL K3	3.67	231.4	168.51	227.76	131.79	1720.00	1072.50	110149.42	1.0000	4.28	
4F1	COL K3	3.67	231.4	168.59	227.76	131.19	1720.00	1072.50	110149.42	1.0000	4.28	
4F1	COL K3	3.67	231.4	168.68	227.76	130.58	1720.00	1072.50	110149.42	1.0000	4.29	
4F1	COL K3	3.67	231.4	168.77	227.76	129.98	1720.00	1072.50	110149.42	1.0000	4.30	
4F1	COL K3	3.67	231.4	168.85	227.76	129.38	1720.00	1072.50	110149.42	1.0000	4.31	
4F1	COL K3	3.67	231.4	168.93	227.76	128.78	1720.00	1072.50	110149.42	1.0000	4.32	
4F1	COL K3	3.67	231.4	169.01	227.76	128.18	1720.00	1072.50	110149.42	1.0000	4.33	
4F1	COL K3	3.67	231.4	169.09	227.76	127.57	1720.00	1072.50	110149.42	1.0000	4.34	
4F1	COL K3	3.67	231.4	169.17	227.76	126.97	1720.00	1072.50	110149.42	1.0000	4.35	
4F1	COL K3	3.67	231.4	169.25	227.76	126.37	1720.00	1072.50	110149.42	1.0000	4.35	
4F1	COL K3	3.67	231.4	169.33	227.76	125.77	1720.00	1072.50	110149.42	1.0000	4.36	
4F1	COL K3	3.67	231.4	169.41	227.76	125.17	1720.00	1072.50	110149.42	1.0000	4.36	
4F1	COL K3	3.67	231.4	169.49	227.76	124.57	1720.00	1072.50	110149.42	1.0000	4.38	
4F1	COL K3	3.67	231.4	169.57	227.76	123.96	1720.00	1072.50	110149.42	1.0000	4.38	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _e		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.26	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
4F1	COL K3	3.67	231.4	168.84	227.76	123.36	1720.00	1072.50	110149.42	1.0000	4.39
4F1	COL K3	3.67	231.4	168.92	227.76	122.16	1720.00	1072.50	110149.42	1.0000	4.41
4F1	COL K3	3.67	231.4	169.00	227.76	121.56	1720.00	1072.50	110149.42	1.0000	4.42
4F1	COL K3	3.67	231.4	169.08	227.76	120.35	1720.00	1072.50	110149.42	1.0000	4.43
4F1	COL K3	3.67	231.4	169.15	227.76	119.75	1720.00	1072.50	110149.42	1.0000	4.44
4F1	COL K3	3.67	231.4	169.22	227.76	119.15	1720.00	1072.50	110149.42	1.0000	4.45
4F1	COL K3	3.67	231.4	169.29	227.76	117.95	1720.00	1072.50	110149.42	1.0000	4.47
4F1	COL K3	3.67	231.4	169.36	227.76	117.34	1720.00	1072.50	110149.42	1.0000	4.47
4F1	COL K3	3.67	231.4	169.42	227.76	116.14	1720.00	1072.50	110149.42	1.0000	4.49
4F1	COL K3	3.67	231.4	169.48	227.76	115.54	1720.00	1072.50	110149.42	1.0000	4.50
4F1	COL K3	3.67	231.4	169.54	227.76	114.94	1720.00	1072.50	110149.42	1.0000	4.51
4F1	COL K3	3.67	231.4	169.60	227.76	113.73	1720.00	1072.50	110149.42	1.0000	4.53
4F1	COL K3	3.67	231.4	169.66	227.76	113.13	1720.00	1072.50	110149.42	1.0000	4.53
4F1	COL K3	3.67	231.4	169.71	227.76	111.93	1720.00	1072.50	110149.42	1.0000	4.55
4F1	COL K3	3.67	231.4	169.76	227.76	111.33	1720.00	1072.50	110149.42	1.0000	4.56
4F1	COL K3	3.67	231.4	169.81	227.76	110.12	1720.00	1072.50	110149.42	1.0000	4.58
4F1	COL K3	3.67	231.4	169.86	227.76	109.52	1720.00	1072.50	110149.42	1.0000	4.59
4F1	COL K3	3.67	231.4	169.90	227.76	108.92	1720.00	1072.50	110149.42	1.0000	4.60
4F1	COL K3	3.67	231.4	169.95	227.76	107.72	1720.00	1072.50	110149.42	1.0000	4.62
4F1	COL K3	3.67	231.4	169.99	227.76	107.11	1720.00	1072.50	110149.42	1.0000	4.63
4F1	COL K3	3.67	231.4	170.03	227.76	105.91	1720.00	1072.50	110149.42	1.0000	4.64
4F1	COL K3	3.67	231.4	170.07	227.76	105.31	1720.00	1072.50	110149.42	1.0000	4.65
4F1	COL K3	3.67	231.4	170.10	227.76	104.71	1720.00	1072.50	110149.42	1.0000	4.66
4F1	COL K3	3.67	231.4	169.75	227.76	104.11	1720.00	1072.50	110149.42	1.0000	4.68
4F1	COL K3	3.67	231.4	170.13	227.76	103.50	1720.00	1072.50	110149.42	1.0000	4.68
4F1	COL K3	3.67	231.4	170.16	227.76	102.90	1720.00	1072.50	110149.42	1.0000	4.69
4F1	COL K3	3.67	231.4	170.19	227.76	101.70	1720.00	1072.50	110149.42	1.0000	4.71
4F1	COL K3	3.67	231.4	170.21	227.76	101.10	1720.00	1072.50	110149.42	1.0000	4.72
4F1	COL K3	3.67	231.4	170.23	227.76	99.89	1720.00	1072.50	110149.42	1.0000	4.74
4F1	COL K3	3.67	231.4	170.25	227.76	99.29	1720.00	1072.50	110149.42	1.0000	4.75
4F1	COL K3	3.67	231.4	170.27	227.76	98.69	1720.00	1072.50	110149.42	1.0000	4.76
4F1	COL K3	3.67	231.4	169.85	227.76	98.09	1720.00	1072.50	110149.42	1.0000	4.78
4F1	COL K3	3.67	231.4	170.29	227.76	97.49	1720.00	1072.50	110149.42	1.0000	4.78
4F1	COL K3	3.67	231.4	170.30	227.76	96.88	1720.00	1072.50	110149.42	1.0000	4.79
4F1	COL K3	3.67	231.4	170.31	227.76	95.68	1720.00	1072.50	110149.42	1.0000	4.81
4F1	COL K3	3.67	231.4	170.32	227.76	95.08	1720.00	1072.50	110149.42	1.0000	4.82
4F1	COL K3	3.67	231.4	170.32	227.76	93.88	1720.00	1072.50	110149.42	1.0000	4.85
4F1	COL K3	3.67	231.4	170.33	227.76	93.27	1720.00	1072.50	110149.42	1.0000	4.86
4F1	COL K3	3.67	231.4	170.33	227.76	92.67	1720.00	1072.50	110149.42	1.0000	4.87
4F1	COL K3	3.67	231.4	169.84	227.76	92.07	1720.00	1072.50	110149.42	1.0000	4.89
5C1	COL K3	3.67	231.4	156.84	227.76	204.60	1720.00	1072.50	110149.42	1.0000	3.57
5C1	COL K3	3.67	231.4	157.93	227.76	204.00	1720.00	1072.50	110149.42	1.0000	3.56
5C1	COL K3	3.67	231.4	159.38	227.76	203.40	1720.00	1072.50	110149.42	1.0000	3.56
5C1	COL K3	3.67	231.4	160.46	227.76	202.80	1720.00	1072.50	110149.42	1.0000	3.55
5C1	COL K3	3.67	231.4	166.74	227.76	202.19	1720.00	1072.50	110149.42	1.0000	3.50
5C1	COL K3	3.67	231.4	170.61	227.76	201.59	1720.00	1072.50	110149.42	1.0000	3.46
5C1	COL K3	3.67	231.4	173.42	227.76	200.99	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	175.81	227.76	200.39	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	177.32	227.76	199.79	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	177.88	227.76	199.19	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	178.42	227.76	198.58	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	178.97	227.76	197.98	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	179.50	227.76	197.38	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	180.03	227.76	196.78	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	180.54	227.76	196.18	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	181.05	227.76	195.57	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	181.55	227.76	194.97	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	182.05	227.76	194.37	1720.00	1072.50	110149.42	1.0000	3.42

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.26	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
5C1	COL K3	3.67	231.4	182.78	227.76	193.77	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	183.25	227.76	193.17	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	183.71	227.76	192.57	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	184.17	227.76	191.96	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	184.62	227.76	191.36	1720.00	1072.50	110149.42	1.0000	3.42
5C1	COL K3	3.67	231.4	185.06	227.76	190.76	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	185.50	227.76	190.16	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	185.92	227.76	189.56	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	186.34	227.76	188.96	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	186.74	227.76	188.35	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	187.18	227.76	187.75	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	187.41	227.76	187.15	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	188.00	227.76	186.55	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	188.93	227.76	185.95	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	189.41	227.76	185.34	1720.00	1072.50	110149.42	1.0000	3.43
5C1	COL K3	3.67	231.4	189.73	227.76	184.74	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	190.04	227.76	184.14	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	190.50	227.76	183.54	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	190.78	227.76	182.94	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	191.20	227.76	182.34	1720.00	1072.50	110149.42	1.0000	3.44
5C1	COL K3	3.67	231.4	191.59	227.76	181.73	1720.00	1072.50	110149.42	1.0000	3.45
5C1	COL K3	3.67	231.4	191.84	227.76	181.13	1720.00	1072.50	110149.42	1.0000	3.45
5C1	COL K3	3.67	231.4	192.20	227.76	180.53	1720.00	1072.50	110149.42	1.0000	3.45
5C1	COL K3	3.67	231.4	192.42	227.76	179.93	1720.00	1072.50	110149.42	1.0000	3.45
5C1	COL K3	3.67	231.4	192.74	227.76	179.33	1720.00	1072.50	110149.42	1.0000	3.46
5C1	COL K3	3.67	231.4	193.04	227.76	178.73	1720.00	1072.50	110149.42	1.0000	3.46
5C1	COL K3	3.67	231.4	193.22	227.76	178.12	1720.00	1072.50	110149.42	1.0000	3.46
5C1	COL K3	3.67	231.4	193.49	227.76	177.52	1720.00	1072.50	110149.42	1.0000	3.47
5C1	COL K3	3.67	231.4	193.72	227.76	176.92	1720.00	1072.50	110149.42	1.0000	3.47
5C1	COL K3	3.67	231.4	193.87	227.76	176.32	1720.00	1072.50	110149.42	1.0000	3.47
5C1	COL K3	3.67	231.4	194.07	227.76	175.72	1720.00	1072.50	110149.42	1.0000	3.48
5C1	COL K3	3.67	231.4	194.25	227.76	175.11	1720.00	1072.50	110149.42	1.0000	3.48
5C1	COL K3	3.67	231.4	194.36	227.76	174.51	1720.00	1072.50	110149.42	1.0000	3.49
5C1	COL K3	3.67	231.4	194.51	227.76	173.91	1720.00	1072.50	110149.42	1.0000	3.49
5C1	COL K3	3.67	231.4	194.63	227.76	173.31	1720.00	1072.50	110149.42	1.0000	3.49
5C1	COL K3	3.67	231.4	194.70	227.76	172.71	1720.00	1072.50	110149.42	1.0000	3.50
5C1	COL K3	3.67	231.4	194.79	227.76	172.11	1720.00	1072.50	110149.42	1.0000	3.50
5C1	COL K3	3.67	231.4	194.85	227.76	171.50	1720.00	1072.50	110149.42	1.0000	3.51
5C1	COL K3	3.67	231.4	194.88	227.76	170.90	1720.00	1072.50	110149.42	1.0000	3.51
5C1	COL K3	3.67	231.4	194.91	227.76	170.30	1720.00	1072.50	110149.42	1.0000	3.52
5C1	COL K3	3.67	231.4	194.92	227.76	169.70	1720.00	1072.50	110149.42	1.0000	3.53
5C1	COL K3	3.67	231.4	194.92	227.76	169.10	1720.00	1072.50	110149.42	1.0000	3.53
5C1	COL K3	3.67	231.4	194.92	227.76	169.10	1720.00	1072.50	110149.42	1.0000	3.53
5C1	COL K3	3.67	231.4	194.91	227.76	168.50	1720.00	1072.50	110149.42	1.0000	3.54
5C1	COL K3	3.67	231.4	194.89	227.76	167.89	1720.00	1072.50	110149.42	1.0000	3.54
5C1	COL K3	3.67	231.4	194.86	227.76	167.29	1720.00	1072.50	110149.42	1.0000	3.55
5C1	COL K3	3.67	231.4	195.13	227.76	166.69	1720.00	1072.50	110149.42	1.0000	3.55
5C1	COL K3	3.67	231.4	195.26	227.76	166.09	1720.00	1072.50	110149.42	1.0000	3.56
5C1	COL K3	3.67	231.4	195.51	227.76	165.49	1720.00	1072.50	110149.42	1.0000	3.56
5C1	COL K3	3.67	231.4	195.63	227.76	164.88	1720.00	1072.50	110149.42	1.0000	3.56
5C1	COL K3	3.67	231.4	195.75	227.76	164.28	1720.00	1072.50	110149.42	1.0000	3.57
5C1	COL K3	3.67	231.4	195.98	227.76	163.68	1720.00	1072.50	110149.42	1.0000	3.57
5C1	COL K3	3.67	231.4	196.09	227.76	163.08	1720.00	1072.50	110149.42	1.0000	3.58
5C1	COL K3	3.67	231.4	196.20	227.76	162.48	1720.00	1072.50	110149.42	1.0000	3.58
5C1	COL K3	3.67	231.4	196.41	227.76	161.88	1720.00	1072.50	110149.42	1.0000	3.59
5C1	COL K3	3.67	231.4	196.51	227.76	161.27	1720.00	1072.50	110149.42	1.0000	3.59
5C1	COL K3	3.67	231.4	196.61	227.76	160.67	1720.00	1072.50	110149.42	1.0000	3.60
5C1	COL K3	3.67	231.4	196.80	227.76	160.07	1720.00	1072.50	110149.42	1.0000	3.60

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section K - South Frame Column Ratings



Calculated:

CTG

2/22/2012

Checked:

NRF

2/27/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _c	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
5C1	COL K3	3.67	231.4	196.89	227.76	159.47	1720.00	1072.50	110149.42	1.0000	3.60		
5C1	COL K3	3.67	231.4	197.07	227.76	158.87	1720.00	1072.50	110149.42	1.0000	3.61		
5C1	COL K3	3.67	231.4	197.16	227.76	158.27	1720.00	1072.50	110149.42	1.0000	3.61		
5C1	COL K3	3.67	231.4	197.31	227.76	157.66	1720.00	1072.50	110149.42	1.0000	3.62		
5C1	COL K3	3.67	231.4	197.39	227.76	157.06	1720.00	1072.50	110149.42	1.0000	3.62		
5C1	COL K3	3.67	231.4	197.47	227.76	156.46	1720.00	1072.50	110149.42	1.0000	3.63		
5C1	COL K3	3.67	231.4	197.61	227.76	155.86	1720.00	1072.50	110149.42	1.0000	3.63		
5C1	COL K3	3.67	231.4	197.67	227.76	155.26	1720.00	1072.50	110149.42	1.0000	3.64		
5C1	COL K3	3.67	231.4	197.80	227.76	154.65	1720.00	1072.50	110149.42	1.0000	3.64		
5C1	COL K3	3.67	231.4	197.86	227.76	154.05	1720.00	1072.50	110149.42	1.0000	3.65		
5C1	COL K3	3.67	231.4	197.97	227.76	153.45	1720.00	1072.50	110149.42	1.0000	3.65		
5C1	COL K3	3.67	231.4	198.02	227.76	152.85	1720.00	1072.50	110149.42	1.0000	3.66		
5C1	COL K3	3.67	231.4	198.11	227.76	152.25	1720.00	1072.50	110149.42	1.0000	3.66		
5C1	COL K3	3.67	231.4	198.16	227.76	151.65	1720.00	1072.50	110149.42	1.0000	3.67		
5C1	COL K3	3.67	231.4	198.24	227.76	151.04	1720.00	1072.50	110149.42	1.0000	3.68		
5C1	COL K3	3.67	231.4	198.28	227.76	150.44	1720.00	1072.50	110149.42	1.0000	3.68		
5C1	COL K3	3.67	231.4	198.34	227.76	149.84	1720.00	1072.50	110149.42	1.0000	3.69		
5C1	COL K3	3.67	231.4	198.37	227.76	149.24	1720.00	1072.50	110149.42	1.0000	3.69		
5C1	COL K3	3.67	231.4	198.42	227.76	148.64	1720.00	1072.50	110149.42	1.0000	3.70		
5C1	COL K3	3.67	231.4	198.45	227.76	148.04	1720.00	1072.50	110149.42	1.0000	3.70		
5C1	COL K3	3.67	231.4	198.46	227.76	147.43	1720.00	1072.50	110149.42	1.0000	3.71		
5C1	COL K3	3.67	231.4	198.49	227.76	146.83	1720.00	1072.50	110149.42	1.0000	3.72		
5C1	COL K3	3.67	231.4	198.49	227.76	146.23	1720.00	1072.50	110149.42	1.0000	3.72		
5C1	COL K3	3.67	231.4	198.49	227.76	146.23	1720.00	1072.50	110149.42	1.0000	3.72		
5C1	COL K3	3.67	231.4	198.50	227.76	145.63	1720.00	1072.50	110149.42	1.0000	3.73		

Load Case	Controlling RF
HS20 INV	1.75
HS20 OPER	2.92
2F1	6.53
3F1	4.29
4F1	3.70
5C1	3.42

FATIGUE LIFE CALCULATIONS

SECTION K



Made By: DWC
Checked By: CTG

Date: 3/3/2012
Date: 3/4/2012

Job No.: P402110046
Sheet No.: _____

Section K - Stringer Fatigue Summary

Redundant? Yes \rightarrow $f = 2.0$ (Calculate MEAN Life per ODOT BDM 402.2.6)
 $R_s = 1.00$
 Present ADTT (T_p) = 104 \rightarrow $T_N = 235$ (Future ADTT, assuming growth rate of 1%/year)
 Weight Ratios = 1.0 (W_p/W , W_N/W equal to unity per ODOT BDM 402.2.6)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_p = 18$ (Present age of the bridge in years) $Y_{f,MIN} = 180$ years

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

STRINGERS:	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	C (cycles per truck passage)	Y_1	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)				(years)	(years)	(years)
F1-1	68.88	214.66	4.43	C	12	1.80	1476.53	654.10	646.12
S1-1	45.49	155	4.05	C	12	1.50	2315.78	1025.88	1017.91
	25.68	64.85	5.46	B	33	1.50	2592.55	1148.49	1140.52
S2-1	60.23	134	6.20	C	12	1.50	644.65	285.58	277.60
	36.79	83.42	6.09	B	33	1.50	1876.74	831.39	823.41
S3-1	58.27	117	6.87	C	12	1.50	473.88	209.93	201.96
	38.27	94	5.62	B	33	1.50	2385.56	1056.80	1048.82
S4-1	59.41	117	7.01	C	12	1.50	447.12	198.07	190.10
S5-1	55.84	108	7.14	C	12	1.50	423.53	187.62	179.65
S6-1	36.16	108	4.62	C	12	1.50	1559.68	690.93	682.96
F2-1	56.47	404.17	1.93	C	12	1.80	17885.74	7923.33	7915.36
F1-2	68.34	214.66	4.39	C	12	1.80	1511.81	669.73	661.75
S1-2	43.29	155	3.85	C	12	1.50	2687.09	1190.37	1182.40
	27.74	53.65	7.14	B	33	1.50	1164.59	515.91	507.93
	29.01	56.39	7.10	B	33	1.50	1182.35	523.78	515.80
S2-2	57.13	134	5.88	C	12	1.50	755.39	334.64	326.66
	35.53	70.65	6.94	B	33	1.50	1265.71	560.70	552.73
	38.01	74.28	7.06	B	33	1.50	1201.45	532.24	524.26
S3-2	60.49	134	6.23	C	12	1.50	636.37	281.91	273.94
	41.66	97.36	5.90	B	33	1.50	2054.78	910.26	902.29
	43.38	99.57	6.01	B	33	1.50	1946.70	862.38	854.41
S4-2	58.89	134	6.06	C	12	1.50	689.67	305.52	297.55
S5-2	61.68	146	5.83	C	12	1.50	776.38	343.93	335.96
S6-2	39.28	146	3.71	C	12	1.50	3006.03	1331.66	1323.69
F2-2	75.63	404.17	2.58	C	12	1.80	7445.23	3298.21	3290.24

SECTION K



Made By: DWC Date: 3/5/2012
 Checked By: SFH Date: 3/5/2012

Job No.: P402110046
 Sheet No.: _____

Section K - Floorbeam Fatigue Summary

Redundant? No → $f = 1.0$ (Calculate SAFE Life per ODOT BDM 402.2.6)
 $R_s = 1.75$
 Present ADTT (T_p) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of 1%/year)
 Weight Ratios = 1.0 ($W_P/W, W_N/W$ equal to unity per ODOT BDM 402.2.6)
 $C = 1.00$ (Cycles per truck passage)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_P^{**} = \text{Varies}$ (Present age of the bridge in years) $Y_{f,MIN} = -7$ years

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

** Rehabbed floorbeams have a Y_p of 18 years.

GIRDER LOCATION	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	C	Y_P	Y_f	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)				(years)	(years)	(years)	(years)
Floorbeam 2 Top Cover Plate Weld	72.52	413.7	2.42	D	6	1.0	74	760.56	336.93	304.15
Floorbeam 2 North Bracket Top Cover Plate Weld	72.52	263.40	3.80	E	2.9	1.0	74	94.88	42.03	9.25
Floorbeam 2 South Bracket Top Cover Plate Weld	57.77	263.40	3.03	E	2.9	1.0	74	187.68	83.14	50.36
Floorbeam 3 Top Cover Plate Weld	58.65	413.7	1.96	D	6	1.0	74	1437.44	636.78	604.00
Floorbeam 3 North Bracket Top Cover Plate Weld	54.93	269.80	2.81	E	2.9	1.0	74	234.59	103.92	71.14
Floorbeam 3 South Bracket Top Cover Plate Weld	58.65	269.80	3.00	E	2.9	1.0	74	192.71	85.37	52.59
Floorbeam 4 Top Cover Plate Weld	81.00	413.7	2.70	D	6	1.0	74	545.78	241.78	209.00
Floorbeam 4 North Bracket Top Cover Plate Weld	74.33	269.80	3.80	E	2.9	1.0	74	94.66	41.93	9.15
Floorbeam 4 South Bracket Top Cover Plate Weld	81.00	269.80	4.14	E	2.9	1.0	74	73.17	32.41	-0.37
Floorbeam 5 Top Cover Plate Weld	85.45	413.7	2.85	D	6	1.0	74	464.81	205.91	173.13
Floorbeam 5 North Bracket Top Cover Plate Weld	85.45	263.40	4.48	E	2.9	1.0	74	57.98	25.69	-7.10
Floorbeam 5 South Bracket Top Cover Plate Weld	76.26	263.40	4.00	E	2.9	1.0	74	81.57	36.14	3.35
Floorbeam 1** Bottom Flange to Web Fillet Weld	171.99	438.13	5.42	B	33	1.0	18	372.43	164.99	157.01
Floorbeam 6** Bottom Flange to Web Fillet Weld	187.02	430.61	5.99	B	33	1.0	18	274.99	121.82	113.85

SECTION K



Made By: NRF Date: 3/3/2012
 Checked By: SFH Date: 3/5/2012

Job No.: P402110046
 Sheet No.: _____

Section K - North Girder Fatigue Summary

Redundant? No → $f = 1.0$ (Calculate SAFE Life per ODOT BDM 402.2.6)
 $R_s = 1.75$
 Present ADTT (T_p) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of 1%/year)
 Weight Ratios = 1.0 ($W_P/W, W_N/W$ equal to unity per ODOT BDM 402.2.6)
 $C = \text{Varies}$ (Cycles per truck passage)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_p = \text{74}$ (Present age of the bridge in years) $Y_{f,MIN} = 62 \text{ years}$

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

GIRDER LOCATION	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	C	Y_1	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)				(years)	(years)	(years)
Girder Splice Between Floorbeams 2 and 3 (Web and Flange)	69.3879095	1105.1	0.87	B	33	1.0	91008.62	40316.55	40283.76
Girder Splice Between Floorbeams 4 and 5 (Web and Flange)	53.845452	1105.1	0.67	B	33	1.0	194754.21	86275.53	86242.75
Welded Stiffener Under Floorbeam 3	238.954258	1105.1	2.98	C'	12	1.0	810.32	358.97	326.19
Welded Stiffener Under Floorbeam 4	284.044992	1105.1	3.55	C'	12	1.0	482.44	213.72	180.94
Welded Stiffener At Short End of Taper, Left Side of Column K6	258.37488	1105.1	3.23	C'	12	1.5	427.33	189.30	156.52
Welded Stiffener At Tall End of Taper At Column K6	355.98312	2349.7	2.09	C'	12	1.5	1570.56	695.75	662.97
Welded Stiffener At Short End of Taper, Right Side of Column K6	266.87448	1105.1	3.33	C'	12	1.0	581.67	257.68	224.90
Welded Stiffener At Short End of Taper, Left Side of Column K7	274.826706	1105.1	3.43	C'	12	1.0	532.63	235.95	203.17
Welded Stiffener At Tall End of Taper At Column K7	359.461674	2349.7	2.11	C'	12	1.5	1525.40	675.75	642.97
Welded Stiffener At Short End of Taper, Right Side of Column K7	255.77673	1105.1	3.19	C'	12	1.5	440.48	195.13	162.35
Riveted Web Plate At Column K6	258.37488	1105.1	3.23	D	6	1.5	213.66	94.65	61.87
Riveted Web Plate At Column K7	255.77673	1105.1	3.19	D	6	1.5	220.24	97.57	64.78

ID: SECTION K - UNIT 1

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
IGNORE IMPACT
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BRINCD 1 6 2 7 4 9 6 11 7 12 9 14 11 16 12 17 14 19 16 21 17 22 19 24
21 26 22 27 24 29 26 31 27 32 29 34 31 36 32 37 34 39
FPC 4.5
GCD-1 0. 0. 11.9765 -0.6784 23.9049 -1.2139 36.0724 -1.616 48.276
-1.8735
GCD-2 0. 2.9115 12.138 2.9115 24.276 2.9115 36.276 2.9115 48.276
2.9115
GCD-3 0. 9.0365 12.4135 9.0365 24.8271 9.0365 36.5516 9.0365 48.276
9.0365
GCD-4 0. 15.1615 12.6891 15.1615 25.3781 15.1615 36.8271 15.1615
48.276 15.1615
GCD-5 0. 21.2865 12.9646 21.2865 25.9292 21.2865 37.1026 21.2865
48.276 21.2865
GCD-6 0. 27.4115 13.2401 27.4115 26.4802 27.4115 37.3781 27.4115
48.276 27.4115
GCD-7 0. 33.5365 13.5156 33.5365 27.0312 33.5365 37.6536 33.5365
48.276 33.5365
GCD-8 0. 40.0469 13.7725 39.2474 27.4908 38.6441 37.8686 38.3155
48.276 38.0964
HNG-1 22.9
HNG-8 26.5
RAD-1 -1020.484
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5
SUP-2 1 3 5
SUP-3 1 3 5
SUP-4 1 3 5
SUP-5 1 3 5
SUP-6 1 3 5
SUP-7 1 3 5
SUP-8 1 3 5
WAC-1 0.131
WAC-2 0.141
WAC-3 0.141
WAC-4 0.141
WAC-5 0.141
WAC-6 0.141
WAC-7 0.141
WAC-8 0.138
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WDD-1 0.464
WDD-2 0.592
WDD-3 0.722
WDD-4 0.722
WDD-5 0.722
WDD-6 0.722

WDD-7 0.678
WDD-8 0.636
WDF-1 0.464
WDF-2 0.592
WDF-3 0.722
WDF-4 0.722
WDF-5 0.722
WDF-6 0.722
WDF-7 0.678
WDF-8 0.636
WDR-1 0.464
WDR-2 0.592
WDR-3 0.722
WDR-4 0.722
WDR-5 0.722
WDR-6 0.722
WDR-7 0.678
WDR-8 0.636
WDS-1 0.464
WDS-2 0.592
WDS-3 0.722
WDS-4 0.722
WDS-5 0.722
WDS-6 0.722
WDS-7 0.678
WDS-8 0.636
WHLSPC 6.
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001

GO

ID: SECTION K - UNIT 2

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
GRID MODEL
IGNORE IMPACT
LFD METHOD
LOW RESOLUTION MESH
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BRINCD 2 9 4 11 6 13 7 14 9 16 11 18 13 20 14 21 16 23 18 25 20 27 21
28 23 30 25 32 27 34 28 35 30 37 32 39 34 41 35 42 37 44 39 46 41 48
42 49 44 51 46 53 48 55 49 56
FPC 4.5
GCD-1 48.276 -1.8735 60.8411 -1.9861 73.4062 -1.944 83.8171 -1.7918
94.2512 -1.5327 108.9627 -0.9858 123.625 -0.2292
GCD-2 48.276 2.9115 60.8411 2.9115 73.4062 2.9115 84.0286 2.9115
94.651 2.9115 109.138 2.9115 123.625 2.9115
GCD-3 48.276 9.0365 60.8411 9.0365 73.4062 9.0365 84.3042 9.0365
95.2021 9.0365 109.4135 9.0365 123.625 9.0365
GCD-4 48.276 15.1615 60.8411 15.1615 73.4062 15.1615 84.5797 15.1615
95.7531 15.1615 109.6891 15.1615 123.625 15.1615
GCD-5 48.276 21.2865 60.8411 21.2865 73.4062 21.2865 84.8552 21.2865
96.3042 21.2865 109.9646 21.2865 123.625 21.2865
GCD-6 48.276 27.4115 60.8411 27.4115 73.4062 27.4115 85.1307 27.4115
96.8552 27.4115 110.2401 27.4115 123.625 27.4115
GCD-7 48.276 33.5365 60.8411 33.5365 73.4062 33.5365 85.4062 33.5365
97.4062 33.5365 110.5156 33.5365 123.625 33.5365
GCD-8 48.276 38.0964 60.8411 37.9791 73.4062 38.0229 85.6169 38.2197
97.8591 38.5698 110.7661 39.1048 123.625 39.8073
HNG-1 24.6 20.9
HNG-8 24.6 24.5
RAD-1 -1020.484
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5 7
SUP-2 1 3 5 7
SUP-3 1 3 5 7
SUP-4 1 3 5 7
SUP-5 1 3 5 7
SUP-6 1 3 5 7
SUP-7 1 3 5 7
SUP-8 1 3 5 7
WAC-1 0.131
WAC-2 0.141
WAC-3 0.141
WAC-4 0.141
WAC-5 0.141
WAC-6 0.141
WAC-7 0.141
WAC-8 0.138
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WDD-1 0.506
WDD-2 0.612
WDD-3 0.722

WDD-4 0.722
WDD-5 0.722
WDD-6 0.722
WDD-7 0.658
WDD-8 0.598
WDF-1 0.506
WDF-2 0.612
WDF-3 0.722
WDF-4 0.722
WDF-5 0.722
WDF-6 0.722
WDF-7 0.658
WDF-8 0.598
WDR-1 0.506
WDR-2 0.612
WDR-3 0.722
WDR-4 0.722
WDR-5 0.722
WDR-6 0.722
WDR-7 0.658
WDR-8 0.598
WDS-1 0.506
WDS-2 0.612
WDS-3 0.722
WDS-4 0.722
WDS-5 0.722
WDS-6 0.722
WDS-7 0.658
WDS-8 0.598
WHLSPC 6.
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001

GO

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 22-Mar-11
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
**NORTH
1 0.0000 0 0 ;
2 26.8513 0 0 ;
3 48.2760 0 0 ;
4 73.4063 0 0 ;
5 97.6250 0 0 ;
6 123.6250 0 0 ;
*
**SOUTH
*1 0.0000 0 0 ;
*2 24.4560 0 0 ;
*3 48.2760 0 0 ;
*4 73.4063 0 0 ;
*5 94.8310 0 0 ;
*6 123.6250 0 0 ;

MEMBER INCIDENCES
1 1 2; 2 2 3; 3 3 4; 4 4 5; 5 5 6
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TO 5 TABLE ST W24x84
CONSTANTS
BETA 0 MEMB 2
MATERIAL STEEL ALL
SUPPORTS
1 TO 6 PINNED
MEMBER RELEASE
2 END MZ
3 START MZ
DEFINE MOVING LOAD
TYPE 1 LOAD 12 12 3
DIST 30 14
TYPE 2 LOAD 3 12 12
DIST 14 30

***HS15
LOAD GENERATION 2000
TYPE 1 -28 0 0 XINC 0.1
LOAD GENERATION 2000
TYPE 2 -28 0 0 XINC 0.1

PERFORM ANALYSIS
PRINT MAXREACTION
FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 1 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 6.5104 0 0 ;
3 8.5104 0 0 ;
4 12.6354 0 0 ;
5 18.7604 0 0 ;
6 24.8854 0 0 ;
7 31.0104 0 0 ;
8 35.1354 0 0 ;
9 37.1354 0 0 ;
10 40.0469 0 0 ;

***FICTITIOUS DECK
101 0 20 0 ;
102 6.5104 20 0 ;
104 12.6354 20 0 ;
105 18.7604 20 0 ;
106 24.8854 20 0 ;
107 31.0104 20 0 ;
109 37.1354 20 0 ;
110 40.0469 20 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TO 9 TABLE ST W33x130
101 TO 107 TABLE ST W33x130

CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
3 8 PINNED
MEMBER RELEASE
101 TO 107 BOTH MZ

***MASTER-SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 3005
TYPE 1 2 20 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 2 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 5.1283 0 0 ;
3 7.1364 0 0 ;
4 11.2781 0 0 ;
5 17.4278 0 0 ;
6 23.5775 0 0 ;
7 29.7272 0 0 ;
8 33.8689 0 0 ;
9 35.877 0 0 ;
10 40.019 0 0 ;

***FICTITIOUS DECK
101 0 20 0 ;
102 5.1283 20 0 ;
104 11.2781 20 0 ;
105 17.4278 20 0 ;
106 23.5775 20 0 ;
107 29.7272 20 0 ;
109 35.877 20 0 ;
110 40.019 20 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TO 9 TABLE ST W33x130

101 TO 107 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
3 8 PINNED
MEMBER RELEASE
101 TO 107 BOTH MZ

***MASTER-SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

DEFINE MOVING LOAD

TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 3002
TYPE 1 2 0 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 3 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 4.5599 0 0 ;
3 6.5599 0 0 ;
4 10.6849 0 0 ;
5 16.8099 0 0 ;
6 22.9349 0 0 ;
7 29.0599 0 0 ;
8 33.1849 0 0 ;
9 35.1849 0 0 ;
10 39.9699 0 0 ;

***FICTITIOUS DECK
101 0 20 0 ;
102 4.5599 20 0 ;
104 10.6849 20 0 ;
105 16.8099 20 0 ;
106 22.9349 20 0 ;
107 29.0599 20 0 ;
109 35.1849 20 0 ;
110 39.9699 20 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TO 9 TABLE ST W33x130
101 TO 107 TABLE ST W33x130

CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
3 8 PINNED
MEMBER RELEASE
101 TO 107 BOTH MZ

***MASTER-SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6
** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 2997
TYPE 1 2 0 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH


```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 4 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 4.4864 0 0 ;
3 6.4864 0 0 ;
4 10.6114 0 0 ;
5 16.7364 0 0 ;
6 22.8614 0 0 ;
7 28.9864 0 0 ;
8 33.1114 0 0 ;
9 35.1114 0 0 ;
10 39.9668 0 0 ;

***FICTITIOUS DECK
101 0 20 0 ;
102 4.4864 20 0 ;
104 10.6114 20 0 ;
105 16.7364 20 0 ;
106 22.8614 20 0 ;
107 28.9864 20 0 ;
109 35.1114 20 0 ;
110 39.9668 20 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;
***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TO 9 TABLE ST W33x130
101 TO 107 TABLE ST W33x130

```

CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
3 8 PINNED
MEMBER RELEASE
101 TO 107 BOTH MZ

****MASTER-SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 2997
TYPE 1 2 20 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 5 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 5.0537 0 0 ;
3 7.0618 0 0 ;
4 11.2035 0 0 ;
5 17.3532 0 0 ;
6 23.5029 0 0 ;
7 29.6526 0 0 ;
8 33.7943 0 0 ;
9 35.8024 0 0 ;
10 40.2645 0 0 ;

***FICTITIOUS DECK
101 0 20 0 ;
102 5.0537 20 0 ;
104 11.2035 20 0 ;
105 17.3532 20 0 ;
106 23.5029 20 0 ;
107 29.6526 20 0 ;
109 35.8024 20 0 ;
110 40.2645 20 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TO 9 TABLE ST W33x130

101 TO 107 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
3 8 PINNED
MEMBER RELEASE
101 TO 107 BOTH MZ

***MASTER-SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

DEFINE MOVING LOAD

TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 3027
TYPE 1 2 20 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 13-Feb-12
ENGINEER NAME DWC
*Section K
*Floorbeam 6 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 6.2708 0 0 ;
3 8.2708 0 0 ;
4 12.3958 0 0 ;
5 18.5208 0 0 ;
6 24.6458 0 0 ;
7 30.7708 0 0 ;
8 34.8958 0 0 ;
9 36.8958 0 0 ;
10 40.0364 0 0 ;

***FICTITIOUS DECK
101 0 20 0 ;
102 6.2708 20 0 ;
104 12.3958 20 0 ;
105 18.5208 20 0 ;
106 24.6458 20 0 ;
107 30.7708 20 0 ;
109 36.8958 20 0 ;
110 40.0364 20 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;
***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TO 9 TABLE ST W33x130
101 TO 107 TABLE ST W33x130

```

CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
3 8 PINNED
MEMBER RELEASE
101 TO 107 BOTH MZ

***MASTER-SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 3004
TYPE 1 2 20 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 16-Feb-12
JOB NAME Section K North Frame Fatigue Loading
JOB NO P402110046
ENGINEER NAME CTG
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 7.28 9.961 0; 2 34.11 10 0; 3 104.49 10 0; 4 129.324 9.987 0;
5 7.28 21.711 0; 6 8.32 21.726 0; 7 30.95 22.054 0; 8 33.45 22.09 0;
9 34.106 22.1 0; 10 34.762 22.11 0; 11 37.262 22.146 0; 12 46.102 22.274
0;
13 47.582 22.296 0; 14 55.282 22.357 0; 15 80.462 22.559 0; 16 91.002
22.644 0;
17 92.482 22.648 0; 18 101.322 22.671 0; 19 103.822 22.678 0;
20 104.478 22.68 0; 21 105.134 22.682 0; 22 107.634 22.689 0;
23 129.324 22.747 0; 24 131.414 22.754 0; 100 7.28 25 0; 101 34.106 25
0;
102 55.282 25 0; 103 80.462 25 0; 104 104.478 25 0; 105 129.324 25 0;
MEMBER INCIDENCES
1 1 5; 2 2 9; 3 3 20; 4 4 23; 5 5 6; 6 6 7; 7 7 8; 8 8 9; 9 9 10; 10 10
11;
11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 17; 17 17 18; 18
18 19;
19 19 20; 20 20 21; 21 21 22; 22 22 23; 23 23 24; 100 100 101; 101 101
102;
102 102 103; 103 103 104; 104 104 105;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6.5e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 4 TABLE ST W10X45
2 3 TABLE ST W14X211
6 11 TO 17 22 TABLE ST W36X300
MEMBER PROPERTY AMERICAN
7 18 TAPERED 3.06 0.07875 5.56 1.38875 0.14 1.3125 0.1302
10 21 TAPERED 5.56 0.07875 3.06 1.38875 0.14 1.3125 0.1302
5 23 TAPERED 1.59375 0.07875 1.59375 1.04167 0.04167 1.38875 0.14
8 9 19 20 TAPERED 5.56 0.17 5.56 1.38875 0.14 1.38875 0.14
100 TO 104 TABLE ST W18X60
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
1 TO 4 PINNED
MEMBER RELEASE
101 END MX MY MZ
102 START MX MY MZ
1 END MZ
4 END MZ
SLAVE FY MASTER 100 JOINT 5
SLAVE FY MASTER 101 JOINT 9
SLAVE FY MASTER 102 JOINT 14
SLAVE FY MASTER 103 JOINT 15
SLAVE FY MASTER 104 JOINT 20

```

```
SLAVE FY MASTER 105 JOINT 24
DEFINE MOVING LOAD
**HS15 Truck
TYPE 1 LOAD 12 12 3
DIST 30 14
TYPE 2 LOAD 3 12 12
DIST 14 30

*HS15 LOADING 1 TRUCK - FORWARD
LOAD GENERATION 2000
TYPE 1 -18 25 0 XINC 0.1
*HS15 LOADING 1 TRUCK - BACKWARD
LOAD GENERATION 2000
TYPE 2 -18 25 0 XINC 0.1
PERFORM ANALYSIS
FINISH
```



```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 16-Feb-12
JOB NAME Section K South Frame
JOB NO P402110046
ENGINEER NAME CTG
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 10 10 0; 2 34.11 10 0; 3 104.49 10 0; 4 132.09 10 0; 5 10 21.75 0;
6 11.04 21.765 0; 7 30.95 22.054 0; 8 33.45 22.09 0; 9 34.106 22.1 0;
10 34.762 22.11 0; 11 37.262 22.146 0; 12 46.102 22.274 0; 13 47.582
22.296 0;
14 55.282 22.357 0; 15 80.462 22.559 0; 16 91.002 22.644 0; 17 92.482
22.648 0;
18 101.322 22.671 0; 19 103.822 22.678 0; 20 104.478 22.68 0;
21 105.134 22.682 0; 22 107.634 22.689 0; 23 132.074 22.754 0;
24 134.164 22.76 0; 100 10 25 0; 101 34.11 25 0; 102 55.282 25 0;
103 80.462 25 0; 104 104.49 25 0; 105 134.164 25 0;
MEMBER INCIDENCES
1 1 5; 2 2 9; 3 3 20; 4 4 23; 5 5 6; 6 6 7; 7 7 8; 8 8 9; 9 9 10; 10 10
11;
11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 17; 17 17 18; 18
18 19;
19 19 20; 20 20 21; 21 21 22; 22 22 23; 23 23 24; 100 100 101; 101 101
102;
102 102 103; 103 103 104; 104 104 105;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6.5e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 4 TABLE ST W10X45
2 3 TABLE ST W14X211
6 11 TO 17 22 TABLE ST W36X300
MEMBER PROPERTY AMERICAN
7 18 TAPERED 3.06 0.07875 5.56 1.38875 0.14 1.3125 0.1302
10 21 TAPERED 5.56 0.07875 3.06 1.38875 0.14 1.3125 0.1302
5 23 TAPERED 1.59375 0.07875 1.59375 1.04167 0.04167 1.38875 0.14
8 9 19 20 TAPERED 5.56 0.17 5.56 1.38875 0.14 1.38875 0.14
100 TO 104 TABLE ST W18X60
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
1 TO 4 PINNED
MEMBER RELEASE
101 END MX MY MZ
102 START MX MY MZ
1 END MZ
4 END MZ
SLAVE FY MASTER 100 JOINT 5
SLAVE FY MASTER 101 JOINT 9
SLAVE FY MASTER 102 JOINT 14
SLAVE FY MASTER 103 JOINT 15
SLAVE FY MASTER 104 JOINT 20
SLAVE FY MASTER 105 JOINT 24

```

```
DEFINE MOVING LOAD
**HS15 Truck
TYPE 1 LOAD 12 12 3
DIST 30 14
TYPE 2 LOAD 3 12 12
DIST 14 30
```

```
*HS15 LOADING 1 TRUCK - FORWARD
LOAD GENERATION 2000
TYPE 1 -18 25 0 XINC 0.1
*HS15 LOADING 1 TRUCK - BACKWARD
LOAD GENERATION 2000
TYPE 2 -18 25 0 XINC 0.1
```

```
PERFORM ANALYSIS
FINISH
```

BRIDGE LOAD RATING SUMMARY REPORT

CUY-2-1441

SECTION L

SFN	BRIDGE NUMBER	DISTRICT
1800035	CUY-2-1441	12
ORIGINAL CONSTRUCTION YEAR	REHABILITATION YEAR	OVERALL STRUCTURE LENGTH (FT)
1938 - 1940	1991 - 1992	6580
FEATURE INTERSECTED:	NUMEROUS LOCAL STREETS, RTA RAILROAD TRACKS AND THE CUYAHOGA RIVER	
SPECIAL ASSUMPTIONS & COMMENTS		
RATING & ANALYSIS OPTION:		
LOAD RATING PURPOSE:	LOAD RATING FOR FUTURE REHABILITATION RECOMMENDATIONS	
RATING SOFTWARE:	STAAD, MDX	
BASIS OF ANALYSIS:	EXISTING PLANS AND FIELD MEASUREMENTS	
METHOD OF ANALYSIS:	LOAD FACTOR	
DESIGN LOADING (ORIGINAL):	H20-33	
STRUCTURE RATING SUMMARY		
LOADING & RATING TYPE	RATING FACTOR - RF (ROUNDED TO 2 DECIMAL POINTS)	RATING LOAD
INVENTORY CURRENT DESIGN	0.69	HS13.8
OPERATING CURRENT DESIGN	1.16	
OHIO LEGAL - 2F1	2.25	OHIO LEGAL LOADS OVERALL MINIMUM RATING FACTOR
OHIO LEGAL - 3F1	1.51	1.34
OHIO LEGAL - 4F1	1.34	OHIO LEGAL LOADS OVERALL CONTROLLING TRUCK
OHIO LEGAL - 5C1	1.39	4F1
RATED BY, PE#	REVIEWED BY, PE#	REPORT DATE
Carolyn Guion, PE	Nick Fisco, EI	3/5/2012
AGENCY/FIRM	PHONE NUMBER	EMAIL
TranSystems	216-861-1780	ctguion@transystems.com

SFN: 1800035 BRIDGE NO.: CUY-2-1441

West Approach - Section L

CUY-2-1441 Load Rating Analysis
Main Ave Bridge

Calculated: DMP 3/5/2012
 Checked: NRF 3/5/2012

As-Built Controlling Rating Factor Summary								
Item	Location/Member	HS20 Inventory	HS20 Operating	2F1 Operating	3F1 Operating	4F1 Operating	5C1 Operating	Fatigue
Deck	Deck	1.14	1.89	3.03	3.57	4.33	3.57	N/A
Stringers	Unit 4 Stringer S2-4	1.08	1.81	2.73	2.05	1.96	2.16	
Floorbeam	Floorbeam 8	0.69	1.16	2.25	1.51	1.34	1.57	
Girder	South Girder	0.86	1.44	2.78	1.87	1.66	1.94	
	North Girder	0.98	1.64	3.34	2.23	1.95	1.87	
Column	North Column L5	2.07	3.45	7.55	5.06	4.44	3.99	

As-Inspected Controlling Rating Factor Summary*								
Item	Location/Member	HS20 Inventory	HS20 Operating	2F1 Operating	3F1 Operating	4F1 Operating	5C1 Operating	Fatigue
Deck	Deck	1.14	1.89	3.03	3.57	4.33	3.57	N/A
Stringers	Unit 4 Stringer S2-4	1.08	1.81	2.73	2.05	1.96	2.16	
Floorbeam	Floorbeam 8	0.69	1.16	2.25	1.51	1.34	1.57	
Girder	South Girder	0.86	1.44	2.78	1.87	1.66	1.94	
	North Girder	0.98	1.64	3.34	2.23	1.95	1.87	
Column	North Column L5	2.07	3.45	7.55	5.06	4.44	3.99	

*No significant section loss was noted that affected the rating

Overall Summary			
Case	Rating Factor	Tonnage	HS equivalent or Ohio Legal Load %
HS20 Inventory	0.69	24.84	HS13.8
HS20 Operating	1.16	41.76	HS23.2
2F1	2.25	33.75	135%
3F1	1.51	34.73	
4F1	1.34	36.18	
5C1	1.57	62.80	
Fatigue	years remaining		



DECK RATING



DECK - WEST APPROACH - SECTION L

- SIMILAR TO SECTION K, EXCEPT STRINGER SPACING INCREASED TO 6.5'. ASSUME SIMILAR BEHAVIOR WHERE APPROPRIATE
- IGNORE SECTIONS OF UNIT 2 + 3 w/ > 7' SPACING BETWEEN STR 6 + FASCIA B/C ADD'L #4'S @ 8" WERE PROVIDED ALTERNATE THE PRIMARY REBAR

1. MATERIAL PROPERTIES: SEE SECTION K

2. DECK GEOMETRY:

BEAM SPACING = 6.5'

STRINGERS: W16x67 → $b_f = 10.2"$

EFF. SPAN LENGTH = $6.5' - \frac{1}{2} \times 10.2" \times \frac{1}{12} = S = 6.075'$

→ DECK THICKNESS, REBAR, COVER, WS: SAME AS SECTION K

3. DEAD LOAD: $q_{DL} = .080 \text{ K/FT}$ (SECTION K)

DL MOMENT = $\frac{1}{8} \times .080 \text{ K/FT} \times (6.075')^2 \times 0.8 = 0.295 \text{ K-FT}$

4. LIVE LOAD: $M_{LL} = \left(\frac{S+2}{32}\right)P(1+I) \times 0.8 = \left(\frac{6.075+2}{32}\right)P(1.30) \times 0.8$

HS20: $P = 16 \text{ K}$ $M_{HS20} = 4.199 \text{ K-FT}$

2F1: $P = 10 \text{ K}$ $M_{2F1} = 2.624 \text{ K-FT}$

3F1: $P = 8.5 \text{ K}$ $M_{3F1} = 2.231 \text{ K-FT}$

4F1: $P = 7.0 \text{ K}$ $M_{4F1} = 1.837 \text{ K-FT}$

5C1: $P = 8.5 \text{ K}$ $M_{5C1} = 2.231 \text{ K-FT}$

5. MOMENT CAPACITY

- BASED ON CALCULATIONS FOR SECTION K, THE REBAR WILL CONTROL FOR T+B REINFORCING
- FROM SECTION K CALCS, MOMENT CAPACITIES ARE:

$\phi M_n^- = 10.97 \text{ K-FT}$

$\phi M_n^+ = 10.74 \text{ K-FT}$

← POSITIVE MOMENT GOVERNS

6. RATING FACTORS :

HS2D : INVENTORY : $RF = \frac{C - 1.3D}{2.17(L+I)}$
 $= \frac{10.74 - 1.3(.295)}{2.17(4.199)} = \underline{\underline{1.14}}$

OPERATING : $RF = \frac{C - 1.3D}{1.3(L+I)} = \underline{\underline{1.89}}$

2F1 : $RF = \frac{C - 1.3D}{1.3(L+I)} = \frac{10.74 - 1.3(.295)}{1.3(2.624)} = \underline{\underline{3.03}}$

3F1 : $RF = \frac{10.74 - 1.3(.295)}{1.3(2.231)} = \underline{\underline{3.57}}$

4F1 : $RF = \frac{10.74 - 1.3(.295)}{1.3(1.837)} = \underline{\underline{4.33}}$

SCI : $RF = \underline{\underline{3.57}}$

STRINGER RATINGS

West Approach - Section L

Similar to Section K in approach and assumptions

Hinges

Define approx. 6" from interior supports for fascia stringers.

G1: 21.6'

G8: 14.6'

G1 = F2
G2 = S6
G3 = S5
G4 = S4
G5 = S3
G6 = S2
G7 = S1
G8 = F1

Section Properties

Interior Stringers → W16x67

Fascia Stringers

$F = 8" \times 3/4"$

G1 Web = $46" \times 3/8"$

G8 Web = $28" \times 3/8"$

} From Shop DWG

Bracing

Same as K

Group D1 (Intermediate) C10x30 with $7\frac{1}{2}" \times \frac{1}{2}"$ FH conn. IR's

Group D2 (End) MC10x41.1 with $7\frac{1}{2}" \times \frac{1}{2}"$ FH conn. IR's

} Shop DWG

Conn. Dist = $4\frac{1}{4}"$

Distance to Conn. IR's for Diaphragms (measured in microstation)

Girder	Dist 1	Dist 2	Dist 3	Dist 4
1	141.14"	245.06"	240.66"	-
2	1"	139.58"	241.56"	240.0"
3	1"	133.13"	235.23"	240"
4	1"	126.12"	228.34"	240"
5	1"	119.11"	221.46"	240"
6	1"	112.10"	214.58"	240"
7	1"	105.08"	207.69"	240"
8	97.76"	200.74"	240.71"	-

Non-Composite DL

Wearing Surface Add weight, 150 kcf - .113 kcf = .037 kcf

(Avg. Sp. measured in Microstation)

G3-G6 WAS = .037 kcf ($6'6"$) ($.1042'$) = 0.025 k/ft

G2: WAS = .037 kcf ($\frac{3.5' + 6.4'}{2}$) ($.1042'$) = 0.019 k/ft

G1: WAS = .037 kcf ($\frac{2.08' + 2.8'}{2}$) ($.1042'$) = 0.009 k/ft

G8: WAS = .037 kcf ($\frac{4.8' + 8.5'}{2}$) ($.1042'$) = 0.014 k/ft

G7: WAS = .037 kcf ($\frac{6.5' + 3.7'}{2}$) ($.1042'$) = 0.010 k/ft

Add 5% Misc ⇒

G1 = .125 k/ft

G2 and G7 = 0.137 k/ft

G3-G6 = 0.142 k/ft

G8 = .138 k/ft

Barriers = 0.11 k/ft per Girder

WST1 - Section L

Steel Weight

Assume .011/ft

Tributary Slab Widths

Max GI Vok

G2 input points 25 → 30

AVG Tslab W @ 30 = $6.4' (sh+1) = 76.8''$

⇒ AVG = 72.9''

Point 24 = 69.05''

G7 input points 25 → 30

AVG Tslab W @ 30 = $3.7' (sh+1) = 44.4''$

⇒ AVG = 49.4''

Point 24 = 54.3''

G8 points 26 → 30

@ 30 = $2.5' = 30''$

⇒ AVG = 31.7''

Point 25 = 33.4''

Roadway Width

Girder 1

Span 1 = 22.1487'

Span 2 = 20.0701'

Span 3 = 20.0416'

R = 1020.484' ⇒

10th point $\theta = 0.124327334^\circ$

$\theta = 0.112684964^\circ$

$\theta = 0.112524948^\circ$

Draft and take roadway widths from microstation

Girder 8

Span 1 = 15.0664'

Span 2 = 20.0767'

Span 3 = 20.045'

R = 980.516' ⇒

10th point $\theta = 0.098039474^\circ$

$\theta = 0.117316819^\circ$

$\theta = 0.117131582^\circ$

Haunches

6" + FE width

$h = 1'' + t_f$

Superelevation

4% = .04

Effective Slab Width

- Check MDX, hand calc select values

Girder 1 ✓ OK

Girder 2 span 3 $20/4 \times 12 = 60''$

span 2 $19.9993/4 \times 12 = 59.98'' \rightarrow \text{say } 60''$

span 1 Spacing controls (MDX)

G3-G6 if span $\leq 26'$ → span governs, otherwise 78"

spans 2+3 = 20' ∴ ESLABW = 60"

Girder	Span	Span L	ESlab W
3	1	19.3828'	58.15"
4	-1	18.2249'	54.67"
5	1	17.0669'	51.20"
6	1	15.9109'	47.73"

Girder 7

span 1: 11.751' → 44.25"

spans 2+3: 20' → 60"

Girder 8

span 1: 13.7038' → 41.11"

spans 2+3 spacing controls

Coping @ G7

S1-1	<u>h</u>	<u>bf</u>	<u>t_f</u>	<u>dw</u>	<u>tw</u>	<u>Cope @ FB1</u>	<u>FB2</u>	<u>FB3</u>	<u>FB4</u>
W16x67	16.3"	10.2"	.665"	14.97"	.395"	0.64"	3.20"	4.01"	3.57"

Section L - Unit 2

• Same as Unit 1 except as noted

Hinges

G1: 39.5'

G8: 39.5'

Copes

G7 W16x47

h

b_f

t_f

d_w

t_w

cope@F84

F85

16'3"

10.2"

.665"

14.97"

.395"

3.57"

6.57"

Distance to conn. IR's

Girder

Dist 1

Dist 2

Dist 3

1

120.15"

240.15"

247.34"

2-6

120" (7 only)

240"

247.31"

8

120.16"

240.16"

247.35"

- No End Diaphragms

AVG. SPA.

Girder

F84 AVG SPA.

F85 AVG SPA.

F86 AVG SPA.

F87 AVG SPA.

1

$\frac{5.75' + 1.7'}{2} = 4.46'$

$\frac{6.63' + 1.7'}{2} = 4.90'$

$\frac{7.14' + 1.7'}{2} = 5.15'$

$\frac{7.24' + 1.7'}{2} = 5.20'$

2

$\frac{5.75' + 6.5'}{2} = 6.13'$

$\frac{6.63' + 6.5'}{2} = 6.57'$

$\frac{7.14' + 6.5'}{2} = 6.82'$

$\frac{7.24' + 6.5'}{2} = 6.87'$

3-5

6.5'

6.5'

6.5'

6.5'

6

6.5'

6.5'

$\frac{6.84' + 6.5'}{2} = 6.67'$

$\frac{6.73' + 6.5'}{2} = 6.62'$

7

$\frac{6.5' + 1.78'}{2} = 4.14'$

$\frac{6.5' + .854'}{2} = 3.68'$

—

—

8

$\frac{1.78'}{2} + 1.7' = 2.47'$

$\frac{.854' + 1.7'}{2} = 2.01'$

$\frac{6.84'}{2} + 1.7' = 5.0'$

$\frac{6.73'}{2} + 1.7' = 4.95'$

(3.68')
@ right side

Non Composite DL

Wearing Surface: .150 kcf = .113 kcf = .037 kcf

$$G1: (.037 \text{ kcf}) \left(\frac{4.46' + 5.20'}{2} \right) (.1042') = 0.019 \text{ k/ft}$$

$$G2: (.037 \text{ kcf}) \left(\frac{6.13' + 6.87'}{2} \right) (.1042') = 0.025 \text{ k/ft}$$

$$G3-G5: 6.5' \times .037 \text{ kcf} \times .1042' = 0.025 \text{ k/ft}$$

$$G6: (.037 \text{ kcf}) \left(\frac{6.5' + 6.67'}{2} \right) (.1042') = 0.025 \text{ k/ft}$$

$$G7: (.037 \text{ kcf}) \left(\frac{4.14' + 3.68'}{2} \right) (.1042') = 0.015 \text{ k/ft}$$

$$G8: \text{From F84-F85} \rightarrow (.037 \text{ kcf}) \left(\frac{2.47' + 2.01'}{2} \right) (.1042') = 0.009 \text{ k/ft}$$

$$\text{From F85-F87} \rightarrow (.037 \text{ kcf}) \left(\frac{5' + 4.95'}{2} \right) (.1042') = 0.019 \text{ k/ft}$$

Barriers $\rightarrow 0.11 \text{ k/ft}$ per Girder F84-F85

$$0.89 \text{ k/ft} / 7 = 0.127 \text{ k/ft F85-F87}$$

	k/ft	
	F84-5	F85-7
G1:	.135	.153
G2-6:	.142	.160
G7:	.131	—
G8:	.125	.153

ADD 5% Misc \Rightarrow

Tributary Slab Width

If MDX does not calculate, Use Avg. Spacing from sheet 4

Effective Slab Width

Interior Girders Min $\left\{ \begin{array}{l} \frac{1}{4}(20') = 60'' \text{ (span 1+2)} \\ \text{AVG spa. (sheet 4)} \\ 12 \times 6.75'' = 81'' \end{array} \right. \quad \frac{1}{4}(21.219') = 63.66'' \text{ (span 3)}$

Fascia Girders Min $\left\{ \begin{array}{l} \frac{1}{4} \text{ span} \\ \text{AVG spa. (sheet 4)} \\ 12 \times 6.75'' = 81'' \end{array} \right.$

Girder	Span	Span L	AVG spa.	ESlab W	
1	1	20.02'	4.68'*	56.2"	
1	2	20.01'*	5.03'	60"	Girder 1 input points 0-5
1	3	21.22'	5.18'*	62.2"	
2	1-2		>6'	60"	Girder 2 input all points say 62"
2	3		>6'	63.66"	
3-5	1-2		6.5'	60"	Girder 3-5 input all points say 62"
3-5	3		6.5'	63.66"	
6	1-2		76'	60"	Girder 6 input all points say 62"
6	3		>6'	63.66"	
7	1	20'	3.91'	46.92"	Points ok
8	1	20.02'	2.24'*	26.88"	
8	2	20.01'	4.34'*	52.08"	Girder 8 input all points
8	3	21.22'	4.98'*	59.76"	

Roadway Width

Girder 1 $\text{Span 1} = 20.0201'$
 $\text{Span 2} = 20.0065'$
 $\text{Span 3} = 21.2193'$

$R = 1020.484' \Rightarrow$

10^{th} point $\theta = 0.112404235^\circ$
 $\theta = 0.112327877^\circ$
 $\theta = 0.119137226^\circ$

Girder 8 $\text{Span 1} = 20.0218'$
 $\text{Span 2} = 20.0071'$
 $\text{Span 3} = 21.2194'$

$R = 980.516' \Rightarrow$

10^{th} point $\theta = 0.116996014^\circ$
 $\theta = 0.116910116^\circ$
 $\theta = 0.123994108^\circ$

Wheel Distribution

Since G7 is not full length of unit have to input wheel load distribution

For G3-G5 $DF = \frac{S}{5.5} = \frac{6.5'}{5.5'} = 1.18$ Full Length

(continued)

Made By CTGDate 2/20/2012Job No. P402110046Checked By DWCDate 2/28/2012Calculations For: **CUY-2-1441 SECTION L UNIT 2****GIRDER 1**

Live Load Distribution Factor

10th Point	S (ft.)	DF = S/5.5 or DF = S/(4+.25S)
0	5.75	1.05
1	5.86	1.07
2	5.96	1.08
3	6.06	1.1
4	6.15	1.11
5	6.25	1.12
6	6.33	1.13
7	6.42	1.15
8	6.49	1.15
9	6.57	1.16
10	6.64	1.17
11	6.71	1.18
12	6.77	1.19
13	6.83	1.2
14	6.89	1.2
15	6.94	1.21
16	6.99	1.22
17	7.03	1.22
18	7.07	1.23
19	7.11	1.23
20	7.14	1.23
21	7.17	1.24
22	7.2	1.24
23	7.22	1.24
24	7.23	1.24
25	7.25	1.25
26	7.25	1.25
27	7.26	1.25
28	7.26	1.25
29	7.25	1.25
30	7.24	1.25

GIRDER 2

Live Load Distribution Factor

10th Point	S1	S2	Avg S (ft.)	DF = S/5.5
0	5.75	6.5	6.125	1.11
1	5.86	6.5	6.18	1.12
2	5.96	6.5	6.23	1.13
3	6.06	6.5	6.28	1.14
4	6.15	6.5	6.325	1.15
5	6.25	6.5	6.375	1.16
6	6.33	6.5	6.415	1.17
7	6.42	6.5	6.46	1.17
8	6.49	6.5	6.495	1.18
9	6.57	6.5	6.535	1.19
10	6.64	6.5	6.57	1.19
11	6.71	6.5	6.605	1.2
12	6.77	6.5	6.635	1.21
13	6.83	6.5	6.665	1.21
14	6.89	6.5	6.695	1.22
15	6.94	6.5	6.72	1.22
16	6.99	6.5	6.745	1.23
17	7.03	6.5	6.765	1.23
18	7.07	6.5	6.785	1.23
19	7.11	6.5	6.805	1.24
20	7.14	6.5	6.82	1.24
21	7.17	6.5	6.835	1.24
22	7.2	6.5	6.85	1.25
23	7.22	6.5	6.86	1.25
24	7.23	6.5	6.865	1.25
25	7.25	6.5	6.875	1.25
26	7.25	6.5	6.875	1.25
27	7.26	6.5	6.88	1.25
28	7.26	6.5	6.88	1.25
29	7.25	6.5	6.875	1.25
30	7.24	6.5	6.87	1.25

GIRDER 6

Live Load Distribution Factor

10th Point	S1	S2	Avg S (ft.)	DF = S/5.5
0	6.5	6.5	6.5	1.18
1	6.5	6.5	6.5	1.18
2	6.5	6.5	6.5	1.18
3	6.5	6.5	6.5	1.18
4	6.5	6.5	6.5	1.18
5	6.5	6.5	6.5	1.18
6	6.5	6.5	6.5	1.18
7	6.5	6.5	6.5	1.18
8	6.5	6.5	6.5	1.18
9	6.5	6.5	6.5	1.18
10	7.35	6.5	6.925	1.26
11	7.28	6.5	6.89	1.25
12	7.22	6.5	6.86	1.25
13	7.16	6.5	6.83	1.24
14	7.1	6.5	6.8	1.24
15	7.04	6.5	6.77	1.23
16	6.99	6.5	6.745	1.23
17	6.95	6.5	6.725	1.22
18	6.91	6.5	6.705	1.22
19	6.87	6.5	6.685	1.22
20	6.84	6.5	6.67	1.21
21	6.8	6.5	6.65	1.21
22	6.78	6.5	6.64	1.21
23	6.76	6.5	6.63	1.21
24	6.74	6.5	6.62	1.2
25	6.73	6.5	6.615	1.2
26	6.72	6.5	6.61	1.2
27	6.71	6.5	6.605	1.2
28	6.72	6.5	6.61	1.2
29	6.72	6.5	6.61	1.2
30	6.73	6.5	6.615	1.2



Made By CTG
Checked By DWC

Date 2/20/2012
Date 2/28/2012

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Calculations For: **CUY-2-1441 SECTION L UNIT 2**

GIRDER 7

Live Load Distribution Factor				
10th Point	S1	S2	Avg S (ft.)	DF = S/5.5
0	1.78	6.5	4.14	0.75
1	1.67	6.5	4.085	0.74
2	1.56	6.5	4.03	0.73
3	1.46	6.5	3.98	0.72
4	1.36	6.5	3.93	0.71
5	1.27	6.5	3.885	0.71
6	1.18	6.5	3.84	0.7
7	1.09	6.5	3.795	0.69
8	1.01	6.5	3.755	0.68
9	0.93	6.5	3.715	0.68
10	0.87	6.5	3.685	0.67

GIRDER 8

Live Load Distribution Factor		
10th Point	S (ft.)	DF = S/5.5 or DF = S/(4+.25S)
0	1.78	0.32
1	1.67	0.3
2	1.56	0.28
3	1.46	0.27
4	1.36	0.25
5	1.27	0.23
6	1.18	0.21
7	1.09	0.2
8	1.01	0.18
9	0.93	0.17
10	7.35	1.26
11	7.28	1.25
12	7.22	1.24
13	7.16	1.24
14	7.1	1.23
15	7.04	1.22
16	6.99	1.22
17	6.95	1.21
18	6.91	1.21
19	6.87	1.2
20	6.84	1.2
21	6.8	1.19
22	6.78	1.19
23	6.76	1.19
24	6.74	1.19
25	6.73	1.18
26	6.72	1.18
27	6.71	1.18
28	6.72	1.18
29	6.72	1.18
30	6.73	1.18

SECTION L UNIT 3

• Same as Units 1+2 except as noted

Hinges

G1: 20.7'

G8: 20.7'

Distance to conn. R's

Girder	Dist 1	Dist 2	Dist 3
1	127.32"	254.66"	254.79"
2-6	127.31"	254.56"	254.5"
7	127.25"	-	-
8	127.32"	254.66"	254.81"

- No End Diaphragms

Cope

S1-3 is only coped stringer

G7

	<u>h</u>	<u>bf</u>	<u>tf</u>	<u>dw</u>	<u>tw</u>	<u>Cope @ FB 9</u>	<u>Cope @ FB 10</u>
W16x67	16.3"	10.2"	.665"	14.97"	.395"	2.14"	6.2"

AVG. Spa, Trib W, Non composite DL, DF all calculated similar to previous UNITS
see spreadsheet (SHT 8)



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Calculations For: **CUY-2-1441 SECTION L UNIT 3**

Girder 1 Tenth		Overhang	Avg. Spa./Trib W	Span L	Noncomposite DL	Eff. Width	DF
Point	Spa. Left (in.)	Right (in.)	(in.)	(ft.)	(k/ft)	(in)	
0	86.9	19	62.45	21.2219	0.153	62.45	1.25
1	86.73	19	62.365	21.2219		62.37	1.24
2	86.51	19	62.255	21.2219		62.26	1.24
3	86.23	19	62.115	21.2219		62.12	1.24
4	85.9	19	61.95	21.2219		61.95	1.24
5	85.52	19	61.76	21.2219		61.76	1.23
6	85.08	19	61.54	21.2219		61.54	1.23
7	84.6	19	61.3	21.2219		61.30	1.22
8	84.05	19	61.025	21.2219		61.03	1.22
9	83.46	19	60.73	21.2219		60.73	1.21
10	82.81	19	60.405	21.2231		60.41	1.21
11	82.11	19	60.055	21.2231		60.06	1.2
12	81.36	19	59.68	21.2231		59.68	1.19
13	80.56	19	59.28	21.2231		59.28	1.18
14	79.7	19	58.85	21.2231		58.85	1.17
15	78.78	19	58.39	21.2231		58.39	1.16
16	77.82	19	57.91	21.2231		57.91	1.15
17	76.8	19	57.4	21.2231		57.40	1.14
18	75.73	19	56.865	21.2231		56.87	1.13
19	74.61	19	56.305	21.2231		56.31	1.12
20	73.43	19	55.715	21.244	0.133	55.72	1.11
21	72.2	19	55.1	21.244		55.10	1.09
22	70.92	19	54.46	21.244		54.46	1.07
23	69.58	19	53.79	21.244		53.79	1.05
24	68.19	19	53.095	21.244		53.10	1.03
25	66.75	19	52.375	21.244		52.38	1.01
26	65.26	19	51.63	21.244		51.63	0.99
27	63.71	19	50.855	21.244		50.86	0.97
28	62.11	19	50.055	21.244		50.06	0.94
29	60.45	19	49.225	21.244		49.23	0.92
30	58.74	19	48.37	21.244		48.37	0.89



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Calculations For: **CUY-2-1441 SECTION L UNIT 3**

Girder 2 Tenth		Avg. Spa./Trib W	Span L	Noncomposite DL	Eff. Width	DF	
Point	Spa. Left (in.)	Spa. Right (in.)	(in.)	(ft.)	(k/ft)	(in)	
0	78	86.9	82.45	21.2188	0.161	63.66	1.25
1	78	86.73	82.365	21.2188		63.66	1.25
2	78	86.51	82.255	21.2188		63.66	1.25
3	78	86.23	82.115	21.2188		63.66	1.24
4	78	85.9	81.95	21.2188		63.66	1.24
5	78	85.52	81.76	21.2188		63.66	1.24
6	78	85.08	81.54	21.2188		63.66	1.24
7	78	84.6	81.3	21.2188		63.66	1.23
8	78	84.05	81.025	21.2188		63.66	1.23
9	78	83.46	80.73	21.2188		63.66	1.22
10	78	82.81	80.405	21.2188		63.66	1.22
11	78	82.11	80.055	21.2083		63.62	1.21
12	78	81.36	79.68	21.2083		63.62	1.21
13	78	80.56	79.28	21.2083		63.62	1.2
14	78	79.7	78.85	21.2083		63.62	1.19
15	78	78.78	78.39	21.2083		63.62	1.19
16	78	77.82	77.91	21.2083		63.62	1.18
17	78	76.8	77.4	21.2083		63.62	1.17
18	78	75.73	76.865	21.2083		63.62	1.16
19	78	74.61	76.305	21.2083		63.62	1.16
20	78	73.43	75.715	21.2083	0.140	63.62	1.15
21	78	72.2	75.1	21.2083		63.62	1.14
22	78	70.92	74.46	21.2083		63.62	1.13
23	78	69.58	73.79	21.2083		63.62	1.12
24	78	68.19	73.095	21.2083		63.62	1.11
25	78	66.75	72.375	21.2083		63.62	1.1
26	78	65.26	71.63	21.2083		63.62	1.09
27	78	63.71	70.855	21.2083		63.62	1.07
28	78	62.11	70.055	21.2083		63.62	1.06
29	78	60.45	69.225	21.2083		63.62	1.05
30	78	58.74	68.37	21.2083		63.62	1.04

Girders 3-5		Avg. Spa./Trib W	Span L	Noncomposite DL	Eff. Width	DF	
Tenth Point	Spa. Left (in.)	Spa. Right (in.)	(in.)	(ft.)	(k/ft)	(in)	
0	78	78	78	21.2188	0.160	63.66	1.18
10	78	78	78	21.2083	0.160	63.62	1.18
20	78	78	78	21.2083	0.142	63.62	1.18



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Calculations For: **CUY-2-1441 SECTION L UNIT 3**

Girder 6 Tenth		Avg. Spa./Trib W	Span L	Noncomposite DL	Eff. Width	DF	
Point	Spa. Left (in.)	Spa. Right (in.)	(in.)	(ft.)	(k/ft)	(in)	
0	80.77	78	79.385	21.2188	0.162	63.66	1.2
1	80.95	78	79.475	21.2188		63.66	1.2
2	81.18	78	79.59	21.2188		63.66	1.21
3	81.47	78	79.735	21.2188		63.66	1.21
4	81.81	78	79.905	21.2188		63.66	1.21
5	82.21	78	80.105	21.2188		63.66	1.21
6	82.67	78	80.335	21.2188		63.66	1.22
7	83.17	78	80.585	21.2188		63.66	1.22
8	83.74	78	80.87	21.2188		63.66	1.23
9	84.36	78	81.18	21.2188		63.66	1.23
10	85.03	78	81.515	21.2188		63.66	1.24
11	85.76	78	81.88	21.2083		63.62	1.24
12	86.54	78	82.27	21.2083		63.62	1.25
13	87.38	78	82.69	21.2083		63.62	1.25
14	88.28	78	83.14	21.2083		63.62	1.26
15	89.23	78	83.615	21.2083		63.62	1.27
16	90.23	78	84.115	21.2083		63.62	1.27
17	91.29	78	84.645	21.2083		63.62	1.28
18	92.4	78	85.2	21.2083		63.62	1.29
19	93.57	78	85.785	21.2083		63.62	1.3
20	94.8	78	86.4	21.2083	0.143	63.62	1.31
21	78	78	78	21.2083		63.62	1.18
22	78	78	78	21.2083		63.62	1.18
23	78	78	78	21.2083		63.62	1.18
24	78	78	78	21.2083		63.62	1.18
25	78	78	78	21.2083		63.62	1.18
26	78	78	78	21.2083		63.62	1.18
27	78	78	78	21.2083		63.62	1.18
28	78	78	78	21.2083		63.62	1.18
29	78	78	78	21.2083		63.62	1.18
30	78	78	78	21.2083		63.62	1.18

Girder 7 Tenth		Avg. Spa./Trib W	Span L	Noncomposite DL	Eff. Width	DF	
Point	Spa. Left (in.)	Spa. Right (in.)	(in.)	(ft.)	(k/ft)	(in)	
0	16.8	78	47.4	21.2083	0.132	47.40	0.72
1	18.08	78	48.04	21.2083		48.04	0.73
2	19.42	78	48.71	21.2083		48.71	0.74
3	20.81	78	49.405	21.2083		49.41	0.75
4	22.26	78	50.13	21.2083		50.13	0.76
5	23.76	78	50.88	21.2083		50.88	0.77
6	25.31	78	51.655	21.2083		51.66	0.78
7	26.93	78	52.465	21.2083		52.47	0.79
8	28.59	78	53.295	21.2083		53.30	0.81
9	30.32	78	54.16	21.2083		54.16	0.82
10	32.09	78	55.045	21.2083		55.05	0.83



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Calculations For: **CUY-2-1441 SECTION L UNIT 3**

Girder 8 Tenth	Overhang Left		Avg. Spa./Trib W	Span L	Noncomposite DL	Eff. Width	DF
Point	(in.)	Spa. Right (in.)	(in.)	(ft.)	(k/ft)	(in)	
0	19	80.77	59.385	21.2221	0.154	59.39	1.18
1	19	80.95	59.475	21.2221		59.48	1.19
2	19	81.18	59.59	21.2221		59.59	1.19
3	19	81.47	59.735	21.2221		59.74	1.19
4	19	81.81	59.905	21.2221		59.91	1.2
5	19	82.21	60.105	21.2221		60.11	1.2
6	19	82.67	60.335	21.2221		60.34	1.2
7	19	83.17	60.585	21.2221		60.59	1.21
8	19	83.74	60.87	21.2221		60.87	1.21
9	19	84.36	61.18	21.2221		61.18	1.22
10	19	85.03	61.515	21.2243		61.52	1.23
11	19	85.76	61.88	21.2243		61.88	1.24
12	19	86.54	62.27	21.2243		62.27	1.24
13	19	87.38	62.69	21.2243		62.69	1.25
14	19	88.28	63.14	21.2243		63.14	1.26
15	19	89.23	63.615	21.2243		63.62	1.27
16	19	90.23	64.115	21.2243		63.67	1.28
17	19	91.29	64.645	21.2243		63.67	1.29
18	19	92.4	65.2	21.2243		63.67	1.3
19	19	93.57	65.785	21.2243		63.67	1.31
20	19	94.8	66.4	21.247	0.132	63.74	1.32
21	19	18.08	28.04	21.247		28.04	0.27
22	19	19.42	28.71	21.247		28.71	0.29
23	19	20.81	29.405	21.247		29.41	0.32
24	19	22.26	30.13	21.247		30.13	0.34
25	19	23.76	30.88	21.247		30.88	0.36
26	19	25.31	31.655	21.247		31.66	0.38
27	19	26.93	32.465	21.247		32.47	0.41
28	19	28.59	33.295	21.247		33.30	0.43
29	19	30.32	34.16	21.247		34.16	0.46
30	19	32.09	35.045	21.247		35.05	0.49

SECTION L - UNIT 4

• similar to previous sections except as noted

Hinges

None

Distance to Conn. P's

<u>Stringer</u>	<u>Dist 1</u>	<u>Dist 2</u>	<u>Dist 3</u>
1	139.51"	279.41"	—
2-7	139.13"	278.25"	138.13"
8	139.54"	279.51"	—

End Diaph. similar to Unit 1

Cape

S1-4 is the only caped stringer
G7

Wkx67 (see dim. sheet 7)

Cape @ FB10
6.20"

Cape @ FB11
5.70"

Non Composite DL

similar to Unit 1

see spreadsheet (SHT 11)

ESlab W + TSlab W use MDX values, unless not accurate enough then use spreadsheet (SHT 11)



Made By CTG
 Checked By DWC

Date 2/26/2012 Job No. P402110046
 Date 2/28/2012

Calculations For: **CUY-2-1441 SECTION L UNIT 4**

Girder 1 Tenth		Overhang	Avg. Spa./Trib W		Noncomposite DL	Eff. Width
Point	Spa. Left (in.)	Right (in.)	(in.)	Span L (ft.)	(k/ft)	(in)
0	64.96	19	51.48	23.2613	0.128	51.48
10	42.81	19	40.405	23.3098		40.41
20	14.25	19	26.125	23.3098		26.13

Girder 2 Tenth		Spa. Right	Avg. Spa./Trib W		Noncomposite DL	Eff. Width
Point	Spa. Left (in.)	(in.)	(in.)	Span L (ft.)	(k/ft)	(in)
0	78	64.96	71.48	23.1875	0.135	69.56
10	78	42.81	60.405	23.1875		60.41
20	78	14.25	46.125	23.1875		46.13

Girders 3-6 Tenth		Spa. Right	Avg. Spa./Trib W		Noncomposite DL	Eff. Width
Point	Spa. Left (in.)	(in.)	(in.)	Span L (ft.)	(k/ft)	(in)
0	78	78	78	23.1875	0.142	69.56
10	78	78	78	23.1875		69.56
20	78	78	78	23.1875		69.56

Girder 7 Tenth		Spa. Right	Avg. Spa./Trib W		Noncomposite DL	Eff. Width
Point	Spa. Left (in.)	(in.)	(in.)	Span L (ft.)	(k/ft)	(in)
0	32.09	78	55.045	23.1875	0.139	55.05
10	55.17	78	66.585	23.1875		66.59
20	84.91	78	81.455	23.1875		69.56

Girder 8 Tenth		Overhang Left	Spa. Right	Avg. Spa./Trib W		Noncomposite DL	Eff. Width
Point	(in.)	(in.)	(in.)	Span L (ft.)	(k/ft)	(in)	
0	19	32.09	35.045	23.2675	0.132	35.05	
10	19	55.17	46.585	23.3201		46.59	
20	19	84.91	61.455	23.3201		61.46	

SECTION L



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Date 2/24/2012
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Job No. P402110046
Sheet No. _____

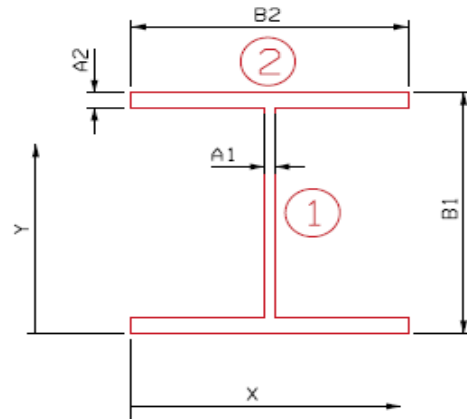
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.3750$ in
 $A_2 = t_f = 0.7500$ in
 $B_1 = d = 29.5000$ in
 $B_2 = b_f = 8.0000$ in

- * Girder 8 in MDX
- * Use Non-compact section properties regardless of criteria because fascia beams are curved



**North Fascia Stringer
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		10.5000	14.7500	154.8750	686.0000	0.0000	0.0000	686.0000
2	Top Flange		6.0000	29.1250	174.7500	0.2813	14.3750	1239.8438	1240.1250
	Bottom Flange		6.0000	0.3750	2.2500	0.2813	14.3750	1239.8438	1240.1250
Total			22.50		331.88	686.56		2479.69	3166.25
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	14.7500	in	S _{top} = 214.66 in ³	y-bar =	14.7500	in	S _{top} = 214.66 in ³
I _x =	3166.25	in ⁴	S _{bottom} = 214.66 in ³	I _x =	3166.25	in ⁴	S _{bottom} = 214.66 in ³
c _{top} =	14.7500	in	A = 22.5000 in ²	c _{top} =	14.7500	in	A = 22.5000 in ²
c _{bottom} =	14.7500	in	r _x = 11.8626 in	c _{bottom} =	14.7500	in	r _x = 11.8626 in
			Z = 246.00 in ³				Z = 50.00 in ³

SECTION L



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Date 2/24/2012
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Calculations For: **CUY-2-1441**

Stringer Rating Factors

Non-composite Capacities*		
	AB	AI
M	643.98 k-ft	643.98 k-ft
V	207.62 k	207.62 k

*Noncompact Section

$F_y =$ **36.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



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Date 2/24/2012
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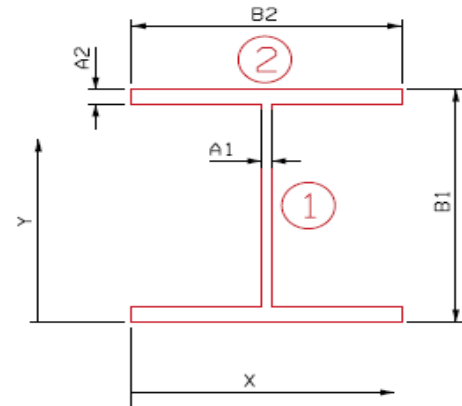
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.3750$ in
 $A_2 = t_f = 0.7500$ in
 $B_1 = d = 47.5000$ in
 $B_2 = b_f = 8.0000$ in

- * Girder 1 in MDX
- * Use Non-compact section properties regardless of criteria because fascia beams are curved



South Fascia Stringer
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.2500	23.7500	409.6875	3041.7500	0.0000	0.0000	3041.7500
2	Top Flange		6.0000	47.1250	282.7500	0.2813	23.3750	3278.3438	3278.6250
	Bottom Flange		6.0000	0.3750	2.2500	0.2813	23.3750	3278.3438	3278.6250
Total			29.25		694.69	3042.31		6556.69	9599.00
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	23.7500	in	S _{top} =	404.17	in ³	y-bar =	23.7500	in	S _{top} =	404.17	in ³
I _x =	9599.00	in ⁴	S _{bott.} =	404.17	in ³	I _x =	9599.00	in ⁴	S _{bott.} =	404.17	in ³
C _{top} =	23.7500	in	A =	29.2500	in ²	C _{top} =	23.7500	in	A =	29.2500	in ²
C _{bottom} =	23.7500	in	r _x =	18.1155	in	C _{bottom} =	23.7500	in	r _x =	18.1155	in
			Z =	478.88	in ³				Z =	50.00	in ³

SECTION L



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Checked By CTG

Date 2/24/2012
Date 2/27/2012

Job No. P402110046
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Calculations For: **CUY-2-1441**

Stringer Rating Factors

Non-composite Capacities*		
	AB	AI
M	1212.51 k-ft	1212.51 k-ft
V	149.61 k	149.61 k

*Noncompact Section

$F_y =$ **36.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

Coped Stringer End S1-1 @ FB2



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Date 2/24/2012
 Date 2/27/2011
 Date 2/29/2012

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 Rev. ✓'d KMW 2/29/2012

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 12.0000$ in
 $D_1 = t_w = 0.3950$ in

Left Angle:

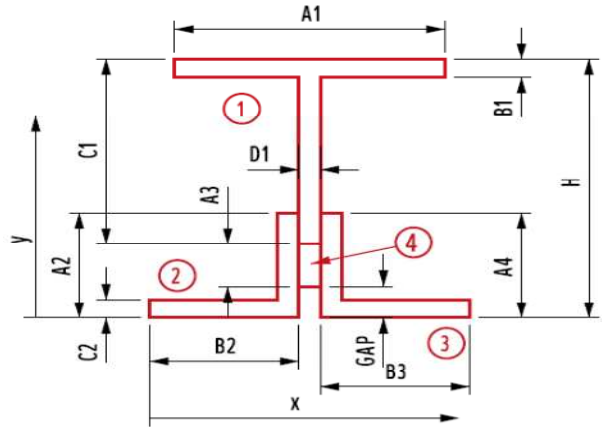
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 6.0000$ in
 $C_3 = t = 0.5000$ in

Miscellaneous:

$H = 12.4375$ in
 Gap = 0.4375 in



Coped Stringer End S1-1 @ FB2

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	12.1050	82.1082	0.2500	6.1967	260.4581	260.7081
	Web		4.4773	6.1050	27.3341	47.9381	0.1967	0.1732	48.1112
2	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	5.6583	56.0293	56.0658
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.9083	25.3752	34.3752
3	Horizontal Legs		2.7500	0.2500	0.6875	0.0573	5.6583	88.0461	88.1034
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.9083	25.3752	34.3752
Total			21.76		128.57	66.28		455.46	521.74
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	5.9083	in	S _{top} =	79.91	in ³	y-bar =	5.9083	in	S _{top} =	79.91	in ³
I _x =	521.74	in ⁴	S _{bott.} =	88.31	in ³	I _x =	521.74	in ⁴	S _{bott.} =	88.31	in ³
C _{top} =	6.5292	in	A =	21.7603	in ²	C _{top} =	6.5292	in	A =	21.7603	in ²
C _{bottom} =	5.9083	in	r _x =	4.8966	in	C _{bottom} =	5.9083	in	r _x =	4.8966	in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	4.1975	28.4716	58.8086	0.2389	0.3870	59.1956
	Web		4.4773	4.1975	18.7936	0.0582	0.2389	0.2554	0.3136
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	2.6864	12.6289	14.4153
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	0.6864	1.4132	1.4757
3 (Right)	Horizontal Leg		2.7500	7.6450	21.0238	6.9323	3.2086	28.3124	35.2447
	Vertical Leg		3.0000	4.6450	13.9350	0.0625	0.2086	0.1306	0.1931
Total			21.76		96.54	67.71		43.13	110.84
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
x-bar =	4.4364	in	S _{right} =	21.92	in ³	x-bar =	4.4364	in	S _{right} =	21.92	in ³
I _y =	110.84	in ⁴	S _{left} =	20.76	in ³	I _y =	110.84	in ⁴	S _{left} =	20.76	in ³
C _{right} =	5.0561	in	A =	21.7603	in ²	C _{right} =	5.0561	in	A =	21.7603	in ²
C _{left} =	5.3389	in	r _y =	2.2569	in	C _{left} =	5.3389	in	r _y =	2.2569	in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	286.83 k-ft	286.83 k-ft
V	208.33 k	208.33 k

F_y = **36.00 ksi**

*Compact Section

Coped Stringer End S1-1 @ FB3



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 Date 2/29/2012

Job No. P402110046
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 Rev. 'd KMW 2/29/2012

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 11.0000$ in
 $D_1 = t_w = 0.3950$ in

Left Angle:

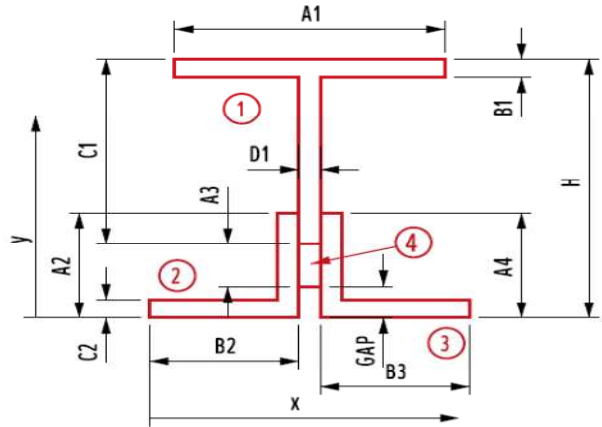
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 8.0000$ in
 $C_2 = t = 0.5000$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.5000$ in

Miscellaneous:

$H = 11.6250$ in
 Gap = 0.6250 in



Coped Stringer End S1-1 @ FB3

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	11.2925	76.5970	0.2500	5.9441	239.6585	239.9084
	Web		4.0823	5.7925	23.6469	36.3369	0.4441	0.8051	37.1420
2	Horizontal Legs		3.7500	0.2500	0.9375	0.0781	5.0984	97.4766	97.5548
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.3484	16.5451	25.5451
3	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	5.0984	45.4891	45.5256
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.3484	16.5451	25.5451
Total			22.37		119.62	54.70		416.52	471.22
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	5.3484	in	S _{top} =	75.08	in ³	y-bar =	5.3484	in	S _{top} =	75.08	in ³
I _x =	471.22	in ⁴	S _{bott.} =	88.10	in ³	I _x =	471.22	in ⁴	S _{bott.} =	88.10	in ³
C _{top} =	6.2766	in	A =	22.3653	in ²	C _{top} =	6.2766	in	A =	22.3653	in ²
C _{bottom} =	5.3484	in	r _x =	4.5901	in	C _{bottom} =	5.3484	in	r _x =	4.5901	in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	8.1975	55.6036	58.8086	0.5542	2.0834	60.8920
	Web		4.0823	8.1975	33.4649	0.0531	0.5542	1.2539	1.3069
2 (Left)	Horizontal Leg		3.7500	3.7500	14.0625	17.5781	3.8933	56.8415	74.4196
	Vertical Leg		3.0000	7.7500	23.2500	0.0625	0.1067	0.0342	0.0967
3 (Right)	Horizontal Leg		1.7500	10.6450	18.6288	1.7865	3.0017	15.7679	17.5544
	Vertical Leg		3.0000	8.6450	25.9350	0.0625	1.0017	3.0102	3.0727
Total			22.37		170.94	78.35		78.99	157.34
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
x-bar =	7.6433	in	S _{right} =	33.11	in ³	x-bar =	7.6433	in	S _{right} =	33.11	in ³
I _y =	157.34	in ⁴	S _{left} =	20.59	in ³	I _y =	157.34	in ⁴	S _{left} =	20.59	in ³
C _{right} =	4.7517	in	A =	22.3653	in ²	C _{right} =	4.7517	in	A =	22.3653	in ²
C _{left} =	7.6433	in	r _y =	2.6524	in	C _{left} =	7.6433	in	r _y =	2.6524	in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	225.23 k-ft	225.23 k-ft
V	200.08 k	200.08 k

F_y = **36.00 ksi**

*Noncompact Section

Coped Stringer End S1-1 @ FB4



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 11.1250$ in
 $D_1 = t_w = 0.3950$ in

Left Angle:

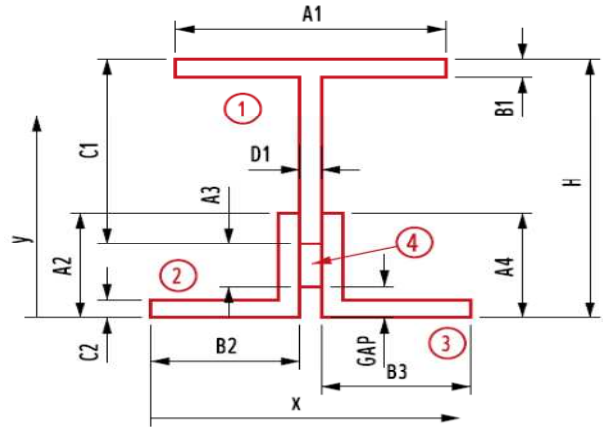
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 8.0000$ in
 $C_2 = t = 0.5000$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.5000$ in

Miscellaneous:

$H = 12.0625$ in
 Gap = 0.9375 in



Coped Stringer End S1-1 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	11.7300	79.5646	0.2500	6.1791	258.9833	259.2332
	Web		4.1317	6.1675	25.4823	37.6713	0.6166	1.5708	39.2422
2	Horizontal Legs		3.7500	0.2500	0.9375	0.0781	5.3009	105.3734	105.4516
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.5509	19.5213	28.5213
3	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	5.3009	49.1743	49.2107
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.5509	19.5213	28.5213
Total			22.41		124.42	56.04		454.14	510.18
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	5.5509	in	S _{top} = 78.35 in ³	y-bar =	5.5509	in	S _{top} = 78.35 in ³
I _x =	510.18	in ⁴	S _{bott.} = 91.91 in ³	I _x =	510.18	in ⁴	S _{bott.} = 91.91 in ³
C _{top} =	6.5116	in	A = 22.4147 in ²	C _{top} =	6.5116	in	A = 22.4147 in ²
C _{bottom} =	5.5509	in	r _x = 4.7708 in	C _{bottom} =	5.5509	in	r _x = 4.7708 in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	8.1975	55.6036	58.8086	0.5530	2.0742	60.8828
	Web		4.1317	8.1975	33.8696	0.0537	0.5530	1.2634	1.3172
2 (Left)	Horizontal Leg		3.7500	3.7500	14.0625	17.5781	3.8945	56.8772	74.4553
	Vertical Leg		3.0000	7.7500	23.2500	0.0625	0.1055	0.0334	0.0959
3 (Right)	Horizontal Leg		1.7500	10.6450	18.6288	1.7865	3.0005	15.7551	17.5416
	Vertical Leg		3.0000	8.6450	25.9350	0.0625	1.0005	3.0029	3.0654
Total			22.41		171.35	78.35		79.01	157.36
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	7.6445	in	S _{right} = 33.12 in ³	x-bar =	7.6445	in	S _{right} = 33.12 in ³
I _y =	157.36	in ⁴	S _{left} = 20.58 in ³	I _y =	157.36	in ⁴	S _{left} = 20.58 in ³
C _{right} =	4.7505	in	A = 22.4147 in ²	C _{right} =	4.7505	in	A = 22.4147 in ²
C _{left} =	7.6445	in	r _y = 2.6496 in	C _{left} =	7.6445	in	r _y = 2.6496 in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	235.05 k-ft	235.05 k-ft
V	201.11 k	201.11 k

F_y = **36.00 ksi**

*Noncompact Section

Coped Stringer End S1-2 @ FB4



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 Date 2/29/2012

Job No. P402110046
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 11.5000$ in
 $D_1 = t_w = 0.3950$ in

Left Angle:

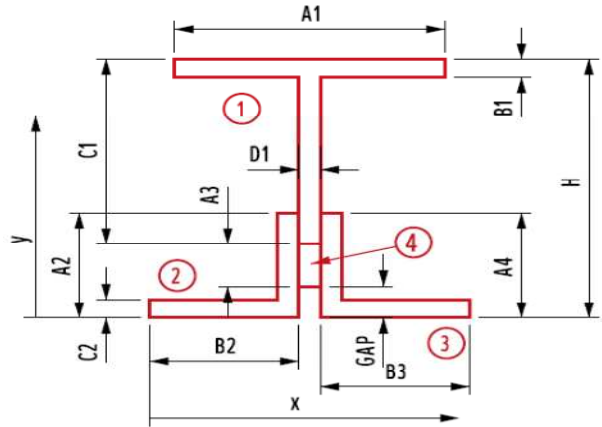
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 8.0000$ in
 $C_2 = t = 0.5000$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.5000$ in

Miscellaneous:

$H = 12.0625$ in
 Gap = 0.5625 in



Coped Stringer End S1-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	11.7300	79.5646	0.2500	6.2106	261.6320	261.8820
	Web		4.2798	5.9800	25.5934	41.8700	0.4606	0.9080	42.7780
2	Horizontal Legs		3.7500	0.2500	0.9375	0.0781	5.2694	104.1241	104.2022
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.5194	19.0419	28.0419
3	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	5.2694	48.5913	48.6277
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	2.5194	19.0419	28.0419
Total			22.56		124.53	60.23		453.34	513.57
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	5.5194	in	S _{top} = 78.49 in ³	y-bar =	5.5194	in	S _{top} = 78.49 in ³
I _x =	513.57	in ⁴	S _{bottom} = 93.05 in ³	I _x =	513.57	in ⁴	S _{bottom} = 93.05 in ³
C _{top} =	6.5431	in	A = 22.5628 in ²	C _{top} =	6.5431	in	A = 22.5628 in ²
C _{bottom} =	5.5194	in	r _x = 4.7709 in	C _{bottom} =	5.5194	in	r _x = 4.7709 in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	8.1975	55.6036	58.8086	0.5494	2.0470	60.8557
	Web		4.2798	8.1975	35.0839	0.0556	0.5494	1.2916	1.3473
2 (Left)	Horizontal Leg		3.7500	3.7500	14.0625	17.5781	3.8981	56.9833	74.5614
	Vertical Leg		3.0000	7.7500	23.2500	0.0625	0.1019	0.0311	0.0936
3 (Right)	Horizontal Leg		1.7500	10.6450	18.6288	1.7865	2.9969	15.7170	17.5035
	Vertical Leg		3.0000	8.6450	25.9350	0.0625	0.9969	2.9812	3.0437
Total			22.56		172.56	78.35		79.05	157.41
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	7.6481	in	S _{right} = 33.16 in ³	x-bar =	7.6481	in	S _{right} = 33.16 in ³
I _y =	157.41	in ⁴	S _{left} = 20.58 in ³	I _y =	157.41	in ⁴	S _{left} = 20.58 in ³
C _{right} =	4.7469	in	A = 22.5628 in ²	C _{right} =	4.7469	in	A = 22.5628 in ²
C _{left} =	7.6481	in	r _y = 2.6413 in	C _{left} =	7.6481	in	r _y = 2.6413 in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	235.47 k-ft	235.47 k-ft
V	204.20 k	204.20 k

F_y = **36.00 ksi**

*Noncompact Section

Coped Stringer End S1-2 @ FB5



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 8.6250$ in
 $D_1 = t_w = 0.3950$ in

Left Angle:

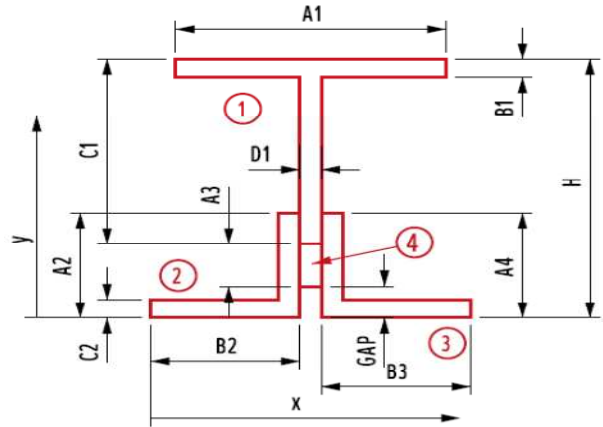
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 8.0000$ in
 $C_2 = t = 0.5000$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.5000$ in

Miscellaneous:

$H = 9.0625$ in
 Gap = 0.4375 in



Coped Stringer End S1-2 @ FB4

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	8.7300	59.2156	0.2500	4.4140	132.1550	132.4050
	Web		3.1442	4.4175	13.8895	16.6018	0.1015	0.0324	16.6342
2	Horizontal Legs		3.7500	0.2500	0.9375	0.0781	4.0660	61.9968	62.0749
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	1.3160	5.1957	14.1957
3	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	4.0660	28.9318	28.9683
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	1.3160	5.1957	14.1957
Total			21.43		92.48	34.97		233.51	268.47
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	4.3160	in	S _{top} =	56.56	in ³	y-bar =	4.3160	in	S _{top} =	56.56	in ³
I _x =	268.47	in ⁴	S _{bott.} =	62.20	in ³	I _x =	268.47	in ⁴	S _{bott.} =	62.20	in ³
C _{top} =	4.7465	in	A =	21.4272	in ²	C _{top} =	4.7465	in	A =	21.4272	in ²
C _{bottom} =	4.3160	in	r _x =	3.5397	in	C _{bottom} =	4.3160	in	r _x =	3.5397	in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	8.1975	55.6036	58.8086	0.5785	2.2698	61.0784
	Web		3.1442	8.1975	25.7746	0.0409	0.5785	1.0521	1.0930
2 (Left)	Horizontal Leg		3.7500	3.7500	14.0625	17.5781	3.8690	56.1352	73.7133
	Vertical Leg		3.0000	7.7500	23.2500	0.0625	0.1310	0.0515	0.1140
3 (Right)	Horizontal Leg		1.7500	10.6450	18.6288	1.7865	3.0260	16.0239	17.8103
	Vertical Leg		3.0000	8.6450	25.9350	0.0625	1.0260	3.1578	3.2203
Total			21.43		163.25	78.34		78.69	157.03
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
x-bar =	7.6190	in	S _{right} =	32.88	in ³	x-bar =	7.6190	in	S _{right} =	32.88	in ³
I _y =	157.03	in ⁴	S _{left} =	20.61	in ³	I _y =	157.03	in ⁴	S _{left} =	20.61	in ³
C _{right} =	4.7760	in	A =	21.4272	in ²	C _{right} =	4.7760	in	A =	21.4272	in ²
C _{left} =	7.6190	in	r _y =	2.7071	in	C _{left} =	7.6190	in	r _y =	2.7071	in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	169.69 k-ft	169.69 k-ft
V	180.49 k	180.49 k

F_y = **36.00 ksi**

*Noncompact Section

Coped Stringer End S1-3 @ FB9



Made By SFH
 Checked By KMW
 Revised By DWC

Date 2/24/2012
 Date 2/27/2011
 Date 2/29/2012

Job No. P402110046
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 13.0000$ in
 $D_1 = t_w = 0.3950$ in

Left Angle:

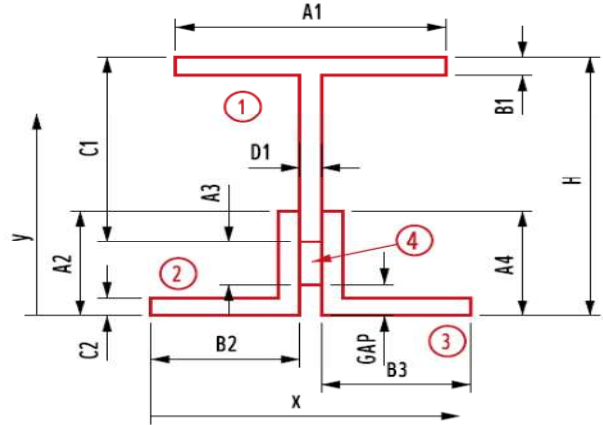
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.5000$ in

Miscellaneous:

$H = 13.5000$ in
 Gap = 0.5000 in



Coped Stringer End S1-3 @ FB9

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	13.1675	89.3152	0.2500	6.5178	288.1543	288.4042
	Web		4.8723	6.6675	32.4862	61.7779	0.0178	0.0015	61.7795
2	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	6.3997	71.6731	71.7095
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	3.6497	39.9607	48.9607
3	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	6.3997	71.6731	71.7095
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	3.6497	39.9607	48.9607
Total			21.16		140.68	80.10		511.42	591.52
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	6.6497 in	S _{top} =	86.35 in ³	y-bar =	6.6497 in	S _{top} =	86.35 in ³
I _x =	591.52 in ⁴	S _{bott.} =	88.96 in ³	I _x =	591.52 in ⁴	S _{bott.} =	88.96 in ³
C _{top} =	6.8503 in	A =	21.1553 in ²	C _{top} =	6.8503 in	A =	21.1553 in ²
C _{bottom} =	6.6497 in	r _x =	5.2878 in	C _{bottom} =	6.6497 in	r _x =	5.2878 in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	4.1975	28.4716	58.8086	0.0000	0.0000	58.8086
	Web		4.8723	4.1975	20.4516	0.0634	0.0000	0.0000	0.0634
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	2.4475	10.4829	12.2694
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	0.4475	0.6008	0.6633
3 (Right)	Horizontal Leg		1.7500	6.6450	11.6288	1.7865	2.4475	10.4829	12.2694
	Vertical Leg		3.0000	4.6450	13.9350	0.0625	0.4475	0.6008	0.6633
Total			21.16		88.80	62.57		22.17	84.74
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	4.1975 in	S _{right} =	16.62 in ³	x-bar =	4.1975 in	S _{right} =	16.62 in ³
I _y =	84.74 in ⁴	S _{left} =	16.62 in ³	I _y =	84.74 in ⁴	S _{left} =	16.62 in ³
C _{right} =	5.1000 in	A =	21.1553 in ²	C _{right} =	5.1000 in	A =	21.1553 in ²
C _{left} =	5.1000 in	r _y =	2.0014 in	C _{left} =	5.1000 in	r _y =	2.0014 in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	303.24 k-ft	303.24 k-ft
V	216.57 k	216.57 k

F_y = **36.00 ksi**

*Compact Section

Coped Stringer End S1-3 @ FB10



Made By SFH
 Checked By KMW
 Revised By DWC

Date 2/24/2012
 Date 2/27/2011
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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.2000$ in
 $B_1 = t_f = 0.6650$ in
 $C_1 = d = 9.0000$ in
 $D_1 = t_w = 0.3950$ in

Left Angle:

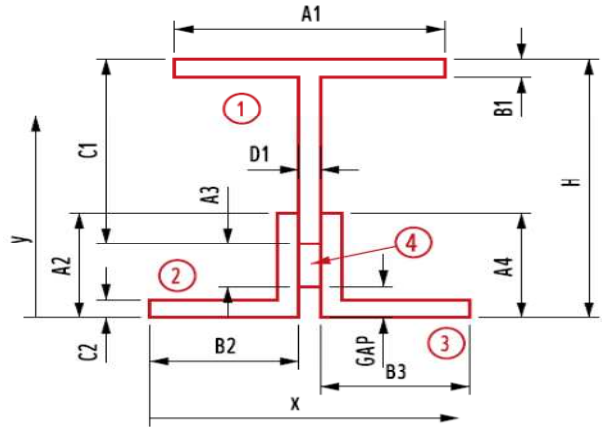
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.5000$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.5000$ in

Miscellaneous:

$H = 9.4375$ in
 Gap = 0.4375 in



Coped Stringer End S1-3 @ FB10

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	9.1050	61.7592	0.2500	4.2113	120.2980	120.5480
	Web		3.2923	4.6050	15.1612	19.0604	0.2887	0.2744	19.3348
2	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	4.6437	37.7366	37.7730
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	1.8937	10.7581	19.7581
3	Horizontal Legs		1.7500	0.2500	0.4375	0.0365	4.6437	37.7366	37.7730
	Vertical Legs		3.0000	3.0000	9.0000	9.0000	1.8937	10.7581	19.7581
Total			19.58		95.80	37.38		217.56	254.94
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	4.8937	in	S _{top} =	56.11	in ³	y-bar =	4.8937	in	S _{top} =	56.11	in ³
I _x =	254.94	in ⁴	S _{bott.} =	52.10	in ³	I _x =	254.94	in ⁴	S _{bott.} =	52.10	in ³
C _{top} =	4.5438	in	A =	19.5753	in ²	C _{top} =	4.5438	in	A =	19.5753	in ²
C _{bottom} =	4.8937	in	r _x =	3.6088	in	C _{bottom} =	4.8937	in	r _x =	3.6088	in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		6.7830	4.1975	28.4716	58.8086	0.0000	0.0000	58.8086
	Web		3.2923	4.1975	13.8195	0.0428	0.0000	0.0000	0.0428
2 (Left)	Horizontal Leg		1.7500	1.7500	3.0625	1.7865	2.4475	10.4829	12.2694
	Vertical Leg		3.0000	3.7500	11.2500	0.0625	0.4475	0.6008	0.6633
3 (Right)	Horizontal Leg		1.7500	6.6450	11.6288	1.7865	2.4475	10.4829	12.2694
	Vertical Leg		3.0000	4.6450	13.9350	0.0625	0.4475	0.6008	0.6633
Total			19.58		82.17	62.55		22.17	84.72
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
x-bar =	4.1975	in	S _{right} =	16.61	in ³	x-bar =	4.1975	in	S _{right} =	16.61	in ³
I _y =	84.72	in ⁴	S _{left} =	16.61	in ³	I _y =	84.72	in ⁴	S _{left} =	16.61	in ³
C _{right} =	5.1000	in	A =	19.5753	in ²	C _{right} =	5.1000	in	A =	19.5753	in ²
C _{left} =	5.1000	in	r _y =	2.0803	in	C _{left} =	5.1000	in	r _y =	2.0803	in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	192.60 k-ft	192.60 k-ft
V	183.58 k	183.58 k

F_y =	36.00 ksi
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*Compact Section

Coped Stringer End S1-4 @ FB10



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Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 9.0000$ in
 $D_1 = t_w = 0.4550$ in

Left Angle:

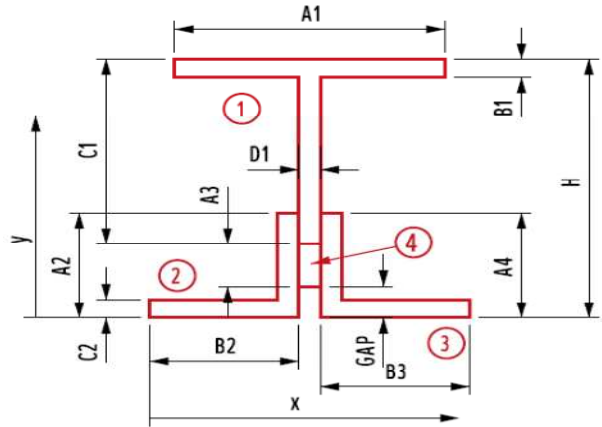
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.6250$ in

Miscellaneous:

$H = 9.4375$ in
 Gap = 0.4375 in



Coped Stringer End S1-4 @ FB10

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	9.0575	70.9021	0.3768	4.2581	141.9302	142.3070
	Web		3.7492	4.5575	17.0870	21.2135	0.2419	0.2195	21.4329
2	Horizontal Legs		2.1094	0.3125	0.6592	0.0687	4.4869	42.4672	42.5359
	Vertical Legs		3.7500	3.0000	11.2500	11.2500	1.7994	12.1424	23.3924
3	Horizontal Legs		2.1094	0.3125	0.6592	0.0687	4.4869	42.4672	42.5359
	Vertical Legs		3.7500	3.0000	11.2500	11.2500	1.7994	12.1424	23.3924
Total			23.30		111.81	44.23		251.37	295.60
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



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Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	4.7994	in	S _{top} = 63.73 in ³	y-bar =	4.7994	in	S _{top} = 63.73 in ³
I _x =	295.60	in ⁴	S _{bott.} = 61.59 in ³	I _x =	295.60	in ⁴	S _{bott.} = 61.59 in ³
C _{top} =	4.6381	in	A = 23.2960 in ²	C _{top} =	4.6381	in	A = 23.2960 in ²
C _{bottom} =	4.7994	in	r _x = 3.5621 in	C _{bottom} =	4.7994	in	r _x = 3.5621 in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.0000	0.0000	69.2060
	Web		3.7492	4.2275	15.8497	0.0647	0.0000	0.0000	0.0647
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	2.5400	13.6088	15.6111
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	0.5400	1.0935	1.2156
3 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	2.5400	13.6088	15.6111
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.5400	1.0935	1.2156
Total			23.30		98.48	73.52		29.40	102.92
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	4.2275	in	S _{right} = 19.99 in ³	x-bar =	4.2275	in	S _{right} = 19.99 in ³
I _y =	102.92	in ⁴	S _{left} = 19.99 in ³	I _y =	102.92	in ⁴	S _{left} = 19.99 in ³
C _{right} =	5.1500	in	A = 23.2960 in ²	C _{right} =	5.1500	in	A = 23.2960 in ²
C _{left} =	5.1500	in	r _y = 2.1019 in	C _{left} =	5.1500	in	r _y = 2.1019 in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	225.39 k-ft	225.39 k-ft
V	218.57 k	218.57 k

F_y = **36.00 ksi**

*Compact Section

Coped Stringer End S1-4 @ FB11



Made By SFH
 Checked By KMW
 Revised By DWC

Date 2/24/2012
 Date 2/27/2011
 Date 2/29/2012

Job No. P402110046
 Sheet No. _____
 Rev. 'd KMW 2/29/2012

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Partial W-Section

$A_1 = b_f = 10.3000$ in
 $B_1 = t_f = 0.7600$ in
 $C_1 = d = 9.5000$ in
 $D_1 = t_w = 0.4550$ in

Left Angle:

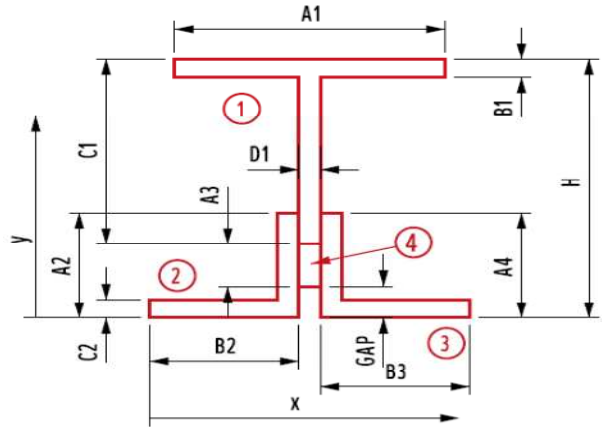
$A_2 = L_v = 6.0000$ in
 $B_2 = L_h = 4.0000$ in
 $C_2 = t = 0.6250$ in

Right Angle:

$A_4 = L_v = 6.0000$ in
 $B_3 = L_h = 4.0000$ in
 $C_3 = t = 0.6250$ in

Miscellaneous:

$H = 9.9375$ in
 Gap = 0.4375 in



Coped Stringer End S1-4 @ FB11

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	9.5575	74.8161	0.3768	4.5518	162.1840	162.5608
	Web		3.9767	4.8075	19.1180	25.3142	0.1982	0.1563	25.4705
2	Horizontal Legs		2.1094	0.3125	0.6592	0.0687	4.6932	46.4623	46.5310
	Vertical Legs		3.7500	3.0000	11.2500	11.2500	2.0057	15.0863	26.3363
3	Horizontal Legs		2.1094	0.3125	0.6592	0.0687	4.6932	46.4623	46.5310
	Vertical Legs		3.7500	3.0000	11.2500	11.2500	2.0057	15.0863	26.3363
Total			23.52		117.75	48.33		285.44	333.77
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



Made By SFH
 Checked By KMW
 Revised By DWC

Date 2/24/2012
 Date 2/27/2011
 Date 2/29/2012

Job No. P402110046
 Sheet No. _____
 Rev. ✓'d KMW 2/29/2012

Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	5.0057	in	S _{top} = 67.68 in ³	y-bar =	5.0057	in	S _{top} = 67.68 in ³
I _x =	333.77	in ⁴	S _{bott.} = 66.68 in ³	I _x =	333.77	in ⁴	S _{bott.} = 66.68 in ³
C _{top} =	4.9318	in	A = 23.5235 in ²	C _{top} =	4.9318	in	A = 23.5235 in ²
C _{bottom} =	5.0057	in	r _x = 3.7668 in	C _{bottom} =	5.0057	in	r _x = 3.7668 in

Min Vertical Leg + Web +

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Top Flange		7.8280	4.2275	33.0929	69.2060	0.0000	0.0000	69.2060
	Web		3.9767	4.2275	16.8115	0.0686	0.0000	0.0000	0.0686
2 (Left)	Horizontal Leg		2.1094	1.6875	3.5596	2.0023	2.5400	13.6088	15.6111
	Vertical Leg		3.7500	3.6875	13.8281	0.1221	0.5400	1.0935	1.2156
3 (Right)	Horizontal Leg		2.1094	6.7675	14.2752	2.0023	2.5400	13.6088	15.6111
	Vertical Leg		3.7500	4.7675	17.8781	0.1221	0.5400	1.0935	1.2156
Total			23.52		99.45	73.52		29.40	102.93
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	4.2275	in	S _{right} = 19.99 in ³	x-bar =	4.2275	in	S _{right} = 19.99 in ³
I _y =	102.93	in ⁴	S _{left} = 19.99 in ³	I _y =	102.93	in ⁴	S _{left} = 19.99 in ³
C _{right} =	5.1500	in	A = 23.5235 in ²	C _{right} =	5.1500	in	A = 23.5235 in ²
C _{left} =	5.1500	in	r _y = 2.0918 in	C _{left} =	5.1500	in	r _y = 2.0918 in

Stringer Capacity

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

Non-composite Capacities*		
	AB	AI
M	240.15 k-ft	240.15 k-ft
V	223.32 k	223.32 k

F_y = **36.00 ksi**

*Compact Section

ID: SECTION L - UNIT 1

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
FLOAT LANES
HS20 LOADING
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

BRINCD 1 8 2 9 4 11 6 13 8 15 9 16 11 18 13 20 15 22 16 23 18 25 20 27
22 29 23 30 25 32 27 34 29 36 30 37 32 39 34 41 36 43 37 44 39 46 41
48 43 50 44 51 46 53 48 55
FPC 4.5
GCD-1 8.6314 10.1577 20.3223 8.8711 30.6539 7.8474 40.6535 6.9575
50.6532 6.1667 60.6532 5.4746 70.6532 4.8812
GCD-2 8.8081 11.1495 20.5234 11.1495 30.6539 11.1495 40.6535 11.1495
50.6532 11.1495 60.6532 11.1495 70.6532 11.1495
GCD-3 9.8738 17.1313 21.0513 17.1313 30.6532 17.1313 40.6535 17.1313
50.6532 17.1313 60.6532 17.1313 70.6532 17.1313
GCD-4 11.0317 23.6313 21.6249 23.6313 30.6532 23.6313 40.6535 23.6313
50.6532 23.6313 60.6532 23.6313 70.6532 23.6313
GCD-5 12.1896 30.1313 22.1986 30.1313 30.6532 30.1313 40.6535 30.1313
50.6532 30.1313 60.6532 30.1313 70.6532 30.1313
GCD-6 13.3476 36.6313 22.7722 36.6313 30.6532 36.6313 40.6535 36.6313
50.6532 36.6313 60.6532 36.6313 70.6532 36.6313
GCD-7 14.5055 43.1313 23.3459 43.1313 30.6532 43.1313 40.6535 43.1313
50.6532 43.1313 60.6532 43.1313 70.6532 43.1313
GCD-8 15.655 49.4295 23.8366 48.6911 30.6532 48.0004 40.6535 47.0742
50.6532 46.2511 60.6532 45.5309 70.6532 44.9134
HNG-1 21.6
HNG-8 14.6
LANWID 12.
LCD-1 6.3266 10.5113 10.3266 10.0465 14.3266 9.5977 18.3266 9.1649
22.3266 8.7479 26.3266 8.347 30.3266 7.9619 34.3266 7.5927 38.3266
7.2394 42.3266 6.9019 46.3266 6.5803 50.3266 6.2745 54.3266 5.9845
58.3266 5.7104 62.3266 5.452 66.3266 5.2093 70.3266 4.9825 74.3266
4.7713
LCD-2 6.3266 22.5959 10.3266 22.1255 14.3266 21.6712 18.3266 21.2332
22.3266 20.8112 26.3266 20.4054 30.3266 20.0157 34.3266 19.6421
38.3266 19.2846 42.3266 18.9431 46.3266 18.6176 50.3266 18.3081
54.3266 18.0147 58.3266 17.7372 62.3266 17.4757 66.3266 17.2302
70.3266 17.0006 74.3266 16.787
LCD-3 6.3266 34.6825 10.3266 34.2063 14.3266 33.7466 18.3266 33.3031
22.3266 32.8761 26.3266 32.4653 30.3266 32.0709 34.3266 31.6927
38.3266 31.3309 42.3266 30.9852 46.3266 30.6558 50.3266 30.3426
54.3266 30.0456 58.3266 29.7648 62.3266 29.5001 66.3266 29.2516
70.3266 29.0193 74.3266 28.8031
RAD-1 -1020.486
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
ROADWG 39.88 39.85 39.82 39.81 39.8 39.81 39.82 39.85 39.89 39.93
39.98 39.98 39.97 39.96 39.96 39.95 39.94 39.94 39.93 39.92 39.92
39.91 39.91 39.9 39.9 39.89 39.88 39.88 39.87 39.87 39.87
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SPEED 50
SUP-1 1 3 5 7
SUP-2 1 3 5 7
SUP-3 1 3 5 7
SUP-4 1 3 5 7
SUP-5 1 3 5 7
SUP-6 1 3 5 7
SUP-7 1 3 5 7
SUP-8 1 3 5 7
SUPER 0.04
WAC-1 0.125
WAC-2 0.137

WAC-3 0.142
WAC-4 0.142
WAC-5 0.142
WAC-6 0.142
WAC-7 0.137
WAC-8 0.13
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001
GO

SECTION L - UNIT 1
Girder 1 : Input File : Definition
Mon Mar 05 13:59:29 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 11.7615 20.4214 20.0549
ESLABW 25.0441 26.4899 27.9356 29.3814 30.8271 32.2729 33.5764 34.8157
36.0549 37.2941 38.5334 39.6566 40.7797 41.9029 43.0261 44.1493
45.0402 45.9306 46.821 47.7114 48.6019 49.491 50.3801 51.2693 52.1585
53.0476 53.9367 54.8259 55.715 56.6042 57.4933
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 21.6
IGIRD 1
RAD -1020.486
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 46.
SPLWT 0.375
SPN 22.1437 20.0701 20.0416
SS 1.
STFGAP 0.
SUPBST 1.
SUPBSW 4.
TSLABW 25.0441 26.4899 27.9356 29.3814 30.8271 32.2729 33.5764 34.8157
36.0549 37.2941 38.5334 39.6566 40.7797 41.9029 43.0261 44.1493
45.0402 45.9306 46.821 47.7114 48.6019 49.491 50.3801 51.2693 52.1585
53.0476 53.9367 54.8259 55.715 56.6042 57.4933
TSSP 141.14 245.06 240.66
WCONC 113.

GO

SECTION L - UNIT 1
Girder 2 : Input File : Definition
Mon Mar 05 13:59:41 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 11.7153 20.1301 19.9997
ESLABW 42.5004 43.8534 45.2059 46.5585 47.911 49.2636 50.5349 51.76
52.9851 54.2102 55.435 56.5571 57.6787 58.8003 59.9218 61.0433 61.933
62.8227 63.7124 64.6021 65.4914 66.3808 67.2705 68.1603 69.05 35.8908
35.8908 35.8908 35.8908 35.8908 35.8908
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 2
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 21.8458 19.9993 20.
STFGAP 0.
TSLABW 42.5004 43.8534 45.2059 46.5585 47.911 49.2636 50.5349 51.76
52.9851 54.2102 55.435 56.5571 57.6787 58.8003 59.9218 61.0433 61.933
62.8227 63.7124 64.6021 65.4914 66.3808 67.2705 68.1603 69.05 72.9
72.9 72.9 72.9 72.9 72.9
TSSP 1. 139.58 241.56 240.
WCONC 113.

GO

SECTION L - UNIT 1
Girder 3 : Input File : Definition
Mon Mar 05 13:59:45 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 11.1775 19.6022 19.9997
ESLABW 76.0699 75.9048 75.7397 75.5746 75.4095 75.2444 75.1627 75.1318
75.101 75.0701 75.0393 75.0096 74.9799 74.9502 74.9205 74.8908 74.8908
74.8908 74.8908 74.8908 74.8908 74.8908 74.8908 74.8908 74.8908 39.
39. 39. 39. 39. 39.
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 3
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 20.7794 20. 20.
STFGAP 0.
TSLABW 74.89
TSSP 1. 133.13 235.23 240.
WCONC 113.

GO

SECTION L - UNIT 1
Girder 4 : Input File : Definition
Mon Mar 05 13:59:50 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10.5932 19.0286 19.9997
ESLABW 79.2279 79.0567 78.8854 78.714 78.5428 78.3714 78.2844 78.2531
78.2219 78.1906 78.1593 78.1275 78.0956 78.0637 78.0319 78. 78. 78.
78. 78. 78. 78. 78. 78. 39. 39. 39. 39. 39. 39.
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 4
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 19.6215 20. 20.
STFGAP 0.
TSLABW 78.
TSSP 1. 126.12 228.34 240.
WCONC 113.

GO

SECTION L - UNIT 1
Girder 5 : Input File : Definition
Mon Mar 05 13:59:56 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10.009 18.4549 19.9997
ESLABW 79.2281 79.0575 78.8869 78.7163 78.5457 78.3751 78.2856 78.2553
78.225 78.1946 78.1643 78.1315 78.0986 78.0658 78.0329 78. 78. 78. 78.
78. 78. 78. 78. 78. 78. 39. 39. 39. 39. 39. 39.
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 5
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 18.4636 20. 20.
STFGAP 0.
TSLABW 78.
TSSP 1. 119.11 221.46 240.
WCONC 113.

GO

SECTION L - UNIT 1
Girder 6 : Input File : Definition
Mon Mar 05 14:00:01 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 9.4246 17.8813 19.9997
ESLABW 79.2281 79.0582 78.8884 78.7185 78.5487 78.3789 78.2869 78.2576
78.2282 78.1989 78.1696 78.1357 78.1018 78.0679 78.034 78. 78. 78. 78.
78. 78. 78. 78. 78. 78. 39. 39. 39. 39. 39.
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 6
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 17.3056 20. 20.
STFGAP 0.
TSLABW 78.
TSSP 1. 112.1 214.58 240.
WCONC 113.

GO

SECTION L - UNIT 1
Girder 7 : Input File : Definition
Mon Mar 05 14:00:07 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 0.64 3.2 4.01 3.57
BR 8.8404 17.3076 19.9997
ESLABW 78.0274 77.0433 76.0593 75.0752 74.0912 73.1072 72.1508 71.2195
70.2881 69.3567 68.4254 67.2718 66.1182 64.9647 63.8111 62.6576
61.7315 60.8055 59.8795 58.9535 58.0276 57.1016 56.1756 55.2496
54.3236 14.3976 13.4716 12.5456 11.6196 10.6936 9.7676
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 7
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.665
SPLBFW 10.2
SPLTFT 0.665
SPLTFW 10.2
SPLTST 0.5
SPLTSW 7.5
SPLWD 14.97
SPLWT 0.395
SPN 16.1477 20. 20.
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 78.0274 77.0433 76.0593 75.0752 74.0912 73.1072 72.1508 71.2195
70.2881 69.3567 68.4254 67.2718 66.1182 64.9647 63.8111 62.6576
61.7315 60.8055 59.8795 58.9535 58.0276 57.1016 56.1756 55.2496
54.3236 49.4 49.4 49.4 49.4 49.4 49.4
TSSP 1. 105.08 207.69 240.
WCONC 113.

GO

SECTION L - UNIT 1
Girder 8 : Input File : Definition
Mon Mar 05 14:00:13 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 8.2149 16.8947 20.0595
ESLABW 57.413 56.5094 55.6062 54.703 53.7997 52.8965 52.0078 51.1311
50.2544 49.3777 48.5014 47.3336 46.1653 44.9969 43.8286 42.6603
41.7328 40.806 39.8792 38.9524 38.0251 37.0995 36.1743 35.2491 34.3239
33.3987 18.9996 18.9996 18.9996 18.9996 18.9996
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 14.6
IGIRD 8
RAD -980.516
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 28.
SPLWT 0.375
SPN 15.0664 20.0767 20.045
SS 1.
STFGAP 0.
SUPBST 1.
SUPBSW 4.
TSLABW 57.413 56.5094 55.6062 54.703 53.7997 52.8965 52.0078 51.1311
50.2544 49.3777 48.5014 47.3336 46.1653 44.9969 43.8286 42.6603
41.7328 40.806 39.8792 38.9524 38.0251 37.0995 36.1743 35.2491 34.3239
33.3987 31.7 31.7 31.7 31.7 31.7
TSSP 97.76 202.74 240.71
WCONC 113.

GO

SECTION L - UNIT 1
Bracing : Input File : Definition
Mon Mar 05 14:00:19 2012

ID: SECTION L - UNIT 1

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

DIAPHRAGM MC10X41.1 FOR GROUP 2

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

TYPE D BRACING FOR GROUP 2

DATA

BRL-1 1.0074 2.2873 4.192 5.6749

BRL-2 6.076 6.005 5.9818 5.9818

BRL-3 6.6023 6.5253 6.5 6.5

BRL-4 6.6023 6.5253 6.5 6.5

BRL-5 6.6024 6.5253 6.5 6.5

BRL-6 6.6023 6.5253 6.5 6.5

BRL-7 6.4022 5.5814 3.9429 2.3996

GCONNDST 4.25 4.25

GRP-1 2 1 1 1

GRP-2 2 1 1 1

GRP-3 2 1 1 1

GRP-4 2 1 1 1

GRP-5 2 1 1 1

GRP-6 2 1 1 1

GRP-7 2 1 1 1

GRPHT 0. 0.

GO

ID: SECTION L - UNIT 2

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
HS20 LOADING
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

BRINCD 2 9 4 11 6 13 9 16 11 18 13 20 16 23 18 25 20 27 23 30 25 32 27
34 30 37 32 39 34 41 37 44 39 49 41 51 44 47
FPC 4.5
GCD-1 70.6532 4.8812 80.6532 4.3862 90.6532 3.9894 100.6532 3.6909
110.6532 3.4904 121.2625 3.3849 131.8719 3.3896
GCD-2 70.6532 10.6313 80.6532 10.6313 90.6532 10.6313 100.6532 10.6313
110.6532 10.6313 121.2625 10.6313 131.8719 10.6313
GCD-3 70.6532 17.1313 80.6532 17.1313 90.6532 17.1313 100.6532 17.1313
110.6532 17.1313 121.2625 17.1313 131.8719 17.1313
GCD-4 70.6532 23.6313 80.6532 23.6313 90.6532 23.6313 100.6532 23.6313
110.6532 23.6313 121.2625 23.6313 131.8719 23.6313
GCD-5 70.6532 30.1313 80.6532 30.1313 90.6532 30.1313 100.6532 30.1313
110.6532 30.1313 121.2625 30.1313 131.8719 30.1313
GCD-6 70.6532 36.6313 80.6532 36.6313 90.6532 36.6313 100.6532 36.6313
110.6532 36.6313 121.2625 36.6313 131.8719 36.6313
GCD-7 70.6532 43.1313 80.6532 43.1313 90.6532 43.1313
GCD-8 70.6532 44.9134 80.6532 44.3983 90.6532 43.9856 100.6532 43.6751
110.6532 43.4667 121.2625 43.3571 131.8719 43.3623
HNG-1 39.5
HNG-8 39.5
RAD-1 -1020.484
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5 7
SUP-2 1 3 5 7
SUP-3 1 3 5 7
SUP-4 1 3 5 7
SUP-5 1 3 5 7
SUP-6 1 3 5 7
SUP-7 1 3
SUP-8 1 3 5 7
WAC-1 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135
0.135 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
0.153 0.153
WAC-2 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
0.142 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
WAC-3 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
0.142 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
WAC-4 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
0.142 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
WAC-5 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
0.142 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
WAC-6 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
0.142 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
WAC-7 0.131 0.131 0.131 0.131 0.131 0.131 0.131 0.131 0.131 0.131
0.131 0.131
WAC-8 0.125 0.125 0.125 0.125 0.125 0.125 0.125 0.125 0.125 0.125
0.125 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
0.153 0.153
WAS-1 0.01

1.18 1.18 1.18 1.18 1.18 1.18
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001
GO

SECTION L - UNIT 2
Girder 1 : Input File : Definition
Mon Mar 05 14:01:31 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 10.0122 20.0124 20.6119
ESLABW 56.2 56.2 56.2 56.2 56.2 56.2 56.8871 57.3044 57.7218 58.1391
58.5565 58.9735 59.3906 59.8076 60.2247 60.6417 60.8201 60.9983
61.1765 61.3547 61.5329 61.7219 61.9109 62.1 62.289 62.478 62.667
62.856 63.045 63.234 63.423
FPC 4.5
HINGE 39.5
IGIRD 1
RAD -1020.484
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 46.
SPLWT 0.375
SPN 20.0201 20.0065 21.2193
SS 1.
STFGAP 0.
SUPBST 0.5
SUPBSW 4.
TSLABW 56.2 56.2 56.2 56.2 56.2 56.2 56.8871 57.3044 57.7218 58.1391
58.5565 58.9735 59.3906 59.8076 60.2247 60.6417 60.8201 60.9983
61.1765 61.3547 61.5329 61.7219 61.9109 62.1 62.289 62.478 62.667
62.856 63.045 63.234 63.423
TSSP 120.15 240.15 247.34
WCONC 113.

GO

SECTION L - UNIT 2
Girder 3 : Input File : Definition
Mon Mar 05 14:01:40 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10. 20. 20.6093
ESLABW 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
FPC 4.5
IGIRD 3
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 20. 20. 21.2187
STFGAP 0.
TSLABW 78.
TSSP 120. 240. 247.31
WCONC 113.

GO

SECTION L - UNIT 2
Girder 4 : Input File : Definition
Mon Mar 05 14:01:45 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10. 20. 20.6093
ESLABW 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
FPC 4.5
IGIRD 4
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 20. 20. 21.2187
STFGAP 0.
TSLABW 78.
TSSP 120. 240. 247.31
WCONC 113.

GO

SECTION L - UNIT 2
Girder 5 : Input File : Definition
Mon Mar 05 14:01:53 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10. 20. 20.6093
ESLABW 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
FPC 4.5
IGIRD 5
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 20. 20. 21.2187
STFGAP 0.
TSLABW 78.
TSSP 120. 240. 247.31
WCONC 113.

GO

SECTION L - UNIT 2
Girder 6 : Input File : Definition
Mon Mar 05 14:01:57 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10. 20. 20.6093
ESLABW 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62. 62.
FPC 4.5
IGIRD 6
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 20. 20. 21.2187
STFGAP 0.
TSLABW 78. 78. 78. 78. 78. 78. 78. 78.6526 78.9789 79.3051 79.6314
79.9577 80.284 80.6102 80.9365 81.2628 81.0776 80.8925 80.7073 80.5222
80.337 80.1406 79.9441 79.7477 79.5512 79.4 79.4 79.4 79.4 79.4
TSSP 120. 240. 247.31
WCONC 113.

GO

SECTION L - UNIT 2
Girder 7 : Input File : Definition
Mon Mar 05 14:02:04 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 3.57 6.57
BR 10.
ESLABW 45.0401 44.855 44.6698 44.4847 44.2995 44.1143 43.9292 43.744
43.5589 43.3737 43.1886
FPC 4.5
IGIRD 7
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.665
SPLBFW 10.2
SPLTFT 0.665
SPLTFW 10.2
SPLTST 0.5
SPLTSW 7.5
SPLWD 14.97
SPLWT 0.395
SPN 20.
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 45.0401 44.855 44.6698 44.4847 44.2995 44.1143 43.9292 43.744
43.5589 43.3737 43.1886
TSSP 120.
WCONC 113.

GO

SECTION L - UNIT 2
Girder 8 : Input File : Definition
Mon Mar 05 14:02:12 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 10.0133 20.0134 20.6121
ESLABW 26.88 26.88 26.88 26.88 26.88 26.88 26.88 26.88 26.88 26.88
26.88 52.08 52.08 52.08 52.08 52.08 52.08 52.08 52.08 52.08 52.08
59.76 59.76 59.76 59.76 59.76 59.76 59.76 59.76 59.76 59.76
FPC 4.5
HINGE 39.5
IGIRD 8
RAD -980.516
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 28.
SPLWT 0.375
SPN 20.0218 20.0071 21.2194
SS 1.
STFGAP 0.
SUPBST 0.5
SUPBSW 4.
TSLABW 26.88 26.88 26.88 26.88 26.88 26.88 26.88 26.88 26.88 26.88
43.9341 47.3977 50.8629 54.3281 57.7933 61.2585 61.0774 60.8922
60.7068 60.5216 60.3365 60.14 59.9436 59.7473 59.5509 59.4 59.4 59.4
59.4 59.4 59.4
TSSP 120.16 240.16 247.35
WCONC 113.

GO

SECTION L - UNIT 2
Bracing : Input File : Definition
Mon Mar 05 14:02:17 2012

ID: SECTION L - UNIT 2

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

DATA

BRL-1 6.2451 6.9404 7.2464

BRL-2 6.5 6.5 6.5

BRL-3 6.5 6.5 6.5

BRL-4 6.5 6.5 6.5

BRL-5 6.5 6.5 6.5

BRL-6 6.5 7.0438 6.7258

BRL-7 1.267

GCONNDST 4.25

GRP-1 1 1 1

GRP-2 1 1 1

GRP-3 1 1 1

GRP-4 1 1 1

GRP-5 1 1 1

GRP-6 1 1 1

GRP-7 1

GRPHT 0.

GO

ID: SECTION L - UNIT 3

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
HS20 LOADING
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

BRINCD 2 9 4 11 6 13 9 16 11 18 13 20 16 23 18 25 20 27 23 30 25 32 27
34 30 37 32 39 34 41 41 44 37 47 39 49 44 51
FPC 4.5
GCD-1 131.8719 3.3896 142.4813 3.5047 153.0907 3.7302 163.6948 4.0658
174.299 4.5119 184.9032 5.0686 195.5073 5.7359
GCD-2 131.8719 10.6313 142.4813 10.6313 153.0907 10.6313 163.6948
10.6313 174.299 10.6313 184.9032 10.6313 195.5073 10.6313
GCD-3 131.8719 17.1313 142.4813 17.1313 153.0907 17.1313 163.6948
17.1313 174.299 17.1313 184.9032 17.1313 195.5073 17.1313
GCD-4 131.8719 23.6313 142.4813 23.6313 153.0907 23.6313 163.6948
23.6313 174.299 23.6313 184.9032 23.6313 195.5073 23.6313
GCD-5 131.8719 30.1313 142.4813 30.1313 153.0907 30.1313 163.6948
30.1313 174.299 30.1313 184.9032 30.1313 195.5073 30.1313
GCD-6 131.8719 36.6313 142.4813 36.6313 153.0907 36.6313 163.6948
36.6313 174.299 36.6313 184.9032 36.6313 195.5073 36.6313
GCD-7 174.299 43.1313 184.9032 43.1313 195.5073 43.1313
GCD-8 131.8719 43.3623 142.4813 43.4823 153.0907 43.7171 163.6948
44.0667 174.299 44.5313 184.9032 45.1109 195.5073 45.8058
HNG-1 20.7
HNG-8 20.7
RAD-1 -1020.486
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5 7
SUP-2 1 3 5 7
SUP-3 1 3 5 7
SUP-4 1 3 5 7
SUP-5 1 3 5 7
SUP-6 1 3 5 7
SUP-7 1 3
SUP-8 1 3 5 7
WAC-1 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154
0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154
0.154 0.154 0.133 0.133 0.133 0.133 0.133 0.133 0.133 0.133
0.133 0.133
WAC-2 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161
0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161
0.161 0.161 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14
0.14
WAC-3 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
WAC-4 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
WAC-5 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
WAC-6 1. 1. 0.161 0.161 0.161 0.161 0.161 0.161 0.16 0.161 0.161 0.16
0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161
0.161 0.161 0.143 0.143 0.143 0.143 0.143 0.143 0.143 0.143 0.143
0.143
WAC-7 0.132 0.132 0.132 0.132 0.132 0.132 0.132 0.132 0.132 0.132
0.132 0.132
WAC-8 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
0.153 0.153 0.132 0.132 0.132 0.132 0.132 0.132 0.132 0.132

0.132 0.132
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WDD-1 1.25 1.24 1.24 1.24 1.24 1.23 1.23 1.22 1.22 1.21 1.21 1.2 1.19
1.18 1.17 1.16 1.15 1.14 1.13 1.12 1.11 1.09 1.07 1.05 1.03 1.01 0.99
0.97 0.94 0.92 0.89
WDD-2 1.25 1.25 1.25 1.24 1.24 1.24 1.24 1.23 1.23 1.22 1.22 1.21 1.21
1.2 1.19 1.19 1.18 1.17 1.16 1.16 1.15 1.14 1.13 1.12 1.11 1.1 1.09
1.07 1.06 1.05 1.04
WDD-3 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDD-4 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDD-5 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDD-6 1.2 1.2 1.21 1.21 1.21 1.21 1.22 1.22 1.23 1.23 1.24 1.24 1.25
1.25 1.23 1.27 1.27 1.28 1.29 1.3 1.31 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDD-7 0.72 0.73 0.74 0.75 0.76 0.77 0.78 0.79 0.81 0.82
0.83
WDD-8 1.18 1.19 1.19 1.19 1.2 1.2 1.2 1.21 1.21 1.22 1.23 1.24 1.24
1.25 1.26 1.27 1.28 1.29 1.3 1.31 1.32 0.27 0.29 0.32 0.34 0.36
0.38 0.41 0.43 0.46 0.49
WDF-1 1.25 1.24 1.24 1.24 1.24 1.23 1.23 1.22 1.22 1.21 1.21 1.2 1.19
1.18 1.17 1.16 1.15 1.14 1.13 1.12 1.11 1.09 1.07 1.05 1.03 1.01 0.99
0.97 0.94 0.92 0.89
WDF-2 1.25 1.25 1.25 1.24 1.24 1.24 1.24 1.23 1.23 1.22 1.22 1.21 1.21
1.2 1.19 1.19 1.18 1.17 1.16 1.16 1.15 1.14 1.13 1.12 1.11 1.1 1.09
1.07 1.06 1.05 1.04
WDF-3 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDF-4 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDF-5 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDF-6 1.2 1.2 1.21 1.21 1.21 1.21 1.22 1.22 1.23 1.23 1.24 1.24 1.25
1.25 1.23 1.27 1.27 1.28 1.29 1.3 1.31 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDF-7 0.72 0.73 0.74 0.75 0.76 0.77 0.78 0.79 0.81 0.82
0.83
WDF-8 1.18 1.19 1.19 1.19 1.2 1.2 1.2 1.21 1.21 1.22 1.23 1.24 1.24
1.25 1.26 1.27 1.28 1.29 1.3 1.31 1.32 0.27 0.29 0.32 0.34 0.36
0.38 0.41 0.43 0.46 0.49
WDR-1 1.25 1.22 1.11 0.89
WDR-2 1.25 1.22 1.15 1.04
WDR-3 1.18 1.18 1.18 1.18
WDR-4 1.18 1.18 1.18 1.18
WDR-5 1.18 1.18 1.18 1.18
WDR-6 1.2 1.24 1.31 1.18
WDR-7 0.72 0.83
WDR-8 1.18 1.23 1.32 0.49
WDS-1 1.25 1.24 1.24 1.24 1.24 1.23 1.23 1.22 1.22 1.21 1.21 1.2 1.19
1.18 1.17 1.16 1.15 1.14 1.13 1.12 1.11 1.09 1.07 1.05 1.03 1.01 0.99
0.97 0.94 0.92 0.89
WDS-2 1.25 1.25 1.25 1.24 1.24 1.24 1.24 1.23 1.23 1.22 1.22 1.21 1.21
1.2 1.19 1.19 1.18 1.17 1.16 1.16 1.15 1.14 1.13 1.12 1.11 1.1 1.09
1.07 1.06 1.05 1.04
WDS-3 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDS-4 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 9.999
WDS-5 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18 1.18
1.18 1.18 1.18 1.18
WDS-6 1.2 1.2 1.21 1.21 1.21 1.21 1.22 1.22 1.23 1.23 1.24 1.24 1.25
1.25 1.23 1.27 1.27 1.28 1.29 1.3 1.31 1.18 1.18 1.18 1.18 1.18 1.18

1.18 1.18 1.18 1.18
WDS-7 0.72 0.73 0.74 0.75 0.76 0.77 0.78 0.79 0.81 0.82
0.83
WDS-8 1.18 1.19 1.19 1.19 1.2 1.2 1.2 1.21 1.21 1.22 1.23 1.24 1.24
1.25 1.26 1.27 1.28 1.29 1.3 1.31 1.32 0.27 0.29 0.32 0.34 0.36
0.38 0.41 0.43 0.46 0.49
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001

GO

SECTION L - UNIT 3
Girder 1 : Input File : Definition
Mon Mar 05 14:02:50 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 10.61 21.2213 21.2325
ESLABW 62.45 62.37 62.26 62.12 61.95 61.7591 61.4224 61.0857 60.7491
60.4124 60.0757 59.739 59.4023 59.0656 58.729 58.392 57.7906 57.1892
56.5878 55.9864 55.3849 54.7829 54.1809 53.5789 52.9769 52.3749
51.7729 51.1709 50.5689 49.9669 49.3649
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 20.7
IGIRD 1
RAD -1020.486
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 48.
SPLWT 0.375
SPN 21.2219 21.2231 21.244
SS 1.
STFGAP 0.
SUPBST 0.5
SUPBSW 4.
TSLABW 62.45 62.37 62.26 62.12 61.95 61.7591 61.4224 61.0857 60.7491
60.4124 60.0757 59.739 59.4023 59.0656 58.729 58.392 57.7906 57.1892
56.5878 55.9864 55.3849 54.7829 54.1809 53.5789 52.9769 52.3749
51.7729 51.1709 50.5689 49.9669 49.3649
TSSP 127.32 254.66 254.79
WCONC 113.

GO

SECTION L - UNIT 3
Girder 2 : Input File : Definition
Mon Mar 05 14:02:54 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10.6094 21.2135 21.2084
ESLABW 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 2
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 21.2188 21.2083 21.2083
STFGAP 0.
TSLABW 82.45 82.37 82.26 82.12 81.95 81.7595 81.4228 81.086 80.7493
80.4125 80.0759 79.7392 79.4026 79.0661 78.7295 78.3928 77.7912
77.1895 76.5878 75.9861 75.3846 74.7828 74.1811 73.5797 72.9777 72.38
71.63 70.86 70.06 69.23 68.37
TSSP 127.31 254.56 254.5
WCONC 113.

GO

SECTION L - UNIT 3
Girder 3 : Input File : Definition
Mon Mar 05 14:02:58 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10.6094 21.2135 21.2084
ESLABW 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 3
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 21.2188 21.2083 21.2083
STFGAP 0.
TSLABW 78.
TSSP 127.31 254.56 254.5
WCONC 113.

GO

SECTION L - UNIT 3
Girder 4 : Input File : Definition
Mon Mar 05 14:03:03 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10.6094 21.2135 21.2084
ESLABW 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 4
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 21.2188 21.2083 21.2083
STFGAP 0.
TSLABW 78.
TSSP 127.31 254.56 254.5
WCONC 113.

GO

SECTION L - UNIT 3
Girder 5 : Input File : Definition
Mon Mar 05 14:03:07 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10.6094 21.2135 21.2084
ESLABW 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 5
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 21.2188 21.2083 21.2083
STFGAP 0.
TSLABW 78.
TSSP 127.31 254.56 254.5
WCONC 113.

GO

SECTION L - UNIT 3
Girder 6 : Input File : Definition
Mon Mar 05 14:03:12 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 10.6094 21.2135 21.2084
ESLABW 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6
63.6 63.6 63.6 63.6 63.6 63.6 63.6 63.6 48.04 48.71 49.41 50.13
50.88 51.66 52.47 53.3 54.16 55.05
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 6
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 21.2188 21.2083 21.2083
STFGAP 0.
TSLABW 79.39 79.48 79.59 79.74 79.91 80.106 80.4567 80.8075 81.1582
81.5089 81.8597 82.2102 82.5608 82.9113 83.2619 83.6124 83.0512
82.4899 81.9287 81.3675 80.8062 80.245 78. 78. 78. 78. 78. 78. 78.
78.
TSSP 127.31 254.56 254.5
WCONC 113.

GO

SECTION L - UNIT 3
Girder 7 : Input File : Definition
Mon Mar 05 14:03:18 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 2.14 6.2
BR 10.6042
ESLABW 47.4 48.04 48.71 49.41 50.13 50.88 51.66 52.47 53.3 54.16 55.05
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 7
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.665
SPLBFW 10.2
SPLTFT 0.665
SPLTFW 10.2
SPLTST 0.5
SPLTSW 8.25
SPLWD 14.97
SPLWT 0.375
SPN 21.2083
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 47.4 48.04 48.71 49.41 50.13 50.88 51.66 52.47 53.3 54.16 55.05
TSSP 127.25
WCONC 113.

GO

SECTION L - UNIT 3
Girder 8 : Input File : Definition
Mon Mar 05 14:03:26 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 10.6101 21.222 21.2345
ESLABW 59.39 59.48 59.59 59.74 59.91 60.1057 60.4563 60.807 61.1576
61.5082 61.8589 62.2095 62.5602 62.9111 63.2618 63.6079 60.3357
57.0635 53.7914 50.5192 47.2479 28.04 28.71 29.41 30.13 30.88 31.66
32.47 33.3 34.16 35.05
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 20.7
IGIRD 8
RAD -980.516
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 28.
SPLWT 0.375
SPN 21.2221 21.2243 21.247
SS 1.
STFGAP 0.
SUPBST 0.5
SUPBSW 4.
TSLABW 59.39 59.48 59.59 59.74 59.91 60.1057 60.4563 60.807 61.1576
61.5082 61.8589 62.2095 62.5602 62.9111 63.2618 63.6079 64.115 64.645
65.2 65.785 6.4 28.04 28.71 29.41 30.13 30.88 31.66 32.47 33.3 34.16
35.05
TSSP 127.32 254.66 254.81
WCONC 113.

GO

SECTION L - UNIT 3
Bracing : Input File : Definition
Mon Mar 05 14:03:32 2012

ID: SECTION L - UNIT 3

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

DATA

BRL-1 7.1266 6.5655 5.5627

BRL-2 6.5 6.5 6.5

BRL-3 6.5 6.5 6.5

BRL-4 6.5 6.5 6.5

BRL-5 6.5 6.5 6.5

BRL-6 6.851 7.4354 6.5

BRL-7 1.9796

GCONNDST 4.25

GRP-1 1 1 1

GRP-2 1 1 1

GRP-3 1 1 1

GRP-4 1 1 1

GRP-5 1 1 1

GRP-6 1 1 1

GRP-7 1

GRPHT 0.

GO

ID: SECTION L - UNIT 4

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
FLOAT LANES
HS20 LOADING
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

BRINCD 2 7 4 9 5 10 7 12 9 14 10 15 12 17 14 19 15 20 17 22 19 24 20
25 22 27 24 29 25 30 27 32 29 34 30 35 32 37 34 39 35 40
FPC 4.5
GCD-1 195.5073 5.7359 207.1011 6.5926 218.6948 7.5822 230.2886 8.7052
241.8823 9.962
GCD-2 195.5073 11.1495 207.1011 11.1495 218.6948 11.1495 230.2886
11.1495 241.8823 11.1495
GCD-3 195.5073 17.1313 207.1011 17.1313 218.6948 17.1313 230.2886
17.1313 241.8823 17.1313
GCD-4 195.5073 23.6313 207.1011 23.6313 218.6948 23.6313 230.2886
23.6313 241.8823 23.6313
GCD-5 195.5073 30.1313 207.1011 30.1313 218.6948 30.1313 230.2886
30.1313 241.8823 30.1313
GCD-6 195.5073 36.6313 207.1011 36.6313 218.6948 36.6313 230.2886
36.6313 241.8823 36.6313
GCD-7 195.5073 43.1313 207.1011 43.1313 218.6948 43.1313 230.2886
43.1313 241.8823 43.1313
GCD-8 195.5073 45.8058 207.1011 46.6979 218.6948 47.7284 230.2886
48.8979 241.8823 50.2068
LANWID 12.
LCD-1 192.7428 5.6348 196.7428 5.9044 200.7428 6.1899 204.7428 6.4912
208.7428 6.8082 212.7428 7.1412 216.7428 7.4899 220.7428 7.8546
224.7428 8.2351 228.7428 8.6315 232.7428 9.0439 236.7428 9.4722
240.7428 9.9164 244.7428 10.3767
LCD-2 192.7428 17.6608 196.7428 17.9336 200.7428 18.2225 204.7428
18.5274 208.7428 18.8483 212.7428 19.1852 216.7428 19.5381 220.7428
19.9071 224.7428 20.2922 228.7428 20.6934 232.7428 21.1107 236.7428
21.5442 240.7428 21.9938 244.7428 22.4596
LCD-3 192.7428 29.6874 196.7428 29.9635 200.7428 30.2559 204.7428
30.5645 208.7428 30.8893 212.7428 31.2303 216.7428 31.5875 220.7428
31.961 224.7428 32.3508 228.7428 32.7568 232.7428 33.1792 236.7428
33.618 240.7428 34.073 244.7428 34.5445
RAD-1 -1020.486
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
ROADWG 39.9 39.91 39.92 39.92 39.93 39.94 39.95 39.95 39.96 39.97
39.98 39.99 40. 40.01 40.02 40.03 40.04 40.05 40.06 40.07 40.08
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SPEED 50
SUP-1 1 3 5
SUP-2 1 3 5
SUP-3 1 3 5
SUP-4 1 3 5
SUP-5 1 3 5
SUP-6 1 3 5
SUP-7 1 3 5
SUP-8 1 3 5
SUPER 0.04
WAC-1 0.128
WAC-2 0.135
WAC-3 0.142
WAC-4 0.142
WAC-5 0.142
WAC-6 0.142
WAC-7 0.139
WAC-8 0.132
WAS-1 0.01

WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WS-1 0.0001
WS-2 0.0001
WS-3 0.0001
WS-4 0.0001
WS-5 0.0001
WS-6 0.0001
WS-7 0.0001
WS-8 0.0001
GO

SECTION L - UNIT 4
Girder 1 : Input File : Definition
Mon Mar 05 14:04:12 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 11.6254 23.284 11.6617
ESLABW 51.5 51.5 51.5 51.5 51.5 46.3382 45.0718 43.8055 42.5392
41.2729 40.0065 38.7376 37.4686 36.1996 34.9307 33.6617 32.3927
31.1238 29.8548 28.5859 27.3169
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 22.8
IGIRD 1
RAD -1020.486
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 48.
SPLWT 0.375
SPN 23.2613 23.3098
SS 1.
STFGAP 0.
SUPBST 0.5
SUPBSW 4.
TSLABW 18.9996 51.5 51.5 51.5 51.5 51.5 45.0718 43.8055 42.5392
41.2729 40.0065 38.7376 37.4686 36.1996 34.9307 33.6617 32.3927
31.1238 29.8548 28.5859 27.3169
TSSP 139.51 279.41
WCONC 113.

GO

SECTION L - UNIT 4
Girder 2 : Input File : Definition
Mon Mar 05 14:04:17 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 11.5938 23.1875 11.5937
ESLABW 69.6 69.6 69.6 69.6 69.6 69.6 61.9644 60.6968 59.4292 58.1617
56.8944 55.6266 54.359 53.0914 51.8239 46.1 46.1 46.1 46.1 46.1 46.1
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 2
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 23.1875 23.1875
STFGAP 0.
TSLABW 71.5 71.5 71.5 71.5 71.5 71.5 61.9644 60.6968 59.4292 58.1617
56.8944 55.6266 54.359 53.0914 51.8239 46.2 46.2 46.2 46.2 46.2 46.2
TSSP 139.13 278.25 138.13
WCONC 113.

GO

SECTION L - UNIT 4
Girder 3 : Input File : Definition
Mon Mar 05 14:04:23 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 11.5938 23.1875 11.5937
ESLABW 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 3
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 23.1875 23.1875
STFGAP 0.
TSLABW 78.
TSSP 139.13 278.25 138.13
WCONC 113.

GO

SECTION L - UNIT 4
Girder 4 : Input File : Definition
Mon Mar 05 14:04:27 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 11.5938 23.1875 11.5937
ESLABW 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 4
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 23.1875 23.1875
STFGAP 0.
TSLABW 78.
TSSP 139.13 278.25 138.13
WCONC 113.

GO

SECTION L - UNIT 4
Girder 5 : Input File : Definition
Mon Mar 05 14:04:31 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 11.5938 23.1875 11.5937
ESLABW 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 5
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 23.1875 23.1875
STFGAP 0.
TSLABW 78.
TSSP 139.13 278.25 138.13
WCONC 113.

GO

SECTION L - UNIT 4
Girder 6 : Input File : Definition
Mon Mar 05 14:04:35 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
ROLLED SHAPES GIRDER
SYSTEM FORCES
W16X67

DATA

BR 11.5938 23.1875 11.5937
ESLABW 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 6
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLTST 0.5
SPLTSW 7.5
SPN 23.1875 23.1875
STFGAP 0.
TSLABW 78.
TSSP 139.13 278.25 138.13
WCONC 113.

GO

SECTION L - UNIT 4
Girder 7 : Input File : Definition
Mon Mar 05 14:04:39 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS BOTH SIDES OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BNCLIP 6.2 5.7 0.
BR 11.5938 23.1875 11.5937
ESLABW 55. 55. 55. 55. 55. 55. 61.7195 63.0395 64.3595 65.6795 66.9995
68.3195 69.6395 69.6 69.6 69.6 69.6 69.6 69.6 69.6 69.6
FILLET 1.
FPC 4.5
HAUNCW 16.2
IGIRD 7
RAD 0.
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.665
SPLBFW 10.2
SPLTFT 0.665
SPLTFW 10.2
SPLTST 0.5
SPLTSW 7.5
SPLWD 14.97
SPLWT 0.395
SPN 23.1875 23.1875
SS 1.
STFGAP 0.
SUPBST 0.1
SUPBSW 2.
TSLABW 55.1 55.1 55.1 55.1 55.1 55.1 61.7195 63.0395 64.3595 65.6795
66.9995 68.3195 69.6395 70.9595 72.2795 81.5 81.5 81.5 81.5 81.5
TSSP 139.13 278.25 138.13
WCONC 113.

GO

SECTION L - UNIT 4
Girder 8 : Input File : Definition
Mon Mar 05 14:04:45 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL
A36 STIFFENER STEEL
ENGLISH INPUT
ENGLISH OUTPUT
FULL DEPTH CONNECTION PLATES
INTERMEDIATE TRANSVERSE STIFFENERS ONE SIDE OF WEB
LFD METHOD
NONCOMPOSITE GIRDER
RATE MODE
SINGLE BEARING STIFFENERS EACH SIDE
SYSTEM FORCES

DATA

BR 11.6281 23.2922 11.6674
ESLABW 35. 35. 35. 35. 35. 40.4024 41.7209 43.0395 44.3581 45.6767
46.9956 48.3173 49.6388 50.9602 52.2816 61.5 61.5 61.5 61.5 61.5
FILLET 1.
FPC 4.5
HAUNCW 14.
HINGE 22.8
IGIRD 8
RAD -980.516
SLABT 8.
SLABWEAR 1.25
SPLBFT 0.75
SPLBFW 8.
SPLTFT 0.75
SPLTFW 8.
SPLTST 0.5
SPLTSW 7.5
SPLWD 28.
SPLWT 0.375
SPN 23.2675 23.3201
SS 1.
STFGAP 0.
SUPBST 0.5
SUPBSW 4.
TSLABW 35.1 35.1 35.1 35.1 35.1 40.4024 41.7209 43.0395 44.3581
45.6767 46.9956 48.3173 49.6388 50.9602 52.2816 61.5 61.5 61.5 61.5
61.5 61.5
TSSP 139.54 279.51
WCONC 113.

GO

SECTION L - UNIT 4
Bracing : Input File : Definition
Mon Mar 05 14:04:51 2012

ID: SECTION L - UNIT 4

CONDITIONS

A36 STEEL

DIAPHRAGM C10X30 FOR GROUP 1

DIAPHRAGM MC10X41.1 FOR GROUP 2

ENGLISH INPUT

ENGLISH OUTPUT

LFD METHOD

RATE MODE

TYPE D BRACING FOR GROUP 1

TYPE D BRACING FOR GROUP 2

DATA

BRL-1 4.5569 2.4443 1.1875

BRL-2 5.9818 5.9818 5.9818

BRL-3 6.5 6.5 6.5

BRL-4 6.5 6.5 6.5

BRL-5 6.5 6.5 6.5

BRL-6 6.5 6.5 6.5

BRL-7 3.5666 5.7666 7.0755

GCONNDST 4.25 4.25

GRP-1 1 1 2

GRP-2 1 1 2

GRP-3 1 1 2

GRP-4 1 1 2

GRP-5 1 1 2

GRP-6 1 1 2

GRP-7 1 1 2

GRPHT 0. 0.

GO



Made By DWC
Checked By CTG

Date 6/20/2012
Date 6/20/2012

Job No. P402110046

Calculations For **CUY-2-1441**

Revisions to Stringer Analysis

- ◆ Isolated continuous stringers have copes over intermediate supports. Because the stringers are not full depth in these locations, the full negative moment cannot develop.
- ◆ Per discussion with ODOT May 29, 2012, any continuous stringer that is coped over intermediate supports should be re-analyzed as simply supported.
- ◆ Because of the large volume of stringers that fit this condition, the results of the original analysis were evaluated in order to determine which stringers could potentially govern the stringer ratings. Calculations were performed for select stringers in order to determine governing load ratings for each section.
- ◆ Calculations for the revised stringers are included on the following page(s). Any data in the original rating calculations that has now been superceded remains in the volume for informational purposes, but has been crossed out.



Made By DWC
 Checked By CTG

Date #####
 Date 6/6/2012

Job No. P402110046

Calculations For: **CUY-2-1441**

Section L Stringers

- ◆ Changing from continuous to simple span will increase moment, Shear will increase at end supports, but decrease at interior supports
- ◆ The stringers in Section L are controlled by moment, not shear
- ◆ Only one stringer line is coped in Section L (S1 in all units, with S1-2 and S1-3 already simple span)

- ◆ Changing S1-1 and S1-4 from continuous to simple span will not affect the governing stringer rating in Section L. The governing stringer is S2-4 by a wide enough margin for each load case such that revising the coped stringer analysis will still not govern (see below).

Stringer	Governing Rating Factor (Positive Moment)					
	HS20 INV	HS20 OP	2F1	3F1	4F1	5C1
S1-1	2.39	3.98	6.41	5.37	5.69	5.16
S1-4	1.82	3.03	4.72	3.65	3.65	3.72
S2-4	1.08	1.8	2.73	2.05	1.96	2.16
Comparison*	59.34%	59.41%	57.84%	56.16%	53.70%	58.06%

* Represents the ratio of the controlling rating factor (S2-4) to the governing continuous, coped stringer rating factor.

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
HS20-44	Stringer F1A-1											
	0	0.00	0.05	0.02	4.24	16.56	643.98	5935.30	9894.14	207.60	5.62	9.37
	1.51	5.74	21.06	0.85	3.36	14.76	643.98	13.93	23.22	207.60	6.35	10.58
	3.01	10.14	36.80	1.70	2.49	12.95	643.98	7.90	13.17	207.60	7.27	12.12
	4.52	13.24	47.55	2.54	1.62	11.17	643.98	6.07	10.13	207.60	8.48	14.13
	6.03	15.04	53.10	3.39	0.77	9.11	643.98	5.42	9.03	207.60	10.45	17.42
	7.53	15.56	54.20	4.23	0.08	7.83	643.98	5.30	8.84	207.60	12.21	20.36
	9.04	14.54	49.55	4.06	1.23	8.78	643.98	5.81	9.69	207.60	10.81	18.02
	10.55	12.05	37.72	3.04	2.06	9.96	643.98	7.68	12.80	207.60	9.48	15.81
	12.05	8.32	24.24	2.03	2.89	12.06	643.98	12.04	20.07	207.60	7.79	12.98
	13.56	3.36	11.58	1.01	3.70	12.07	643.98	25.45	42.43	207.60	7.74	12.91
	15.07	0.00	0.00	0.00	4.19	14.97	643.98	N/A	N/A	207.60	6.22	10.37
	Stringer F1B-1											
	17.07	6.67	24.18	13.02	3.13	13.63	643.98	12.11	20.18	207.60	6.88	11.47
	19.08	11.90	38.88	14.91	2.09	11.02	643.98	7.45	12.42	207.60	8.57	14.28
	21.09	15.05	45.64	16.80	1.05	8.08	643.98	6.30	10.51	207.60	11.76	19.61
	23.1	16.15	50.84	18.69	0.04	6.83	643.98	5.65	9.41	207.60	14.00	23.34
	25.1	15.22	54.19	20.59	1.64	8.90	643.98	5.31	8.85	207.60	10.64	17.73
	27.11	10.95	44.51	18.75	2.62	9.09	643.98	6.52	10.87	207.60	10.35	17.26
	29.12	4.71	32.60	16.93	3.60	10.25	643.98	9.02	15.03	207.60	9.12	15.21
	31.13	-3.49	21.70	16.26	4.56	11.92	643.98	13.58	22.64	207.60	7.80	13.00
	33.14	-13.62	11.16	23.52	5.52	12.72	643.98	12.27	20.46	207.60	7.26	12.10
	35.14	-25.65	4.81	38.77	6.46	13.54	643.98	7.26	12.10	207.60	6.78	11.30
	37.15	-13.27	9.69	25.47	5.72	12.37	643.98	11.34	18.90	207.60	7.46	12.43
	39.15	-2.73	18.45	19.08	4.80	10.85	643.98	15.47	25.79	207.60	8.55	14.26
	41.16	5.97	26.55	18.93	3.89	7.41	643.98	11.04	18.41	207.60	12.60	21.00
	43.16	12.88	34.95	19.13	3.00	7.41	643.98	8.27	13.79	207.60	12.67	21.12
	45.17	18.03	45.11	19.86	2.12	8.48	643.98	6.34	10.57	207.60	11.13	18.56
47.17	17.86	36.09	15.87	0.52	5.74	643.98	7.93	13.21	207.60	16.61	27.69	
49.17	15.95	27.06	11.90	1.38	4.96	643.98	10.61	17.69	207.60	19.12	31.88	
51.18	12.29	18.03	7.93	2.25	5.07	643.98	16.05	26.76	207.60	18.60	31.01	
53.18	6.89	9.00	3.96	3.11	5.08	643.98	32.52	54.20	207.60	18.47	30.78	
55.19	0.00	0.00	0.00	3.94	5.08	643.98	N/A	N/A	207.60	18.37	30.62	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)		Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	D	M+	M-	V							
0	0.00	0.04	0.07	4.19	24.10	348.45	2293.94	3824.00	228.95	4.27	7.12
0.75	2.72	13.09	1.07	3.66	21.30	348.45	12.14	20.24	228.95	4.85	8.09
1.61	5.84	28.06	2.22	3.05	18.08	390.00	6.28	10.47	123.50	3.05	5.08
3.23	9.83	46.02	4.45	1.91	14.93	390.00	3.78	6.30	123.50	3.74	6.23
4.84	12.01	60.71	6.68	0.78	13.17	390.00	2.84	4.74	123.50	4.29	7.14
6.46	12.37	71.95	8.91	0.33	12.30	390.00	2.39	3.99	123.50	4.61	7.69
8.07	10.93	69.61	13.18	1.44	12.23	390.00	2.49	4.15	123.50	4.58	7.64
9.69	9.70	56.36	14.07	2.18	14.01	390.00	3.10	5.16	123.50	3.97	6.62
11.3	4.37	48.12	17.64	3.26	16.85	390.00	3.68	6.14	123.50	3.26	5.44
12.92	-1.83	35.81	21.48	4.34	17.03	390.00	4.99	8.32	123.50	3.19	5.32
14.53	-9.69	20.43	32.09	5.40	20.18	390.00	5.42	8.03	123.50	2.66	4.43
15.4	-14.77	12.56	42.93	5.97	22.32	286.83	2.87	4.79	208.33	4.14	6.90
16.15	-19.14	5.77	52.28	6.46	24.17	286.83	2.21	3.85	208.33	3.81	6.35
16.9	-15.28	9.78	44.81	5.73	21.92	286.83	2.75	4.58	208.33	4.22	7.04
18.15	-8.85	16.46	32.36	4.50	18.18	390.00	5.39	8.99	123.50	2.98	4.97
20.15	-1.14	30.37	20.14	3.22	16.23	390.00	5.90	9.83	123.50	3.39	5.65
22.15	4.03	46.57	14.22	1.95	17.12	390.00	3.81	6.35	123.50	3.26	5.43
24.15	6.69	56.89	11.73	0.70	11.07	390.00	3.09	5.15	123.50	5.11	8.52
26.15	7.24	43.58	9.54	0.53	12.13	390.00	4.02	6.71	123.50	3.30	5.51
28.15	6.98	45.98	11.22	0.74	10.95	390.00	3.82	6.36	123.50	5.18	8.64
30.15	4.29	42.76	14.33	1.95	12.00	390.00	4.14	6.91	123.50	4.65	7.74
32.15	-0.80	33.67	17.88	3.15	16.44	390.00	5.32	8.87	123.50	3.35	5.58
34.15	-8.29	19.93	27.60	4.33	19.61	390.00	6.33	10.56	123.50	2.77	4.62
35.4	-14.33	9.97	40.07	4.97	21.60	225.23	2.38	3.96	200.08	4.13	6.89
36.15	-17.96	4.00	47.55	5.36	22.79	225.23	1.36	3.26	200.08	3.90	6.51
36.9	-14.38	9.22	40.78	4.93	20.67	225.33	2.34	3.89	200.08	4.32	7.20
38.15	-8.41	17.92	29.50	4.20	17.13	390.00	5.92	9.87	123.50	3.18	5.29
40.15	-1.16	33.09	19.69	3.05	15.64	390.00	5.41	9.02	123.50	3.52	5.87
42.15	3.78	49.77	13.06	1.90	17.26	390.00	3.57	5.94	123.50	3.23	5.39
44.15	8.46	57.93	12.55	0.78	10.41	390.00	3.04	5.06	123.50	5.42	9.04
46.15	6.91	38.02	3.75	1.97	20.54	390.00	4.62	7.70	123.50	2.71	4.52
48.15	9.77	50.46	3.00	0.90	16.20	390.00	3.45	5.74	123.50	3.48	5.80
50.15	10.51	57.98	2.25	0.16	12.35	390.00	2.99	4.99	123.50	4.60	7.67
52.15	9.13	53.97	1.50	1.22	14.86	390.00	3.23	5.38	123.50	3.78	6.30
54.15	5.63	33.99	0.75	2.28	18.27	390.00	5.19	8.65	123.50	3.04	5.07
55.4	2.11	12.75	0.28	2.95	20.78	235.05	8.40	14.00	201.11	4.38	7.99
56.15	0.00	0.00	0.00	3.35	22.28	235.05	N/A	N/A	201.11	4.07	6.78

HS20-44

Stringer S1-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.02	0.03	5.01	32.68	390.00	5990.78	9986.64	123.50	1.65	2.75
1.73	7.59	45.07	5.00	3.76	27.09	390.00	3.89	6.48	123.50	2.02	3.36
3.46	13.01	73.19	10.01	2.51	22.03	390.00	2.35	3.92	123.50	2.52	4.19
5.19	16.26	90.93	15.03	1.26	18.49	390.00	1.87	3.12	123.50	3.04	5.06
6.92	17.35	100.70	20.04	0.01	15.19	390.00	1.68	2.80	123.50	3.75	6.25
8.65	16.28	103.49	25.06	1.24	17.66	390.00	1.64	2.74	123.50	3.18	5.30
10.38	12.55	96.91	30.01	3.02	21.83	390.00	1.78	2.96	123.50	2.52	4.21
12.11	6.24	81.46	35.08	4.27	24.31	390.00	2.16	3.60	123.50	2.24	3.73
13.84	-2.23	61.16	40.15	5.52	26.12	390.00	2.92	4.86	123.50	2.05	3.42
15.58	-12.86	36.63	62.38	6.77	31.63	390.00	2.76	4.60	123.50	1.67	2.79
17.31	-25.65	15.57	97.69	7.30	37.88	390.00	1.68	2.80	123.50	1.39	2.31
19.31	-12.49	35.59	60.23	5.86	35.36	390.00	2.86	4.77	123.50	1.51	2.52
21.31	-2.23	56.42	36.51	4.41	29.80	390.00	3.16	5.27	123.50	1.82	3.04
23.31	5.15	77.08	34.81	2.97	23.19	390.00	2.29	3.82	123.50	2.38	3.96
25.31	9.63	91.40	34.96	1.52	22.21	390.00	1.90	3.17	123.50	2.52	4.20
27.31	11.21	104.12	35.60	0.79	26.98	390.00	1.66	2.77	123.50	2.09	3.49
29.31	8.19	98.35	36.10	2.23	20.50	390.00	1.78	2.96	123.50	2.71	4.52
31.31	2.28	83.32	37.75	3.68	25.67	390.00	2.14	3.57	123.50	2.13	3.55
33.31	-6.52	59.58	42.52	5.12	31.85	390.00	2.95	4.92	123.50	1.69	2.82
35.31	-18.21	35.63	63.43	6.57	35.85	390.00	2.66	4.44	123.50	1.48	2.46
37.31	-32.82	11.71	103.03	9.27	42.52	390.00	1.55	2.59	123.50	1.21	2.01
39.31	-15.73	36.49	65.01	7.82	37.88	390.00	2.62	4.37	123.50	1.38	2.30
41.31	-1.53	62.34	38.99	6.38	32.16	390.00	2.87	4.78	123.50	1.65	2.75
43.31	9.78	83.49	33.13	4.93	25.24	390.00	2.08	3.47	123.50	2.14	3.56
45.31	18.20	98.65	28.41	3.49	20.77	390.00	1.71	2.85	123.50	2.64	4.40
47.31	23.71	108.86	23.71	2.04	23.60	390.00	1.52	2.53	123.50	2.36	3.93
49.31	24.74	104.93	18.96	0.20	14.47	390.00	1.57	2.62	123.50	3.92	6.54
51.31	22.89	96.11	14.22	1.65	18.34	390.00	1.73	2.88	123.50	3.05	5.08
53.31	18.15	81.35	9.48	3.09	23.19	390.00	2.08	3.46	123.50	2.37	3.96
55.31	10.51	49.52	4.73	4.54	27.91	390.00	3.50	5.84	123.50	1.94	3.24
57.31	0.00	0.00	0.00	5.98	32.96	390.00	N/A	N/A	123.50	1.62	2.70

HS20-44

Stringer S2-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.04	0.05	5.30	29.52	390.00	3594.47	5991.98	123.50	1.82	3.03
1.85	8.56	42.23	4.41	3.97	23.90	390.00	4.13	6.89	123.50	2.28	3.80
3.69	14.67	69.63	8.84	2.64	19.64	390.00	2.45	4.09	123.50	2.82	4.70
5.54	18.30	86.19	13.26	1.30	16.32	390.00	1.96	3.26	123.50	3.44	5.73
7.39	19.48	95.47	17.68	0.03	15.04	390.00	1.76	2.93	123.50	3.78	6.31
9.23	18.19	98.49	22.10	1.36	17.53	390.00	1.71	2.86	123.50	3.20	5.33
11.08	14.36	93.27	26.73	2.79	20.27	390.00	1.83	3.06	123.50	2.73	4.54
12.92	7.98	81.26	31.47	4.12	23.11	390.00	2.15	3.59	123.50	2.36	3.93
14.77	-0.87	63.11	37.01	5.46	27.30	390.00	2.84	4.73	123.50	1.96	3.28
16.62	-12.17	38.41	59.31	6.79	33.38	390.00	2.91	4.85	123.50	1.58	2.64
18.46	-25.92	14.58	94.42	7.02	37.93	390.00	1.74	2.90	123.50	1.39	2.32
20.46	-13.32	36.59	57.96	5.58	32.31	390.00	2.96	4.94	123.50	1.66	2.76
22.46	-3.61	55.63	36.27	4.13	27.84	390.00	3.19	5.32	123.50	1.96	3.26
24.46	3.21	75.36	34.05	2.69	22.77	390.00	2.36	3.93	123.50	2.43	4.05
26.46	7.14	87.17	33.31	1.24	19.48	390.00	2.01	3.36	123.50	2.88	4.81
28.46	8.17	94.48	33.57	0.21	24.51	390.00	1.85	3.08	123.50	2.32	3.86
30.46	6.31	90.41	34.85	1.65	18.34	390.00	1.95	3.24	123.50	3.05	5.08
32.46	1.56	77.31	37.59	3.10	21.75	390.00	2.31	3.86	123.50	2.53	4.22
34.46	-6.07	56.72	42.20	4.54	26.83	390.00	3.10	5.18	123.50	2.02	3.37
36.46	-16.60	33.86	62.94	5.99	31.99	390.00	2.70	4.50	123.50	1.67	2.78
38.46	-30.04	11.29	99.81	8.84	42.56	390.00	1.62	2.70	123.50	1.21	2.02
40.46	-13.82	33.77	61.46	7.39	37.68	390.00	2.79	4.65	123.50	1.39	2.32
42.46	-0.48	62.85	35.27	5.95	32.19	390.00	2.85	4.76	123.50	1.66	2.76
44.46	9.97	85.01	30.03	4.50	26.35	390.00	2.04	3.41	123.50	2.06	3.43
46.46	17.52	100.91	25.56	3.06	20.96	390.00	1.68	2.80	123.50	2.63	4.38
48.46	22.17	109.61	21.48	1.61	25.99	390.00	1.52	2.53	123.50	2.15	3.59
50.46	23.52	109.45	17.19	0.05	14.74	390.00	1.51	2.52	123.50	3.86	6.43
52.46	21.98	103.15	12.89	1.49	19.44	390.00	1.61	2.69	123.50	2.88	4.80
54.46	17.54	88.19	8.60	2.94	24.91	390.00	1.92	3.20	123.50	2.21	3.69
56.46	10.22	54.82	4.31	4.38	30.85	390.00	3.17	5.28	123.50	1.76	2.93
58.46	0.00	0.00	0.00	5.83	37.13	390.00	N/A	N/A	123.50	1.44	2.40

HS20-44

Stringer S3-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.02	0.04	5.81	34.47	390.00	4493.09	7489.98	123.50	1.55	2.58
1.96	10.00	53.47	4.27	4.39	28.36	390.00	3.25	5.42	123.50	1.91	3.19
3.92	17.22	86.21	8.54	2.97	22.86	390.00	1.97	3.28	123.50	2.41	4.02
5.89	21.65	101.79	12.82	1.55	18.02	390.00	1.64	2.73	123.50	3.11	5.18
7.85	23.31	108.47	17.09	0.14	15.05	390.00	1.53	2.55	123.50	3.78	6.29
9.81	22.18	108.95	21.37	1.28	17.97	390.00	1.53	2.55	123.50	3.12	5.21
11.77	17.77	100.65	25.82	3.12	20.88	390.00	1.68	2.80	123.50	2.64	4.39
13.74	10.25	85.04	30.41	4.54	23.38	390.00	2.04	3.40	123.50	2.32	3.86
15.7	0.00	63.77	35.64	5.96	28.76	390.00	2.82	4.70	123.50	1.85	3.09
17.66	-13.12	38.66	61.45	7.37	34.38	390.00	2.80	4.66	123.50	1.53	2.55
19.62	-29.01	14.80	99.49	7.26	36.96	390.00	1.63	2.72	123.50	1.42	2.37
21.62	-15.93	36.27	62.62	5.81	33.39	390.00	2.72	4.53	123.50	1.60	2.67
23.62	-5.75	56.57	41.36	4.37	28.24	390.00	3.12	5.19	123.50	1.92	3.20
25.62	1.55	76.26	37.53	2.92	22.65	390.00	2.34	3.91	123.50	2.44	4.06
27.62	5.95	88.15	35.96	1.48	19.03	390.00	2.00	3.33	123.50	2.94	4.91
29.62	7.45	95.15	36.81	0.07	25.94	390.00	1.84	3.07	123.50	2.19	3.65
31.62	5.86	90.74	37.35	1.52	18.55	390.00	1.94	3.24	123.50	3.02	5.03
33.62	1.39	77.39	38.75	2.96	23.97	390.00	2.31	3.85	123.50	2.30	3.83
35.62	-5.98	56.27	42.19	4.41	29.32	390.00	3.13	5.22	123.50	1.85	3.09
37.62	-16.24	34.20	63.89	5.85	34.87	390.00	2.66	4.44	123.50	1.53	2.55
39.62	-29.41	13.27	101.10	7.30	40.13	390.00	1.60	2.67	123.50	1.31	2.18
41.62	-13.27	38.47	60.75	7.34	35.41	390.00	2.83	4.71	123.50	1.48	2.47
43.62	0.00	65.66	36.16	5.90	31.99	390.00	2.74	4.56	123.50	1.67	2.78
45.62	10.32	88.30	30.16	4.45	34.98	390.00	1.97	3.28	123.50	1.55	2.59
47.62	17.78	102.76	25.56	3.01	20.69	390.00	1.65	2.74	123.50	2.66	4.44
49.62	22.33	103.62	20.97	1.56	20.41	390.00	1.61	2.68	123.50	2.74	4.57
51.62	23.65	100.80	16.77	0.06	17.70	390.00	1.64	2.74	123.50	3.21	5.36
53.62	22.07	92.44	12.58	1.51	17.22	390.00	1.80	3.00	123.50	3.25	5.42
55.62	17.61	76.68	8.39	2.95	21.35	390.00	2.21	3.68	123.50	2.58	4.31
57.62	10.26	46.72	4.20	4.40	26.04	390.00	3.72	6.19	123.50	2.08	3.47
59.62	0.00	0.00	0.00	5.84	31.04	390.00	N/A	N/A	123.50	1.72	2.87

HS20-44

Stringer S4-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.05	0.07	5.96	28.06	390.00	2567.48	4279.99	123.50	1.90	3.17
2.08	10.84	46.06	4.13	4.49	23.10	390.00	3.76	6.27	123.50	2.35	3.91
4.16	18.67	74.97	8.27	3.03	18.78	390.00	2.25	3.75	123.50	2.93	4.89
6.23	23.45	89.30	12.42	1.57	14.90	390.00	1.86	3.09	123.50	3.76	6.26
8.31	25.21	95.07	16.56	0.11	13.13	390.00	1.73	2.89	123.50	4.33	7.22
10.39	23.92	95.79	20.70	1.35	15.67	390.00	1.73	2.88	123.50	3.58	5.97
12.47	19.23	90.07	24.95	3.09	18.00	390.00	1.87	3.11	123.50	3.06	5.10
14.55	11.30	77.24	29.30	4.55	21.14	390.00	2.24	3.73	123.50	2.56	4.27
16.62	0.33	58.53	35.39	6.01	26.31	390.00	3.07	5.11	123.50	2.03	3.38
18.7	-13.67	35.73	58.72	7.47	31.53	390.00	2.92	4.87	123.50	1.66	2.77
20.78	-30.73	13.65	94.38	7.32	36.22	390.00	1.71	2.85	123.50	1.45	2.42
22.78	-17.50	34.63	58.49	5.91	31.55	390.00	2.89	4.82	123.50	1.69	2.82
24.78	-7.08	54.53	40.35	4.51	27.37	390.00	3.22	5.36	123.50	1.98	3.30
26.78	0.52	74.98	35.70	3.10	22.38	390.00	2.39	3.99	123.50	2.46	4.10
28.78	5.32	88.31	34.55	1.69	18.94	390.00	2.00	3.33	123.50	2.95	4.92
30.78	7.32	95.66	34.53	0.29	23.35	390.00	1.83	3.06	123.50	2.43	4.05
32.78	5.64	90.89	35.79	1.54	18.70	390.00	1.94	3.23	123.50	2.99	4.99
34.78	1.16	77.17	37.85	2.95	23.77	390.00	2.32	3.87	123.50	2.32	3.87
36.78	-6.14	56.10	42.06	4.35	29.37	390.00	3.14	5.23	123.50	1.85	3.08
38.78	-16.25	33.16	62.77	5.76	34.83	390.00	2.71	4.51	123.50	1.53	2.56
40.78	-29.16	13.59	99.62	8.73	42.10	390.00	1.63	2.72	123.50	1.23	2.05
42.78	-13.11	35.02	61.68	7.32	37.24	390.00	2.79	4.65	123.50	1.41	2.35
44.78	0.13	62.70	35.61	5.92	31.77	390.00	2.87	4.78	123.50	1.68	2.80
46.78	10.55	84.08	30.21	4.51	25.93	390.00	2.06	3.44	123.50	2.09	3.49
48.78	18.17	99.63	25.48	3.10	20.77	390.00	1.69	2.82	123.50	2.65	4.42
50.78	22.95	108.32	21.06	1.70	26.08	390.00	1.53	2.55	123.50	2.14	3.57
52.78	23.98	107.94	16.85	0.18	14.46	390.00	1.53	2.55	123.50	3.93	6.55
54.78	22.21	101.55	12.64	1.59	19.14	390.00	1.64	2.73	123.50	2.92	4.87
56.78	17.62	86.71	8.43	3.00	24.49	390.00	1.95	3.25	123.50	2.25	3.75
58.78	10.22	53.82	4.22	4.40	30.29	390.00	3.23	5.38	123.50	1.79	2.99
60.78	0.00	0.00	0.00	5.81	36.45	390.00	N/A	N/A	123.50	1.47	2.44

HS20-44

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	-0.06	0.04	0.26	3.86	19.67	390.00	691.11	1152.07	123.50	2.78	4.63	
2.18	7.18	33.85	1.02	2.77	16.43	390.00	5.18	8.64	123.50	3.36	5.61	
4.37	12.03	54.67	2.09	1.66	13.14	390.00	3.16	5.26	123.50	4.26	7.09	
6.55	14.43	63.29	3.15	0.54	10.69	390.00	2.70	4.51	123.50	5.29	8.82	
8.74	14.35	61.69	4.22	0.61	13.61	390.00	2.77	4.62	123.50	4.15	6.93	
10.92	11.75	51.09	5.28	1.77	16.76	390.00	3.38	5.63	123.50	3.33	5.56	
13.11	9.34	48.03	8.60	1.00	10.89	390.00	3.63	6.04	123.50	5.17	8.62	
15.29	5.84	46.63	13.29	2.20	12.30	390.00	3.78	6.30	123.50	4.52	7.53	
17.48	-0.29	38.44	21.39	3.42	15.70	390.00	4.67	7.79	123.50	3.49	5.83	
19.66	-9.10	24.35	34.08	4.65	18.80	390.00	5.11	8.52	123.50	2.88	4.80	
21.85	-20.61	9.25	54.58	5.65	21.47	390.00	3.07	5.11	123.50	2.49	4.16	
23.85	-10.47	21.59	33.34	4.49	18.60	390.00	5.20	8.67	123.50	2.92	4.86	
25.85	-2.66	33.76	22.92	3.32	16.60	390.00	5.28	8.80	123.50	3.31	5.52	
27.85	2.79	43.86	19.64	2.13	14.25	390.00	4.06	6.77	123.50	3.90	6.51	
29.85	5.85	49.59	17.71	0.93	11.94	390.00	3.55	5.92	123.50	4.72	7.87	
31.85	6.48	51.69	17.73	0.08	12.40	390.00	3.40	5.67	123.50	4.59	7.64	
33.85	5.08	51.62	19.94	1.31	10.61	390.00	3.42	5.71	123.50	5.29	8.82	
35.85	1.22	46.29	23.26	2.55	13.16	390.00	3.87	6.45	123.50	4.21	7.02	
37.85	-5.13	35.13	27.81	3.80	16.58	390.00	5.03	8.38	123.50	3.30	5.49	
39.85	-13.99	21.59	40.28	5.06	20.07	390.00	4.25	7.09	123.50	2.68	4.48	
41.85	-25.40	7.15	63.12	7.58	26.03	390.00	2.61	4.34	123.50	2.01	3.35	
43.85	-11.52	20.67	37.70	6.30	24.81	390.00	4.58	7.64	123.50	2.14	3.57	
45.85	-0.21	40.12	21.31	5.00	21.37	390.00	4.48	7.46	123.50	2.52	4.21	
47.85	8.50	55.50	16.50	3.70	17.57	390.00	3.15	5.25	123.50	3.11	5.19	
49.85	14.58	65.71	13.82	2.38	15.01	390.00	2.60	4.34	123.50	3.70	6.16	
51.85	17.99	71.00	11.15	1.63	19.53	390.00	2.38	3.97	123.50	2.86	4.77	
53.85	19.87	73.88	8.92	0.26	13.41	390.00	2.27	3.79	123.50	4.23	7.06	
55.85	19.02	71.80	6.69	1.11	13.28	390.00	2.34	3.91	123.50	4.24	7.06	
57.85	15.42	62.17	4.46	2.49	17.26	390.00	2.74	4.57	123.50	3.21	5.35	
59.85	9.08	39.14	2.23	3.86	21.76	390.00	4.45	7.42	123.50	2.51	4.18	
61.85	0.00	0.00	0.00	5.23	26.64	390.00	N/A	N/A	123.50	2.02	3.37	

HS20-44

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
				L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44	Stringer F2A-1	0	0.07	0.30	0.04	5.34	5.87	1212.51	1862.39	3104.61	149.61	11.20	18.67
		2.21	10.90	12.15	2.72	4.44	5.87	1212.51	45.45	75.77	149.61	11.29	18.82
		4.43	19.72	24.17	5.41	3.52	5.87	1212.51	22.63	37.72	149.61	11.39	18.98
		6.64	26.47	36.18	8.10	2.58	5.87	1212.51	15.01	25.01	149.61	11.48	19.14
		8.86	31.11	48.20	10.80	1.61	5.87	1212.51	11.21	18.68	149.61	11.58	19.31
		11.07	33.60	60.21	13.49	0.63	6.21	1212.51	8.95	14.91	149.61	11.04	18.41
		13.29	31.25	58.97	12.23	2.10	6.76	1212.51	9.16	15.27	149.61	10.01	16.69
		15.5	25.47	48.71	9.17	3.12	8.55	1212.51	11.16	18.60	149.61	7.85	13.08
		17.71	17.42	35.51	6.11	4.15	10.97	1212.51	15.44	25.74	149.61	6.06	10.10
		19.93	7.06	16.19	3.06	5.21	13.45	1212.51	34.25	57.10	149.61	4.89	8.16
		22.14	0.00	0.00	0.00	4.18	13.88	1212.51	N/A	N/A	149.61	4.79	7.98
		24.15	6.19	23.62	14.09	3.19	13.38	1212.51	23.50	39.17	149.61	5.01	8.35
		26.16	11.60	40.44	17.03	2.19	11.54	1212.51	13.65	22.75	149.61	5.86	9.77
		28.16	14.98	50.34	19.97	1.18	9.65	1212.51	10.92	18.21	149.61	7.07	11.79
		30.17	16.32	60.41	22.91	0.15	8.08	1212.51	9.09	15.15	149.61	8.52	14.21
		32.18	15.58	65.73	25.86	1.10	10.71	1212.51	8.36	13.93	149.61	6.38	10.63
	34.19	12.33	59.51	24.76	2.15	11.06	1212.51	9.27	15.45	149.61	6.12	10.20	
	36.19	6.94	48.84	23.68	3.22	13.86	1212.51	11.36	18.93	149.61	4.84	8.06	
	38.2	-0.59	35.72	22.66	4.29	16.84	1212.51	15.63	26.06	149.61	3.94	6.57	
	40.21	-10.29	17.96	27.01	5.38	19.82	1212.51	20.46	34.11	149.61	3.32	5.53	
	42.21	-22.21	4.44	46.14	7.06	24.51	1212.51	11.82	19.71	149.61	2.64	4.40	
	44.22	-9.18	20.43	25.49	5.95	22.00	1212.51	21.71	36.18	149.61	2.97	4.95	
	46.22	1.62	40.09	19.48	4.83	19.14	1212.51	13.91	23.19	149.61	3.45	5.75	
	48.23	10.15	56.31	18.81	3.69	15.97	1212.51	9.81	16.36	149.61	4.18	6.97	
	50.23	16.42	70.14	18.18	2.55	12.69	1212.51	7.83	13.05	149.61	5.31	8.86	
	52.23	20.37	78.20	17.55	1.40	11.56	1212.51	6.99	11.65	149.61	5.89	9.82	
	54.24	21.03	75.65	14.03	0.25	10.40	1212.51	7.22	12.04	149.61	6.61	11.03	
	56.24	19.36	68.54	10.53	1.42	13.40	1212.51	7.98	13.31	149.61	5.08	8.47	
	58.25	15.31	57.64	7.02	2.61	16.72	1212.51	9.53	15.89	149.61	4.03	6.72	
	60.25	8.88	35.27	3.52	3.81	20.29	1212.51	15.69	26.16	149.61	3.29	5.48	
	62.26	0.00	0.00	0.00	5.02	23.95	1212.51	N/A	N/A	149.61	2.75	4.59	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	4.49	11.32	643.98	N/A	N/A	207.60	8.21	13.69	
2	8.23	18.67	4.01	3.73	9.73	643.98	15.63	26.06	207.60	9.60	16.01	
4	14.93	32.03	8.03	2.97	8.48	643.98	8.99	14.98	207.60	11.07	18.46	
6.01	20.11	42.01	12.04	2.21	7.28	643.98	6.78	11.30	207.60	12.96	21.60	
8.01	23.77	47.92	16.06	1.44	7.00	643.98	5.90	9.83	207.60	13.54	22.58	
10.01	25.90	54.40	20.08	3.49	11.42	643.98	5.17	8.62	207.60	8.19	13.66	
12.01	18.17	40.79	24.88	4.25	12.53	643.98	7.01	11.68	207.60	7.43	12.39	
14.02	8.89	26.81	29.83	5.01	11.46	643.98	9.77	16.29	207.60	8.09	13.48	
16.02	-1.91	11.83	35.15	5.77	12.12	643.98	8.41	14.02	207.60	7.61	12.68	
18.02	-14.23	5.73	52.16	6.54	12.23	643.98	5.53	9.21	207.60	7.50	12.51	
20.02	-28.19	2.94	75.48	6.84	38.46	643.98	3.71	6.18	207.60	2.38	3.97	
22.02	-15.56	22.28	23.31	5.78	30.45	643.98	12.33	20.56	207.60	3.03	5.05	
24.02	-5.08	49.98	7.66	4.69	25.75	643.98	5.88	9.80	207.60	3.61	6.01	
26.02	3.16	82.33	8.23	3.55	24.83	643.98	3.58	5.97	207.60	3.77	6.28	
28.02	9.08	106.26	8.88	2.36	19.45	643.98	2.74	4.57	207.60	4.85	8.08	
30.03	12.43	104.07	9.56	1.17	17.06	643.98	2.78	4.63	207.60	5.57	9.28	
32.03	13.52	100.99	7.65	0.08	15.97	643.98	2.86	4.76	207.60	5.99	9.98	
34.03	12.13	80.71	5.73	1.32	19.67	643.98	3.59	5.98	207.60	4.82	8.04	
36.03	8.24	58.33	3.83	2.56	26.03	643.98	5.00	8.34	207.60	3.62	6.03	
38.03	1.87	23.45	1.91	3.80	30.40	643.98	12.61	21.02	207.60	3.07	5.12	
40.03	0.00	0.00	0.00	6.67	32.83	643.98	N/A	N/A	207.60	2.79	4.65	
42.15	11.31	56.26	32.41	5.36	27.60	643.98	5.15	8.59	207.60	3.35	5.58	
44.27	21.30	94.69	29.99	4.06	23.29	643.98	3.00	5.00	207.60	4.00	6.67	
46.39	28.52	117.82	27.56	2.75	21.70	643.98	2.37	3.96	207.60	4.33	7.22	
48.52	32.97	136.21	25.14	1.45	17.01	643.98	2.03	3.39	207.60	5.57	9.29	
50.64	34.67	131.14	22.71	0.15	12.48	643.98	2.10	3.51	207.60	7.66	12.77	
52.76	33.24	125.25	18.17	1.32	18.06	643.98	2.21	3.68	207.60	5.25	8.76	
54.88	29.07	117.75	13.63	2.62	18.25	643.98	2.37	3.95	207.60	5.16	8.60	
57	22.13	100.35	9.08	3.92	25.35	643.98	2.83	4.71	207.60	3.68	6.14	
59.13	12.43	58.57	4.53	5.22	28.95	643.98	4.94	8.23	207.60	3.20	5.33	
61.25	0.00	0.00	0.00	6.52	32.81	643.98	N/A	N/A	207.60	2.80	4.66	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
HS20-44 Stringer S1-2	0	0.00	0.00	0.00	2.33	16.58	235.47	N/A	N/A	204.20	5.59	9.32
	0.75	1.38	8.46	0.92	1.97	14.77	235.47	12.73	21.23	204.20	6.29	10.49
	2	3.68	22.55	2.44	1.36	11.75	390.00	7.87	13.12	123.50	4.77	7.96
	4	5.43	34.65	4.87	0.39	9.03	390.00	5.09	8.49	123.50	6.28	10.46
	6	5.25	40.44	7.31	0.57	10.12	390.00	4.37	7.28	123.50	5.59	9.32
	8	3.13	42.22	15.58	1.54	9.99	390.00	4.21	7.02	123.50	5.60	9.34
	10	0.00	23.71	12.19	2.49	12.35	390.00	7.58	12.64	123.50	4.49	7.48
	12	3.73	27.44	6.29	1.42	10.11	390.00	6.47	10.78	123.50	5.55	9.24
	14	5.61	32.96	4.72	0.47	10.03	390.00	5.35	8.92	123.50	5.65	9.41
	16	5.60	38.21	3.14	0.48	7.61	390.00	4.62	7.69	123.50	7.44	12.40
	18	3.71	33.54	6.63	1.42	9.54	390.00	5.29	8.82	123.50	5.88	9.80
	19.25	1.39	12.58	2.49	2.01	12.91	169.69	6.15	10.25	180.49	6.35	10.59
20	0.00	0.00	0.00	2.36	14.93	169.69	N/A	N/A	180.49	5.48	9.13	
HS20-44 Stringer S2-2	0	0.00	0.00	0.00	6.02	30.04	390.00	N/A	N/A	123.50	1.77	2.96
	2	10.62	49.33	4.13	4.60	25.56	390.00	3.51	5.86	123.50	2.12	3.53
	4	18.41	80.28	8.26	3.18	20.85	390.00	2.10	3.50	123.50	2.64	4.40
	6	23.35	95.63	12.39	1.76	16.56	390.00	1.73	2.89	123.50	3.37	5.62
	8	25.46	102.77	16.52	0.34	14.38	390.00	1.60	2.67	123.50	3.94	6.57
	10	24.71	104.01	20.63	1.95	20.48	390.00	1.59	2.64	123.50	2.72	4.54
	12	19.38	93.59	24.30	3.37	19.90	390.00	1.80	2.99	123.50	2.76	4.60
	14	11.21	77.90	28.07	4.80	22.24	390.00	2.22	3.70	123.50	2.43	4.05
	16	0.17	56.31	33.91	6.23	27.30	390.00	3.19	5.32	123.50	1.95	3.25
	18	-13.72	32.54	58.28	7.67	31.88	390.00	2.94	4.91	123.50	1.64	2.74
	20	-30.49	16.11	96.03	9.12	37.52	390.00	1.68	2.80	123.50	1.37	2.29
	22	-17.01	31.94	55.46	6.00	29.05	390.00	3.06	5.10	123.50	1.84	3.06
	24	-6.50	52.61	36.78	4.51	26.16	390.00	3.34	5.57	123.50	2.07	3.45
	26	1.04	71.26	32.84	3.03	23.16	390.00	2.51	4.19	123.50	2.38	3.97
	28	5.61	82.91	31.73	1.54	19.39	390.00	2.13	3.55	123.50	2.89	4.81
	30	7.20	86.05	31.81	0.20	20.43	390.00	2.04	3.40	123.50	2.78	4.63
	32	5.31	81.20	33.37	1.69	16.83	390.00	2.17	3.62	123.50	3.32	5.54
	34	0.43	70.13	37.44	3.19	20.30	390.00	2.56	4.27	123.50	2.71	4.52
	36	-7.44	52.99	44.95	4.68	24.40	390.00	3.31	5.51	123.50	2.22	3.70
	38	-18.28	34.12	60.99	6.17	29.39	390.00	2.77	4.61	123.50	1.81	3.02
	40	-32.07	14.15	95.06	9.24	35.12	390.00	1.69	2.81	123.50	1.46	2.44
	42.12	-14.13	34.35	57.56	7.67	32.29	390.00	2.98	4.96	123.50	1.62	2.70
	44.24	0.48	57.32	33.33	6.10	27.54	390.00	3.13	5.22	123.50	1.93	3.22
	46.37	11.75	78.87	26.69	4.53	22.50	390.00	2.19	3.65	123.50	2.41	4.02
	48.49	19.70	92.62	23.35	2.96	19.04	390.00	1.81	3.02	123.50	2.90	4.83
	50.61	24.35	100.75	20.09	1.61	15.83	390.00	1.64	2.73	123.50	3.53	5.89
	52.73	26.11	103.36	16.08	0.05	14.79	390.00	1.59	2.65	123.50	3.85	6.41
	54.85	24.56	99.80	12.06	1.51	16.44	390.00	1.65	2.76	123.50	3.41	5.68
56.97	19.69	84.91	8.04	3.08	20.96	390.00	1.98	3.30	123.50	2.63	4.38	
59.1	11.51	52.71	4.02	4.64	25.98	390.00	3.28	5.47	123.50	2.08	3.47	
61.22	0.00	0.00	0.00	6.20	31.36	390.00	N/A	N/A	123.50	1.70	2.83	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.81	29.89	390.00	N/A	N/A	123.50	1.79	2.98
2	10.20	48.86	4.92	4.39	25.35	390.00	3.55	5.92	123.50	2.14	3.57
4	17.56	79.29	9.84	2.97	20.66	390.00	2.13	3.56	123.50	2.67	4.45
6	22.08	94.13	14.76	1.55	16.34	390.00	1.77	2.95	123.50	3.43	5.71
8	23.76	100.53	19.67	0.13	15.24	390.00	1.65	2.74	123.50	3.73	6.22
10	22.61	100.93	24.60	1.57	21.07	390.00	1.65	2.74	123.50	2.66	4.43
12	18.06	91.84	26.95	2.99	18.87	390.00	1.84	3.07	123.50	2.92	4.87
14	10.67	77.66	29.45	4.41	21.72	390.00	2.23	3.72	123.50	2.50	4.17
16	0.44	57.65	34.37	5.82	26.63	390.00	3.11	5.19	123.50	2.01	3.34
18	-12.63	34.87	56.18	7.24	31.23	390.00	3.06	5.11	123.50	1.68	2.81
20	-28.57	19.01	91.63	8.68	35.25	390.00	1.77	2.96	123.50	1.47	2.45
22	-15.73	31.42	57.84	5.69	29.70	390.00	2.94	4.91	123.50	1.80	3.00
24	-5.81	51.12	40.06	4.24	25.74	390.00	3.45	5.75	123.50	2.11	3.52
26	1.21	70.38	36.62	2.78	20.74	390.00	2.54	4.24	123.50	2.66	4.44
28	5.31	82.47	36.35	1.32	17.43	390.00	2.14	3.57	123.50	3.22	5.37
30	6.52	87.06	37.42	0.30	15.25	390.00	2.02	3.37	123.50	3.72	6.20
32	4.45	81.66	37.40	1.76	16.82	390.00	2.17	3.61	123.50	3.32	5.54
34	-0.52	70.85	40.15	3.21	21.45	390.00	2.53	4.22	123.50	2.56	4.27
36	-8.41	53.19	46.54	4.67	26.22	390.00	3.28	5.47	123.50	2.06	3.44
38	-19.20	34.70	61.48	6.13	31.00	390.00	2.74	4.56	123.50	1.72	2.86
40	-32.88	16.36	95.28	7.58	35.40	390.00	1.68	2.80	123.50	1.48	2.47
42.12	-14.46	35.70	57.33	7.91	32.31	390.00	2.98	4.97	123.50	1.61	2.69
44.24	0.69	58.27	33.79	6.37	27.67	390.00	3.08	5.13	123.50	1.92	3.20
46.37	12.56	80.34	28.30	4.82	22.76	390.00	2.14	3.57	123.50	2.37	3.96
48.49	21.15	95.71	25.89	3.28	19.38	390.00	1.75	2.91	123.50	2.84	4.73
50.61	26.49	104.97	23.71	1.36	16.22	390.00	1.56	2.60	123.50	3.46	5.77
52.73	27.74	106.45	18.97	0.18	15.28	390.00	1.53	2.55	123.50	3.72	6.20
54.85	25.72	101.80	14.23	1.72	16.82	390.00	1.61	2.69	123.50	3.32	5.54
56.97	20.43	85.90	9.49	3.27	21.26	390.00	1.95	3.25	123.50	2.58	4.31
59.1	11.86	53.03	4.75	4.81	26.19	390.00	3.26	5.43	123.50	2.06	3.44
61.22	0.00	0.00	0.00	6.36	31.52	390.00	N/A	N/A	123.50	1.68	2.81

HS20-44

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.77	30.72	390.00	N/A	N/A	123.50	1.74	2.90
2	10.12	48.97	4.94	4.35	26.78	390.00	3.55	5.91	123.50	2.03	3.38
4	17.41	79.51	9.88	2.93	21.63	390.00	2.13	3.55	123.50	2.55	4.25
6	21.85	94.46	14.82	1.51	17.10	390.00	1.76	2.94	123.50	3.28	5.46
8	23.46	100.95	19.76	0.09	15.29	390.00	1.64	2.74	123.50	3.72	6.20
10	22.23	101.47	24.71	1.50	18.11	390.00	1.64	2.73	123.50	3.09	5.16
12	17.80	92.23	27.05	2.92	18.96	390.00	1.83	3.06	123.50	2.91	4.85
14	10.54	77.93	29.59	4.34	24.18	390.00	2.23	3.71	123.50	2.25	3.74
16	0.43	57.78	34.59	5.76	29.12	390.00	3.11	5.18	123.50	1.84	3.06
18	-12.51	34.96	56.56	7.18	33.77	390.00	3.05	5.08	123.50	1.56	2.60
20	-28.32	19.03	92.20	8.62	37.87	390.00	1.77	2.94	123.50	1.37	2.28
22	-15.54	32.48	58.18	5.66	28.80	390.00	2.93	4.88	123.50	1.86	3.10
24	-5.67	51.80	40.32	4.21	25.81	390.00	3.40	5.67	123.50	2.11	3.51
26	1.28	70.85	36.87	2.75	20.81	390.00	2.53	4.21	123.50	2.66	4.43
28	5.33	82.87	36.69	1.30	17.55	390.00	2.13	3.55	123.50	3.20	5.33
30	6.44	87.41	37.89	0.25	18.50	390.00	2.01	3.35	123.50	3.07	5.11
32	4.48	81.94	37.65	1.71	16.86	390.00	2.16	3.60	123.50	3.31	5.53
34	-0.40	71.07	40.33	3.17	20.11	390.00	2.53	4.21	123.50	2.74	4.56
36	-8.18	53.50	46.62	4.62	24.50	390.00	3.27	5.45	123.50	2.21	3.68
38	-18.88	35.27	61.52	6.08	28.91	390.00	2.74	4.56	123.50	1.84	3.07
40	-32.50	17.24	95.53	9.37	35.23	390.00	1.68	2.80	123.50	1.46	2.43
42.12	-14.26	36.22	57.53	7.82	32.33	390.00	2.98	4.96	123.50	1.62	2.69
44.24	0.69	58.47	33.91	6.28	27.69	390.00	3.07	5.11	123.50	1.92	3.20
46.37	12.38	80.49	28.60	4.73	22.78	390.00	2.14	3.57	123.50	2.37	3.96
48.49	20.78	95.82	26.48	3.19	19.38	390.00	1.75	2.91	123.50	2.84	4.73
50.61	25.93	105.07	24.58	1.41	16.32	390.00	1.56	2.60	123.50	3.44	5.73
52.73	27.29	106.56	19.66	0.13	15.33	390.00	1.53	2.56	123.50	3.71	6.18
54.85	25.38	101.86	14.75	1.67	16.83	390.00	1.62	2.69	123.50	3.32	5.54
56.97	20.19	85.93	9.83	3.22	21.27	390.00	1.95	3.25	123.50	2.59	4.31
59.1	11.73	53.03	4.91	4.76	26.20	390.00	3.26	5.43	123.50	2.06	3.44
61.22	0.00	0.00	0.00	6.31	31.53	390.00	N/A	N/A	123.50	1.69	2.81

HS20-44

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.88	30.69	390.00	N/A	N/A	123.50	1.74	2.90
2	10.34	48.86	4.60	4.46	26.74	390.00	3.55	5.92	123.50	2.03	3.38
4	17.85	79.29	9.21	3.04	21.59	390.00	2.13	3.55	123.50	2.55	4.25
6	22.51	94.13	13.81	1.62	17.06	390.00	1.77	2.94	123.50	3.28	5.47
8	24.34	100.51	18.42	0.20	15.10	390.00	1.64	2.74	123.50	3.76	6.27
10	23.33	100.90	23.03	1.69	21.08	390.00	1.64	2.74	123.50	2.65	4.42
12	18.53	91.81	25.93	3.11	18.90	390.00	1.84	3.06	123.50	2.91	4.86
14	10.89	77.57	28.97	4.53	24.13	390.00	2.23	3.72	123.50	2.25	3.74
16	0.41	57.47	34.33	5.95	29.06	390.00	3.12	5.21	123.50	1.84	3.06
18	-12.91	34.10	56.14	7.37	33.71	390.00	3.06	5.11	123.50	1.56	2.60
20	-29.10	17.47	91.61	8.81	37.81	390.00	1.77	2.95	123.50	1.37	2.28
22	-16.10	31.45	57.81	5.77	28.69	390.00	2.94	4.90	123.50	1.86	3.11
24	-6.01	51.18	39.98	4.32	25.69	390.00	3.44	5.74	123.50	2.11	3.53
26	1.17	70.40	36.37	2.86	20.68	390.00	2.54	4.24	123.50	2.67	4.45
28	5.43	82.43	35.99	1.41	17.42	390.00	2.14	3.57	123.50	3.22	5.37
30	6.76	86.89	36.95	0.36	18.26	390.00	2.02	3.37	123.50	3.10	5.18
32	4.58	81.42	37.12	1.82	16.79	390.00	2.17	3.62	123.50	3.32	5.54
34	-0.51	70.50	40.08	3.27	20.04	390.00	2.54	4.24	123.50	2.74	4.57
36	-8.51	52.77	46.53	4.73	24.43	390.00	3.31	5.52	123.50	2.21	3.69
38	-19.43	33.99	61.37	6.18	28.84	390.00	2.74	4.57	123.50	1.85	3.08
40	-33.26	15.33	95.24	9.54	35.23	390.00	1.68	2.80	123.50	1.45	2.42
42.12	-14.66	35.09	57.28	7.99	32.32	390.00	2.98	4.97	123.50	1.61	2.69
44.24	0.66	58.16	33.73	6.45	27.68	390.00	3.08	5.14	123.50	1.92	3.19
46.37	12.70	80.40	27.91	4.90	22.77	390.00	2.14	3.57	123.50	2.37	3.95
48.49	21.47	95.79	25.19	3.36	19.38	390.00	1.74	2.90	123.50	2.83	4.72
50.61	26.99	105.06	22.61	1.32	16.11	390.00	1.56	2.60	123.50	3.48	5.81
52.73	28.14	106.55	18.08	0.23	15.13	390.00	1.53	2.55	123.50	3.75	6.26
54.85	26.02	101.86	13.56	1.77	16.83	390.00	1.61	2.69	123.50	3.32	5.53
56.97	20.62	85.93	9.04	3.32	21.27	390.00	1.95	3.25	123.50	2.58	4.30
59.1	11.94	53.02	4.51	4.86	26.21	390.00	3.25	5.43	123.50	2.06	3.43
61.22	0.00	0.00	0.00	6.41	31.53	390.00	N/A	N/A	123.50	1.68	2.81

HS20-44

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	5.42	28.32	390.00	N/A	N/A	123.50	1.89	3.16	
2.04	9.62	46.06	3.88	3.99	23.47	390.00	3.78	6.30	123.50	2.32	3.87	
4.09	16.32	74.47	7.77	2.57	18.96	390.00	2.28	3.80	123.50	2.92	4.87	
6.13	20.11	87.43	11.65	1.14	14.84	390.00	1.92	3.20	123.50	3.79	6.32	
8.17	20.98	91.22	15.53	0.29	14.43	390.00	1.83	3.05	123.50	3.93	6.55	
10.21	19.06	89.25	19.40	1.19	14.94	390.00	1.89	3.14	123.50	3.76	6.27	
12.26	15.18	86.31	23.12	2.62	17.93	390.00	1.98	3.30	123.50	3.09	5.15	
14.3	8.37	73.60	26.95	4.05	21.11	390.00	2.37	3.96	123.50	2.58	4.30	
16.34	-1.38	55.54	34.90	5.50	25.50	390.00	3.22	5.37	123.50	2.10	3.51	
18.38	-14.08	33.12	59.65	6.94	30.61	390.00	2.87	4.79	123.50	1.72	2.87	
20.43	-27.75	16.17	87.63	7.20	33.84	390.00	1.86	3.10	123.50	1.55	2.59	
22.43	-14.81	30.93	55.05	5.73	27.84	390.00	3.10	5.17	123.50	1.92	3.20	
24.43	-4.81	50.51	37.22	4.26	25.20	390.00	3.50	5.84	123.50	2.16	3.60	
26.43	2.24	67.75	31.92	2.79	20.24	390.00	2.63	4.39	123.50	2.73	4.55	
28.43	6.34	77.25	30.72	1.31	16.96	390.00	2.28	3.80	123.50	3.31	5.52	
30.43	7.48	79.72	30.66	0.23	16.97	390.00	2.20	3.66	123.50	3.35	5.58	
32.43	5.53	79.26	32.74	1.72	16.53	390.00	2.23	3.71	123.50	3.38	5.64	
34.43	0.59	69.65	37.35	3.21	19.97	390.00	2.58	4.29	123.50	2.75	4.59	
36.43	-7.32	52.19	45.00	4.71	24.26	390.00	3.36	5.60	123.50	2.23	3.72	
38.43	-18.23	32.73	60.42	6.20	28.93	390.00	2.79	4.66	123.50	1.84	3.07	
40.43	-32.15	13.51	94.31	9.24	35.45	390.00	1.70	2.84	123.50	1.45	2.42	
42.55	-14.24	32.57	56.84	7.65	32.59	390.00	3.01	5.02	123.50	1.61	2.68	
44.67	0.30	58.25	32.54	6.05	27.88	390.00	3.08	5.14	123.50	1.91	3.19	
46.79	11.45	79.65	25.93	4.45	22.67	390.00	2.17	3.62	123.50	2.39	3.99	
48.91	19.20	93.69	22.45	2.85	19.10	390.00	1.80	2.99	123.50	2.89	4.82	
51.04	23.52	101.17	19.07	1.79	16.26	390.00	1.64	2.73	123.50	3.43	5.72	
53.16	25.62	104.60	15.26	0.19	15.20	390.00	1.57	2.62	123.50	3.74	6.23	
55.28	24.32	101.60	11.44	1.42	16.73	390.00	1.63	2.71	123.50	3.35	5.59	
57.4	19.61	86.82	7.63	3.02	21.42	390.00	1.93	3.23	123.50	2.57	4.29	
59.52	11.50	54.07	3.82	4.62	26.64	390.00	3.20	5.33	123.50	2.03	3.39	
61.65	0.00	0.00	0.00	6.22	32.24	390.00	N/A	N/A	123.50	1.65	2.75	

HS20-44

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.02	27.39	1212.51	N/A	N/A	149.61	2.41	4.01
2	8.86	43.65	5.74	3.83	23.19	1212.51	12.68	21.14	149.61	2.87	4.79
4	15.33	75.10	11.49	2.63	20.12	1212.51	7.32	12.20	149.61	3.35	5.58
6.01	19.40	92.74	17.23	1.44	20.33	1212.51	5.90	9.83	149.61	3.35	5.58
8.01	21.08	106.68	22.98	0.24	14.89	1212.51	5.12	8.53	149.61	4.62	7.70
10.01	20.36	100.08	28.73	1.41	16.69	1212.51	5.46	9.10	149.61	4.08	6.80
12.01	16.34	79.20	31.97	2.61	21.18	1212.51	6.93	11.55	149.61	3.18	5.30
14.01	9.92	67.35	35.29	3.81	25.58	1212.51	8.21	13.68	149.61	2.61	4.34
16.02	1.08	59.28	38.63	5.02	27.72	1212.51	9.41	15.69	149.61	2.38	3.97
18.02	-10.19	42.83	70.14	6.24	29.52	1212.51	7.88	13.13	149.61	2.21	3.68
20.02	-23.97	2.38	88.82	7.49	35.42	1212.51	6.13	10.22	149.61	1.82	3.03
22.02	-10.65	20.59	55.59	6.03	28.40	1212.51	9.94	16.56	149.61	2.30	3.83
24.02	0.13	48.21	42.12	4.76	25.35	1212.51	11.59	19.32	149.61	2.61	4.35
26.02	8.38	80.64	38.77	3.48	22.76	1212.51	6.87	11.45	149.61	2.94	4.90
28.02	14.07	105.49	35.44	2.20	22.17	1212.51	5.22	8.70	149.61	3.05	5.08
30.02	17.17	106.66	32.15	0.92	16.36	1212.51	5.14	8.57	149.61	4.18	6.97
32.02	17.45	88.54	25.62	0.50	16.65	1212.51	6.19	10.32	149.61	4.12	6.87
34.02	15.16	68.37	19.21	1.79	24.53	1212.51	8.04	13.40	149.61	2.77	4.61
36.03	10.28	57.97	12.81	3.09	25.43	1212.51	9.53	15.89	149.61	2.64	4.40
38.03	2.81	36.45	14.33	4.38	29.01	1212.51	15.28	25.48	149.61	2.29	3.81
40.03	0.00	0.00	0.00	7.23	33.82	1212.51	N/A	N/A	149.61	1.91	3.18
42.15	12.35	59.54	11.52	5.85	29.23	1212.51	9.26	15.44	149.61	2.24	3.73
44.27	23.31	104.05	11.57	4.47	25.54	1212.51	5.24	8.73	149.61	2.59	4.33
46.39	31.33	128.69	11.62	3.09	21.13	1212.51	4.20	6.99	149.61	3.18	5.29
48.51	36.42	143.53	11.67	1.70	17.64	1212.51	3.74	6.24	149.61	3.85	6.42
50.64	38.57	141.69	11.72	0.32	14.01	1212.51	3.78	6.30	149.61	4.91	8.18
52.76	36.77	119.18	9.37	1.54	19.83	1212.51	4.50	7.51	149.61	3.43	5.72
54.88	32.03	119.53	7.02	2.93	22.99	1212.51	4.51	7.53	149.61	2.92	4.87
57	24.32	117.34	4.68	4.33	25.15	1212.51	4.64	7.73	149.61	2.64	4.40
59.12	13.65	85.31	2.34	5.73	28.34	1212.51	6.45	10.76	149.61	2.31	3.85
61.25	0.00	0.00	0.00	7.13	34.79	1212.51	N/A	N/A	149.61	1.86	3.10

HS20-44

Stringer F2A-2

Stringer F2B-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
			D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44	Stringer F1A-3												
	0	0.00	0.00	0.00	6.39	33.41	643.98	N/A	N/A	207.60	2.75	4.58	
	2.12	12.15	56.93	2.06	5.06	27.98	643.98	5.08	8.48	207.60	3.31	5.52	
	4.24	21.49	93.03	4.13	3.74	22.85	643.98	3.05	5.09	207.60	4.09	6.82	
	6.37	28.02	115.12	6.19	2.41	18.85	643.98	2.43	4.05	207.60	5.00	8.33	
	8.49	31.72	130.79	8.26	1.08	16.06	643.98	2.12	3.54	207.60	5.92	9.86	
	10.61	32.63	137.63	10.33	0.50	14.41	643.98	2.01	3.36	207.60	6.62	11.03	
	12.73	30.17	126.11	8.26	1.83	15.99	643.98	2.21	3.68	207.60	5.91	9.86	
	14.86	24.86	103.64	6.20	3.17	20.94	643.98	2.72	4.53	207.60	4.48	7.46	
	16.98	16.71	71.45	4.13	4.51	27.57	643.98	4.01	6.69	207.60	3.37	5.62	
	19.1	5.70	31.25	2.07	5.86	31.96	643.98	9.39	15.65	207.60	2.88	4.81	
	21.22	-1.36	0.00	36.98	7.22	35.22	643.98	8.00	13.34	207.60	2.59	4.32	
	23.34	8.42	57.19	34.82	3.93	28.04	643.98	5.10	8.50	207.60	3.33	5.55	
	25.47	15.31	92.52	32.66	2.57	22.87	643.98	3.11	5.18	207.60	4.12	6.86	
	27.59	19.31	108.50	30.50	1.20	18.32	643.98	2.63	4.38	207.60	5.18	8.64	
	29.71	20.39	118.49	28.33	0.17	15.33	643.98	2.40	4.00	207.60	6.23	10.39	
	31.83	18.56	119.25	26.58	1.49	16.56	643.98	2.40	3.99	207.60	5.72	9.54	
	33.96	13.93	107.13	21.32	2.87	19.42	643.98	2.69	4.49	207.60	4.84	8.06	
	36.08	6.36	89.70	16.02	4.26	23.54	643.98	3.27	5.44	207.60	3.96	6.59	
	38.2	-4.18	61.74	12.25	5.66	29.06	643.98	4.77	7.95	207.60	3.18	5.29	
	40.32	-17.69	34.41	27.21	7.07	34.37	643.98	8.32	13.86	207.60	2.66	4.43	
	42.45	-33.67	12.03	61.93	8.08	39.36	643.98	4.47	7.45	207.60	2.31	3.85	
	44.57	-17.51	16.05	49.73	7.21	8.53	643.98	5.76	9.60	207.60	10.71	17.85	
	46.7	-2.86	22.40	43.01	6.46	8.39	643.98	6.86	11.44	207.60	10.94	18.24	
	48.82	10.28	28.66	37.64	5.70	7.79	643.98	7.72	12.87	207.60	11.84	19.74	
	50.95	21.87	29.90	32.52	4.94	7.59	643.98	8.72	14.54	207.60	12.21	20.36	
	53.07	28.93	30.28	27.47	0.43	6.84	643.98	9.23	15.38	207.60	13.95	23.25	
	55.19	27.06	34.15	21.98	1.33	6.30	643.98	8.22	13.69	207.60	15.06	25.10	
	57.32	23.25	35.31	16.49	2.25	5.66	643.98	8.01	13.35	207.60	16.66	27.78	
	59.44	17.49	30.60	11.00	3.18	7.74	643.98	9.36	15.60	207.60	12.11	20.19	
	61.57	9.74	19.77	5.51	4.11	9.41	643.98	14.72	24.53	207.60	9.90	16.51	
	63.69	0.00	0.00	0.00	5.06	12.19	643.98	N/A	N/A	207.60	7.60	12.67	
	HS20-44	Stringer S1-3											
0		0.00	0.00	0.00	2.89	16.31	303.24	N/A	N/A	216.57	6.01	10.02	
0.75		1.76	8.49	1.28	2.50	14.75	303.24	16.33	27.23	216.57	6.67	11.11	
2.12		4.97	24.00	3.63	1.79	11.89	390.00	7.36	12.28	123.50	4.70	7.83	
4.24		7.60	37.30	7.26	0.69	9.31	390.00	4.70	7.83	123.50	6.07	10.12	
6.36		7.88	45.49	10.89	0.43	10.85	390.00	3.85	6.41	123.50	5.22	8.70	
8.48		5.79	47.36	21.07	1.55	11.00	390.00	3.72	6.20	123.50	5.09	8.48	
10.6		2.59	26.12	18.48	2.68	14.96	390.00	6.82	11.37	123.50	3.70	6.16	
12.72		6.94	34.86	6.87	1.48	13.95	390.00	5.04	8.40	123.50	4.02	6.69	
14.85		8.87	42.16	5.16	0.34	11.54	390.00	4.14	6.90	123.50	4.91	8.19	
16.97		8.36	42.19	3.44	0.82	10.51	390.00	4.14	6.90	123.50	5.37	8.95	
19.09		5.39	29.08	1.72	1.98	14.73	390.00	6.07	10.12	123.50	3.78	6.31	
20.46		1.91	10.29	0.61	2.74	17.33	192.60	8.52	14.20	183.58	4.79	7.98	
21.21	0.00	0.00	0.00	3.16	18.75	192.60	N/A	N/A	183.58	4.41	7.35		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	8.49	31.74	390.00	N/A	N/A	123.50	1.63	2.72
2.12	14.44	53.09	4.45	5.12	26.17	390.00	3.22	5.37	123.50	2.06	3.43
4.24	24.24	86.11	8.90	3.53	21.22	390.00	1.92	3.20	123.50	2.58	4.30
6.37	27.51	101.30	13.34	1.04	16.64	390.00	1.61	2.69	123.50	3.38	5.64
8.49	24.87	104.75	17.79	1.45	16.15	390.00	1.57	2.62	123.50	3.47	5.78
10.61	25.94	100.79	22.26	1.73	18.09	390.00	1.63	2.72	123.50	3.09	5.15
12.73	20.58	94.39	26.42	3.33	18.94	390.00	1.77	2.96	123.50	2.90	4.83
14.85	11.81	80.98	30.67	4.94	23.36	390.00	2.13	3.55	123.50	2.31	3.85
16.98	-0.38	60.74	37.34	6.55	28.10	390.00	2.96	4.93	123.50	1.89	3.14
19.1	-15.98	37.63	62.06	8.16	33.44	390.00	2.74	4.57	123.50	1.56	2.59
21.22	-35.01	19.31	101.11	9.79	37.46	390.00	1.57	2.62	123.50	1.36	2.27
23.34	-19.25	33.16	62.90	6.62	31.05	390.00	2.67	4.46	123.50	1.71	2.84
25.46	-6.94	56.20	44.19	4.99	27.19	390.00	3.12	5.21	123.50	1.98	3.31
27.58	1.91	75.33	37.15	3.35	22.35	390.00	2.37	3.95	123.50	2.46	4.10
29.7	7.28	85.69	32.94	1.71	20.28	390.00	2.05	3.41	123.50	2.76	4.59
31.82	9.18	89.53	32.63	0.26	19.60	390.00	1.95	3.24	123.50	2.90	4.83
33.94	6.89	88.21	32.26	1.90	18.12	390.00	1.99	3.32	123.50	3.08	5.13
36.06	1.13	77.18	35.49	3.54	21.45	390.00	2.32	3.87	123.50	2.55	4.26
38.19	-8.10	58.21	41.38	5.16	26.98	390.00	3.00	5.01	123.50	1.99	3.33
40.31	-20.77	34.79	59.06	6.79	32.00	390.00	2.83	4.72	123.50	1.65	2.75
42.43	-36.84	17.70	97.36	8.40	36.74	390.00	1.62	2.70	123.50	1.41	2.35
44.55	-16.86	35.31	60.92	8.62	31.02	390.00	2.78	4.64	123.50	1.67	2.78
46.67	-0.19	57.46	37.86	7.08	26.44	390.00	3.13	5.21	123.50	1.99	3.32
48.79	13.09	76.36	31.30	5.51	22.48	390.00	2.25	3.75	123.50	2.38	3.98
50.91	23.01	88.16	27.21	3.94	19.80	390.00	1.88	3.14	123.50	2.76	4.59
53.03	29.98	94.02	23.20	2.45	23.64	390.00	1.72	2.87	123.50	2.35	3.91
55.15	30.49	98.64	18.56	0.52	16.62	390.00	1.64	2.73	123.50	3.41	5.68
57.27	27.75	96.10	13.93	2.06	15.93	390.00	1.70	2.83	123.50	3.50	5.83
59.39	21.76	82.12	9.29	3.59	20.39	390.00	2.03	3.38	123.50	2.69	4.48
61.51	12.51	51.17	4.65	5.13	25.34	390.00	3.37	5.61	123.50	2.12	3.54
63.64	0.00	0.00	0.00	6.66	30.68	390.00	N/A	N/A	123.50	1.72	2.88

HS20-44

Stringer S2-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	6.49	32.28	390.00	N/A	N/A	123.50	1.64	2.74	
2.12	12.10	54.00	5.74	4.92	26.77	390.00	3.19	5.32	123.50	2.02	3.36	
4.24	20.87	87.69	11.48	3.35	21.73	390.00	1.91	3.18	123.50	2.53	4.21	
6.37	26.31	104.43	17.22	1.78	17.26	390.00	1.57	2.62	123.50	3.24	5.39	
8.49	28.41	109.60	22.96	0.21	17.04	390.00	1.48	2.47	123.50	3.33	5.56	
10.61	27.17	107.47	28.70	1.91	18.72	390.00	1.52	2.54	123.50	2.98	4.97	
12.73	21.45	98.18	30.84	3.48	19.80	390.00	1.70	2.83	123.50	2.77	4.62	
14.85	12.39	82.80	33.35	5.06	23.86	390.00	2.08	3.47	123.50	2.26	3.76	
16.98	0.00	60.57	39.04	6.63	28.71	390.00	2.97	4.95	123.50	1.84	3.07	
19.1	-15.74	38.29	63.21	8.20	33.29	390.00	2.69	4.49	123.50	1.56	2.60	
21.22	-34.79	21.12	103.28	9.77	37.20	390.00	1.54	2.56	123.50	1.37	2.29	
23.34	-19.45	34.74	64.37	6.45	30.54	390.00	2.61	4.35	123.50	1.74	2.90	
25.46	-7.45	56.38	46.47	4.88	26.99	390.00	3.11	5.18	123.50	2.00	3.33	
27.58	1.23	76.19	40.97	3.30	23.32	390.00	2.35	3.92	123.50	2.36	3.93	
29.7	6.57	88.68	38.60	1.73	19.95	390.00	1.98	3.30	123.50	2.80	4.67	
31.82	8.59	91.97	40.31	0.03	20.08	390.00	1.90	3.16	123.50	2.83	4.72	
33.94	6.86	88.81	38.64	1.60	17.65	390.00	1.98	3.30	123.50	3.17	5.28	
36.06	1.80	76.09	40.88	3.17	21.71	390.00	2.35	3.91	123.50	2.53	4.22	
38.19	-6.59	55.76	46.21	4.74	26.27	390.00	3.15	5.25	123.50	2.06	3.43	
40.31	-18.31	33.71	64.03	6.31	30.78	390.00	2.64	4.39	123.50	1.73	2.88	
42.43	-33.33	19.81	102.82	9.38	35.99	390.00	1.55	2.59	123.50	1.43	2.38	
44.55	-15.10	37.60	63.05	7.83	32.81	390.00	2.71	4.51	123.50	1.59	2.65	
46.67	-0.16	60.33	39.06	6.27	28.25	390.00	2.98	4.96	123.50	1.88	3.14	
48.79	11.47	82.14	32.95	4.72	24.35	390.00	2.10	3.51	123.50	2.22	3.70	
50.91	19.79	97.22	29.71	3.17	21.42	390.00	1.73	2.88	123.50	2.57	4.28	
53.03	25.32	106.26	26.69	1.70	27.43	390.00	1.55	2.58	123.50	2.04	3.40	
55.15	26.76	108.59	21.35	0.09	17.59	390.00	1.51	2.51	123.50	3.23	5.39	
57.27	24.94	103.66	16.01	1.62	17.33	390.00	1.59	2.65	123.50	3.23	5.38	
59.39	19.88	87.16	10.68	3.15	21.79	390.00	1.93	3.21	123.50	2.53	4.21	
61.51	11.57	53.74	5.34	4.69	26.76	390.00	3.22	5.36	123.50	2.02	3.37	
63.64	0.00	0.00	0.00	6.22	32.16	390.00	N/A	N/A	123.50	1.65	2.76	

HS20-44

Stringer S3-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.36	32.10	390.00	N/A	N/A	123.50	1.65	2.76
2.12	11.82	53.72	5.63	4.78	26.59	390.00	3.21	5.36	123.50	2.03	3.39
4.24	20.31	87.12	11.26	3.21	21.55	390.00	1.92	3.21	123.50	2.55	4.25
6.37	25.46	103.59	16.88	1.64	17.08	390.00	1.59	2.65	123.50	3.27	5.46
8.49	27.28	108.48	22.51	0.07	16.98	390.00	1.51	2.51	123.50	3.35	5.58
10.61	25.76	106.07	28.13	1.70	18.58	390.00	1.55	2.58	123.50	3.01	5.01
12.73	20.48	96.93	30.39	3.27	19.66	390.00	1.73	2.88	123.50	2.80	4.66
14.85	11.88	81.90	32.93	4.84	23.72	390.00	2.11	3.51	123.50	2.28	3.80
16.98	-0.06	60.21	38.55	6.41	28.57	390.00	2.98	4.97	123.50	1.86	3.10
19.1	-15.34	38.64	63.04	7.98	33.13	390.00	2.71	4.51	123.50	1.57	2.62
21.22	-33.93	21.91	103.14	9.55	37.03	390.00	1.55	2.58	123.50	1.38	2.30
23.34	-18.77	35.15	64.14	6.36	30.40	390.00	2.63	4.38	123.50	1.75	2.91
25.46	-6.95	56.13	46.14	4.79	26.84	390.00	3.13	5.21	123.50	2.01	3.36
27.58	1.55	75.57	40.70	3.22	23.17	390.00	2.37	3.94	123.50	2.37	3.96
29.7	6.72	87.61	38.46	1.65	19.83	390.00	2.01	3.34	123.50	2.82	4.70
31.82	8.57	90.28	40.18	0.02	20.29	390.00	1.93	3.22	123.50	2.80	4.67
33.94	6.86	87.56	38.43	1.59	17.55	390.00	2.01	3.34	123.50	3.19	5.32
36.06	1.83	75.37	40.67	3.16	21.61	390.00	2.37	3.95	123.50	2.55	4.24
38.19	-6.53	55.81	46.14	4.73	26.17	390.00	3.15	5.25	123.50	2.07	3.44
40.31	-18.22	34.79	64.32	6.30	30.68	390.00	2.62	4.38	123.50	1.73	2.89
42.43	-33.21	21.51	103.05	9.34	36.04	390.00	1.55	2.59	123.50	1.42	2.37
44.55	-15.06	38.50	62.94	7.79	32.89	390.00	2.71	4.52	123.50	1.59	2.65
46.67	-0.20	60.21	38.36	6.24	28.33	390.00	2.98	4.97	123.50	1.88	3.13
48.79	11.35	81.86	32.47	4.69	24.43	390.00	2.11	3.52	123.50	2.21	3.69
50.91	19.60	96.91	29.68	3.14	21.51	390.00	1.73	2.89	123.50	2.56	4.26
53.03	25.04	106.12	27.22	1.66	27.38	390.00	1.55	2.59	123.50	2.04	3.40
55.15	26.54	108.48	21.78	0.06	17.63	390.00	1.51	2.52	123.50	3.23	5.38
57.27	24.78	103.57	16.34	1.59	17.29	390.00	1.59	2.65	123.50	3.24	5.40
59.39	19.77	87.10	10.89	3.13	21.75	390.00	1.93	3.21	123.50	2.53	4.22
61.51	11.51	53.71	5.45	4.66	26.72	390.00	3.22	5.36	123.50	2.03	3.38
63.64	0.00	0.00	0.00	6.19	32.12	390.00	N/A	N/A	123.50	1.66	2.76

HS20-44

Stringer S4-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	6.46	32.30	390.00	N/A	N/A	123.50	1.64	2.74	
2.12	12.05	54.04	5.38	4.89	26.79	390.00	3.19	5.32	123.50	2.02	3.36	
4.24	20.76	87.76	10.77	3.32	21.74	390.00	1.91	3.18	123.50	2.53	4.21	
6.37	26.14	104.54	16.15	1.75	17.27	390.00	1.57	2.62	123.50	3.23	5.39	
8.49	28.18	109.75	21.54	0.18	16.88	390.00	1.48	2.47	123.50	3.37	5.61	
10.61	26.89	107.64	26.92	1.90	18.76	390.00	1.52	2.53	123.50	2.97	4.96	
12.73	21.19	98.11	29.76	3.47	19.84	390.00	1.70	2.84	123.50	2.76	4.61	
14.85	12.17	82.54	32.85	5.04	23.91	390.00	2.09	3.48	123.50	2.25	3.76	
16.98	-0.19	60.10	38.86	6.61	28.76	390.00	2.99	4.98	123.50	1.84	3.07	
19.1	-15.88	37.12	63.15	8.18	33.32	390.00	2.70	4.49	123.50	1.56	2.60	
21.22	-34.90	19.42	103.45	9.75	37.24	390.00	1.54	2.56	123.50	1.37	2.29	
23.34	-19.42	33.69	64.64	6.51	30.49	390.00	2.60	4.33	123.50	1.74	2.90	
25.46	-7.28	55.75	46.62	4.94	26.93	390.00	3.15	5.24	123.50	2.00	3.34	
27.58	1.54	75.80	40.73	3.37	23.26	390.00	2.36	3.93	123.50	2.36	3.93	
29.7	7.03	88.31	38.08	1.80	19.91	390.00	1.99	3.31	123.50	2.80	4.67	
31.82	9.19	91.32	39.32	0.16	19.98	390.00	1.91	3.18	123.50	2.84	4.74	
33.94	7.19	88.36	37.91	1.73	17.62	390.00	1.99	3.31	123.50	3.17	5.29	
36.06	1.86	75.92	40.53	3.30	21.68	390.00	2.35	3.92	123.50	2.53	4.22	
38.19	-6.80	55.84	46.23	4.87	26.24	390.00	3.15	5.24	123.50	2.06	3.43	
40.31	-18.80	33.72	64.12	6.44	30.75	390.00	2.63	4.38	123.50	1.73	2.88	
42.43	-34.09	19.52	102.88	9.51	36.06	390.00	1.55	2.58	123.50	1.42	2.37	
44.55	-15.57	37.35	62.96	7.96	32.90	390.00	2.71	4.51	123.50	1.58	2.64	
46.67	-0.34	60.09	38.81	6.41	28.33	390.00	2.99	4.98	123.50	1.87	3.12	
48.79	11.57	82.07	32.90	4.86	24.40	390.00	2.11	3.51	123.50	2.21	3.69	
50.91	20.19	97.42	29.87	3.31	21.48	390.00	1.72	2.87	123.50	2.56	4.26	
53.03	26.00	106.62	27.02	1.83	27.47	390.00	1.54	2.57	123.50	2.03	3.39	
55.15	27.30	108.89	21.62	0.15	17.61	390.00	1.50	2.50	123.50	3.23	5.38	
57.27	25.35	103.88	16.22	1.69	17.36	390.00	1.58	2.64	123.50	3.22	5.37	
59.39	20.15	87.32	10.81	3.22	21.83	390.00	1.92	3.20	123.50	2.52	4.20	
61.51	11.71	53.81	5.41	4.75	26.80	390.00	3.21	5.35	123.50	2.02	3.36	
63.64	0.00	0.00	0.00	6.28	32.20	390.00	N/A	N/A	123.50	1.65	2.75	

HS20-44

Stringer S5-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.26	32.31	390.00	N/A	N/A	123.50	1.65	2.74
2.12	11.56	53.86	4.28	4.63	26.54	390.00	3.21	5.35	123.50	2.04	3.40
4.24	19.66	86.34	8.57	3.00	21.27	390.00	1.95	3.24	123.50	2.59	4.32
6.37	24.30	100.23	12.85	1.37	16.50	390.00	1.65	2.75	123.50	3.40	5.67
8.49	25.50	102.72	17.13	0.25	16.35	390.00	1.60	2.67	123.50	3.47	5.79
10.61	23.22	97.68	21.41	1.31	17.30	390.00	1.70	2.83	123.50	3.24	5.41
12.73	18.72	91.44	24.93	2.93	18.44	390.00	1.84	3.07	123.50	2.99	4.99
14.85	10.78	78.18	28.53	4.55	22.67	390.00	2.22	3.69	123.50	2.39	3.98
16.98	-0.58	57.94	34.92	6.16	27.35	390.00	3.10	5.16	123.50	1.95	3.24
19.1	-15.35	34.26	58.29	7.77	32.52	390.00	2.93	4.88	123.50	1.61	2.68
21.22	-33.53	15.43	95.66	9.37	36.35	390.00	1.67	2.78	123.50	1.41	2.35
23.34	-18.18	32.21	59.48	6.44	29.25	390.00	2.84	4.73	123.50	1.81	3.02
25.46	-6.22	54.24	42.74	4.84	25.86	390.00	3.24	5.41	123.50	2.09	3.48
27.58	2.37	70.94	35.92	3.25	21.87	390.00	2.51	4.19	123.50	2.51	4.19
29.7	7.59	80.14	31.01	1.67	18.70	390.00	2.19	3.64	123.50	2.99	4.98
31.82	9.47	80.67	29.74	0.17	18.80	390.00	2.16	3.60	123.50	3.02	5.04
33.94	8.15	79.60	29.16	1.41	16.07	390.00	2.20	3.66	123.50	3.49	5.82
36.06	3.51	69.24	31.97	2.97	19.76	390.00	2.57	4.28	123.50	2.79	4.65
38.19	-4.45	51.75	37.68	4.53	24.17	390.00	3.42	5.70	123.50	2.24	3.74
40.31	-15.70	31.41	54.97	6.08	28.47	390.00	3.10	5.17	123.50	1.87	3.12
42.43	-30.24	17.04	89.16	8.44	32.32	390.00	1.81	3.02	123.50	1.60	2.67
44.55	-13.96	34.17	54.81	6.93	29.22	390.00	3.13	5.21	123.50	1.81	3.01
46.67	-0.89	54.47	34.06	5.42	24.98	390.00	3.29	5.48	123.50	2.15	3.58
48.79	8.99	71.20	27.25	3.93	21.32	390.00	2.45	4.08	123.50	2.56	4.27
50.91	15.69	80.69	23.22	2.44	18.32	390.00	2.11	3.52	123.50	3.03	5.05
53.03	19.75	84.51	19.44	1.73	23.79	390.00	1.99	3.31	123.50	2.35	3.92
55.15	21.88	88.94	15.55	0.28	15.72	390.00	1.87	3.12	123.50	3.61	6.02
57.27	20.94	85.98	11.66	1.16	14.43	390.00	1.94	3.24	123.50	3.90	6.49
59.39	16.98	73.26	7.78	2.58	18.05	390.00	2.31	3.86	123.50	3.07	5.11
61.51	9.99	45.50	3.89	4.00	22.66	390.00	3.82	6.37	123.50	2.41	4.01
63.64	0.00	0.00	0.00	5.41	27.21	390.00	N/A	N/A	123.50	1.97	3.29

HS20-44

Stringer S6-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
				L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44	Stringer F2A-3	0	0.00	0.00	0.00	6.91	35.24	1212.51	N/A	N/A	149.61	1.84	3.07
		2.12	13.15	59.39	1.96	5.49	29.18	1212.51	9.28	15.46	149.61	2.25	3.75
		4.24	23.29	97.38	3.91	4.07	23.90	1212.51	5.59	9.33	149.61	2.78	4.64
		6.37	30.42	121.27	5.87	2.65	19.84	1212.51	4.46	7.43	149.61	3.40	5.66
		8.49	34.55	137.78	7.82	1.24	16.91	1212.51	3.91	6.51	149.61	4.03	6.72
		10.61	35.68	145.07	9.78	0.66	14.48	1212.51	3.70	6.18	149.61	4.73	7.89
		12.73	32.79	131.75	7.83	2.07	16.68	1212.51	4.09	6.82	149.61	4.06	6.77
		14.86	26.91	106.19	5.87	3.47	21.67	1212.51	5.11	8.52	149.61	3.09	5.14
		16.98	18.06	73.41	3.91	4.87	27.52	1212.51	7.46	12.44	149.61	2.40	4.00
		19.1	6.24	32.10	1.96	6.27	32.84	1212.51	17.29	28.82	149.61	1.99	3.31
	Stringer F2B-3	21.22	0.00	0.00	0.00	7.66	35.63	1212.51	N/A	N/A	149.61	1.81	3.01
		23.34	9.37	56.24	37.82	4.38	27.60	1212.51	9.84	16.40	149.61	2.40	4.01
		25.47	17.20	91.27	38.36	3.00	22.59	1212.51	6.01	10.02	149.61	2.97	4.96
		27.59	22.11	106.92	38.96	1.62	18.09	1212.51	5.10	8.51	149.61	3.76	6.26
		29.71	24.10	116.39	40.06	0.25	15.21	1212.51	4.68	7.80	149.61	4.52	7.54
		31.83	23.19	116.88	41.29	1.31	16.28	1212.51	4.66	7.77	149.61	4.19	6.98
		33.96	18.96	104.35	38.43	2.67	17.93	1212.51	5.25	8.74	149.61	3.76	6.26
		36.08	11.85	88.13	34.72	4.03	21.16	1212.51	6.26	10.43	149.61	3.14	5.24
		38.2	1.87	62.42	33.24	5.37	26.02	1212.51	8.93	14.89	149.61	2.53	4.21
		40.32	-10.95	33.80	41.46	6.71	30.47	1212.51	13.32	22.20	149.61	2.13	3.55
		42.45	-26.57	10.69	71.67	8.04	34.54	1212.51	7.57	12.63	149.61	1.86	3.10
		44.57	-11.33	36.17	42.38	6.53	29.19	1212.51	13.02	21.71	149.61	2.23	3.71
		46.69	1.15	65.26	35.71	5.24	24.67	1212.51	8.55	14.26	149.61	2.67	4.45
		48.82	10.87	87.47	34.38	3.95	20.32	1212.51	6.31	10.52	149.61	3.28	5.46
		50.94	17.86	99.83	33.23	2.68	18.20	1212.51	5.49	9.15	149.61	3.70	6.17
		53.07	22.71	106.66	32.14	0.93	14.94	1212.51	5.11	8.52	149.61	4.58	7.63
		55.19	23.38	103.20	25.71	0.31	12.91	1212.51	5.28	8.80	149.61	5.33	8.88
		57.32	21.42	94.37	19.28	1.54	15.51	1212.51	5.78	9.64	149.61	4.39	7.31
59.44	16.85	76.97	12.85	2.76	19.14	1212.51	7.13	11.88	149.61	3.52	5.86		
61.56	9.70	46.02	6.42	3.97	22.38	1212.51	12.02	20.03	149.61	2.97	4.96		
63.69	0.00	0.00	0.00	5.18	26.20	1212.51	N/A	N/A	149.61	2.51	4.19		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L-I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	4.81	10.37	643.98	N/A	N/A	207.60	8.95	14.92	
2.33	9.99	23.06	6.46	3.77	10.24	643.98	12.61	21.02	207.60	9.12	15.21	
4.65	17.53	43.07	12.92	2.72	9.64	643.98	6.65	11.08	207.60	9.76	16.26	
6.98	22.65	55.90	19.38	1.67	8.10	643.98	5.07	8.45	207.60	11.69	19.48	
9.31	25.33	61.49	25.84	0.63	7.54	643.98	4.58	7.63	207.60	12.64	21.07	
11.63	25.50	72.09	32.32	2.52	10.20	643.98	3.90	6.51	207.60	9.23	15.39	
13.96	18.31	61.81	32.41	3.66	11.57	643.98	4.62	7.71	207.60	8.08	13.47	
16.29	8.46	54.06	32.50	4.81	12.88	643.98	5.40	8.99	207.60	7.20	12.01	
18.61	-4.09	34.28	32.59	5.98	15.53	643.98	8.59	14.31	207.60	5.93	9.88	
20.94	-19.40	15.07	35.26	7.18	17.31	643.98	8.09	13.48	207.60	5.28	8.80	
23.27	-37.47	2.57	56.78	8.77	20.15	643.98	4.83	8.05	207.60	4.49	7.48	
25.6	-18.45	17.35	33.99	7.54	18.72	643.98	8.41	14.01	207.60	4.87	8.12	
27.93	-2.32	39.02	29.69	6.29	16.65	643.98	7.57	12.62	207.60	5.52	9.20	
30.26	10.86	59.25	28.36	5.02	13.74	643.98	4.90	8.17	207.60	6.74	11.24	
32.6	21.06	67.42	27.09	3.73	12.34	643.98	4.21	7.03	207.60	7.57	12.62	
34.93	28.16	79.07	25.86	1.17	7.98	643.98	3.54	5.90	207.60	11.90	19.84	
37.26	29.22	78.11	20.69	0.26	9.38	643.98	3.58	5.96	207.60	10.18	16.97	
39.59	26.93	77.48	15.52	1.70	11.53	643.98	3.62	6.04	207.60	8.21	13.68	
41.92	21.30	64.08	10.35	3.13	14.55	643.98	4.43	7.39	207.60	6.45	10.75	
44.26	12.31	38.41	5.18	4.57	17.34	643.98	7.53	12.56	207.60	5.36	8.93	
46.59	0.00	0.07	0.02	6.00	20.33	643.98	4239.50	7067.25	207.60	4.53	7.55	
0	0.00	0.00	0.00	3.86	21.25	225.39	N/A	N/A	218.57	4.63	7.72	
0.75	2.41	10.66	0.28	3.44	19.30	225.39	9.61	16.01	218.57	5.11	8.52	
2.32	7.44	32.98	0.88	2.55	15.23	390.00	5.31	8.86	123.50	3.64	6.06	
4.64	11.83	50.20	1.76	1.24	11.45	390.00	3.44	5.73	123.50	4.91	8.18	
6.96	13.18	61.88	2.65	0.07	13.39	390.00	2.78	4.63	123.50	4.25	7.08	
9.27	11.50	63.30	9.95	1.38	10.64	390.00	2.73	4.55	123.50	5.27	8.79	
11.59	6.37	36.40	4.41	2.70	17.41	390.00	4.83	8.86	123.50	3.18	5.29	
13.91	5.86	43.78	11.90	0.92	12.08	390.00	4.03	6.71	123.50	4.67	7.78	
16.23	2.18	44.86	19.42	2.30	12.06	390.00	2.98	6.63	123.50	4.60	7.68	
18.55	-4.68	35.76	26.94	3.70	15.93	390.00	4.95	8.25	123.50	3.43	5.72	
20.87	-14.79	19.44	36.55	5.11	19.32	390.00	4.67	7.79	123.50	2.79	4.65	
22.44	-24.66	6.51	52.70	7.17	25.17	240.15	1.82	3.03	223.32	3.92	6.53	
23.19	-29.38	0.33	60.42	8.16	27.97	240.15	1.54	2.57	223.32	3.50	5.84	
23.94	-23.82	5.66	51.98	7.66	26.05	240.15	1.85	3.09	223.32	3.77	6.29	
25.51	-12.19	16.83	34.30	6.67	22.03	390.00	5.03	8.38	123.50	2.40	4.00	
27.83	1.52	42.64	28.34	5.15	18.98	390.00	4.19	6.99	123.50	2.84	4.73	
30.14	11.69	72.24	21.38	3.62	21.46	390.00	2.39	3.99	123.50	2.55	4.25	
32.46	18.29	87.45	17.42	2.06	13.92	390.00	1.93	3.22	123.50	4.00	6.67	
34.78	19.28	75.35	13.47	2.62	20.93	390.00	2.23	3.72	123.50	2.64	4.41	
37.1	23.37	86.27	10.78	0.91	14.79	390.00	1.92	3.20	123.50	3.81	6.35	
39.42	23.49	91.18	8.09	0.81	13.31	390.00	1.82	3.03	123.50	4.24	7.07	
41.74	19.63	77.76	5.39	2.52	17.68	390.00	2.16	3.60	123.50	3.15	5.22	
44.06	11.80	48.29	2.70	4.24	21.87	390.00	3.58	5.96	123.50	2.49	4.14	
46.38	0.00	0.06	0.10	5.95	27.14	390.00	1797.24	2995.99	123.50	1.97	3.26	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V								
		D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44 Stringer S2-4	0	0.00	0.00	0.00	6.74	35.90	390.00	N/A	N/A	123.50	1.47	2.46
	2.32	13.70	70.82	8.28	5.07	32.71	390.00	2.42	4.04	123.50	1.65	2.75
	4.64	23.51	116.98	16.55	3.39	26.97	390.00	1.42	2.36	123.50	2.03	3.39
	6.96	29.44	138.98	24.83	1.72	20.68	390.00	1.17	1.94	123.50	2.70	4.50
	9.27	31.48	141.41	33.11	0.04	16.67	390.00	1.14	1.90	123.50	3.41	5.69
	11.59	29.65	141.78	41.40	3.14	28.52	390.00	1.14	1.90	123.50	1.93	3.22
	13.91	20.42	126.50	49.05	4.82	24.03	390.00	1.32	2.21	123.50	2.25	3.75
	16.23	7.31	108.30	56.69	6.49	29.04	390.00	1.62	2.70	123.50	1.83	3.04
	18.55	-9.69	66.70	64.34	8.17	34.66	390.00	2.61	4.35	123.50	1.50	2.50
	20.87	-30.57	30.96	84.97	9.84	39.30	390.00	1.90	3.17	123.50	1.30	2.16
	23.19	-55.37	2.74	135.31	11.58	45.03	390.00	1.08	1.81	123.50	1.11	1.85
	25.51	-30.46	30.81	86.43	9.91	40.88	390.00	1.87	3.11	123.50	1.25	2.08
	27.83	-9.43	66.85	65.86	8.23	35.41	390.00	2.60	4.34	123.50	1.47	2.45
	30.14	7.71	104.23	56.98	6.55	28.25	390.00	1.68	2.80	123.50	1.88	3.13
	32.46	20.96	119.15	48.09	4.88	24.04	390.00	1.40	2.34	123.50	2.25	3.74
	34.78	30.29	133.87	39.23	3.20	30.52	390.00	1.21	2.01	123.50	1.80	3.00
	37.1	32.00	136.75	31.38	0.10	16.25	390.00	1.17	1.96	123.50	3.50	5.83
	39.42	29.83	137.40	23.53	1.77	20.31	390.00	1.18	1.96	123.50	2.75	4.58
41.74	23.77	115.74	15.68	3.45	26.09	390.00	1.43	2.38	123.50	2.10	3.50	
44.06	13.83	70.49	7.84	5.12	31.77	390.00	2.43	4.05	123.50	1.69	2.83	
46.38	0.00	0.04	0.07	6.80	37.76	390.00	2567.48	4279.99	123.50	1.40	2.33	
HS20-44 Stringer S3-4	0	0.00	0.00	0.00	6.32	35.89	390.00	N/A	N/A	123.50	1.48	2.47
	2.32	12.70	68.54	7.07	4.64	31.60	390.00	2.51	4.19	123.50	1.71	2.86
	4.64	21.52	110.68	14.14	2.97	25.44	390.00	1.51	2.51	123.50	2.17	3.61
	6.96	26.46	129.47	21.20	1.29	19.83	390.00	1.27	2.11	123.50	2.83	4.72
	9.27	27.51	129.08	28.27	0.38	14.85	390.00	1.26	2.11	123.50	3.82	6.36
	11.59	24.68	122.89	35.35	2.16	27.28	390.00	1.34	2.24	123.50	2.04	3.40
	13.91	17.74	112.72	42.02	3.83	20.17	390.00	1.50	2.50	123.50	2.71	4.51
	16.23	6.92	99.05	49.78	5.51	26.53	390.00	1.77	2.95	123.50	2.02	3.37
	18.55	-7.79	64.37	57.55	7.18	32.43	390.00	2.72	4.53	123.50	1.62	2.70
	20.87	-26.38	30.91	76.10	8.86	37.84	390.00	2.15	3.59	123.50	1.36	2.27
	23.19	-48.89	1.94	120.80	10.53	43.09	390.00	1.25	2.08	123.50	1.17	1.96
	25.51	-26.45	32.02	77.62	8.84	39.84	390.00	2.11	3.52	123.50	1.30	2.16
	27.83	-7.90	67.63	59.28	7.16	33.53	390.00	2.59	4.31	123.50	1.57	2.62
	30.14	6.77	99.22	51.35	5.49	27.19	390.00	1.77	2.95	123.50	1.97	3.29
	32.46	17.55	110.45	43.43	3.81	21.65	390.00	1.53	2.55	123.50	2.52	4.21
	34.78	24.41	116.81	35.52	2.14	28.60	390.00	1.41	2.36	123.50	1.95	3.24
	37.1	27.30	120.82	28.42	0.41	16.95	390.00	1.35	2.25	123.50	3.34	5.57
	39.42	26.30	119.07	21.31	1.27	18.00	390.00	1.38	2.30	123.50	3.12	5.20
41.74	21.42	99.78	14.21	2.94	22.53	390.00	1.67	2.79	123.50	2.45	4.08	
44.06	12.66	60.36	7.10	4.62	27.39	390.00	2.85	4.75	123.50	1.98	3.30	
46.38	0.00	0.07	0.09	6.29	32.59	390.00	1996.93	3328.88	123.50	1.63	2.72	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
HS20-44 Stringer S4-4	0	0.00	0.00	0.00	6.37	37.38	390.00	N/A	N/A	123.50	1.42	2.37
	2.32	12.83	70.24	7.00	4.69	32.36	390.00	2.45	4.08	123.50	1.67	2.79
	4.64	21.77	111.73	14.01	3.02	25.66	390.00	1.49	2.49	123.50	2.15	3.58
	6.96	26.83	129.35	21.01	1.34	19.79	390.00	1.27	2.11	123.50	2.84	4.73
	9.27	28.00	128.96	28.01	0.33	15.09	390.00	1.26	2.11	123.50	3.76	6.27
	11.59	25.30	122.78	35.03	2.29	27.23	390.00	1.34	2.23	123.50	2.04	3.40
	13.91	18.04	112.59	43.10	3.97	20.16	390.00	1.50	2.50	123.50	2.71	4.51
	16.23	6.90	98.76	51.18	5.64	26.48	390.00	1.78	2.96	123.50	2.02	3.37
	18.55	-8.12	64.29	59.25	7.32	32.43	390.00	2.72	4.53	123.50	1.62	2.70
	20.87	-27.03	30.94	77.05	8.99	37.88	390.00	2.12	3.54	123.50	1.36	2.27
	23.19	-49.85	4.03	121.60	10.68	43.74	390.00	1.23	2.05	123.50	1.15	1.93
	25.51	-27.02	30.87	77.31	9.01	38.87	390.00	2.12	3.53	123.50	1.33	2.21
	27.83	-8.08	64.21	59.24	7.33	33.43	390.00	2.72	4.54	123.50	1.57	2.62
	30.14	6.98	98.93	51.26	5.66	27.58	390.00	1.77	2.96	123.50	1.94	3.23
	32.46	18.15	112.71	43.28	3.98	22.19	390.00	1.50	2.50	123.50	2.46	4.10
	34.78	25.40	123.00	35.42	2.31	29.63	390.00	1.34	2.23	123.50	1.87	3.12
	37.1	28.09	129.01	28.34	0.32	16.17	390.00	1.26	2.10	123.50	3.51	5.85
	39.42	26.90	129.25	21.25	1.35	19.44	390.00	1.27	2.11	123.50	2.89	4.81
41.74	21.82	110.36	14.16	3.03	24.88	390.00	1.51	2.52	123.50	2.21	3.69	
44.06	12.85	68.28	7.07	4.70	30.78	390.00	2.52	4.20	123.50	1.76	2.93	
46.38	0.00	0.03	0.06	6.38	36.98	390.00	2995.39	4993.32	123.50	1.44	2.39	
HS20-44 Stringer S5-4	0	0.00	0.00	0.00	6.52	35.47	390.00	N/A	N/A	123.50	1.49	2.49
	2.32	13.18	67.81	6.20	4.85	31.31	390.00	2.53	4.22	123.50	1.72	2.88
	4.64	22.48	109.46	12.40	3.17	25.23	390.00	1.52	2.53	123.50	2.18	3.63
	6.96	27.90	128.01	18.60	1.50	19.66	390.00	1.27	2.12	123.50	2.85	4.75
	9.27	29.43	127.90	24.80	0.18	15.39	390.00	1.27	2.11	123.50	3.69	6.15
	11.59	27.09	122.01	31.01	2.48	27.23	390.00	1.34	2.23	123.50	2.04	3.39
	13.91	19.39	112.02	38.16	4.16	19.99	390.00	1.50	2.50	123.50	2.72	4.54
	16.23	7.80	98.68	45.32	5.83	26.33	390.00	1.77	2.96	123.50	2.03	3.38
	18.55	-7.67	63.51	52.47	7.51	32.29	390.00	2.76	4.60	123.50	1.62	2.71
	20.87	-27.02	29.98	71.08	9.18	36.65	390.00	2.30	3.84	123.50	1.40	2.34
	23.19	-50.30	1.95	116.18	10.86	41.16	390.00	1.29	2.15	123.50	1.22	2.04
	25.51	-27.58	28.33	76.16	8.96	35.28	390.00	2.14	3.57	123.50	1.46	2.44
	27.83	-8.75	58.87	58.42	7.28	29.95	390.00	2.96	4.94	123.50	1.75	2.92
	30.14	6.19	88.14	50.67	5.61	24.46	390.00	2.00	3.33	123.50	2.19	3.65
	32.46	17.25	99.73	42.92	3.93	19.97	390.00	1.70	2.83	123.50	2.73	4.55
	34.78	24.39	107.80	35.19	2.26	25.64	390.00	1.53	2.55	123.50	2.17	3.61
	37.1	27.28	109.30	28.15	0.41	15.04	390.00	1.49	2.49	123.50	3.77	6.28
	39.42	26.28	106.50	21.11	1.27	16.07	390.00	1.54	2.57	123.50	3.49	5.82
41.74	21.40	89.13	14.06	2.94	20.35	390.00	1.87	3.12	123.50	2.71	4.52	
44.06	12.64	54.59	7.02	4.62	24.86	390.00	3.15	5.26	123.50	2.18	3.63	
46.38	0.00	0.07	0.10	6.29	29.68	390.00	1797.24	2995.99	123.50	1.79	2.98	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
			D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44	Stringer S6-4	0	0.00	0.00	0.00	5.52	23.60	390.00	N/A	N/A	123.50	2.27	3.79
		2.32	10.98	43.08	3.07	3.95	19.85	390.00	4.02	6.70	123.50	2.75	4.58
		4.64	18.34	67.00	6.13	2.39	15.38	390.00	2.52	4.20	123.50	3.61	6.01
		6.96	22.06	75.91	9.20	0.83	11.61	390.00	2.19	3.66	123.50	4.86	8.10
		9.27	22.16	73.56	12.26	0.74	11.93	390.00	2.26	3.77	123.50	4.73	7.89
		11.59	18.64	67.38	15.33	2.30	17.71	390.00	2.50	4.17	123.50	3.14	5.23
		13.91	14.73	63.49	18.63	2.43	11.96	390.00	2.69	4.49	123.50	4.64	7.73
		16.23	7.32	54.21	21.96	3.90	15.72	390.00	3.23	5.39	123.50	3.47	5.79
		18.55	-3.54	36.28	25.38	5.36	19.06	390.00	4.90	8.16	123.50	2.82	4.70
		20.87	-17.80	17.54	39.59	6.80	22.23	390.00	4.27	7.12	123.50	2.38	3.96
		23.19	-33.73	0.90	65.44	7.98	25.07	390.00	2.44	4.06	123.50	2.08	3.47
		25.51	-18.63	19.83	42.99	5.84	19.75	390.00	3.92	6.54	123.50	2.70	4.51
		27.83	-6.62	36.80	32.11	4.52	16.76	390.00	4.78	7.96	123.50	3.23	5.39
		30.14	2.34	48.83	24.38	3.21	14.22	390.00	3.65	6.09	123.50	3.87	6.45
		32.46	8.29	52.37	16.65	1.93	11.38	390.00	3.34	5.56	123.50	4.90	8.17
		34.78	11.32	51.03	8.91	2.01	21.66	390.00	3.39	5.65	123.50	2.57	4.29
		37.1	14.59	63.63	7.12	0.81	14.79	390.00	2.69	4.48	123.50	3.82	6.36
		39.42	15.09	69.41	5.33	0.38	10.89	390.00	2.46	4.10	123.50	5.21	8.68
41.74	12.81	60.54	3.53	1.58	14.47	390.00	2.84	4.74	123.50	3.87	6.45		
44.06	7.76	37.74	1.74	2.77	17.08	390.00	4.64	7.73	123.50	3.23	5.39		
46.38	-0.05	0.06	0.26	3.97	20.71	390.00	691.13	1152.11	123.50	2.63	4.39		
HS20-44	Stringer F2-4	0	0.00	0.00	0.00	5.78	21.86	1212.51	N/A	N/A	149.61	3.00	4.99
		2.33	12.26	42.32	4.28	4.68	19.05	1212.51	13.03	21.72	149.61	3.47	5.79
		4.65	22.16	70.15	8.57	3.58	15.81	1212.51	7.78	12.96	149.61	4.23	7.04
		6.98	29.68	84.60	12.85	2.49	12.82	1212.51	6.39	10.66	149.61	5.26	8.77
		9.3	34.82	87.58	17.14	1.39	10.23	1212.51	6.14	10.24	149.61	6.66	11.10
		11.63	30.98	88.88	21.44	1.64	10.69	1212.51	6.08	10.13	149.61	6.36	10.60
		13.96	25.63	76.92	20.55	2.93	11.35	1212.51	7.06	11.78	149.61	5.92	9.87
		16.28	17.29	68.97	19.66	4.20	14.13	1212.51	7.95	13.25	149.61	4.70	7.84
		18.61	5.98	48.37	18.77	5.46	16.56	1212.51	11.48	19.13	149.61	3.97	6.61
		20.94	-8.25	19.41	17.99	6.69	18.47	1212.51	28.53	47.56	149.61	3.52	5.86
		23.26	-24.30	3.03	36.12	7.75	19.86	1212.51	15.07	25.12	149.61	3.24	5.40
		25.59	-8.86	18.39	24.76	6.04	15.35	1212.51	22.35	37.26	149.61	4.26	7.09
		27.92	3.89	39.66	27.01	4.90	13.24	1212.51	14.03	23.39	149.61	4.99	8.31
		30.25	13.99	53.47	29.28	3.78	11.08	1212.51	10.29	17.16	149.61	6.02	10.03
		32.59	21.50	60.47	31.54	2.67	9.18	1212.51	9.03	15.05	149.61	7.34	12.23
		34.92	26.48	67.53	33.84	0.35	6.84	1212.51	8.04	13.40	149.61	10.05	16.75
		37.25	26.04	54.07	27.08	0.72	6.52	1212.51	10.05	16.75	149.61	10.51	17.52
		39.58	23.14	40.61	20.31	1.77	6.52	1212.51	13.42	22.37	149.61	10.41	17.36
41.91	17.80	27.15	13.55	2.80	6.51	1212.51	20.19	33.65	149.61	10.33	17.22		
44.24	10.09	13.69	6.79	3.82	6.62	1212.51	40.37	67.30	149.61	10.07	16.78		
46.57	0.07	0.34	0.07	4.81	6.52	1212.51	1643.29	2739.36	149.61	10.13	16.89		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
2F1	Stringer F1A-1											
	0	0.00	0.03	0.01	4.24	10.66	643.98	---	16512.31	207.60	---	14.58
	1.51	5.74	14.45	0.55	3.36	10.09	643.98	---	33.88	207.60	---	15.49
	3.01	10.14	24.16	1.10	2.49	8.46	643.98	---	20.08	207.60	---	18.58
	4.52	13.24	30.11	1.65	1.62	7.05	643.98	---	16.01	207.60	---	22.42
	6.03	15.04	33.20	2.19	0.77	5.83	643.98	---	14.47	207.60	---	27.26
	7.53	15.56	33.83	2.74	0.08	4.88	643.98	---	14.18	207.60	---	32.71
	9.04	14.54	30.90	2.63	1.23	4.93	643.98	---	15.56	207.60	---	32.14
	10.55	12.05	24.52	1.97	2.06	5.60	643.98	---	19.71	207.60	---	28.15
	12.05	8.32	15.65	1.31	2.89	6.71	643.98	---	31.12	207.60	---	23.37
	13.56	3.36	7.22	0.66	3.70	7.96	643.98	---	68.15	207.60	---	19.60
	15.07	0.00	0.00	0.00	4.19	9.19	643.98	---	N/A	207.60	---	16.92
	Stringer F1B-1											
	17.07	6.67	15.40	6.91	3.13	8.05	643.98	---	31.73	207.60	---	19.45
	19.08	11.90	25.97	6.86	2.09	6.80	643.98	---	18.62	207.60	---	23.18
	21.09	15.05	31.85	6.81	1.05	5.57	643.98	---	15.08	207.60	---	28.48
	23.1	16.15	34.00	8.03	0.04	4.48	643.98	---	14.09	207.60	---	35.64
	25.1	15.22	33.98	10.05	1.64	4.92	643.98	---	14.13	207.60	---	32.12
	27.11	10.95	30.82	10.37	2.62	4.93	643.98	---	15.72	207.60	---	31.86
	29.12	4.71	23.48	10.91	3.60	5.87	643.98	---	20.90	207.60	---	26.59
	31.13	-3.49	14.12	11.49	4.56	6.42	643.98	---	34.84	207.60	---	24.16
	33.14	-13.62	4.23	12.16	5.52	6.66	643.98	---	39.62	207.60	---	23.15
	35.14	-25.65	2.94	14.13	6.46	7.03	643.98	---	33.24	207.60	---	21.80
	37.15	-13.27	2.86	13.46	5.72	6.43	643.98	---	35.82	207.60	---	23.95
	39.15	-2.73	10.65	13.36	4.80	5.99	643.98	---	36.87	207.60	---	25.86
	41.16	5.97	17.59	13.55	3.89	5.30	643.98	---	27.82	207.60	---	29.40
	43.16	12.88	22.85	13.84	3.00	4.64	643.98	---	21.12	207.60	---	33.77
45.17	18.03	29.25	14.14	2.12	4.49	643.98	---	16.32	207.60	---	35.09	
47.17	17.86	24.80	11.30	0.52	3.06	643.98	---	19.25	207.60	---	52.02	
49.17	15.95	18.60	8.47	1.38	3.32	643.98	---	25.78	207.60	---	47.68	
51.18	12.29	12.39	5.64	2.25	3.32	643.98	---	38.99	207.60	---	47.42	
53.18	6.89	6.19	2.82	3.11	3.32	643.98	---	78.91	207.60	---	47.16	
55.19	0.00	0.00	0.00	3.94	3.32	643.98	---	N/A	207.60	---	46.91	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
	D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
0	0.00	0.03	0.05	4.19	15.82	348.45	---	5360.77	228.95	---	10.87
0.75	2.72	8.75	0.78	3.66	14.08	348.45	---	30.34	228.95	---	12.25
1.61	5.84	18.74	1.61	3.05	12.08	390.00	---	15.70	123.50	---	7.61
3.23	9.83	30.58	3.23	1.91	9.86	390.00	---	9.49	123.50	---	9.44
4.84	12.01	39.27	4.85	0.78	8.43	390.00	---	7.33	123.50	---	11.18
6.46	12.37	44.84	6.47	0.33	7.24	390.00	---	6.41	123.50	---	13.08
8.07	10.93	42.70	8.09	1.44	6.75	390.00	---	6.77	123.50	---	13.86
9.69	9.70	33.78	10.17	2.18	6.90	390.00	---	8.62	123.50	---	13.45
11.3	4.37	29.43	12.66	3.26	8.80	390.00	---	10.05	123.50	---	10.43
12.92	-1.83	20.13	15.16	4.34	10.26	390.00	---	14.81	123.50	---	8.84
14.53	-9.69	7.59	17.67	5.40	12.10	390.00	---	16.43	123.50	---	7.40
15.4	-14.77	5.62	21.23	5.97	13.57	286.83	---	9.70	208.33	---	11.37
16.15	-19.14	3.93	24.30	6.46	14.84	286.83	---	8.29	208.33	---	10.36
16.9	-15.28	4.52	20.03	5.73	13.63	286.83	---	9.81	208.33	---	11.34
18.15	-8.85	5.51	15.31	4.50	11.60	390.00	---	19.02	123.50	---	7.80
20.15	-1.14	17.67	12.27	3.22	9.84	390.00	---	16.91	123.50	---	9.33
22.15	4.03	29.70	9.23	1.96	8.62	390.00	---	9.97	123.50	---	10.79
24.15	6.69	36.49	6.97	0.70	6.94	390.00	---	8.04	123.50	---	13.65
26.15	7.24	27.36	4.85	0.53	9.96	390.00	---	10.70	123.50	---	9.48
28.15	6.98	30.16	7.09	0.74	6.05	390.00	---	9.72	123.50	---	15.58
30.15	4.29	27.64	9.48	1.93	6.17	390.00	---	10.70	123.50	---	15.08
32.15	-0.80	20.34	11.93	3.15	8.04	390.00	---	14.71	123.50	---	11.42
34.15	-8.29	8.97	14.62	4.33	9.99	390.00	---	19.95	123.50	---	9.08
35.4	-14.33	5.34	19.83	4.97	12.52	225.23	---	8.01	200.08	---	11.90
36.15	-17.96	3.16	22.96	5.36	14.03	225.23	---	6.76	200.08	---	10.59
36.9	-14.38	4.63	20.17	4.93	12.85	225.33	---	7.88	200.08	---	11.60
38.15	-8.41	7.08	15.52	4.20	10.87	390.00	---	18.79	123.50	---	8.35
40.15	-1.16	18.44	12.26	3.05	9.24	390.00	---	16.21	123.50	---	9.95
42.15	3.79	29.78	9.00	1.90	8.31	390.00	---	9.95	123.50	---	11.20
44.15	6.46	35.63	7.18	0.78	6.48	390.00	---	8.24	123.50	---	14.54
46.15	6.91	23.48	2.53	1.97	12.17	390.00	---	12.48	123.50	---	7.64
48.15	9.77	32.32	2.02	0.90	9.46	390.00	---	8.98	123.50	---	9.95
50.15	10.51	37.01	1.52	0.16	7.72	390.00	---	7.82	123.50	---	12.28
52.15	9.13	33.75	1.01	1.22	6.45	390.00	---	8.62	123.50	---	14.54
54.15	5.63	21.65	0.51	2.28	8.81	390.00	---	13.60	123.50	---	10.52
55.4	2.11	8.12	0.19	2.95	12.06	235.05	---	22.01	201.11	---	12.58
56.15	0.00	0.00	0.00	3.35	14.01	235.05	---	N/A	201.11	---	10.80

2F1

Stringer S1-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.01	0.02	5.01	21.17	390.00	---	15000.00	123.50	---	4.25
1.73	7.59	30.16	3.68	3.76	18.13	390.00	---	9.70	123.50	---	5.03
3.46	13.01	50.49	7.36	2.51	15.18	390.00	---	5.68	123.50	---	6.09
5.19	16.26	61.51	11.04	1.26	12.33	390.00	---	4.61	123.50	---	7.60
6.92	17.35	64.20	14.73	0.01	9.75	390.00	---	4.40	123.50	---	9.74
8.65	16.28	63.22	18.41	1.24	8.53	390.00	---	4.49	123.50	---	10.99
10.38	12.55	58.06	22.04	3.02	11.40	390.00	---	4.95	123.50	---	8.07
12.11	6.24	48.32	25.63	4.27	13.57	390.00	---	6.08	123.50	---	6.69
13.84	-2.23	31.85	29.22	5.52	16.08	390.00	---	9.35	123.50	---	5.56
15.58	-12.86	11.30	32.81	6.77	18.57	390.00	---	8.75	123.50	---	4.75
17.31	-25.65	10.99	43.89	7.30	22.87	390.00	---	6.25	123.50	---	3.83
19.31	-12.49	11.59	28.15	5.86	20.80	390.00	---	10.21	123.50	---	4.29
21.31	-2.23	35.04	24.38	4.41	18.20	390.00	---	8.50	123.50	---	4.98
23.31	5.15	52.05	20.61	2.97	15.33	390.00	---	5.66	123.50	---	6.00
25.31	9.63	61.67	16.84	1.52	12.49	390.00	---	4.71	123.50	---	7.48
27.31	11.21	65.08	15.92	0.79	11.77	390.00	---	4.44	123.50	---	8.00
29.31	8.19	64.77	20.01	2.23	9.65	390.00	---	4.51	123.50	---	9.61
31.31	2.28	55.76	25.29	3.68	12.64	390.00	---	5.34	123.50	---	7.22
33.31	-6.52	37.98	30.58	5.12	15.61	390.00	---	7.73	123.50	---	5.76
35.31	-18.21	14.28	35.86	6.57	18.17	390.00	---	7.86	123.50	---	4.87
37.31	-32.82	8.60	44.58	9.27	23.24	390.00	---	5.99	123.50	---	3.69
39.31	-15.73	10.74	30.93	7.82	21.27	390.00	---	9.19	123.50	---	4.10
41.31	-1.53	33.40	27.52	6.38	18.85	390.00	---	8.94	123.50	---	4.70
43.31	9.78	51.98	24.10	4.93	16.15	390.00	---	5.58	123.50	---	5.58
45.31	18.20	63.50	20.69	3.49	13.35	390.00	---	4.44	123.50	---	6.85
47.31	23.71	67.58	17.28	2.04	12.78	390.00	---	4.09	123.50	---	7.27
49.31	24.74	71.42	13.82	0.20	8.71	390.00	---	3.85	123.50	---	10.88
51.31	22.89	66.89	10.36	1.65	9.29	390.00	---	4.14	123.50	---	10.05
53.31	18.15	53.62	6.91	3.09	11.60	390.00	---	5.26	123.50	---	7.92
55.31	10.51	31.46	3.45	4.54	13.94	390.00	---	9.20	123.50	---	6.49
57.31	0.00	0.00	0.00	5.98	18.96	390.00	---	N/A	123.50	---	4.70

2F1

Stringer S2-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.03	0.03	5.30	18.75	390.00	---	10000.00	123.50	---	4.78	
1.85	8.56	27.90	3.22	3.97	15.72	390.00	---	10.45	123.50	---	5.79	
3.69	14.67	47.14	6.45	2.64	13.28	390.00	---	6.05	123.50	---	6.95	
5.54	18.30	58.58	9.68	1.30	11.00	390.00	---	4.81	123.50	---	8.52	
7.39	19.48	62.40	12.92	0.03	8.84	390.00	---	4.50	123.50	---	10.74	
9.23	18.19	60.70	16.15	1.36	9.02	390.00	---	4.64	123.50	---	10.38	
11.08	14.36	57.31	19.51	2.79	10.25	390.00	---	4.98	123.50	---	9.00	
12.92	7.98	48.49	22.95	4.12	12.67	390.00	---	6.02	123.50	---	7.17	
14.77	-0.87	32.99	26.39	5.46	15.54	390.00	---	9.07	123.50	---	5.76	
16.62	-12.17	12.94	29.82	6.79	18.47	390.00	---	9.65	123.50	---	4.78	
18.46	-25.92	10.66	42.78	7.02	23.20	390.00	---	6.41	123.50	---	3.79	
20.46	-13.32	13.34	29.81	5.58	20.25	390.00	---	9.62	123.50	---	4.42	
22.46	-3.61	34.97	25.36	4.13	17.32	390.00	---	8.48	123.50	---	5.25	
24.46	3.21	50.57	20.92	2.69	14.53	390.00	---	5.87	123.50	---	6.35	
26.46	7.14	58.71	16.57	1.24	11.75	390.00	---	4.99	123.50	---	7.98	
28.46	8.17	59.05	15.51	0.21	13.89	390.00	---	4.94	123.50	---	6.82	
30.46	6.31	58.97	20.20	1.65	8.77	390.00	---	4.98	123.50	---	10.64	
32.46	1.56	51.32	25.52	3.10	11.54	390.00	---	5.82	123.50	---	7.96	
34.46	-6.07	36.03	30.85	4.54	14.36	390.00	---	8.16	123.50	---	6.30	
36.46	-16.60	14.09	36.17	5.99	17.19	390.00	---	7.84	123.50	---	5.18	
38.46	-30.04	8.24	43.69	8.84	23.25	390.00	---	6.18	123.50	---	3.71	
40.46	-13.82	10.13	28.31	7.39	21.26	390.00	---	10.11	123.50	---	4.12	
42.46	-0.48	34.03	25.06	5.95	18.96	390.00	---	8.80	123.50	---	4.70	
44.46	9.97	53.09	21.82	4.50	16.40	390.00	---	5.46	123.50	---	5.52	
46.46	17.52	65.01	18.57	3.06	13.62	390.00	---	4.35	123.50	---	6.75	
48.46	22.17	68.01	15.48	1.61	15.71	390.00	---	4.09	123.50	---	5.94	
50.46	23.52	73.33	12.38	0.05	8.90	390.00	---	3.77	123.50	---	10.67	
52.46	21.98	70.69	9.29	1.49	9.53	390.00	---	3.93	123.50	---	9.81	
54.46	17.54	58.40	6.20	2.94	12.25	390.00	---	4.84	123.50	---	7.52	
56.46	10.22	35.17	3.10	4.38	15.18	390.00	---	8.24	123.50	---	5.97	
58.46	0.00	0.00	0.00	5.83	21.50	390.00	---	N/A	123.50	---	4.15	

2F1

Stringer S3-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.01	0.03	5.81	21.59	390.00	---	10000.00	123.50	---	4.13	
1.96	10.00	34.47	3.12	4.39	18.28	390.00	---	8.41	123.50	---	4.96	
3.92	17.22	57.36	6.26	2.97	15.21	390.00	---	4.93	123.50	---	6.05	
5.89	21.65	69.62	9.39	1.55	12.31	390.00	---	4.00	123.50	---	7.59	
7.85	23.31	72.51	12.52	0.14	9.61	390.00	---	3.82	123.50	---	9.87	
9.81	22.18	67.91	15.65	1.28	8.88	390.00	---	4.09	123.50	---	10.55	
11.77	17.77	64.17	18.90	3.12	10.79	390.00	---	4.40	123.50	---	8.52	
13.74	10.25	52.43	22.24	4.54	13.60	390.00	---	5.53	123.50	---	6.65	
15.7	0.00	33.76	25.57	5.96	16.35	390.00	---	8.89	123.50	---	5.45	
17.66	-13.12	10.84	28.91	7.37	18.92	390.00	---	9.92	123.50	---	4.63	
19.62	-29.01	9.80	43.22	7.26	23.17	390.00	---	6.27	123.50	---	3.79	
21.62	-15.93	13.71	35.02	5.81	19.93	390.00	---	8.11	123.50	---	4.48	
23.62	-5.75	35.74	29.89	4.37	17.28	390.00	---	8.23	123.50	---	5.24	
25.62	1.55	51.27	24.76	2.92	14.48	390.00	---	5.82	123.50	---	6.36	
27.62	5.95	59.24	19.63	1.48	11.66	390.00	---	4.96	123.50	---	8.02	
29.62	7.45	59.47	16.72	0.07	13.32	390.00	---	4.92	123.50	---	7.13	
31.62	5.86	59.28	19.33	1.52	8.85	390.00	---	4.96	123.50	---	10.56	
33.62	1.39	51.42	24.62	2.96	11.66	390.00	---	5.81	123.50	---	7.89	
35.62	-5.98	35.97	29.92	4.41	14.45	390.00	---	8.17	123.50	---	6.27	
37.62	-16.24	13.94	35.21	5.85	17.26	390.00	---	8.06	123.50	---	5.17	
39.62	-29.41	9.92	45.11	7.30	22.42	390.00	---	6.00	123.50	---	3.91	
41.62	-13.27	11.88	28.62	7.34	20.53	390.00	---	10.02	123.50	---	4.27	
43.62	0.00	35.02	25.27	5.90	18.59	390.00	---	8.57	123.50	---	4.79	
45.62	10.32	53.76	21.93	4.45	21.71	390.00	---	5.39	123.50	---	4.17	
47.62	17.78	64.94	18.58	3.01	13.53	390.00	---	4.35	123.50	---	6.80	
49.62	22.33	64.18	15.25	1.56	10.76	390.00	---	4.33	123.50	---	8.68	
51.62	23.65	65.65	12.20	0.06	9.35	390.00	---	4.21	123.50	---	10.15	
53.62	22.07	61.51	9.15	1.51	8.53	390.00	---	4.52	123.50	---	10.96	
55.62	17.61	50.08	6.11	2.95	10.66	390.00	---	5.64	123.50	---	8.64	
57.62	10.26	29.93	3.06	4.40	13.02	390.00	---	9.68	123.50	---	6.96	
59.62	0.00	0.00	0.00	5.84	18.23	390.00	---	N/A	123.50	---	4.89	

2F1

Stringer S4-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.03	0.05	5.96	17.44	390.00	---	6000.00	123.50	---	5.11	
2.08	10.84	29.32	2.99	4.49	14.69	390.00	---	9.86	123.50	---	6.16	
4.16	18.67	48.92	6.00	3.03	12.25	390.00	---	5.75	123.50	---	7.51	
6.23	23.45	59.84	9.00	1.57	9.99	390.00	---	4.62	123.50	---	9.35	
8.31	25.21	63.38	12.01	0.11	7.94	390.00	---	4.34	123.50	---	11.95	
10.39	23.92	60.99	15.01	1.35	8.18	390.00	---	4.53	123.50	---	11.45	
12.47	19.23	58.37	18.06	3.09	9.31	390.00	---	4.81	123.50	---	9.87	
14.55	11.30	47.78	21.17	4.55	11.90	390.00	---	6.04	123.50	---	7.60	
16.62	0.33	30.92	24.28	6.01	14.39	390.00	---	9.69	123.50	---	6.18	
18.7	-13.67	11.14	27.39	7.47	16.81	390.00	---	10.45	123.50	---	5.21	
20.78	-30.73	9.94	41.28	7.32	21.13	390.00	---	6.52	123.50	---	4.15	
22.78	-17.50	13.24	33.55	5.91	18.81	390.00	---	8.42	123.50	---	4.74	
24.78	-7.08	34.92	28.58	4.51	16.54	390.00	---	8.39	123.50	---	5.47	
26.78	0.52	50.64	23.62	3.10	14.06	390.00	---	5.91	123.50	---	6.54	
28.78	5.32	59.24	18.66	1.69	11.50	390.00	---	4.97	123.50	---	8.11	
30.78	7.32	59.79	16.31	0.29	10.32	390.00	---	4.90	123.50	---	9.18	
32.78	5.64	59.29	20.19	1.54	8.94	390.00	---	4.96	123.50	---	10.45	
34.78	1.16	51.21	25.32	2.95	11.64	390.00	---	5.84	123.50	---	7.91	
36.78	-6.14	35.69	30.44	4.35	14.44	390.00	---	8.23	123.50	---	6.28	
38.78	-16.25	13.65	35.56	5.76	17.21	390.00	---	7.98	123.50	---	5.19	
40.78	-29.16	9.42	43.58	8.73	23.02	390.00	---	6.21	123.50	---	3.75	
42.78	-13.11	9.92	28.64	7.32	21.01	390.00	---	10.02	123.50	---	4.17	
44.78	0.13	33.78	25.23	5.92	18.71	390.00	---	8.88	123.50	---	4.76	
46.78	10.55	52.50	21.83	4.51	16.15	390.00	---	5.51	123.50	---	5.60	
48.78	18.17	64.14	18.42	3.10	13.40	390.00	---	4.39	123.50	---	6.86	
50.78	22.95	67.04	15.12	1.70	15.76	390.00	---	4.13	123.50	---	5.92	
52.78	23.98	72.26	12.10	0.18	8.74	390.00	---	3.82	123.50	---	10.85	
54.78	22.21	69.59	9.07	1.59	9.39	390.00	---	3.99	123.50	---	9.95	
56.78	17.62	57.42	6.05	3.00	12.06	390.00	---	4.92	123.50	---	7.63	
58.78	10.22	34.54	3.03	4.40	14.92	390.00	---	8.39	123.50	---	6.07	
60.78	0.00	0.00	0.00	5.81	21.10	390.00	---	N/A	123.50	---	4.23	

2F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	-0.06	0.03	0.17	3.86	12.62	390.00	---	1764.35	123.50	---	7.22	
2.18	7.18	21.80	0.64	2.77	10.50	390.00	---	13.43	123.50	---	8.78	
4.37	12.03	35.24	1.31	1.66	8.48	390.00	---	8.17	123.50	---	11.01	
6.55	14.43	40.83	1.98	0.54	6.56	390.00	---	6.99	123.50	---	14.40	
8.74	14.35	39.57	2.64	0.61	6.26	390.00	---	7.22	123.50	---	15.08	
10.92	11.75	32.29	3.31	1.77	8.36	390.00	---	8.93	123.50	---	11.15	
13.11	9.34	30.22	5.84	1.00	6.36	390.00	---	9.62	123.50	---	14.78	
15.29	5.84	28.13	9.45	2.20	5.82	390.00	---	10.46	123.50	---	15.95	
17.48	-0.29	21.02	13.06	3.42	7.62	390.00	---	14.26	123.50	---	12.02	
19.66	-9.10	9.09	16.68	4.65	9.51	390.00	---	17.44	123.50	---	9.50	
21.85	-20.61	6.54	23.69	5.65	13.53	390.00	---	11.79	123.50	---	6.60	
23.85	-10.47	7.53	17.52	4.49	11.98	390.00	---	16.53	123.50	---	7.56	
25.85	-2.66	19.81	14.92	3.32	10.28	390.00	---	15.01	123.50	---	8.92	
27.85	2.79	28.53	12.90	2.13	8.51	390.00	---	10.42	123.50	---	10.91	
29.85	5.85	32.71	10.89	0.93	6.76	390.00	---	8.99	123.50	---	13.92	
31.85	6.48	32.47	8.87	0.08	6.87	390.00	---	9.04	123.50	---	13.82	
33.85	5.08	33.47	11.84	1.31	5.31	390.00	---	8.81	123.50	---	17.64	
35.85	1.22	30.27	15.93	2.55	6.63	390.00	---	9.87	123.50	---	13.94	
37.85	-5.13	22.22	20.02	3.80	8.42	390.00	---	13.27	123.50	---	10.83	
39.85	-13.99	9.48	24.11	5.06	10.38	390.00	---	11.86	123.50	---	8.66	
41.85	-25.40	4.73	29.38	7.58	15.60	390.00	---	9.35	123.50	---	5.60	
43.85	-11.52	6.41	16.15	6.30	14.26	390.00	---	17.86	123.50	---	6.22	
45.85	-0.21	22.08	14.12	5.00	12.69	390.00	---	13.58	123.50	---	7.09	
47.85	8.50	34.70	12.12	3.70	10.91	390.00	---	8.40	123.50	---	8.37	
49.85	14.58	42.39	10.13	2.38	9.00	390.00	---	6.73	123.50	---	10.29	
51.85	17.99	44.48	8.14	1.63	10.77	390.00	---	6.34	123.50	---	8.67	
53.85	19.87	48.75	6.51	0.26	7.76	390.00	---	5.75	123.50	---	12.21	
55.85	19.02	48.16	4.88	1.11	6.34	390.00	---	5.83	123.50	---	14.81	
57.85	15.42	40.88	3.26	2.49	8.35	390.00	---	6.96	123.50	---	11.08	
59.85	9.08	25.27	1.63	3.86	10.63	390.00	---	11.51	123.50	---	8.57	
61.85	0.00	0.00	0.00	5.23	15.85	390.00	---	N/A	123.50	---	5.66	

2F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.07	0.20	0.03	5.34	4.22	1212.51	---	4663.15	149.61	---	26.01	
2.21	10.90	8.76	1.99	4.44	4.22	1212.51	---	105.23	149.61	---	26.22	
4.43	19.72	17.38	3.97	3.52	4.24	1212.51	---	52.53	149.61	---	26.31	
6.64	26.47	25.99	5.94	2.58	4.22	1212.51	---	34.87	149.61	---	26.66	
8.86	31.11	34.61	7.92	1.61	4.22	1212.51	---	26.05	149.61	---	26.89	
11.07	33.60	43.23	9.90	0.63	4.22	1212.51	---	20.80	149.61	---	27.12	
13.29	31.25	42.03	8.97	2.10	4.29	1212.51	---	21.45	149.61	---	26.34	
15.5	25.47	34.58	6.73	3.12	5.19	1212.51	---	26.24	149.61	---	21.57	
17.71	17.42	22.48	4.48	4.15	6.07	1212.51	---	40.72	149.61	---	18.28	
19.93	7.06	10.21	2.24	5.21	6.95	1212.51	---	90.66	149.61	---	15.81	
22.14	0.00	0.00	0.00	4.18	8.29	1212.51	---	N/A	149.61	---	13.38	
24.15	6.19	14.88	6.93	3.19	7.81	1212.51	---	62.27	149.61	---	14.33	
26.16	11.60	27.22	6.88	2.19	7.15	1212.51	---	33.84	149.61	---	15.79	
28.16	14.98	36.08	8.54	1.18	6.33	1212.51	---	25.44	149.61	---	17.99	
30.17	16.32	40.93	11.39	0.15	5.40	1212.51	---	22.39	149.61	---	21.28	
32.18	15.58	41.27	14.24	1.10	5.77	1212.51	---	22.22	149.61	---	19.75	
34.19	12.33	39.79	14.82	2.15	5.79	1212.51	---	23.13	149.61	---	19.51	
36.19	6.94	33.68	15.41	3.22	7.23	1212.51	---	27.49	149.61	---	15.47	
38.2	-0.59	23.56	16.01	4.29	8.65	1212.51	---	39.56	149.61	---	12.81	
40.21	-10.29	10.11	16.66	5.38	10.01	1212.51	---	55.37	149.61	---	10.96	
42.21	-22.21	2.27	19.13	7.06	13.11	1212.51	---	47.59	149.61	---	8.24	
44.22	-9.18	10.40	14.67	5.95	12.26	1212.51	---	62.95	149.61	---	8.90	
46.22	1.62	26.01	14.04	4.83	11.22	1212.51	---	35.80	149.61	---	9.83	
48.23	10.15	38.55	13.55	3.69	9.99	1212.51	---	23.93	149.61	---	11.15	
50.23	16.42	46.74	13.06	2.55	8.57	1212.51	---	19.60	149.61	---	13.13	
52.23	20.37	49.14	12.56	1.40	6.82	1212.51	---	18.57	149.61	---	16.67	
54.24	21.03	51.15	10.04	0.25	5.31	1212.51	---	17.82	149.61	---	21.63	
56.24	19.36	47.73	7.53	1.42	6.84	1212.51	---	19.14	149.61	---	16.62	
58.25	15.31	38.33	5.02	2.61	8.46	1212.51	---	23.93	149.61	---	13.29	
60.25	8.88	22.51	2.52	3.81	10.15	1212.51	---	41.04	149.61	---	10.96	
62.26	0.00	0.00	0.00	5.02	13.65	1212.51	---	N/A	149.61	---	8.06	

2F1

Stringer F2A-1

Stringer F2B-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		Inventory							Operating
		D	L+I	L+I	D		L+I	(kips)	Operating				
2F1 Stringer F1A-2	0	0.00	0.00	0.00	4.49	7.27	643.98	---	N/A	207.60	---	21.35	
	2	8.23	12.12	2.78	3.73	6.37	643.98	---	40.19	207.60	---	24.48	
	4	14.93	20.99	5.55	2.97	5.56	643.98	---	22.89	207.60	---	28.19	
	6.01	20.11	27.68	8.33	2.21	4.79	643.98	---	17.17	207.60	---	32.88	
	8.01	23.77	32.08	11.10	1.44	4.42	643.98	---	14.70	207.60	---	35.80	
	10.01	25.90	35.19	13.88	3.49	5.81	643.98	---	13.34	207.60	---	26.89	
	12.01	18.17	27.04	17.41	4.25	5.77	643.98	---	17.65	207.60	---	26.94	
	14.02	8.89	17.85	20.95	5.01	6.14	643.98	---	23.22	207.60	---	25.19	
	16.02	-1.91	7.39	24.49	5.77	6.55	643.98	---	20.15	207.60	---	23.50	
	18.02	-14.23	2.10	33.62	6.54	6.65	643.98	---	14.31	207.60	---	23.03	
	20.02	-28.19	1.36	45.34	6.84	21.50	643.98	---	10.30	207.60	---	7.11	
	22.02	-15.56	11.61	9.82	5.78	18.74	643.98	---	41.33	207.60	---	8.21	
	24.02	-5.08	32.24	5.38	4.69	16.53	643.98	---	15.21	207.60	---	9.38	
	26.02	3.16	54.23	5.49	3.55	14.63	643.98	---	9.08	207.60	---	10.67	
	28.02	9.08	67.87	5.70	2.36	12.43	643.98	---	7.17	207.60	---	12.66	
	30.03	12.43	65.09	5.90	1.17	9.70	643.98	---	7.42	207.60	---	16.34	
	32.03	13.52	68.98	4.75	0.08	7.73	643.98	---	6.99	207.60	---	20.65	
	34.03	12.13	57.00	3.56	1.32	9.60	643.98	---	8.48	207.60	---	16.50	
	36.03	8.24	36.42	2.37	2.56	12.39	643.98	---	13.38	207.60	---	12.68	
	38.03	1.87	14.23	1.19	3.80	15.13	643.98	---	34.68	207.60	---	10.30	
40.03	0.00	0.00	0.00	6.67	20.29	643.98	---	N/A	207.60	---	7.54		
2F1 Stringer F1B-2	42.15	11.31	34.53	20.36	5.36	16.92	643.98	---	14.02	207.60	---	9.12	
	44.27	21.30	61.02	18.92	4.06	14.95	643.98	---	7.77	207.60	---	10.41	
	46.39	28.52	81.85	17.49	2.75	13.37	643.98	---	5.70	207.60	---	11.74	
	48.52	32.97	93.22	16.06	1.45	11.42	643.98	---	4.96	207.60	---	13.86	
	50.64	34.67	85.60	14.62	0.15	8.42	643.98	---	5.38	207.60	---	18.95	
	52.76	33.24	88.91	11.70	1.32	8.40	643.98	---	5.20	207.60	---	18.85	
	54.88	29.07	79.43	8.77	2.62	10.90	643.98	---	5.87	207.60	---	14.41	
	57	22.13	61.21	5.85	3.92	12.98	643.98	---	7.73	207.60	---	12.00	
	59.13	12.43	35.32	2.92	5.22	15.01	643.98	---	13.67	207.60	---	10.29	
	61.25	0.00	0.00	0.00	6.52	19.91	643.98	---	N/A	207.60	---	7.69	
	2F1 Stringer S1-2	0	0.00	0.00	0.00	2.33	10.85	235.47	---	N/A	204.20	---	14.26
		0.75	1.38	5.33	0.62	1.97	9.55	235.47	---	33.76	204.20	---	16.24
2		3.68	14.20	1.64	1.36	7.38	390.00	---	20.87	123.50	---	12.69	
4		5.43	21.80	3.27	0.39	5.51	390.00	---	13.51	123.50	---	17.17	
6		5.25	25.50	4.91	0.57	6.35	390.00	---	11.56	123.50	---	14.87	
8		3.13	26.68	7.85	1.54	6.09	390.00	---	11.13	123.50	---	15.35	
10		0.00	15.19	8.36	2.49	7.44	390.00	---	19.75	123.50	---	12.43	
12		3.73	17.48	4.39	1.42	6.90	390.00	---	16.95	123.50	---	13.56	
14		5.61	20.82	3.29	0.47	5.79	390.00	---	14.14	123.50	---	16.33	
16		5.60	24.02	2.19	0.48	4.78	390.00	---	12.26	123.50	---	19.77	
18		3.71	21.29	4.26	1.42	5.24	390.00	---	13.92	123.50	---	17.86	
19.25		1.39	7.98	1.60	2.01	8.10	169.69	---	16.18	180.49	---	16.89	
20	0.00	0.00	0.00	2.36	9.82	169.69	---	N/A	180.49	---	13.90		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.02	19.48	390.00	---	N/A	123.50	---	4.57
2	10.62	31.79	2.98	4.60	16.55	390.00	---	9.10	123.50	---	5.46
4	18.41	52.85	5.95	3.18	13.78	390.00	---	5.33	123.50	---	6.66
6	23.35	64.38	8.93	1.76	11.16	390.00	---	4.30	123.50	---	8.35
8	25.46	67.89	11.90	0.34	8.90	390.00	---	4.04	123.50	---	10.64
10	24.71	65.21	14.87	1.95	10.50	390.00	---	4.22	123.50	---	8.86
12	19.38	60.17	17.55	3.37	10.23	390.00	---	4.66	123.50	---	8.96
14	11.21	48.20	20.23	4.80	12.70	390.00	---	5.99	123.50	---	7.10
16	0.17	30.32	23.00	6.23	15.14	390.00	---	9.89	123.50	---	5.86
18	-13.72	10.95	27.95	7.67	17.47	390.00	---	10.24	123.50	---	5.00
20	-30.49	10.62	43.65	9.12	22.57	390.00	---	6.17	123.50	---	3.81
22	-17.01	14.04	31.21	6.00	18.45	390.00	---	9.07	123.50	---	4.82
24	-6.50	33.14	26.27	4.51	15.88	390.00	---	8.86	123.50	---	5.70
26	1.04	46.69	21.91	3.03	13.15	390.00	---	6.40	123.50	---	6.99
28	5.61	53.74	17.64	1.54	10.58	390.00	---	5.48	123.50	---	8.83
30	7.20	54.00	14.55	0.20	8.17	390.00	---	5.42	123.50	---	11.60
32	5.31	53.62	19.92	1.69	8.01	390.00	---	5.50	123.50	---	11.65
34	0.43	46.48	25.34	3.19	10.47	390.00	---	6.45	123.50	---	8.77
36	-7.44	33.08	30.81	4.68	12.92	390.00	---	8.84	123.50	---	6.99
38	-18.28	13.79	36.46	6.17	15.52	390.00	---	7.73	123.50	---	5.72
40	-32.07	9.30	42.85	9.24	21.62	390.00	---	6.25	123.50	---	3.97
42.12	-14.13	10.73	25.27	7.67	19.63	390.00	---	11.31	123.50	---	4.45
44.24	0.48	31.35	21.94	6.10	17.38	390.00	---	9.55	123.50	---	5.12
46.37	11.75	49.78	19.29	4.53	14.97	390.00	---	5.79	123.50	---	6.04
48.49	19.70	61.25	16.84	2.96	12.38	390.00	---	4.58	123.50	---	7.43
50.61	24.35	65.83	14.43	1.61	9.24	390.00	---	4.19	123.50	---	10.11
52.73	26.11	69.45	11.54	0.05	9.24	390.00	---	3.94	123.50	---	10.28
54.85	24.56	66.86	8.66	1.51	8.51	390.00	---	4.12	123.50	---	10.99
56.97	19.69	55.53	5.77	3.08	10.92	390.00	---	5.05	123.50	---	8.42
59.1	11.51	33.69	2.89	4.64	13.61	390.00	---	8.56	123.50	---	6.64
61.22	0.00	0.00	0.00	6.20	19.60	390.00	---	N/A	123.50	---	4.53

2F1

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.81	19.38	390.00	---	N/A	123.50	---	4.60
2	10.20	31.49	3.52	4.39	16.38	390.00	---	9.20	123.50	---	5.53
4	17.56	52.11	7.05	2.97	13.55	390.00	---	5.42	123.50	---	6.79
6	22.08	63.13	10.57	1.55	10.94	390.00	---	4.40	123.50	---	8.54
8	23.76	66.19	14.10	0.13	8.60	390.00	---	4.17	123.50	---	11.03
10	22.61	63.28	17.63	1.57	10.57	390.00	---	4.38	123.50	---	8.84
12	18.06	58.87	19.40	2.99	9.80	390.00	---	4.79	123.50	---	9.39
14	10.67	47.70	21.18	4.41	12.26	390.00	---	6.07	123.50	---	7.39
16	0.44	30.85	23.14	5.82	14.72	390.00	---	9.71	123.50	---	6.06
18	-12.63	12.91	26.09	7.24	17.09	390.00	---	11.01	123.50	---	5.14
20	-28.57	12.51	40.57	8.68	21.26	390.00	---	6.69	123.50	---	4.06
22	-15.73	13.72	32.94	5.69	17.91	390.00	---	8.63	123.50	---	4.99
24	-5.81	32.28	28.27	4.24	15.46	390.00	---	9.11	123.50	---	5.87
26	1.21	46.13	23.95	2.78	12.93	390.00	---	6.48	123.50	---	7.13
28	5.31	53.56	19.73	1.32	10.51	390.00	---	5.50	123.50	---	8.91
30	6.52	54.91	17.24	0.30	7.72	390.00	---	5.34	123.50	---	12.27
32	4.45	53.86	22.00	1.76	8.04	390.00	---	5.49	123.50	---	11.60
34	-0.52	46.84	26.88	3.21	10.43	390.00	---	6.39	123.50	---	8.80
36	-8.41	33.39	31.88	4.67	12.83	390.00	---	8.73	123.50	---	7.04
38	-19.20	14.31	37.12	6.13	15.37	390.00	---	7.56	123.50	---	5.78
40	-32.88	10.72	43.29	7.58	21.79	390.00	---	6.17	123.50	---	4.01
42.12	-14.46	12.20	25.07	7.91	19.80	390.00	---	11.39	123.50	---	4.40
44.24	0.69	31.66	22.26	6.37	17.55	390.00	---	9.45	123.50	---	5.05
46.37	12.56	50.66	20.41	4.82	15.15	390.00	---	5.67	123.50	---	5.95
48.49	21.15	63.27	18.75	3.28	12.68	390.00	---	4.41	123.50	---	7.23
50.61	26.49	68.89	17.10	1.36	9.58	390.00	---	3.97	123.50	---	9.77
52.73	27.74	71.51	13.68	0.18	9.58	390.00	---	3.81	123.50	---	9.90
54.85	25.72	68.15	10.26	1.72	8.76	390.00	---	4.02	123.50	---	10.65
56.97	20.43	56.28	6.84	3.27	11.13	390.00	---	4.97	123.50	---	8.24
59.1	11.86	34.05	3.42	4.81	13.79	390.00	---	8.46	123.50	---	6.54
61.22	0.00	0.00	0.00	6.36	19.77	390.00	---	N/A	123.50	---	4.48

2F1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.77	19.43	390.00	---	N/A	123.50	---	4.59
2	10.12	31.58	3.55	4.35	16.42	390.00	---	9.18	123.50	---	5.52
4	17.41	52.27	7.10	2.93	13.59	390.00	---	5.41	123.50	---	6.77
6	21.85	63.38	10.65	1.51	10.98	390.00	---	4.39	123.50	---	8.51
8	23.46	66.52	14.20	0.09	8.65	390.00	---	4.16	123.50	---	10.97
10	22.23	63.68	17.76	1.50	9.86	390.00	---	4.36	123.50	---	9.48
12	17.80	59.18	19.51	2.92	9.86	390.00	---	4.77	123.50	---	9.34
14	10.54	47.93	21.28	4.34	12.31	390.00	---	6.04	123.50	---	7.36
16	0.43	30.91	23.22	5.76	14.77	390.00	---	9.69	123.50	---	6.04
18	-12.51	12.59	26.26	7.18	17.15	390.00	---	10.95	123.50	---	5.12
20	-28.32	12.19	40.98	8.62	21.32	390.00	---	6.63	123.50	---	4.05
22	-15.54	14.35	33.14	5.66	17.94	390.00	---	8.58	123.50	---	4.98
24	-5.67	32.76	28.44	4.21	15.50	390.00	---	8.98	123.50	---	5.86
26	1.28	46.42	24.18	2.75	12.97	390.00	---	6.44	123.50	---	7.11
28	5.33	53.69	20.06	1.30	10.54	390.00	---	5.49	123.50	---	8.89
30	6.44	54.89	17.52	0.25	8.28	390.00	---	5.35	123.50	---	11.44
32	4.48	53.97	22.19	1.71	8.05	390.00	---	5.48	123.50	---	11.59
34	-0.40	47.02	26.99	3.17	10.44	390.00	---	6.37	123.50	---	8.80
36	-8.18	33.66	31.89	4.62	12.85	390.00	---	8.67	123.50	---	7.03
38	-18.88	14.78	37.17	6.08	15.38	390.00	---	7.56	123.50	---	5.78
40	-32.50	11.21	43.52	9.37	21.79	390.00	---	6.15	123.50	---	3.93
42.12	-14.26	12.39	25.20	7.82	19.80	390.00	---	11.34	123.50	---	4.40
44.24	0.69	31.77	22.27	6.28	17.54	390.00	---	9.42	123.50	---	5.06
46.37	12.38	50.78	20.65	4.73	15.15	390.00	---	5.66	123.50	---	5.96
48.49	20.78	63.36	19.21	3.19	12.68	390.00	---	4.41	123.50	---	7.24
50.61	25.93	68.95	17.78	1.41	9.64	390.00	---	3.97	123.50	---	9.71
52.73	27.29	71.58	14.22	0.13	9.65	390.00	---	3.81	123.50	---	9.83
54.85	25.38	68.20	10.66	1.67	8.77	390.00	---	4.03	123.50	---	10.64
56.97	20.19	56.30	7.10	3.22	11.14	390.00	---	4.97	123.50	---	8.24
59.1	11.73	34.05	3.55	4.76	13.80	390.00	---	8.47	123.50	---	6.54
61.22	0.00	0.00	0.00	6.31	19.78	390.00	---	N/A	123.50	---	4.48

2F1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.88	19.40	390.00	---	N/A	123.50	---	4.59
2	10.34	31.53	3.33	4.46	16.40	390.00	---	9.19	123.50	---	5.52
4	17.85	52.18	6.65	3.04	13.57	390.00	---	5.41	123.50	---	6.78
6	22.51	63.24	9.98	1.62	10.96	390.00	---	4.39	123.50	---	8.52
8	24.34	66.33	13.31	0.20	8.62	390.00	---	4.16	123.50	---	11.00
10	23.33	63.45	16.64	1.69	10.62	390.00	---	4.36	123.50	---	8.79
12	18.53	58.96	18.75	3.11	9.83	390.00	---	4.77	123.50	---	9.35
14	10.89	47.71	20.86	4.53	12.29	390.00	---	6.06	123.50	---	7.36
16	0.41	30.76	23.14	5.95	14.74	390.00	---	9.74	123.50	---	6.04
18	-12.91	12.40	26.06	7.37	17.12	390.00	---	11.02	123.50	---	5.12
20	-29.10	11.55	40.67	8.81	21.30	390.00	---	6.66	123.50	---	4.05
22	-16.10	13.73	33.00	5.77	17.90	390.00	---	8.60	123.50	---	4.98
24	-6.01	32.35	28.32	4.32	15.47	390.00	---	9.09	123.50	---	5.86
26	1.17	46.15	23.87	2.86	12.94	390.00	---	6.48	123.50	---	7.12
28	5.43	53.57	19.52	1.41	10.51	390.00	---	5.50	123.50	---	8.90
30	6.76	54.89	17.01	0.36	8.21	390.00	---	5.34	123.50	---	11.53
32	4.58	53.78	21.86	1.82	8.02	390.00	---	5.49	123.50	---	11.62
34	-0.51	46.67	26.83	3.27	10.41	390.00	---	6.42	123.50	---	8.81
36	-8.51	33.11	31.87	4.73	12.82	390.00	---	8.80	123.50	---	7.04
38	-19.43	13.99	37.16	6.18	15.35	390.00	---	7.55	123.50	---	5.79
40	-33.26	10.28	43.34	9.54	21.82	390.00	---	6.15	123.50	---	3.92
42.12	-14.66	11.98	25.06	7.99	19.82	390.00	---	11.39	123.50	---	4.39
44.24	0.66	31.62	22.25	6.45	17.57	390.00	---	9.47	123.50	---	5.04
46.37	12.70	50.71	20.16	4.90	15.18	390.00	---	5.67	123.50	---	5.94
48.49	21.47	63.35	18.24	3.36	12.70	390.00	---	4.40	123.50	---	7.22
50.61	26.99	68.99	16.32	1.32	9.49	390.00	---	3.96	123.50	---	9.87
52.73	28.14	71.60	13.06	0.23	9.50	390.00	---	3.80	123.50	---	9.98
54.85	26.02	68.22	9.79	1.77	8.78	390.00	---	4.02	123.50	---	10.62
56.97	20.62	56.31	6.52	3.32	11.15	390.00	---	4.96	123.50	---	8.22
59.1	11.94	34.06	3.26	4.86	13.80	390.00	---	8.46	123.50	---	6.53
61.22	0.00	0.00	0.00	6.41	19.78	390.00	---	N/A	123.50	---	4.48

2F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	5.42	17.80	390.00	---	N/A	123.50	---	5.03	
2.04	9.62	29.52	2.81	3.99	15.03	390.00	---	9.84	123.50	---	6.06	
4.09	16.32	48.67	5.62	2.57	12.39	390.00	---	5.83	123.50	---	7.46	
6.13	20.11	58.58	8.43	1.14	9.94	390.00	---	4.78	123.50	---	9.44	
8.17	20.98	60.61	11.24	0.29	7.71	390.00	---	4.60	123.50	---	12.28	
10.21	19.06	56.65	14.05	1.19	7.70	390.00	---	4.96	123.50	---	12.18	
12.26	15.18	55.28	16.82	2.62	9.13	390.00	---	5.15	123.50	---	10.12	
14.3	8.37	44.73	19.61	4.05	11.62	390.00	---	6.52	123.50	---	7.83	
16.34	-1.38	29.14	22.58	5.50	14.00	390.00	---	10.25	123.50	---	6.39	
18.38	-14.08	10.22	26.04	6.94	16.39	390.00	---	10.98	123.50	---	5.37	
20.43	-27.75	10.61	38.47	7.20	20.65	390.00	---	7.08	123.50	---	4.25	
22.43	-14.81	13.03	30.89	5.73	17.64	390.00	---	9.23	123.50	---	5.06	
24.43	-4.81	31.71	26.06	4.26	15.26	390.00	---	9.31	123.50	---	5.95	
26.43	2.24	44.80	21.45	2.79	12.67	390.00	---	6.65	123.50	---	7.28	
28.43	6.34	51.30	16.89	1.31	10.15	390.00	---	5.72	123.50	---	9.23	
30.43	7.48	51.88	14.19	0.23	7.83	390.00	---	5.64	123.50	---	12.10	
32.43	5.53	52.25	19.67	1.72	7.69	390.00	---	5.64	123.50	---	12.13	
34.43	0.59	45.99	25.20	3.21	10.23	390.00	---	6.51	123.50	---	8.97	
36.43	-7.32	33.01	30.77	4.71	12.71	390.00	---	8.87	123.50	---	7.10	
38.43	-18.23	14.17	36.52	6.20	15.32	390.00	---	7.72	123.50	---	5.80	
40.43	-32.15	8.96	42.63	9.24	21.81	390.00	---	6.28	123.50	---	3.93	
42.55	-14.24	10.77	24.61	7.65	19.78	390.00	---	11.61	123.50	---	4.42	
44.67	0.30	32.05	21.38	6.05	17.59	390.00	---	9.35	123.50	---	5.06	
46.79	11.45	50.34	18.77	4.45	15.11	390.00	---	5.73	123.50	---	5.99	
48.91	19.20	61.86	16.28	2.85	12.50	390.00	---	4.54	123.50	---	7.37	
51.04	23.52	65.76	13.80	1.79	9.49	390.00	---	4.20	123.50	---	9.82	
53.16	25.62	70.07	11.04	0.19	9.50	390.00	---	3.92	123.50	---	9.98	
55.28	24.32	67.92	8.28	1.42	8.58	390.00	---	4.06	123.50	---	10.91	
57.4	19.61	56.67	5.52	3.02	11.10	390.00	---	4.95	123.50	---	8.29	
59.52	11.50	34.51	2.76	4.62	13.89	390.00	---	8.36	123.50	---	6.51	
61.65	0.00	0.00	0.00	6.22	20.12	390.00	---	N/A	123.50	---	4.41	

2F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	5.02	17.25	1212.51	---	N/A	149.61	---	6.38	
2	8.86	26.87	3.86	3.83	13.96	1212.51	---	34.38	149.61	---	7.97	
4	15.33	47.01	7.73	2.63	12.21	1212.51	---	19.51	149.61	---	9.21	
6.01	19.40	64.46	11.59	1.44	11.16	1212.51	---	14.17	149.61	---	10.18	
8.01	21.08	74.04	15.45	0.24	9.62	1212.51	---	12.31	149.61	---	11.94	
10.01	20.36	63.01	19.32	1.41	8.95	1212.51	---	14.48	149.61	---	12.70	
12.01	16.34	55.00	21.39	2.61	9.25	1212.51	---	16.66	149.61	---	12.16	
14.01	9.92	46.35	23.51	3.81	12.65	1212.51	---	19.91	149.61	---	8.80	
16.02	1.08	37.17	25.63	5.02	14.61	1212.51	---	25.06	149.61	---	7.53	
18.02	-10.19	22.20	27.93	6.24	15.75	1212.51	---	33.03	149.61	---	6.91	
20.02	-23.97	1.36	36.64	7.49	20.45	1212.51	---	24.80	149.61	---	5.26	
22.02	-10.65	8.14	28.81	6.03	17.53	1212.51	---	32.00	149.61	---	6.22	
24.02	0.13	30.51	26.35	4.76	15.73	1212.51	---	30.57	149.61	---	7.01	
26.02	8.38	52.82	23.96	3.48	14.37	1212.51	---	17.50	149.61	---	7.77	
28.02	14.07	68.66	21.65	2.20	12.62	1212.51	---	13.38	149.61	---	8.94	
30.02	17.17	66.94	19.37	0.92	9.93	1212.51	---	13.68	149.61	---	11.50	
32.02	17.45	61.13	15.46	0.50	6.96	1212.51	---	14.97	149.61	---	16.46	
34.02	15.16	49.32	11.60	1.79	10.77	1212.51	---	18.60	149.61	---	10.52	
36.03	10.28	36.35	7.73	3.09	13.40	1212.51	---	25.38	149.61	---	8.36	
38.03	2.81	22.42	6.14	4.38	15.47	1212.51	---	41.48	149.61	---	7.16	
40.03	0.00	0.00	0.00	7.23	20.98	1212.51	---	N/A	149.61	---	5.14	
42.15	12.35	35.76	7.29	5.85	17.53	1212.51	---	25.74	149.61	---	6.23	
44.27	23.31	63.31	7.39	4.47	15.52	1212.51	---	14.36	149.61	---	7.13	
46.39	31.33	86.92	7.50	3.09	14.20	1212.51	---	10.37	149.61	---	7.89	
48.51	36.42	101.34	7.60	1.70	12.42	1212.51	---	8.84	149.61	---	9.13	
50.64	38.57	92.55	7.71	0.32	9.07	1212.51	---	9.66	149.61	---	12.65	
52.76	36.77	86.02	6.16	1.54	9.06	1212.51	---	10.42	149.61	---	12.53	
54.88	32.03	79.46	4.62	2.93	12.48	1212.51	---	11.33	149.61	---	8.99	
57	24.32	71.64	3.08	4.33	14.27	1212.51	---	12.68	149.61	---	7.76	
59.12	13.65	51.91	1.54	5.73	15.59	1212.51	---	17.70	149.61	---	7.01	
61.25	0.00	0.00	0.00	7.13	21.25	1212.51	---	N/A	149.61	---	5.08	

2F1

Stringer F2A-2

Stringer F2B-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
2F1	Stringer F1A-3											
	0	0.00	0.00	0.00	6.39	20.36	643.98	---	N/A	207.60	---	7.53
	2.12	12.15	36.76	1.46	5.06	18.01	643.98	---	13.15	207.60	---	8.59
	4.24	21.49	63.07	2.91	3.74	15.45	643.98	---	7.51	207.60	---	10.09
	6.37	28.02	78.98	4.37	2.41	12.90	643.98	---	5.92	207.60	---	12.19
	8.49	31.72	86.73	5.83	1.08	10.62	643.98	---	5.35	207.60	---	14.94
	10.61	32.63	89.55	7.29	0.50	8.78	643.98	---	5.17	207.60	---	18.13
	12.73	30.17	87.68	5.83	1.83	8.78	643.98	---	5.31	207.60	---	17.98
	14.86	24.86	72.34	4.37	3.17	11.37	643.98	---	6.50	207.60	---	13.77
	16.98	16.71	46.73	2.91	4.51	14.34	643.98	---	10.24	207.60	---	10.82
	19.1	5.70	20.03	1.46	5.86	17.12	643.98	---	24.45	207.60	---	8.99
	21.22	-1.36	0.00	23.11	7.22	21.04	643.98	---	21.38	207.60	---	7.25
	Stringer F1B-3											
	23.34	8.42	35.84	21.25	3.93	17.56	643.98	---	13.59	207.60	---	8.87
	25.47	15.31	60.46	19.38	2.57	14.82	643.98	---	7.94	207.60	---	10.60
	27.59	19.31	75.06	17.51	1.20	12.26	643.98	---	6.34	207.60	---	12.93
	29.71	20.39	80.19	15.64	0.17	9.82	643.98	---	5.92	207.60	---	16.24
	31.83	18.56	77.25	13.78	1.49	10.60	643.98	---	6.17	207.60	---	14.92
	33.96	13.93	73.76	9.85	2.87	10.60	643.98	---	6.53	207.60	---	14.79
	36.08	6.36	61.31	8.76	4.26	13.36	643.98	---	7.98	207.60	---	11.63
	38.2	-4.18	41.20	8.55	5.66	16.02	643.98	---	11.92	207.60	---	9.62
	40.32	-17.69	17.54	9.81	7.07	18.54	643.98	---	27.23	207.60	---	8.23
	42.45	-33.67	6.82	37.38	8.08	23.03	643.98	---	12.35	207.60	---	6.58
	44.57	-17.51	6.22	33.25	7.21	4.60	643.98	---	14.37	207.60	---	33.15
	46.7	-2.86	10.79	29.44	6.46	4.33	643.98	---	16.73	207.60	---	35.39
	48.82	10.28	16.41	25.96	5.70	4.03	643.98	---	18.69	207.60	---	38.21
	50.95	21.87	20.32	22.50	4.94	3.50	643.98	---	21.04	207.60	---	44.21
	53.07	28.93	21.80	19.07	0.43	3.09	643.98	---	21.40	207.60	---	51.54
	55.19	27.06	23.36	15.26	1.33	2.85	643.98	---	20.05	207.60	---	55.57
	57.32	23.25	23.49	11.45	2.25	2.86	643.98	---	20.10	207.60	---	55.05
	59.44	17.49	19.96	7.64	3.18	3.83	643.98	---	23.94	207.60	---	40.86
	61.57	9.74	12.61	3.82	4.11	4.88	643.98	---	38.51	207.60	---	31.88
	63.69	0.00	0.00	0.00	5.06	7.62	643.98	---	N/A	207.60	---	20.29
2F1	Stringer S1-3											
	0	0.00	0.00	0.00	2.89	10.96	303.24	---	N/A	216.57	---	14.94
	0.75	1.76	5.46	0.84	2.50	9.76	303.24	---	42.38	216.57	---	16.81
	2.12	4.97	15.44	2.37	1.79	7.57	390.00	---	19.11	123.50	---	12.31
	4.24	7.60	24.02	4.75	0.69	5.67	390.00	---	12.17	123.50	---	16.63
	6.36	7.88	29.43	7.12	0.43	6.85	390.00	---	9.93	123.50	---	13.81
	8.48	5.79	30.61	9.49	1.55	6.64	390.00	---	9.61	123.50	---	14.07
	10.6	2.59	17.59	11.87	2.68	9.01	390.00	---	16.91	123.50	---	10.25
	12.72	6.94	22.80	4.69	1.48	8.79	390.00	---	12.85	123.50	---	10.64
	14.85	8.87	27.12	3.52	0.34	7.29	390.00	---	10.73	123.50	---	12.98
	16.97	8.36	27.04	2.35	0.82	5.38	390.00	---	10.79	123.50	---	17.51
	19.09	5.39	18.85	1.17	1.98	6.63	390.00	---	15.63	123.50	---	14.03
	20.46	1.91	6.67	0.41	2.74	10.26	192.60	---	21.93	183.58	---	13.49
21.21	0.00	0.00	0.00	3.16	12.25	192.60	---	N/A	183.58	---	11.27	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	8.49	20.00	390.00	---	N/A	123.50	---	4.33
2.12	14.44	34.19	3.25	5.12	16.76	390.00	---	8.35	123.50	---	5.36
4.24	24.24	56.40	6.51	3.53	13.82	390.00	---	4.89	123.50	---	6.62
6.37	27.51	67.64	9.76	1.04	11.05	390.00	---	4.03	123.50	---	8.50
8.49	24.87	70.24	13.01	1.45	8.60	390.00	---	3.92	123.50	---	10.88
10.61	25.94	66.99	16.28	1.73	9.89	390.00	---	4.09	123.50	---	9.43
12.73	20.58	63.11	19.27	3.33	9.89	390.00	---	4.43	123.50	---	9.27
14.85	11.81	51.93	22.26	4.94	12.44	390.00	---	5.55	123.50	---	7.24
16.98	-0.38	34.23	25.43	6.55	15.04	390.00	---	8.75	123.50	---	5.88
19.1	-15.98	15.04	29.60	8.16	17.72	390.00	---	9.60	123.50	---	4.90
21.22	-35.01	12.14	43.95	9.79	21.51	390.00	---	6.03	123.50	---	3.96
23.34	-19.25	15.15	35.78	6.62	19.07	390.00	---	7.85	123.50	---	4.63
25.46	-6.94	35.64	30.19	4.99	16.47	390.00	---	8.22	123.50	---	5.47
27.58	1.91	50.78	25.20	3.35	13.69	390.00	---	5.87	123.50	---	6.69
29.7	7.28	57.82	20.38	1.71	10.84	390.00	---	5.06	123.50	---	8.61
31.82	9.18	60.34	15.81	0.26	8.60	390.00	---	4.82	123.50	---	11.02
33.94	6.89	59.32	19.75	1.90	8.60	390.00	---	4.94	123.50	---	10.83
36.06	1.13	51.89	23.99	3.54	11.07	390.00	---	5.76	123.50	---	8.26
38.19	-8.10	36.86	28.41	5.16	13.89	390.00	---	7.92	123.50	---	6.47
40.31	-20.77	16.42	33.76	6.79	16.81	390.00	---	8.27	123.50	---	5.25
42.43	-36.84	11.09	42.40	8.40	22.44	390.00	---	6.21	123.50	---	3.86
44.55	-16.86	13.42	29.79	8.62	19.03	390.00	---	9.50	123.50	---	4.54
46.67	-0.19	32.00	25.75	7.08	16.68	390.00	---	9.37	123.50	---	5.27
48.79	13.09	48.76	22.72	5.51	14.21	390.00	---	5.88	123.50	---	6.30
50.91	23.01	58.99	19.85	3.94	11.70	390.00	---	4.70	123.50	---	7.78
53.03	29.98	62.50	17.00	2.45	10.94	390.00	---	4.32	123.50	---	8.46
55.15	30.49	66.24	13.60	0.52	9.79	390.00	---	4.07	123.50	---	9.65
57.27	27.75	64.23	10.20	2.06	8.12	390.00	---	4.24	123.50	---	11.45
59.39	21.76	53.79	6.80	3.59	10.50	390.00	---	5.17	123.50	---	8.71
61.51	12.51	32.92	3.40	5.13	13.19	390.00	---	8.73	123.50	---	6.81
63.64	0.00	0.00	0.00	6.66	19.31	390.00	---	N/A	123.50	---	4.57

2F1

Stringer S2-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.49	20.51	390.00	---	N/A	123.50	---	4.32
2.12	12.10	35.17	4.21	4.92	17.24	390.00	---	8.19	123.50	---	5.23
4.24	20.87	57.99	8.43	3.35	14.21	390.00	---	4.81	123.50	---	6.45
6.37	26.31	70.26	12.64	1.78	11.48	390.00	---	3.90	123.50	---	8.12
8.49	28.41	74.22	16.86	0.21	9.10	390.00	---	3.66	123.50	---	10.42
10.61	27.17	72.70	21.07	1.91	10.65	390.00	---	3.75	123.50	---	8.74
12.73	21.45	66.23	22.68	3.48	10.65	390.00	---	4.21	123.50	---	8.59
14.85	12.39	53.29	24.30	5.06	13.06	390.00	---	5.40	123.50	---	6.89
16.98	0.00	33.74	26.32	6.63	15.60	390.00	---	8.89	123.50	---	5.66
19.1	-15.74	16.14	29.63	8.20	18.17	390.00	---	9.59	123.50	---	4.78
21.22	-34.79	12.90	45.44	9.77	21.38	390.00	---	5.84	123.50	---	3.99
23.34	-19.45	16.42	37.55	6.45	18.97	390.00	---	7.47	123.50	---	4.67
25.46	-7.45	36.04	32.26	4.88	16.32	390.00	---	8.12	123.50	---	5.52
27.58	1.23	51.44	27.82	3.30	13.64	390.00	---	5.81	123.50	---	6.72
29.7	6.57	60.06	23.59	1.73	11.05	390.00	---	4.89	123.50	---	8.44
31.82	8.59	62.60	19.52	0.03	9.14	390.00	---	4.66	123.50	---	10.39
33.94	6.86	59.91	23.39	1.60	9.15	390.00	---	4.89	123.50	---	10.21
36.06	1.80	51.18	27.60	3.17	11.08	390.00	---	5.83	123.50	---	8.29
38.19	-6.59	35.55	32.03	4.74	13.67	390.00	---	8.25	123.50	---	6.60
40.31	-18.31	15.95	37.18	6.31	16.36	390.00	---	7.58	123.50	---	5.42
42.43	-33.33	12.57	45.03	9.38	21.41	390.00	---	5.92	123.50	---	4.00
44.55	-15.10	16.03	29.72	7.83	20.47	390.00	---	9.59	123.50	---	4.26
46.67	-0.16	33.57	26.32	6.27	17.99	390.00	---	8.93	123.50	---	4.93
48.79	11.47	52.81	23.87	4.72	15.45	390.00	---	5.46	123.50	---	5.84
50.91	19.79	65.53	21.81	3.17	12.90	390.00	---	4.28	123.50	---	7.12
53.03	25.32	71.75	19.75	1.70	13.11	390.00	---	3.83	123.50	---	7.12
55.15	26.76	73.45	15.80	0.09	10.59	390.00	---	3.72	123.50	---	8.96
57.27	24.94	69.67	11.85	1.62	9.00	390.00	---	3.95	123.50	---	10.38
59.39	19.88	57.59	7.90	3.15	11.39	390.00	---	4.86	123.50	---	8.06
61.51	11.57	34.98	3.95	4.69	14.12	390.00	---	8.25	123.50	---	6.40
63.64	0.00	0.00	0.00	6.22	20.42	390.00	---	N/A	123.50	---	4.35

2F1

Stringer S3-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.36	20.38	390.00	---	N/A	123.50	---	4.35
2.12	11.82	34.91	4.12	4.78	17.11	390.00	---	8.25	123.50	---	5.27
4.24	20.31	57.45	8.23	3.21	14.08	390.00	---	4.87	123.50	---	6.52
6.37	25.46	69.46	12.35	1.64	11.35	390.00	---	3.95	123.50	---	8.23
8.49	27.28	73.16	16.46	0.07	8.96	390.00	---	3.73	123.50	---	10.59
10.61	25.76	71.36	20.58	1.70	10.53	390.00	---	3.84	123.50	---	8.86
12.73	20.48	65.23	22.26	3.27	10.53	390.00	---	4.29	123.50	---	8.71
14.85	11.88	52.63	23.94	4.84	12.94	390.00	---	5.47	123.50	---	6.97
16.98	-0.06	33.46	26.00	6.41	15.49	390.00	---	8.96	123.50	---	5.72
19.1	-15.34	16.12	29.55	7.98	18.05	390.00	---	9.63	123.50	---	4.82
21.22	-33.93	13.09	45.38	9.55	21.27	390.00	---	5.86	123.50	---	4.02
23.34	-18.77	16.65	37.33	6.36	18.85	390.00	---	7.53	123.50	---	4.70
25.46	-6.95	35.80	31.86	4.79	16.19	390.00	---	8.19	123.50	---	5.57
27.58	1.55	50.94	27.46	3.22	13.52	390.00	---	5.86	123.50	---	6.79
29.7	6.72	59.20	23.33	1.65	10.93	390.00	---	4.95	123.50	---	8.54
31.82	8.57	61.43	19.36	0.02	9.17	390.00	---	4.74	123.50	---	10.36
33.94	6.86	59.11	23.33	1.59	9.18	390.00	---	4.96	123.50	---	10.18
36.06	1.83	50.77	27.46	3.16	10.97	390.00	---	5.87	123.50	---	8.37
38.19	-6.53	35.55	31.87	4.73	13.55	390.00	---	8.26	123.50	---	6.66
40.31	-18.22	16.37	37.38	6.30	16.24	390.00	---	7.54	123.50	---	5.46
42.43	-33.21	12.79	45.32	9.34	21.30	390.00	---	5.89	123.50	---	4.02
44.55	-15.06	16.12	29.51	7.79	20.50	390.00	---	9.66	123.50	---	4.25
46.67	-0.20	33.46	25.87	6.24	18.03	390.00	---	8.96	123.50	---	4.92
48.79	11.35	52.60	23.61	4.69	15.48	390.00	---	5.49	123.50	---	5.83
50.91	19.60	65.18	21.75	3.14	12.94	390.00	---	4.30	123.50	---	7.10
53.03	25.04	71.43	19.89	1.66	13.16	390.00	---	3.85	123.50	---	7.09
55.15	26.54	73.19	15.92	0.06	10.60	390.00	---	3.74	123.50	---	8.96
57.27	24.78	69.48	11.94	1.59	8.97	390.00	---	3.96	123.50	---	10.41
59.39	19.77	57.46	7.96	3.13	11.36	390.00	---	4.88	123.50	---	8.09
61.51	11.51	34.91	3.98	4.66	14.09	390.00	---	8.26	123.50	---	6.41
63.64	0.00	0.00	0.00	6.19	20.39	390.00	---	N/A	123.50	---	4.36

2F1
Stringer S4-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	6.46	20.52	390.00	---	N/A	123.50	---	4.31	
2.12	12.05	35.19	3.97	4.89	17.25	390.00	---	8.18	123.50	---	5.22	
4.24	20.76	58.03	7.94	3.32	14.22	390.00	---	4.81	123.50	---	6.45	
6.37	26.14	70.32	11.92	1.75	11.49	390.00	---	3.89	123.50	---	8.12	
8.49	28.18	74.30	15.89	0.18	9.11	390.00	---	3.66	123.50	---	10.41	
10.61	26.89	72.80	19.86	1.90	10.67	390.00	---	3.75	123.50	---	8.73	
12.73	21.19	66.24	21.85	3.47	10.67	390.00	---	4.21	123.50	---	8.58	
14.85	12.17	53.15	23.84	5.04	13.08	390.00	---	5.42	123.50	---	6.88	
16.98	-0.19	33.46	26.18	6.61	15.63	390.00	---	8.96	123.50	---	5.66	
19.1	-15.88	15.64	29.62	8.18	18.19	390.00	---	9.59	123.50	---	4.77	
21.22	-34.90	12.20	45.50	9.75	21.36	390.00	---	5.83	123.50	---	3.99	
23.34	-19.42	15.98	37.65	6.51	18.94	390.00	---	7.45	123.50	---	4.67	
25.46	-7.28	35.56	32.37	4.94	16.29	390.00	---	8.23	123.50	---	5.53	
27.58	1.54	51.07	27.75	3.37	13.61	390.00	---	5.84	123.50	---	6.73	
29.7	7.03	59.68	23.32	1.80	11.02	390.00	---	4.91	123.50	---	8.46	
31.82	9.19	62.20	19.16	0.16	9.08	390.00	---	4.68	123.50	---	10.44	
33.94	7.19	59.73	22.82	1.73	9.08	390.00	---	4.90	123.50	---	10.27	
36.06	1.86	51.14	27.32	3.30	11.01	390.00	---	5.83	123.50	---	8.33	
38.19	-6.80	35.62	32.04	4.87	13.60	390.00	---	8.23	123.50	---	6.63	
40.31	-18.80	16.03	37.33	6.44	16.29	390.00	---	7.53	123.50	---	5.44	
42.43	-34.09	12.34	45.24	9.51	21.35	390.00	---	5.88	123.50	---	4.00	
44.55	-15.57	15.85	29.52	7.96	20.52	390.00	---	9.64	123.50	---	4.24	
46.67	-0.34	33.47	26.16	6.41	18.05	390.00	---	8.95	123.50	---	4.91	
48.79	11.57	52.69	23.88	4.86	15.50	390.00	---	5.47	123.50	---	5.82	
50.91	20.19	65.57	21.92	3.31	12.96	390.00	---	4.27	123.50	---	7.07	
53.03	26.00	71.95	19.98	1.83	13.14	390.00	---	3.81	123.50	---	7.09	
55.15	27.30	73.61	15.99	0.15	10.59	390.00	---	3.70	123.50	---	8.96	
57.27	25.35	69.80	11.99	1.69	9.02	390.00	---	3.93	123.50	---	10.34	
59.39	20.15	57.67	8.00	3.22	11.41	390.00	---	4.85	123.50	---	8.04	
61.51	11.71	35.01	4.00	4.75	14.14	390.00	---	8.23	123.50	---	6.38	
63.64	0.00	0.00	0.00	6.28	20.43	390.00	---	N/A	123.50	---	4.34	

2F1
Stringer S5-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	6.26	20.38	390.00	---	N/A	123.50	---	4.35	
2.12	11.56	34.69	3.12	4.63	17.00	390.00	---	8.31	123.50	---	5.32	
4.24	19.66	56.53	6.24	3.00	13.85	390.00	---	4.96	123.50	---	6.64	
6.37	24.30	66.89	9.36	1.37	10.94	390.00	---	4.12	123.50	---	8.56	
8.49	25.50	68.80	12.49	0.25	8.43	390.00	---	3.99	123.50	---	11.24	
10.61	23.22	64.75	15.60	1.31	9.63	390.00	---	4.27	123.50	---	9.73	
12.73	18.72	61.16	18.10	2.93	9.63	390.00	---	4.60	123.50	---	9.56	
14.85	10.78	50.15	20.60	4.55	12.18	390.00	---	5.77	123.50	---	7.43	
16.98	-0.58	32.72	23.28	6.16	14.74	390.00	---	9.15	123.50	---	6.03	
19.1	-15.35	13.32	26.95	7.77	17.34	390.00	---	10.56	123.50	---	5.03	
21.22	-33.53	9.61	42.21	9.37	21.90	390.00	---	6.31	123.50	---	3.91	
23.34	-18.18	15.37	34.84	6.44	18.13	390.00	---	8.09	123.50	---	4.88	
25.46	-6.22	34.36	29.29	4.84	15.46	390.00	---	8.55	123.50	---	5.83	
27.58	2.37	47.66	24.26	3.25	12.68	390.00	---	6.24	123.50	---	7.24	
29.7	7.59	53.83	19.35	1.67	10.01	390.00	---	5.43	123.50	---	9.32	
31.82	9.47	54.17	14.65	0.17	8.11	390.00	---	5.36	123.50	---	11.69	
33.94	8.15	53.36	17.55	1.41	8.12	390.00	---	5.47	123.50	---	11.53	
36.06	3.51	46.35	21.62	2.97	10.04	390.00	---	6.40	123.50	---	9.17	
38.19	-4.45	32.58	25.85	4.53	12.53	390.00	---	9.07	123.50	---	7.22	
40.31	-15.70	14.05	30.61	6.08	15.07	390.00	---	9.29	123.50	---	5.90	
42.43	-30.24	10.60	38.74	8.44	19.83	390.00	---	6.96	123.50	---	4.37	
44.55	-13.96	13.57	27.02	6.93	18.13	390.00	---	10.59	123.50	---	4.86	
46.67	-0.89	30.12	23.00	5.42	15.63	390.00	---	9.93	123.50	---	5.73	
48.79	8.99	45.06	19.93	3.93	13.11	390.00	---	6.46	123.50	---	6.95	
50.91	15.69	53.61	17.05	2.44	10.63	390.00	---	5.30	123.50	---	8.71	
53.03	19.75	56.32	14.19	1.73	12.64	390.00	---	4.98	123.50	---	7.38	
55.15	21.88	59.64	11.35	0.28	9.46	390.00	---	4.66	123.50	---	10.01	
57.27	20.94	57.43	8.51	1.16	7.42	390.00	---	4.86	123.50	---	12.65	
59.39	16.98	48.12	5.68	2.58	9.39	390.00	---	5.88	123.50	---	9.84	
61.51	9.99	29.45	2.84	4.00	11.80	390.00	---	9.85	123.50	---	7.71	
63.64	0.00	0.00	0.00	5.41	17.26	390.00	---	N/A	123.50	---	5.19	

2F1

Stringer S6-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
2F1	Stringer F2A-3											
	0	0.00	0.00	0.00	6.91	21.49	1212.51	---	N/A	149.61	---	5.03
	2.12	13.15	38.44	1.37	5.49	18.84	1212.51	---	23.92	149.61	---	5.82
	4.24	23.29	66.08	2.75	4.07	16.19	1212.51	---	13.76	149.61	---	6.86
	6.37	30.42	83.09	4.12	2.65	13.57	1212.51	---	10.86	149.61	---	8.29
	8.49	34.55	91.11	5.49	1.24	11.16	1212.51	---	9.86	149.61	---	10.20
	10.61	35.68	94.28	6.87	0.66	9.24	1212.51	---	9.51	149.61	---	12.38
	12.73	32.79	91.81	5.50	2.07	9.24	1212.51	---	9.80	149.61	---	12.23
	14.86	26.91	74.43	4.12	3.47	11.89	1212.51	---	12.17	149.61	---	9.39
	16.98	18.06	47.98	2.75	4.87	14.70	1212.51	---	19.06	149.61	---	7.50
	19.1	6.24	20.88	1.37	6.27	17.47	1212.51	---	44.37	149.61	---	6.23
	21.22	0.00	0.00	0.00	7.66	20.26	1212.51	---	N/A	149.61	---	5.30
	Stringer F2B-3											
	23.34	9.37	35.36	21.83	4.38	17.33	1212.51	---	26.11	149.61	---	6.39
	25.47	17.20	59.75	20.36	3.00	14.64	1212.51	---	15.32	149.61	---	7.66
	27.59	22.11	74.03	18.89	1.62	12.09	1212.51	---	12.30	149.61	---	9.38
	29.71	24.10	79.26	17.42	0.25	9.71	1212.51	---	11.46	149.61	---	11.83
	31.83	23.19	77.14	18.92	1.31	9.83	1212.51	---	11.79	149.61	---	11.57
	33.96	18.96	73.21	20.14	2.67	9.83	1212.51	---	12.48	149.61	---	11.44
	36.08	11.85	61.14	21.36	4.03	12.19	1212.51	---	15.06	149.61	---	9.11
	38.2	1.87	42.26	22.59	5.37	14.39	1212.51	---	22.03	149.61	---	7.62
	40.32	-10.95	17.99	23.92	6.71	16.42	1212.51	---	38.53	149.61	---	6.60
	42.45	-26.57	6.09	29.41	8.04	19.88	1212.51	---	30.81	149.61	---	5.38
	44.57	-11.33	17.20	25.96	6.53	17.76	1212.51	---	35.49	149.61	---	6.11
	46.69	1.15	40.15	24.70	5.24	15.66	1212.51	---	23.20	149.61	---	7.01
	48.82	10.87	57.35	23.95	3.95	13.48	1212.51	---	16.07	149.61	---	8.24
	50.94	17.86	67.97	23.20	2.68	11.27	1212.51	---	13.46	149.61	---	9.97
	53.07	22.71	71.53	22.47	0.93	8.58	1212.51	---	12.72	149.61	---	13.30
	55.19	23.38	71.53	17.97	0.31	7.00	1212.51	---	12.71	149.61	---	16.40
	57.32	21.42	64.76	13.48	1.54	8.76	1212.51	---	14.07	149.61	---	12.96
	59.44	16.85	50.30	8.99	2.76	10.57	1212.51	---	18.21	149.61	---	10.63
	61.56	9.70	28.89	4.49	3.97	12.31	1212.51	---	31.95	149.61	---	9.03
	63.69	0.00	0.00	0.00	5.18	15.82	1212.51	---	N/A	149.61	---	6.95

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L-I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	4.81	6.04	643.98	---	N/A	207.60	---	25.64	
2.33	9.99	13.20	3.96	3.77	6.04	643.98	---	36.77	207.60	---	25.81	
4.65	17.53	26.41	7.93	2.72	6.04	643.98	---	18.09	207.60	---	25.99	
6.98	22.65	37.53	11.89	1.67	5.73	643.98	---	12.60	207.60	---	27.58	
9.31	25.33	45.09	15.86	0.63	5.18	643.98	---	10.42	207.60	---	30.71	
11.63	25.50	51.10	19.84	2.52	6.53	643.98	---	9.20	207.60	---	24.07	
13.96	18.31	45.37	19.93	3.66	6.54	643.98	---	10.51	207.60	---	23.86	
16.29	8.46	34.36	20.02	4.81	7.67	643.98	---	14.17	207.60	---	20.19	
18.61	-4.09	21.31	20.21	5.98	8.43	643.98	---	23.05	207.60	---	18.23	
20.94	-19.40	7.18	20.45	7.18	9.07	643.98	---	23.27	207.60	---	16.82	
23.27	-37.47	1.31	21.87	8.77	10.54	643.98	---	20.94	207.60	---	14.32	
25.6	-18.45	8.45	20.06	7.54	10.44	643.98	---	23.77	207.60	---	14.57	
27.93	-2.32	24.70	18.71	6.29	9.91	643.98	---	19.96	207.60	---	15.48	
30.26	10.86	38.62	17.82	5.02	9.09	643.98	---	12.55	207.60	---	17.02	
32.6	21.06	48.83	17.02	3.73	8.06	643.98	---	9.71	207.60	---	19.35	
34.93	28.16	54.65	16.27	1.17	4.11	643.98	---	8.55	207.60	---	38.57	
37.26	29.22	55.03	13.02	0.26	4.99	643.98	---	8.47	207.60	---	31.95	
39.59	26.93	50.35	9.77	1.70	6.31	643.98	---	9.30	207.60	---	25.04	
41.92	21.30	39.75	6.51	3.13	7.66	643.98	---	11.93	207.60	---	20.44	
44.26	12.31	23.13	3.26	4.57	9.03	643.98	---	20.88	207.60	---	17.18	
46.59	0.00	0.04	0.01	6.00	11.91	643.98	---	12384.23	207.60	---	12.90	
0	0.00	0.00	0.00	3.86	14.36	225.39	---	N/A	218.57	---	11.44	
0.75	2.41	6.96	0.19	3.44	12.84	225.39	---	24.55	218.57	---	12.83	
2.32	7.44	21.54	0.59	2.55	9.66	390.00	---	13.58	123.50	---	9.57	
4.64	11.83	32.66	1.18	1.24	7.32	390.00	---	8.82	123.50	---	12.81	
6.96	13.18	39.73	1.78	0.07	8.34	390.00	---	7.22	123.50	---	11.38	
9.27	11.50	40.17	5.54	1.38	6.42	390.00	---	7.18	123.50	---	14.58	
11.59	6.37	23.37	2.96	2.70	9.06	390.00	---	12.66	123.50	---	10.19	
13.91	5.86	27.06	7.24	0.92	7.13	390.00	---	10.56	123.50	---	13.19	
16.23	2.18	27.83	11.82	2.30	5.11	390.00	---	10.70	123.50	---	18.14	
18.55	-4.68	22.06	16.46	3.70	7.39	390.00	---	13.39	123.50	---	12.35	
20.87	-14.79	10.18	21.11	5.11	9.55	390.00	---	13.51	123.50	---	9.41	
22.44	-24.66	3.42	25.06	7.17	14.06	240.15	---	6.39	223.32	---	11.68	
23.19	-29.38	0.19	26.94	8.16	16.96	240.15	---	5.77	223.32	---	10.06	
23.94	-23.82	2.82	23.97	7.06	15.35	240.15	---	6.71	223.32	---	10.69	
25.51	-12.19	8.34	17.75	6.67	13.46	390.00	---	16.21	123.50	---	6.56	
27.83	1.52	27.79	15.39	5.15	12.01	390.00	---	10.74	123.50	---	7.48	
30.14	11.69	47.52	13.05	3.62	10.85	390.00	---	6.07	123.50	---	8.42	
32.46	18.29	39.69	10.72	2.06	9.24	390.00	---	4.72	123.50	---	10.06	
34.78	19.28	50.59	8.38	2.62	11.35	390.00	---	5.55	123.50	---	8.14	
37.1	23.37	57.14	6.71	0.91	8.84	390.00	---	4.84	123.50	---	10.64	
39.42	23.49	57.09	5.04	0.81	7.09	390.00	---	4.84	123.50	---	13.28	
41.74	19.63	49.41	3.36	2.52	8.54	390.00	---	5.67	123.50	---	10.83	
44.06	11.80	31.69	1.68	4.24	11.09	390.00	---	9.09	123.50	---	8.18	
46.38	0.00	0.03	0.06	5.95	17.60	390.00	---	5000.00	123.50	---	5.06	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V								
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
2F1 Stringer S2-4	0	0.00	0.00	0.00	6.74	21.75	390.00	---	N/A	123.50	---	4.06
	2.32	13.70	43.10	5.12	5.07	19.33	390.00	---	6.64	123.50	---	4.65
	4.64	23.51	73.98	10.23	3.39	16.59	390.00	---	3.74	123.50	---	5.52
	6.96	29.44	92.06	15.35	1.72	13.76	390.00	---	2.94	123.50	---	6.78
	9.27	31.48	98.34	20.47	0.04	11.03	390.00	---	2.73	123.50	---	8.61
	11.59	29.65	97.50	25.59	3.14	14.52	390.00	---	2.77	123.50	---	6.33
	13.91	20.42	89.99	30.47	4.82	13.02	390.00	---	3.11	123.50	---	6.93
	16.23	7.31	70.57	35.34	6.49	16.07	390.00	---	4.15	123.50	---	5.51
	18.55	-9.69	43.53	40.23	8.17	18.56	390.00	---	6.67	123.50	---	4.68
	20.87	-30.57	12.21	45.14	9.84	20.65	390.00	---	5.97	123.50	---	4.12
	23.19	-55.37	1.07	60.32	11.58	24.56	390.00	---	4.06	123.50	---	3.40
	25.51	-30.46	13.09	48.05	9.91	22.58	390.00	---	5.61	123.50	---	3.77
	27.83	-9.43	43.99	42.07	8.23	20.34	390.00	---	6.61	123.50	---	4.27
	30.14	7.71	68.52	36.16	6.55	17.72	390.00	---	4.27	123.50	---	4.99
	32.46	20.96	84.54	30.33	4.88	14.91	390.00	---	3.30	123.50	---	6.04
	34.78	30.29	91.95	24.52	3.20	16.75	390.00	---	2.93	123.50	---	5.48
	37.1	32.00	95.52	19.61	0.10	8.71	390.00	---	2.81	123.50	---	10.90
	39.42	29.83	89.57	14.71	1.77	10.71	390.00	---	3.02	123.50	---	8.70
41.74	23.77	72.41	9.80	3.45	13.39	390.00	---	3.81	123.50	---	6.84	
44.06	13.83	42.97	4.90	5.12	16.25	390.00	---	6.66	123.50	---	5.53	
46.38	0.00	0.02	0.04	6.80	22.34	390.00	---	7500.00	123.50	---	3.95	
2F1 Stringer S3-4	0	0.00	0.00	0.00	6.32	22.16	390.00	---	N/A	123.50	---	4.00
	2.32	12.70	42.14	4.33	4.64	18.90	390.00	---	6.82	123.50	---	4.78
	4.64	21.52	70.20	8.67	2.97	15.74	390.00	---	3.97	123.50	---	5.85
	6.96	26.46	85.26	13.00	1.29	12.75	390.00	---	3.21	123.50	---	7.35
	9.27	27.51	88.80	17.34	0.38	9.96	390.00	---	3.07	123.50	---	9.50
	11.59	24.68	83.79	21.68	2.16	14.23	390.00	---	3.29	123.50	---	6.52
	13.91	17.74	79.46	26.61	3.83	11.12	390.00	---	3.55	123.50	---	8.20
	16.23	6.92	65.08	31.55	5.51	14.05	390.00	---	4.50	123.50	---	6.37
	18.55	-7.79	42.37	36.49	7.18	16.82	390.00	---	6.90	123.50	---	5.22
	20.87	-26.38	13.56	41.42	8.86	19.39	390.00	---	6.61	123.50	---	4.44
	23.19	-48.89	1.19	54.06	10.53	23.90	390.00	---	4.65	123.50	---	3.53
	25.51	-26.45	14.70	42.48	8.84	21.93	390.00	---	6.44	123.50	---	3.93
	27.83	-7.90	44.02	37.46	7.16	19.70	390.00	---	6.64	123.50	---	4.46
	30.14	6.77	65.04	32.45	5.49	16.66	390.00	---	4.51	123.50	---	5.37
	32.46	17.55	77.17	27.44	3.81	13.59	390.00	---	3.66	123.50	---	6.71
	34.78	24.41	79.44	22.45	2.14	14.07	390.00	---	3.47	123.50	---	6.60
	37.1	27.30	83.47	17.96	0.41	9.84	390.00	---	3.27	123.50	---	9.61
	39.42	26.30	78.63	13.47	1.27	9.36	390.00	---	3.48	123.50	---	10.01
41.74	21.42	63.28	8.98	2.94	11.76	390.00	---	4.40	123.50	---	7.83	
44.06	12.66	37.52	4.49	4.62	14.19	390.00	---	7.66	123.50	---	6.37	
46.38	0.00	0.04	0.05	6.29	19.62	390.00	---	6000.00	123.50	---	4.52	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
2F1 Stringer S4-4	0	0.00	0.00	0.00	6.37	23.09	390.00	---	N/A	123.50	---	3.84
	2.32	12.83	43.21	4.47	4.69	19.38	390.00	---	6.65	123.50	---	4.66
	4.64	21.77	70.88	8.95	3.02	15.89	390.00	---	3.93	123.50	---	5.79
	6.96	26.83	85.19	13.42	1.34	12.74	390.00	---	3.21	123.50	---	7.35
	9.27	28.00	88.69	17.90	0.33	9.94	390.00	---	3.07	123.50	---	9.52
	11.59	25.30	83.64	22.38	2.29	14.22	390.00	---	3.28	123.50	---	6.52
	13.91	18.04	79.31	27.22	3.97	11.11	390.00	---	3.56	123.50	---	8.19
	16.23	6.90	65.00	32.33	5.64	14.04	390.00	---	4.51	123.50	---	6.36
	18.55	-8.12	42.34	37.43	7.32	16.81	390.00	---	6.89	123.50	---	5.22
	20.87	-27.03	13.56	42.53	8.99	19.38	390.00	---	6.42	123.50	---	4.44
	23.19	-49.85	1.50	51.58	10.68	23.74	390.00	---	4.85	123.50	---	3.55
	25.51	-27.02	13.45	42.44	9.01	21.72	390.00	---	6.43	123.50	---	3.96
	27.83	-8.08	42.27	37.40	7.33	19.41	390.00	---	6.91	123.50	---	4.52
	30.14	6.98	65.00	32.37	5.66	16.85	390.00	---	4.51	123.50	---	5.30
	32.46	18.15	79.48	27.33	3.98	14.08	390.00	---	3.55	123.50	---	6.46
	34.78	25.40	83.88	22.55	2.31	16.20	390.00	---	3.27	123.50	---	5.72
	37.1	28.09	88.77	18.04	0.32	8.82	390.00	---	3.06	123.50	---	10.73
	39.42	26.90	85.14	13.52	1.35	9.96	390.00	---	3.21	123.50	---	9.40
	41.74	21.82	70.01	9.01	3.03	12.73	390.00	---	3.97	123.50	---	7.22
44.06	12.85	41.96	4.50	4.70	15.70	390.00	---	6.84	123.50	---	5.75	
46.38	0.00	0.02	0.04	6.38	22.06	390.00	---	7500.00	123.50	---	4.02	
2F1 Stringer S5-4	0	0.00	0.00	0.00	6.52	21.90	390.00	---	N/A	123.50	---	4.04
	2.32	13.18	41.69	3.92	4.85	18.70	390.00	---	6.88	123.50	---	4.82
	4.64	22.48	69.52	7.83	3.17	15.59	390.00	---	3.99	123.50	---	5.89
	6.96	27.90	84.45	11.75	1.50	12.62	390.00	---	3.22	123.50	---	7.41
	9.27	29.43	87.90	15.66	0.18	9.85	390.00	---	3.08	123.50	---	9.63
	11.59	27.09	83.04	19.58	2.48	14.31	390.00	---	3.29	123.50	---	6.47
	13.91	19.39	78.91	24.16	4.16	11.02	390.00	---	3.56	123.50	---	8.24
	16.23	7.80	64.83	28.73	5.83	13.95	390.00	---	4.51	123.50	---	6.39
	18.55	-7.67	41.81	33.31	7.51	16.73	390.00	---	6.99	123.50	---	5.23
	20.87	-27.02	13.00	37.89	9.18	19.10	390.00	---	7.20	123.50	---	4.49
	23.19	-50.30	0.86	49.62	10.86	22.77	390.00	---	5.03	123.50	---	3.70
	25.51	-27.58	12.63	42.34	8.96	19.87	390.00	---	6.43	123.50	---	4.33
	27.83	-8.75	38.20	37.29	7.28	17.50	390.00	---	7.62	123.50	---	5.01
	30.14	6.19	57.92	32.28	5.61	15.01	390.00	---	5.07	123.50	---	5.96
	32.46	17.25	70.17	27.28	3.93	12.43	390.00	---	4.03	123.50	---	7.33
	34.78	24.39	73.84	22.33	2.26	12.50	390.00	---	3.73	123.50	---	7.42
	37.1	27.28	76.08	17.86	0.41	8.77	390.00	---	3.58	123.50	---	10.79
	39.42	26.28	71.08	13.39	1.27	8.53	390.00	---	3.85	123.50	---	10.99
	41.74	21.40	57.72	8.92	2.94	10.63	390.00	---	4.83	123.50	---	8.66
44.06	12.64	34.45	4.46	4.62	12.95	390.00	---	8.34	123.50	---	6.98	
46.38	0.00	0.04	0.06	6.29	18.12	390.00	---	5000.00	123.50	---	4.90	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
2F1 Stringer S6-4	0	0.00	0.00	0.00	5.52	14.98	390.00	---	N/A	123.50	---	5.97
	2.32	10.98	27.15	1.95	3.95	12.18	390.00	---	10.65	123.50	---	7.48
	4.64	18.34	42.93	3.91	2.39	9.63	390.00	---	6.56	123.50	---	9.62
	6.96	22.06	49.72	5.86	0.83	7.43	390.00	---	5.59	123.50	---	12.67
	9.27	22.16	49.60	7.81	0.74	6.04	390.00	---	5.60	123.50	---	15.61
	11.59	18.64	45.16	9.77	2.30	9.49	390.00	---	6.23	123.50	---	9.77
	13.91	14.73	43.16	11.84	2.43	6.29	390.00	---	6.61	123.50	---	14.72
	16.23	7.32	35.64	13.91	3.90	8.07	390.00	---	8.21	123.50	---	11.29
	18.55	-3.54	22.93	15.97	5.36	9.88	390.00	---	12.93	123.50	---	9.07
	20.87	-17.80	6.86	18.29	6.80	11.62	390.00	---	15.43	123.50	---	7.59
	23.19	-33.73	0.60	30.40	7.98	14.64	390.00	---	8.76	123.50	---	5.94
	25.51	-18.63	10.26	25.43	5.84	11.59	390.00	---	11.06	123.50	---	7.69
	27.83	-6.62	23.71	20.46	4.52	9.69	390.00	---	12.37	123.50	---	9.34
	30.14	2.34	31.95	15.50	3.21	7.78	390.00	---	9.32	123.50	---	11.80
	32.46	8.29	34.89	10.56	1.93	6.00	390.00	---	8.36	123.50	---	15.51
	34.78	11.32	33.23	5.64	2.01	11.71	390.00	---	8.69	123.50	---	7.94
	37.1	14.59	41.46	4.51	0.81	8.44	390.00	---	6.88	123.50	---	11.16
	39.42	15.09	44.90	3.37	0.38	6.78	390.00	---	6.35	123.50	---	13.96
41.74	12.81	39.02	2.24	1.58	6.83	390.00	---	7.36	123.50	---	13.68	
44.06	7.76	24.23	1.10	2.77	8.88	390.00	---	12.06	123.50	---	10.39	
46.38	-0.05	0.03	0.17	3.97	13.22	390.00	---	1764.41	123.50	---	6.89	
2F1 Stringer F2-4	0	0.00	0.00	0.00	5.78	13.23	1212.51	---	N/A	149.61	---	8.26
	2.33	12.26	25.58	2.81	4.68	11.69	1212.51	---	35.98	149.61	---	9.44
	4.65	22.16	44.22	5.61	3.58	10.13	1212.51	---	20.59	149.61	---	11.01
	6.98	29.68	55.92	8.42	2.49	8.59	1212.51	---	16.15	149.61	---	13.11
	9.3	34.82	60.96	11.22	1.39	7.07	1212.51	---	14.73	149.61	---	16.08
	11.63	30.98	61.07	14.04	1.64	7.04	1212.51	---	14.77	149.61	---	16.11
	13.96	25.63	56.27	13.41	2.93	7.05	1212.51	---	16.12	149.61	---	15.91
	16.28	17.29	45.28	12.78	4.20	8.30	1212.51	---	20.22	149.61	---	13.36
	18.61	5.98	30.18	12.15	5.46	9.26	1212.51	---	30.71	149.61	---	11.84
	20.94	-8.25	12.85	11.70	6.69	9.94	1212.51	---	71.94	149.61	---	10.90
	23.26	-24.30	1.08	15.27	7.75	10.46	1212.51	---	59.49	149.61	---	10.26
	25.59	-8.86	10.91	15.59	6.04	8.91	1212.51	---	59.26	149.61	---	12.24
	27.92	3.89	24.06	17.02	4.90	8.11	1212.51	---	38.60	149.61	---	13.59
	30.25	13.99	35.13	18.53	3.78	7.31	1212.51	---	26.15	149.61	---	15.23
	32.59	21.50	43.16	20.06	2.67	6.42	1212.51	---	21.11	149.61	---	17.51
	34.92	26.48	48.58	21.60	0.35	4.58	1212.51	---	18.65	149.61	---	25.05
	37.25	26.04	38.90	17.28	0.72	4.59	1212.51	---	23.31	149.61	---	24.92
	39.58	23.14	29.21	12.96	1.77	4.58	1212.51	---	31.14	149.61	---	24.74
41.91	17.80	19.52	8.65	2.80	4.58	1212.51	---	46.87	149.61	---	24.52	
44.24	10.09	9.83	4.33	3.82	4.58	1212.51	---	93.86	149.61	---	24.29	
46.57	0.07	0.22	0.05	4.81	4.58	1212.51	---	4239.23	149.61	---	24.08	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
3F1	Stringer F1A-1											
	0	0.00	0.05	0.02	4.24	14.06	643.98	---	9907.38	207.60	---	11.06
	1.51	5.74	18.73	0.80	3.36	13.11	643.98	---	26.14	207.60	---	11.92
	3.01	10.14	31.99	1.59	2.49	11.23	643.98	---	15.17	207.60	---	14.00
	4.52	13.24	40.08	2.38	1.62	9.42	643.98	---	12.03	207.60	---	16.78
	6.03	15.04	42.55	3.17	0.77	7.39	643.98	---	11.29	207.60	---	21.51
	7.53	15.56	44.69	3.96	0.08	5.73	643.98	---	10.74	207.60	---	27.86
	9.04	14.54	43.11	3.80	1.23	7.71	643.98	---	11.15	207.60	---	20.55
	10.55	12.05	35.39	2.85	2.06	8.97	643.98	---	13.66	207.60	---	17.57
	12.05	8.32	23.30	1.90	2.89	10.67	643.98	---	20.90	207.60	---	14.70
	13.56	3.36	10.40	0.95	3.70	11.31	643.98	---	47.31	207.60	---	13.79
	15.07	0.00	0.00	0.00	4.19	11.83	643.98	---	N/A	207.60	---	13.14
	Stringer F1B-1											
	17.07	6.67	20.26	6.93	3.13	11.87	643.98	---	24.12	207.60	---	13.19
	19.08	11.90	33.62	7.13	2.09	9.94	643.98	---	14.38	207.60	---	15.86
	21.09	15.05	41.28	8.50	1.05	7.86	643.98	---	11.64	207.60	---	20.18
	23.1	16.15	44.85	11.34	0.04	6.72	643.98	---	10.68	207.60	---	23.76
	25.1	15.22	47.28	14.19	1.64	8.11	643.98	---	10.16	207.60	---	19.49
	27.11	10.95	38.72	14.67	2.62	9.00	643.98	---	12.51	207.60	---	17.45
	29.12	4.71	30.42	15.31	3.60	8.80	643.98	---	16.13	207.60	---	17.74
	31.13	-3.49	18.44	16.00	4.56	9.46	643.98	---	26.67	207.60	---	16.40
	33.14	-13.62	4.05	16.82	5.52	9.79	643.98	---	28.64	207.60	---	15.75
	35.14	-25.65	3.42	23.54	6.46	10.24	643.98	---	19.95	207.60	---	14.96
	37.15	-13.27	3.37	18.58	5.72	9.68	643.98	---	25.95	207.60	---	15.91
	39.15	-2.73	12.75	18.56	4.80	8.90	643.98	---	26.54	207.60	---	17.40
	41.16	5.97	23.06	18.88	3.89	7.00	643.98	---	21.22	207.60	---	22.26
	43.16	12.88	32.36	19.45	3.00	7.50	643.98	---	14.91	207.60	---	20.89
	45.17	18.03	41.31	20.04	2.12	7.09	643.98	---	11.56	207.60	---	22.22
47.17	17.86	34.23	16.02	0.52	5.62	643.98	---	13.95	207.60	---	28.32	
49.17	15.95	25.67	12.01	1.38	5.00	643.98	---	18.68	207.60	---	31.66	
51.18	12.29	17.11	8.00	2.25	5.00	643.98	---	28.23	207.60	---	31.49	
53.18	6.89	8.54	3.99	3.11	5.00	643.98	---	57.20	207.60	---	31.32	
55.19	0.00	0.00	0.00	3.94	5.00	643.98	---	N/A	207.60	---	31.15	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V							
0	0.00	0.04	0.07	4.19	19.62	348.45	---	3829.12	228.95	---	8.76
0.75	2.72	11.61	1.10	3.66	18.54	348.45	---	22.86	228.95	---	9.80
1.61	5.84	24.87	2.28	3.05	17.30	390.00	---	11.83	123.50	---	5.32
3.23	9.83	41.33	4.57	1.91	14.54	390.00	---	7.02	123.50	---	6.40
4.84	12.01	50.36	6.86	0.78	12.59	390.00	---	5.72	123.50	---	7.48
6.46	12.37	53.55	9.15	0.33	10.55	390.00	---	5.37	123.50	---	8.97
8.07	10.93	49.42	11.44	1.44	11.17	390.00	---	5.85	123.50	---	8.38
9.69	8.70	42.15	14.33	2.18	11.85	390.00	---	6.91	123.50	---	7.83
11.3	4.31	34.09	17.76	3.26	14.37	390.00	---	8.67	123.50	---	6.38
12.92	-1.83	22.26	21.20	4.34	15.77	390.00	---	13.33	123.50	---	5.75
14.53	-9.69	5.63	25.50	5.40	18.19	390.00	---	11.38	123.50	---	4.93
15.4	-14.77	5.60	31.42	5.97	19.50	286.83	---	6.55	208.33	---	7.91
16.15	-19.14	5.58	36.52	6.46	20.62	286.83	---	5.52	208.33	---	7.46
16.9	-15.28	5.07	31.93	5.73	19.17	286.83	---	6.62	208.33	---	8.06
18.15	-8.85	4.22	21.89	4.50	16.75	390.00	---	13.30	123.50	---	5.40
20.15	-1.14	23.79	17.26	3.22	12.90	390.00	---	12.56	123.50	---	7.11
22.15	4.03	33.77	13.07	1.95	12.22	390.00	---	8.76	123.50	---	7.61
24.15	6.69	39.82	9.76	0.70	8.72	390.00	---	7.37	123.50	---	10.81
26.15	7.24	32.10	6.97	0.53	6.49	390.00	---	9.12	123.50	---	6.52
28.15	6.98	35.25	10.18	0.74	9.61	390.00	---	8.31	123.50	---	9.81
30.15	4.29	32.01	13.40	1.88	11.73	390.00	---	9.24	123.50	---	7.93
32.15	-0.80	22.99	16.71	3.15	13.48	390.00	---	13.01	123.50	---	6.81
34.15	-8.29	6.41	20.42	4.33	16.28	390.00	---	14.29	123.50	---	5.57
35.4	-14.33	5.24	29.88	4.97	18.52	225.23	---	5.50	200.08	---	8.04
36.15	-17.96	4.54	33.96	5.36	19.87	225.23	---	4.57	200.08	---	7.48
36.9	-14.38	5.43	29.69	4.93	18.29	225.33	---	5.35	200.08	---	8.15
38.15	-8.41	8.90	22.58	4.20	15.65	390.00	---	12.91	123.50	---	5.80
40.15	-1.16	25.57	17.79	3.05	13.48	390.00	---	11.65	123.50	---	6.82
42.15	3.75	33.43	12.99	1.90	14.32	390.00	---	8.86	123.50	---	6.50
44.15	6.46	37.65	9.73	0.78	8.80	390.00	---	7.80	123.50	---	10.71
46.15	6.91	25.76	3.60	1.97	19.68	390.00	---	11.38	123.50	---	4.73
48.15	9.77	38.81	2.88	0.90	15.07	390.00	---	7.48	123.50	---	6.24
50.15	10.51	42.58	2.16	0.16	11.23	390.00	---	6.80	123.50	---	8.45
52.15	9.13	41.69	1.44	1.22	12.95	390.00	---	6.98	123.50	---	7.24
54.15	5.63	28.07	0.72	2.28	16.50	390.00	---	10.49	123.50	---	5.62
55.4	2.11	10.53	0.27	2.95	18.69	235.05	---	16.98	201.11	---	8.12
56.15	0.00	0.00	0.00	3.35	20.00	235.05	---	N/A	201.11	---	7.57

3F1

Stringer S1-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.02	0.02	5.01	27.06	390.00	---	15000.00	123.50	---	3.33
1.73	7.59	38.01	5.22	3.76	22.85	390.00	---	7.69	123.50	---	3.99
3.46	13.01	64.17	10.46	2.51	19.29	390.00	---	4.47	123.50	---	4.79
5.19	16.26	79.13	15.69	1.26	15.80	390.00	---	3.59	123.50	---	5.93
6.92	17.35	83.50	20.93	0.01	12.52	390.00	---	3.39	123.50	---	7.59
8.65	16.28	80.92	26.16	1.24	14.27	390.00	---	3.51	123.50	---	6.57
10.38	12.55	73.26	31.28	3.02	19.05	390.00	---	3.92	123.50	---	4.83
12.11	6.24	56.78	36.41	4.27	22.34	390.00	---	5.17	123.50	---	4.06
13.84	-2.23	34.25	41.59	5.52	25.02	390.00	---	7.16	123.50	---	3.58
15.58	-12.86	13.81	47.40	6.77	27.69	390.00	---	6.06	123.50	---	3.19
17.31	-25.65	15.43	70.58	7.30	31.02	390.00	---	3.89	123.50	---	2.83
19.31	-12.49	9.99	42.17	5.86	30.98	390.00	---	6.82	123.50	---	2.88
21.31	-2.23	40.90	35.45	4.41	26.92	390.00	---	7.28	123.50	---	3.37
23.31	5.15	64.27	29.86	2.97	22.06	390.00	---	4.59	123.50	---	4.17
25.31	9.63	76.68	24.26	1.52	18.70	390.00	---	3.79	123.50	---	5.00
27.31	11.21	84.69	22.88	0.79	21.01	390.00	---	3.41	123.50	---	4.48
29.31	8.19	79.03	28.08	2.23	19.26	390.00	---	3.69	123.50	---	4.82
31.31	2.28	68.05	35.45	3.68	22.88	390.00	---	4.38	123.50	---	3.99
33.31	-6.52	45.15	42.82	5.12	26.74	390.00	---	6.50	123.50	---	3.36
35.31	-18.21	11.76	50.19	6.57	29.16	390.00	---	5.61	123.50	---	3.03
37.31	-32.82	12.37	72.07	9.27	34.84	390.00	---	3.71	123.50	---	2.46
39.31	-15.73	11.06	44.37	7.82	31.72	390.00	---	6.41	123.50	---	2.75
41.31	-1.53	38.42	38.91	6.38	27.84	390.00	---	7.67	123.50	---	3.18
43.31	9.78	63.49	34.10	4.93	23.27	390.00	---	4.57	123.50	---	3.87
45.31	18.20	81.04	29.28	3.49	19.59	390.00	---	3.48	123.50	---	4.67
47.31	23.71	90.65	24.49	2.04	22.80	390.00	---	3.05	123.50	---	4.08
49.31	24.74	91.64	19.59	0.20	13.64	390.00	---	3.00	123.50	---	6.95
51.31	22.89	85.52	14.69	1.65	16.18	390.00	---	3.24	123.50	---	5.77
53.31	18.15	70.59	9.79	3.09	19.32	390.00	---	3.99	123.50	---	4.76
55.31	10.51	42.18	4.89	4.54	22.33	390.00	---	6.86	123.50	---	4.05
57.31	0.00	0.00	0.00	5.98	25.59	390.00	---	N/A	123.50	---	3.48

3F1

Stringer S2-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.04	0.05	5.30	23.50	390.00	---	6000.00	123.50	---	3.82
1.85	8.56	35.63	4.56	3.97	20.08	390.00	---	8.18	123.50	---	4.53
3.69	14.67	60.49	9.13	2.64	17.04	390.00	---	4.72	123.50	---	5.42
5.54	18.30	75.66	13.70	1.30	14.16	390.00	---	3.72	123.50	---	6.62
7.39	19.48	80.79	18.27	0.03	11.70	390.00	---	3.47	123.50	---	8.12
9.23	18.19	78.37	22.84	1.36	14.45	390.00	---	3.60	123.50	---	6.48
11.08	14.36	71.22	27.62	2.79	17.48	390.00	---	4.01	123.50	---	5.28
12.92	7.98	57.33	32.52	4.12	21.00	390.00	---	5.09	123.50	---	4.33
14.77	-0.87	35.81	37.43	5.46	24.49	390.00	---	7.99	123.50	---	3.66
16.62	-12.17	13.30	43.25	6.79	27.84	390.00	---	6.66	123.50	---	3.17
18.46	-25.92	14.84	68.02	7.02	30.68	390.00	---	4.03	123.50	---	2.87
20.46	-13.32	11.34	42.71	5.58	29.68	390.00	---	6.71	123.50	---	3.01
22.46	-3.61	40.87	36.02	4.13	25.60	390.00	---	7.25	123.50	---	3.55
24.46	3.21	61.52	29.70	2.69	21.35	390.00	---	4.82	123.50	---	4.32
26.46	7.14	71.56	23.39	1.24	17.01	390.00	---	4.09	123.50	---	5.51
28.46	8.17	76.15	21.72	0.21	20.70	390.00	---	3.83	123.50	---	4.58
30.46	6.31	72.04	28.13	1.65	17.36	390.00	---	4.08	123.50	---	5.38
32.46	1.56	62.59	35.54	3.10	19.57	390.00	---	4.77	123.50	---	4.70
34.46	-6.07	42.39	42.96	4.54	23.23	390.00	---	6.84	123.50	---	3.89
36.46	-16.60	11.44	50.37	5.99	28.13	390.00	---	5.63	123.50	---	3.16
38.46	-30.04	11.71	70.12	8.84	34.83	390.00	---	3.85	123.50	---	2.47
40.46	-13.82	10.49	40.78	7.39	31.69	390.00	---	7.02	123.50	---	2.76
42.46	-0.48	39.43	35.46	5.95	28.05	390.00	---	7.60	123.50	---	3.17
44.46	9.97	64.73	30.87	4.50	24.07	390.00	---	4.48	123.50	---	3.76
46.46	17.52	82.38	26.27	3.06	19.69	390.00	---	3.43	123.50	---	4.67
48.46	22.17	90.46	22.01	1.61	24.76	390.00	---	3.07	123.50	---	3.77
50.46	23.52	93.55	17.60	0.05	13.72	390.00	---	2.96	123.50	---	6.92
52.46	21.98	89.50	13.21	1.49	17.23	390.00	---	3.11	123.50	---	5.43
54.46	17.54	75.58	8.81	2.94	20.90	390.00	---	3.74	123.50	---	4.40
56.46	10.22	46.37	4.41	4.38	24.71	390.00	---	6.25	123.50	---	3.67
58.46	0.00	0.00	0.00	5.83	28.80	390.00	---	N/A	123.50	---	3.10

3F1

Stringer S3-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.01	0.04	5.81	26.61	390.00	---	7500.00	123.50	---	3.35
1.96	10.00	44.58	4.42	4.39	24.16	390.00	---	6.51	123.50	---	3.75
3.92	17.22	73.67	8.85	2.97	19.76	390.00	---	3.84	123.50	---	4.66
5.89	21.65	88.47	13.27	1.55	15.65	390.00	---	3.15	123.50	---	5.97
7.85	23.31	92.63	17.70	0.14	11.96	390.00	---	2.99	123.50	---	7.93
9.81	22.18	89.70	22.13	1.28	15.07	390.00	---	3.10	123.50	---	6.22
11.77	17.77	81.27	26.72	3.12	18.67	390.00	---	3.47	123.50	---	4.92
13.74	10.25	63.74	31.43	4.54	21.98	390.00	---	4.55	123.50	---	4.12
15.7	0.00	38.72	36.15	5.96	24.90	390.00	---	7.75	123.50	---	3.58
17.66	-13.12	12.50	41.49	7.37	27.53	390.00	---	6.91	123.50	---	3.18
19.62	-29.01	13.95	69.24	7.26	29.85	390.00	---	3.91	123.50	---	2.94
21.62	-15.93	10.96	48.66	5.81	29.64	390.00	---	5.84	123.50	---	3.01
23.62	-5.75	42.00	41.52	4.37	25.53	390.00	---	7.01	123.50	---	3.55
25.62	1.55	62.49	34.38	2.92	21.25	390.00	---	4.78	123.50	---	4.33
27.62	5.95	72.39	27.24	1.48	16.95	390.00	---	4.06	123.50	---	5.52
29.62	7.45	76.79	23.45	0.07	20.50	390.00	---	3.81	123.50	---	4.63
31.62	5.86	72.37	27.51	1.52	17.53	390.00	---	4.06	123.50	---	5.33
33.62	1.39	62.71	34.97	2.96	21.49	390.00	---	4.76	123.50	---	4.28
35.62	-5.98	42.32	42.44	4.41	25.11	390.00	---	6.93	123.50	---	3.61
37.62	-16.24	11.29	49.90	5.85	28.36	390.00	---	5.69	123.50	---	3.14
39.62	-29.41	13.76	72.18	7.30	33.90	390.00	---	3.75	123.50	---	2.59
41.62	-13.27	12.30	41.50	7.34	31.19	390.00	---	6.91	123.50	---	2.81
43.62	0.00	40.58	35.81	5.90	26.49	390.00	---	7.39	123.50	---	3.36
45.62	10.32	64.19	31.04	4.45	28.96	390.00	---	4.51	123.50	---	3.13
47.62	17.78	80.77	26.28	3.01	16.65	390.00	---	3.49	123.50	---	5.52
49.62	22.33	82.46	21.57	1.56	19.68	390.00	---	3.37	123.50	---	4.75
51.62	23.65	82.23	17.26	0.06	14.33	390.00	---	3.36	123.50	---	6.63
53.62	22.07	76.94	12.95	1.51	15.09	390.00	---	3.61	123.50	---	6.20
55.62	17.61	63.88	8.64	2.95	18.16	390.00	---	4.42	123.50	---	5.07
57.62	10.26	38.88	4.32	4.40	21.41	390.00	---	7.45	123.50	---	4.23
59.62	0.00	0.00	0.00	5.84	24.73	390.00	---	N/A	123.50	---	3.61

3F1

Stringer S4-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.05	0.07	5.96	23.11	390.00	---	4285.71	123.50	---	3.85
2.08	10.84	38.45	4.23	4.49	19.27	390.00	---	7.52	123.50	---	4.70
4.16	18.67	63.15	8.48	3.03	15.82	390.00	---	4.45	123.50	---	5.81
6.23	23.45	76.69	12.73	1.57	12.80	390.00	---	3.61	123.50	---	7.30
8.31	25.21	82.50	16.98	0.11	10.78	390.00	---	3.33	123.50	---	8.80
10.39	23.92	82.23	21.23	1.35	13.53	390.00	---	3.36	123.50	---	6.92
12.47	19.23	72.55	25.60	3.09	15.95	390.00	---	3.87	123.50	---	5.76
14.55	11.30	57.23	30.07	4.55	19.01	390.00	---	5.04	123.50	---	4.76
16.62	0.33	34.38	34.54	6.01	22.17	390.00	---	8.68	123.50	---	4.01
18.7	-13.67	12.39	39.61	7.47	25.86	390.00	---	7.23	123.50	---	3.38
20.78	-30.73	13.85	66.83	7.32	31.10	390.00	---	4.03	123.50	---	2.82
22.78	-17.50	11.77	47.40	5.91	28.07	390.00	---	5.96	123.50	---	3.17
24.78	-7.08	41.66	40.38	4.51	24.48	390.00	---	7.03	123.50	---	3.70
26.78	0.52	62.32	33.37	3.10	20.82	390.00	---	4.81	123.50	---	4.41
28.78	5.32	71.84	26.35	1.69	16.85	390.00	---	4.10	123.50	---	5.54
30.78	7.32	76.74	22.79	0.29	20.94	390.00	---	3.81	123.50	---	4.52
32.78	5.64	72.53	28.12	1.54	17.65	390.00	---	4.06	123.50	---	5.30
34.78	1.16	62.61	35.30	2.95	21.42	390.00	---	4.77	123.50	---	4.30
36.78	-6.14	41.98	42.50	4.35	24.97	390.00	---	6.91	123.50	---	3.63
38.78	-16.25	10.86	49.71	5.76	28.00	390.00	---	5.71	123.50	---	3.19
40.78	-29.16	13.31	69.25	8.73	34.47	390.00	---	3.91	123.50	---	2.50
42.78	-13.11	11.89	41.18	7.32	31.30	390.00	---	6.97	123.50	---	2.80
44.78	0.13	39.16	35.74	5.92	27.65	390.00	---	7.66	123.50	---	3.22
46.78	10.55	63.98	30.92	4.51	23.68	390.00	---	4.52	123.50	---	3.82
48.78	18.17	81.28	26.09	3.10	19.37	390.00	---	3.47	123.50	---	4.74
50.78	22.95	89.24	21.50	1.70	24.87	390.00	---	3.10	123.50	---	3.75
52.78	23.98	92.69	17.20	0.18	13.53	390.00	---	2.98	123.50	---	7.01
54.78	22.21	88.16	12.90	1.59	16.96	390.00	---	3.15	123.50	---	5.51
56.78	17.62	74.38	8.61	3.00	20.56	390.00	---	3.80	123.50	---	4.47
58.78	10.22	45.57	4.31	4.40	24.27	390.00	---	6.36	123.50	---	3.73
60.78	0.00	0.00	0.00	5.81	28.40	390.00	---	N/A	123.50	---	3.14

3F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	-0.06	0.04	0.25	3.86	16.39	390.00	---	1199.76	123.50	---	5.56	
2.18	7.18	27.86	0.92	2.77	13.44	390.00	---	10.51	123.50	---	6.86	
4.37	12.03	44.71	1.87	1.66	10.78	390.00	---	6.44	123.50	---	8.66	
6.55	14.43	50.21	2.82	0.54	8.37	390.00	---	5.69	123.50	---	11.29	
8.74	14.35	48.89	3.77	0.61	10.79	390.00	---	5.84	123.50	---	8.75	
10.92	11.75	39.40	4.72	1.77	14.40	390.00	---	7.32	123.50	---	6.47	
13.11	9.34	35.38	8.31	1.00	7.87	390.00	---	8.22	123.50	---	11.94	
15.29	5.84	32.37	13.44	2.20	10.24	390.00	---	9.09	123.50	---	9.06	
17.48	-0.29	22.59	18.61	3.42	12.96	390.00	---	13.27	123.50	---	7.07	
19.66	-9.10	7.59	23.79	4.65	15.38	390.00	---	12.23	123.50	---	5.87	
21.85	-20.61	9.19	36.53	5.65	18.58	390.00	---	7.65	123.50	---	4.81	
23.85	-10.47	5.18	25.07	4.49	16.18	390.00	---	11.55	123.50	---	5.59	
25.85	-2.66	22.73	21.31	3.32	13.60	390.00	---	13.08	123.50	---	6.74	
27.85	2.79	34.31	18.39	2.13	10.98	390.00	---	8.66	123.50	---	8.46	
29.85	5.85	39.19	15.50	0.93	8.42	390.00	---	7.51	123.50	---	11.17	
31.85	6.48	40.44	12.62	0.08	8.43	390.00	---	7.26	123.50	---	11.26	
33.85	5.08	40.13	16.64	1.31	8.76	390.00	---	7.35	123.50	---	10.70	
35.85	1.22	36.22	22.34	2.55	11.47	390.00	---	8.25	123.50	---	8.06	
37.85	-5.13	25.73	28.05	3.80	14.16	390.00	---	10.51	123.50	---	6.44	
39.85	-13.99	7.91	33.82	5.06	16.75	390.00	---	8.46	123.50	---	5.37	
41.85	-25.40	6.75	46.57	7.58	21.33	390.00	---	5.90	123.50	---	4.10	
43.85	-11.52	6.11	23.99	6.30	21.40	390.00	---	12.03	123.50	---	4.14	
45.85	-0.21	25.45	20.17	5.00	18.88	390.00	---	11.78	123.50	---	4.77	
47.85	8.50	42.24	17.28	3.70	16.07	390.00	---	6.90	123.50	---	5.68	
49.85	14.58	53.19	14.40	2.38	12.94	390.00	---	5.37	123.50	---	7.16	
51.85	17.99	58.30	11.55	1.63	16.98	390.00	---	4.84	123.50	---	5.50	
53.85	19.87	61.89	9.24	0.26	11.83	390.00	---	4.53	123.50	---	8.01	
55.85	19.02	60.27	6.93	1.11	11.80	390.00	---	4.66	123.50	---	7.96	
57.85	15.42	52.23	4.62	2.49	14.86	390.00	---	5.45	123.50	---	6.23	
59.85	9.08	32.89	2.31	3.86	18.18	390.00	---	8.85	123.50	---	5.01	
61.85	0.00	0.00	0.00	5.23	21.63	390.00	---	N/A	123.50	---	4.15	

3F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.07	0.29	0.04	5.34	5.90	1212.51	---	3215.97	149.61	---	18.60	
2.21	10.90	12.21	2.85	4.44	5.87	1212.51	---	75.50	149.61	---	18.85	
4.43	19.72	24.25	5.67	3.52	5.90	1212.51	---	37.65	149.61	---	18.91	
6.64	26.47	36.28	8.50	2.58	5.90	1212.51	---	24.98	149.61	---	19.07	
8.86	31.11	48.32	11.33	1.61	5.90	1212.51	---	18.66	149.61	---	19.23	
11.07	33.60	60.35	14.15	0.63	6.14	1212.51	---	14.90	149.61	---	18.64	
13.29	31.25	56.67	12.83	2.10	6.66	1212.51	---	15.91	149.61	---	16.96	
15.5	25.47	46.14	9.62	3.12	7.76	1212.51	---	19.66	149.61	---	14.43	
17.71	17.42	32.54	6.41	4.15	9.08	1212.51	---	28.13	149.61	---	12.22	
19.93	7.06	13.99	3.21	5.21	10.52	1212.51	---	66.16	149.61	---	10.44	
22.14	0.00	0.00	0.00	4.18	11.67	1212.51	---	N/A	149.61	---	9.50	
24.15	6.19	20.58	8.52	3.19	11.69	1212.51	---	45.02	149.61	---	9.57	
26.16	11.60	36.76	8.77	2.19	10.61	1212.51	---	25.06	149.61	---	10.64	
28.16	14.98	47.43	11.94	1.18	9.35	1212.51	---	19.35	149.61	---	12.18	
30.17	16.32	52.71	15.92	0.15	7.97	1212.51	---	17.39	149.61	---	14.42	
32.18	15.58	56.36	19.91	1.10	9.02	1212.51	---	16.27	149.61	---	12.64	
34.19	12.33	50.08	20.67	2.15	10.75	1212.51	---	18.38	149.61	---	10.51	
36.19	6.94	42.55	21.45	3.22	12.35	1212.51	---	21.76	149.61	---	9.06	
38.2	-0.59	29.18	22.22	4.29	13.81	1212.51	---	31.94	149.61	---	8.02	
40.21	-10.29	10.25	23.07	5.38	15.39	1212.51	---	39.98	149.61	---	7.13	
42.21	-22.21	3.04	31.04	7.06	19.68	1212.51	---	29.33	149.61	---	5.49	
44.22	-9.18	10.75	20.68	5.95	18.31	1212.51	---	44.66	149.61	---	5.96	
46.22	1.62	32.75	19.85	4.83	16.63	1212.51	---	28.43	149.61	---	6.63	
48.23	10.15	48.83	19.20	3.69	14.71	1212.51	---	18.89	149.61	---	7.57	
50.23	16.42	61.39	18.55	2.55	12.49	1212.51	---	14.93	149.61	---	9.01	
52.23	20.37	67.77	17.91	1.40	10.70	1212.51	---	13.46	149.61	---	10.62	
54.24	21.03	66.51	14.31	0.25	9.99	1212.51	---	13.71	149.61	---	11.49	
56.24	19.36	61.31	10.74	1.42	11.91	1212.51	---	14.90	149.61	---	9.54	
58.25	15.31	50.27	7.16	2.61	13.89	1212.51	---	18.25	149.61	---	8.10	
60.25	8.88	30.03	3.59	3.81	15.92	1212.51	---	30.76	149.61	---	6.99	
62.26	0.00	0.00	0.00	5.02	18.53	1212.51	---	N/A	149.61	---	5.94	

3F1

Stringer F2A-1

Stringer F2B-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		C*							Inventory
		D	L+I	L+I	D		L+I						
3F1	Stringer F1A-2	0	0.00	0.00	0.00	4.49	9.94	643.98	---	N/A	207.60	---	15.61
		2	8.23	16.19	4.02	3.73	9.20	643.98	---	30.09	207.60	---	16.95
		4	14.93	27.89	8.03	2.97	7.99	643.98	---	17.23	207.60	---	19.61
		6.01	20.11	36.53	12.05	2.21	6.97	643.98	---	13.01	207.60	---	22.59
		8.01	23.77	43.88	16.06	1.44	6.39	643.98	---	10.75	207.60	---	24.77
		10.01	25.90	49.41	20.08	3.49	8.69	643.98	---	9.50	207.60	---	17.97
		12.01	18.17	37.10	25.13	4.25	10.41	643.98	---	12.86	207.60	---	14.93
		14.02	8.89	23.84	30.18	5.01	9.75	643.98	---	16.12	207.60	---	15.86
		16.02	-1.91	9.50	35.27	5.77	10.25	643.98	---	13.99	207.60	---	15.02
		18.02	-14.23	1.87	48.21	6.54	10.09	643.98	---	9.98	207.60	---	15.18
		20.02	-28.19	1.95	66.63	6.84	31.46	643.98	---	7.01	207.60	---	4.86
		22.02	-15.56	10.15	14.57	5.78	26.98	643.98	---	32.93	207.60	---	5.70
		24.02	-5.08	43.44	7.59	4.69	24.41	643.98	---	11.29	207.60	---	6.35
		26.02	3.16	66.96	7.73	3.55	23.18	643.98	---	7.35	207.60	---	6.74
		28.02	9.08	85.36	8.01	2.36	17.75	643.98	---	5.70	207.60	---	8.86
		30.03	12.43	82.37	8.31	1.17	15.73	643.98	---	5.86	207.60	---	10.08
	32.03	13.52	82.78	6.69	0.08	14.18	643.98	---	5.82	207.60	---	11.26	
	34.03	12.13	75.38	5.01	1.32	16.61	643.98	---	6.41	207.60	---	9.53	
	36.03	8.24	53.83	3.34	2.56	21.36	643.98	---	9.05	207.60	---	7.36	
	38.03	1.87	17.57	1.67	3.80	25.09	643.98	---	28.09	207.60	---	6.21	
	40.03	0.00	0.00	0.00	6.67	26.91	643.98	---	N/A	207.60	---	5.69	
	42.15	11.31	47.65	26.89	5.36	23.35	643.98	---	10.16	207.60	---	6.61	
	44.27	21.30	83.39	25.10	4.06	20.43	643.98	---	5.68	207.60	---	7.62	
	46.39	28.52	103.62	23.30	2.75	17.52	643.98	---	4.51	207.60	---	8.96	
	48.52	32.97	116.19	21.51	1.45	14.91	643.98	---	3.98	207.60	---	10.61	
	50.64	34.67	117.61	19.72	0.15	10.60	643.98	---	3.92	207.60	---	15.05	
	52.76	33.24	115.09	15.78	1.32	14.68	643.98	---	4.02	207.60	---	10.79	
	54.88	29.07	102.59	11.83	2.62	15.97	643.98	---	4.55	207.60	---	9.84	
	57	22.13	82.58	7.88	3.92	20.26	643.98	---	5.73	207.60	---	7.69	
	59.13	12.43	48.01	3.94	5.22	23.56	643.98	---	10.06	207.60	---	6.56	
	61.25	0.00	0.00	0.00	6.52	24.13	643.98	---	N/A	207.60	---	6.35	
	3F1	Stringer S1-2	0	0.00	0.00	0.00	2.33	12.61	235.47	---	N/A	204.20	---
0.75			1.38	7.23	0.83	1.97	11.58	235.47	---	24.87	204.20	---	13.40
2			3.68	19.27	2.22	1.36	9.86	390.00	---	15.38	123.50	---	9.50
4			5.43	29.32	4.45	0.39	7.55	390.00	---	10.05	123.50	---	12.53
6			5.25	28.56	6.67	0.57	7.43	390.00	---	10.32	123.50	---	12.71
8			3.13	27.61	9.97	1.54	9.53	390.00	---	10.75	123.50	---	9.81
10			0.00	16.80	11.35	2.49	13.32	390.00	---	17.86	123.50	---	6.95
12			3.73	22.37	6.17	1.42	10.13	390.00	---	13.24	123.50	---	9.24
14			5.61	27.84	4.62	0.47	8.09	390.00	---	10.57	123.50	---	11.68
16			5.60	24.43	3.08	0.48	6.61	390.00	---	12.05	123.50	---	14.30
18			3.71	21.02	3.77	1.42	8.67	390.00	---	14.10	123.50	---	10.79
19.25			1.39	7.88	1.41	2.01	11.71	169.69	---	16.38	180.49	---	11.68
20			0.00	0.00	0.00	2.36	13.54	169.69	---	N/A	180.49	---	10.08

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.02	23.98	390.00	---	N/A	123.50	---	3.71
2	10.62	41.92	4.24	4.60	21.86	390.00	---	6.90	123.50	---	4.14
4	18.41	68.61	8.49	3.18	17.90	390.00	---	4.10	123.50	---	5.13
6	23.35	82.16	12.73	1.76	14.34	390.00	---	3.37	123.50	---	6.50
8	25.46	87.22	16.97	0.34	11.52	390.00	---	3.15	123.50	---	8.22
10	24.71	86.77	21.20	1.95	17.32	390.00	---	3.17	123.50	---	5.37
12	19.38	76.78	25.03	3.37	19.18	390.00	---	3.65	123.50	---	4.78
14	11.21	59.46	28.87	4.80	22.00	390.00	---	4.86	123.50	---	4.10
16	0.17	35.29	32.74	6.23	23.45	390.00	---	8.50	123.50	---	3.79
18	-13.72	12.76	40.50	7.67	26.00	390.00	---	7.07	123.50	---	3.36
20	-30.49	15.03	67.63	9.12	31.17	390.00	---	3.99	123.50	---	2.76
22	-17.01	12.07	43.86	6.00	27.62	390.00	---	6.45	123.50	---	3.22
24	-6.50	38.91	36.95	4.51	23.28	390.00	---	7.54	123.50	---	3.89
26	1.04	56.81	30.84	3.03	19.32	390.00	---	5.26	123.50	---	4.76
28	5.61	65.11	24.81	1.54	15.23	390.00	---	4.52	123.50	---	6.14
30	7.20	68.16	20.51	0.20	15.16	390.00	---	4.30	123.50	---	6.25
32	5.31	65.28	28.06	1.69	15.80	390.00	---	4.51	123.50	---	5.91
34	0.43	56.81	35.73	3.19	17.98	390.00	---	5.27	123.50	---	5.11
36	-7.44	39.14	43.43	4.68	21.23	390.00	---	6.74	123.50	---	4.25
38	-18.28	12.01	51.44	6.17	26.17	390.00	---	5.48	123.50	---	3.39
40	-32.07	13.18	67.32	9.24	28.55	390.00	---	3.98	123.50	---	3.00
42.12	-14.13	10.97	36.41	7.67	26.57	390.00	---	7.85	123.50	---	3.29
44.24	0.48	34.33	31.14	6.10	22.86	390.00	---	8.72	123.50	---	3.89
46.37	11.75	59.30	27.48	4.53	19.83	390.00	---	4.86	123.50	---	4.56
48.49	19.70	75.99	23.95	2.96	16.52	390.00	---	3.69	123.50	---	5.57
50.61	24.35	87.14	20.46	1.61	13.40	390.00	---	3.16	123.50	---	6.97
52.73	26.11	89.64	16.37	0.05	11.84	390.00	---	3.06	123.50	---	8.02
54.85	24.56	84.49	12.28	1.51	13.84	390.00	---	3.26	123.50	---	6.76
56.97	19.69	70.34	8.19	3.08	17.27	390.00	---	3.99	123.50	---	5.32
59.1	11.51	43.54	4.10	4.64	21.37	390.00	---	6.63	123.50	---	4.23
61.22	0.00	0.00	0.00	6.20	23.97	390.00	---	N/A	123.50	---	3.70

3F1

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.81	23.81	390.00	---	N/A	123.50	---	3.75
2	10.20	41.52	5.00	4.39	21.65	390.00	---	6.98	123.50	---	4.19
4	17.56	67.65	10.01	2.97	17.65	390.00	---	4.18	123.50	---	5.21
6	22.08	80.63	15.01	1.55	14.05	390.00	---	3.45	123.50	---	6.65
8	23.76	85.15	20.02	0.13	12.21	390.00	---	3.24	123.50	---	7.77
10	22.61	84.25	25.03	1.57	17.64	390.00	---	3.29	123.50	---	5.30
12	18.06	75.18	27.58	2.99	18.23	390.00	---	3.75	123.50	---	5.05
14	10.67	58.95	30.16	4.41	21.47	390.00	---	4.91	123.50	---	4.22
16	0.44	36.02	32.83	5.82	22.98	390.00	---	8.32	123.50	---	3.88
18	-12.63	14.83	37.92	7.24	25.65	390.00	---	7.58	123.50	---	3.42
20	-28.57	17.73	63.26	8.68	30.15	390.00	---	4.29	123.50	---	2.86
22	-15.73	12.08	46.56	5.69	26.72	390.00	---	6.11	123.50	---	3.34
24	-5.81	38.21	40.01	4.24	22.90	390.00	---	7.35	123.50	---	3.96
26	1.21	56.58	33.93	2.78	18.85	390.00	---	5.28	123.50	---	4.89
28	5.31	65.51	27.86	1.32	15.19	390.00	---	4.50	123.50	---	6.17
30	6.52	69.66	24.30	0.30	14.46	390.00	---	4.21	123.50	---	6.55
32	4.45	65.94	31.07	1.76	15.71	390.00	---	4.48	123.50	---	5.94
34	-0.52	57.58	38.06	3.21	19.40	390.00	---	5.20	123.50	---	4.73
36	-8.41	39.75	45.19	4.67	22.88	390.00	---	6.45	123.50	---	3.95
38	-19.20	13.01	52.72	6.13	25.99	390.00	---	5.33	123.50	---	3.42
40	-32.88	15.22	67.76	7.58	28.52	390.00	---	3.94	123.50	---	3.07
42.12	-14.46	12.63	36.22	7.91	26.79	390.00	---	7.88	123.50	---	3.25
44.24	0.69	35.07	31.58	6.37	23.23	390.00	---	8.53	123.50	---	3.82
46.37	12.56	61.05	29.04	4.82	20.20	390.00	---	4.71	123.50	---	4.46
48.49	21.15	79.20	26.60	3.28	16.98	390.00	---	3.52	123.50	---	5.40
50.61	26.49	91.57	24.20	1.36	13.53	390.00	---	2.99	123.50	---	6.92
52.73	27.74	92.95	19.37	0.18	12.33	390.00	---	2.93	123.50	---	7.69
54.85	25.72	86.68	14.53	1.72	14.20	390.00	---	3.16	123.50	---	6.57
56.97	20.43	71.56	9.69	3.27	17.58	390.00	---	3.91	123.50	---	5.22
59.1	11.86	44.08	4.85	4.81	21.64	390.00	---	6.54	123.50	---	4.17
61.22	0.00	0.00	0.00	6.36	24.03	390.00	---	N/A	123.50	---	3.69

3F1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.77	24.62	390.00	---	N/A	123.50	---	3.62
2	10.12	41.65	5.06	4.35	24.11	390.00	---	6.96	123.50	---	3.76
4	17.41	67.89	10.11	2.93	19.84	390.00	---	4.16	123.50	---	4.64
6	21.85	80.98	15.17	1.51	15.94	390.00	---	3.43	123.50	---	5.87
8	23.46	85.63	20.22	0.09	14.00	390.00	---	3.23	123.50	---	6.78
10	22.23	84.84	25.28	1.50	14.97	390.00	---	3.27	123.50	---	6.25
12	17.80	75.63	27.79	2.92	18.30	390.00	---	3.73	123.50	---	5.03
14	10.54	59.27	30.33	4.34	21.54	390.00	---	4.88	123.50	---	4.21
16	0.43	36.12	32.96	5.76	24.51	390.00	---	8.29	123.50	---	3.64
18	-12.51	14.41	38.15	7.18	27.09	390.00	---	7.54	123.50	---	3.24
20	-28.32	17.35	63.83	8.62	30.16	390.00	---	4.26	123.50	---	2.86
22	-15.54	13.00	46.85	5.66	26.73	390.00	---	6.07	123.50	---	3.34
24	-5.67	38.93	40.25	4.21	22.91	390.00	---	7.31	123.50	---	3.96
26	1.28	57.02	34.28	2.75	18.87	390.00	---	5.24	123.50	---	4.89
28	5.33	65.73	28.33	1.30	15.22	390.00	---	4.48	123.50	---	6.16
30	6.44	69.67	24.73	0.25	16.06	390.00	---	4.21	123.50	---	5.90
32	4.48	66.14	31.38	1.71	14.26	390.00	---	4.47	123.50	---	6.54
34	-0.40	57.86	38.25	3.17	17.82	390.00	---	5.18	123.50	---	5.15
36	-8.18	40.19	45.22	4.62	22.90	390.00	---	6.45	123.50	---	3.95
38	-18.88	13.75	52.80	6.08	26.02	390.00	---	5.32	123.50	---	3.42
40	-32.50	15.99	68.06	9.37	28.54	390.00	---	3.93	123.50	---	3.00
42.12	-14.26	12.93	36.41	7.82	26.80	390.00	---	7.85	123.50	---	3.25
44.24	0.69	35.24	31.61	6.28	23.24	390.00	---	8.49	123.50	---	3.82
46.37	12.38	61.22	29.41	4.73	20.21	390.00	---	4.70	123.50	---	4.47
48.49	20.78	79.36	27.30	3.19	16.99	390.00	---	3.52	123.50	---	5.40
50.61	25.93	91.71	25.26	1.41	13.65	390.00	---	2.99	123.50	---	6.86
52.73	27.29	93.07	20.21	0.13	12.44	390.00	---	2.93	123.50	---	7.63
54.85	25.38	86.76	15.15	1.67	14.22	390.00	---	3.17	123.50	---	6.56
56.97	20.19	71.58	10.10	3.22	17.59	390.00	---	3.91	123.50	---	5.22
59.1	11.73	44.07	5.04	4.76	21.65	390.00	---	6.54	123.50	---	4.17
61.22	0.00	0.00	0.00	6.31	24.05	390.00	---	N/A	123.50	---	3.69

3F1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	5.88	24.62	390.00	---	N/A	123.50	---	3.62	
2	10.34	41.55	4.72	4.46	24.11	390.00	---	6.97	123.50	---	3.76	
4	17.85	67.70	9.45	3.04	19.84	390.00	---	4.17	123.50	---	4.64	
6	22.51	80.70	14.17	1.62	15.93	390.00	---	3.44	123.50	---	5.86	
8	24.34	85.25	18.89	0.20	13.83	390.00	---	3.23	123.50	---	6.85	
10	23.33	84.36	23.62	1.69	19.34	390.00	---	3.28	123.50	---	4.82	
12	18.53	75.21	26.66	3.11	18.33	390.00	---	3.74	123.50	---	5.01	
14	10.89	58.90	29.72	4.53	21.58	390.00	---	4.91	123.50	---	4.19	
16	0.41	35.90	32.84	5.95	24.55	390.00	---	8.35	123.50	---	3.63	
18	-12.91	14.09	37.84	7.37	27.14	390.00	---	7.59	123.50	---	3.23	
20	-29.10	16.39	63.34	8.81	30.13	390.00	---	4.28	123.50	---	2.86	
22	-16.10	12.10	46.60	5.77	26.70	390.00	---	6.09	123.50	---	3.34	
24	-6.01	38.32	40.02	4.32	22.88	390.00	---	7.35	123.50	---	3.96	
26	1.17	56.62	33.77	2.86	18.84	390.00	---	5.28	123.50	---	4.89	
28	5.43	65.53	27.54	1.41	15.18	390.00	---	4.50	123.50	---	6.17	
30	6.76	69.64	23.99	0.36	15.86	390.00	---	4.21	123.50	---	5.97	
32	4.58	65.87	30.90	1.82	14.22	390.00	---	4.48	123.50	---	6.55	
34	-0.51	57.35	38.01	3.27	17.78	390.00	---	5.22	123.50	---	5.16	
36	-8.51	39.40	45.19	4.73	22.85	390.00	---	6.45	123.50	---	3.95	
38	-19.43	12.58	52.78	6.18	25.98	390.00	---	5.32	123.50	---	3.42	
40	-33.26	14.60	67.84	9.54	28.50	390.00	---	3.93	123.50	---	3.00	
42.12	-14.66	12.32	36.23	7.99	26.83	390.00	---	7.88	123.50	---	3.24	
44.24	0.66	35.02	31.58	6.45	23.27	390.00	---	8.55	123.50	---	3.81	
46.37	12.70	61.12	28.70	4.90	20.24	390.00	---	4.70	123.50	---	4.45	
48.49	21.47	79.32	25.90	3.36	17.02	390.00	---	3.51	123.50	---	5.38	
50.61	26.99	91.75	23.15	1.32	13.44	390.00	---	2.98	123.50	---	6.97	
52.73	28.14	93.10	18.52	0.23	12.23	390.00	---	2.92	123.50	---	7.75	
54.85	26.02	86.79	13.88	1.77	14.22	390.00	---	3.16	123.50	---	6.56	
56.97	20.62	71.60	9.25	3.32	17.60	390.00	---	3.90	123.50	---	5.21	
59.1	11.94	44.07	4.62	4.86	21.66	390.00	---	6.54	123.50	---	4.16	
61.22	0.00	0.00	0.00	6.41	24.04	390.00	---	N/A	123.50	---	3.69	

3F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.42	22.58	390.00	---	N/A	123.50	---	3.97
2.04	9.62	38.64	4.00	3.99	22.06	390.00	---	7.52	123.50	---	4.13
4.09	16.32	62.53	8.00	2.57	18.08	390.00	---	4.54	123.50	---	5.11
6.13	20.11	74.05	12.00	1.14	14.42	390.00	---	3.78	123.50	---	6.51
8.17	20.98	77.04	16.01	0.29	13.06	390.00	---	3.62	123.50	---	7.25
10.21	19.06	74.26	20.01	1.19	13.69	390.00	---	3.78	123.50	---	6.85
12.26	15.18	67.58	23.94	2.62	17.18	390.00	---	4.21	123.50	---	5.38
14.3	8.37	52.84	27.88	4.05	20.48	390.00	---	5.52	123.50	---	4.44
16.34	-1.38	31.76	32.03	5.50	23.12	390.00	---	9.32	123.50	---	3.87
18.38	-14.08	13.19	38.31	6.94	25.97	390.00	---	7.46	123.50	---	3.39
20.43	-27.75	15.08	60.16	7.20	29.60	390.00	---	4.53	123.50	---	2.97
22.43	-14.81	10.99	43.78	5.73	26.40	390.00	---	6.51	123.50	---	3.38
24.43	-4.81	37.19	36.97	4.26	22.57	390.00	---	7.94	123.50	---	4.02
26.43	2.24	54.58	30.46	2.79	18.41	390.00	---	5.46	123.50	---	5.01
28.43	6.34	62.31	23.97	1.31	14.68	390.00	---	4.71	123.50	---	6.38
30.43	7.48	65.31	20.07	0.23	14.85	390.00	---	4.48	123.50	---	6.38
32.43	5.53	63.11	27.80	1.72	13.80	390.00	---	4.67	123.50	---	6.76
34.43	0.59	55.91	35.63	3.21	17.59	390.00	---	5.36	123.50	---	5.22
36.43	-7.32	38.95	43.51	4.71	22.76	390.00	---	6.73	123.50	---	3.97
38.43	-18.23	12.41	51.67	6.20	26.03	390.00	---	5.45	123.50	---	3.41
40.43	-32.15	12.81	67.64	9.24	28.86	390.00	---	3.96	123.50	---	2.97
42.55	-14.24	10.70	35.69	7.65	26.81	390.00	---	8.01	123.50	---	3.26
44.67	0.30	35.10	30.37	6.05	23.16	390.00	---	8.54	123.50	---	3.84
46.79	11.45	59.93	26.74	4.45	19.98	390.00	---	4.81	123.50	---	4.53
48.91	19.20	76.26	23.17	2.85	16.64	390.00	---	3.68	123.50	---	5.54
51.04	23.52	86.86	19.63	1.79	13.87	390.00	---	3.18	123.50	---	6.72
53.16	25.62	90.19	15.70	0.19	12.17	390.00	---	3.04	123.50	---	7.79
55.28	24.32	85.67	11.78	1.42	14.03	390.00	---	3.22	123.50	---	6.67
57.4	19.61	71.67	7.85	3.02	17.60	390.00	---	3.91	123.50	---	5.23
59.52	11.50	44.54	3.93	4.62	21.86	390.00	---	6.48	123.50	---	4.13
61.65	0.00	0.00	0.00	6.22	24.70	390.00	---	N/A	123.50	---	3.59

3F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
3F1	Stringer F2A-2											
	0	0.00	0.00	0.00	5.02	22.37	1212.51	---	N/A	149.61	---	4.92
	2	8.86	38.36	5.76	3.83	20.99	1212.51	---	24.08	149.61	---	5.30
	4	15.33	67.13	11.53	2.63	18.93	1212.51	---	13.67	149.61	---	5.94
	6.01	19.40	80.63	17.29	1.44	18.15	1212.51	---	11.33	149.61	---	6.26
	8.01	21.08	88.35	23.06	0.24	13.58	1212.51	---	10.32	149.61	---	8.46
	10.01	20.36	81.99	28.83	1.41	12.33	1212.51	---	11.13	149.61	---	9.22
	12.01	16.34	73.17	32.03	2.61	19.23	1212.51	---	12.52	149.61	---	5.85
	14.01	9.92	59.76	35.31	3.81	21.46	1212.51	---	15.44	149.61	---	5.19
	16.02	1.08	36.28	38.58	5.02	22.60	1212.51	---	24.15	149.61	---	4.87
	18.02	-10.19	12.77	42.96	6.24	24.34	1212.51	---	21.47	149.61	---	4.47
	20.02	-23.97	1.98	59.45	7.49	29.29	1212.51	---	15.29	149.61	---	3.67
	22.02	-10.65	7.71	41.23	6.03	25.62	1212.51	---	22.36	149.61	---	4.26
	24.02	0.13	42.37	37.72	4.76	23.91	1212.51	---	22.01	149.61	---	4.61
	26.02	8.38	66.64	34.26	3.48	21.83	1212.51	---	13.87	149.61	---	5.11
	28.02	14.07	81.65	30.95	2.20	20.13	1212.51	---	11.25	149.61	---	5.61
	30.02	17.17	84.01	27.67	0.92	14.06	1212.51	---	10.90	149.61	---	8.12
	32.02	17.45	76.37	22.09	0.50	14.68	1212.51	---	11.98	149.61	---	7.81
	34.02	15.16	69.61	16.57	1.79	20.24	1212.51	---	13.18	149.61	---	5.60
	36.03	10.28	43.19	11.04	3.09	21.93	1212.51	---	21.36	149.61	---	5.11
	38.03	2.81	22.31	5.52	4.38	24.70	1212.51	---	41.68	149.61	---	4.48
	40.03	0.00	0.00	0.00	7.23	27.61	1212.51	---	N/A	149.61	---	3.91
	Stringer F2B-2											
	42.15	12.35	50.28	8.42	5.85	24.65	1212.51	---	18.30	149.61	---	4.43
	44.27	23.31	89.49	8.79	4.47	21.94	1212.51	---	10.16	149.61	---	5.04
	46.39	31.33	112.11	9.15	3.09	18.06	1212.51	---	8.04	149.61	---	6.20
	48.51	36.42	126.31	9.52	1.70	14.99	1212.51	---	7.10	149.61	---	7.56
	50.64	38.57	123.53	9.88	0.32	11.36	1212.51	---	7.24	149.61	---	10.10
52.76	36.77	118.74	7.89	1.54	15.97	1212.51	---	7.55	149.61	---	7.11	
54.88	32.03	104.71	5.92	2.93	18.93	1212.51	---	8.60	149.61	---	5.92	
57	24.32	84.12	3.95	4.33	21.48	1212.51	---	10.80	149.61	---	5.16	
59.12	13.65	56.66	1.98	5.73	24.21	1212.51	---	16.22	149.61	---	4.52	
61.25	0.00	0.00	0.00	7.13	25.22	1212.51	---	N/A	149.61	---	4.28	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
		D	M+	M-	V									
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
3F1	Stringer F1A-3	0	0.00	0.00	0.00	6.39	27.33	643.98	---	N/A	207.60	---	5.61	
		2.12	12.15	48.19	2.09	5.06	23.56	643.98	---	10.03	207.60	---	6.56	
		4.24	21.49	81.82	4.18	3.74	19.99	643.98	---	5.79	207.60	---	7.80	
		6.37	28.02	104.55	6.27	2.41	17.02	643.98	---	4.47	207.60	---	9.24	
		8.49	31.72	116.76	8.36	1.08	14.25	643.98	---	3.97	207.60	---	11.13	
		10.61	32.63	121.57	10.45	0.50	11.75	643.98	---	3.81	207.60	---	13.55	
		12.73	30.17	115.73	8.36	1.83	14.37	643.98	---	4.02	207.60	---	10.99	
		14.86	24.86	96.83	6.27	3.17	17.82	643.98	---	4.86	207.60	---	8.78	
		16.98	16.71	66.53	4.18	4.51	22.37	643.98	---	7.19	207.60	---	6.94	
		19.1	5.70	26.42	2.09	5.86	26.29	643.98	---	18.53	207.60	---	5.85	
	21.22	-1.36	0.00	31.46	7.22	26.34	643.98	---	15.70	207.60	---	5.79		
	Stringer F1B-3	23.34	8.42	47.07	28.52	3.93	22.99	643.98	---	10.35	207.60	---	6.78	
		25.47	15.31	77.98	26.11	2.57	19.22	643.98	---	6.16	207.60	---	8.17	
		27.59	19.31	94.80	23.69	1.20	16.34	643.98	---	5.02	207.60	---	9.70	
		29.71	20.39	103.25	21.27	0.17	13.13	643.98	---	4.60	207.60	---	12.15	
		31.83	18.56	104.11	18.86	1.49	14.11	643.98	---	4.58	207.60	---	11.21	
		33.96	13.93	93.33	13.50	2.87	17.49	643.98	---	5.16	207.60	---	8.97	
		36.08	6.36	74.88	12.23	4.26	20.59	643.98	---	6.53	207.60	---	7.55	
		38.2	-4.18	48.27	11.92	5.66	24.45	643.98	---	10.18	207.60	---	6.30	
		40.32	-17.69	15.03	15.08	7.07	28.26	643.98	---	31.68	207.60	---	5.40	
		42.45	-33.67	9.36	52.82	8.08	28.12	643.98	---	8.74	207.60	---	5.39	
		44.57	-17.51	8.50	46.96	7.21	6.51	643.98	---	10.18	207.60	---	23.42	
		46.7	-2.86	13.52	41.56	6.46	6.37	643.98	---	11.85	207.60	---	24.06	
		48.82	10.28	20.55	36.67	5.70	5.76	643.98	---	13.23	207.60	---	26.73	
		50.95	21.87	25.77	31.82	4.94	4.92	643.98	---	14.88	207.60	---	31.45	
		53.07	28.93	30.24	27.00	0.43	4.54	643.98	---	15.42	207.60	---	35.08	
		55.19	27.06	31.31	21.60	1.33	3.77	643.98	---	14.96	207.60	---	42.01	
		57.32	23.25	29.24	16.21	2.25	4.65	643.98	---	16.15	207.60	---	33.86	
		59.44	17.49	24.78	10.81	3.18	6.12	643.98	---	19.28	207.60	---	25.57	
		61.57	9.74	15.98	5.41	4.11	7.62	643.98	---	30.39	207.60	---	20.42	
		63.69	0.00	0.00	0.00	5.06	9.27	643.98	---	N/A	207.60	---	16.68	
	3F1	Stringer S1-3	0	0.00	0.00	0.00	2.89	13.19	303.24	---	N/A	216.57	---	12.41
			0.75	1.76	7.48	1.15	2.50	12.03	303.24	---	30.97	216.57	---	13.64
2.12			4.97	21.13	3.24	1.79	9.91	390.00	---	13.96	123.50	---	9.41	
4.24			7.60	32.91	6.48	0.69	7.14	390.00	---	8.88	123.50	---	13.21	
6.36			7.88	33.77	9.73	0.43	7.92	390.00	---	8.65	123.50	---	11.94	
8.48			5.79	30.81	13.01	1.55	10.25	390.00	---	9.55	123.50	---	9.12	
10.6			2.59	19.97	16.54	2.68	12.66	390.00	---	14.89	123.50	---	7.29	
12.72			6.94	27.05	6.51	1.48	11.80	390.00	---	10.83	123.50	---	7.93	
14.85			8.87	32.28	4.88	0.34	8.60	390.00	---	9.02	123.50	---	11.01	
16.97			8.36	32.24	3.25	0.82	7.49	390.00	---	9.05	123.50	---	12.57	
19.09			5.39	23.30	1.63	1.98	11.17	390.00	---	12.64	123.50	---	8.33	
20.46			1.91	8.24	0.58	2.74	13.70	192.60	---	17.74	183.58	---	10.11	
21.21			0.00	0.00	0.00	3.16	15.09	192.60	---	N/A	183.58	---	9.15	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	8.49	26.22	390.00	---	N/A	123.50	---	3.30
2.12	14.44	44.16	4.62	5.12	21.61	390.00	---	6.47	123.50	---	4.16
4.24	24.24	71.38	9.24	3.53	17.45	390.00	---	3.86	123.50	---	5.24
6.37	27.51	85.67	13.86	1.04	13.96	390.00	---	3.18	123.50	---	6.73
8.49	24.87	91.19	18.49	1.45	12.81	390.00	---	3.02	123.50	---	7.30
10.61	25.94	88.41	23.12	1.73	13.05	390.00	---	3.10	123.50	---	7.15
12.73	20.58	79.23	27.29	3.33	16.59	390.00	---	3.53	123.50	---	5.53
14.85	11.81	62.52	31.62	4.94	20.27	390.00	---	4.61	123.50	---	4.44
16.98	-0.38	38.21	36.04	6.55	23.53	390.00	---	7.84	123.50	---	3.76
19.1	-15.98	14.50	42.14	8.16	27.33	390.00	---	6.74	123.50	---	3.18
21.22	-35.01	17.13	68.40	9.79	28.19	390.00	---	3.87	123.50	---	3.02
23.34	-19.25	11.77	51.16	6.62	25.47	390.00	---	5.49	123.50	---	3.47
25.46	-6.94	40.22	43.04	4.99	21.99	390.00	---	6.81	123.50	---	4.09
27.58	1.91	60.51	35.83	3.35	18.40	390.00	---	4.93	123.50	---	4.98
29.7	7.28	72.09	28.87	1.71	14.47	390.00	---	4.06	123.50	---	6.45
31.82	9.18	77.18	22.30	0.26	11.79	390.00	---	3.77	123.50	---	8.04
33.94	6.89	73.89	27.87	1.90	14.92	390.00	---	3.97	123.50	---	6.24
36.06	1.13	61.87	33.97	3.54	18.49	390.00	---	4.83	123.50	---	4.95
38.19	-8.10	41.65	40.33	5.16	22.68	390.00	---	7.01	123.50	---	3.96
40.31	-20.77	13.00	48.03	6.79	26.40	390.00	---	5.81	123.50	---	3.34
42.43	-36.84	15.78	65.93	8.40	28.68	390.00	---	3.99	123.50	---	3.02
44.55	-16.86	13.32	42.81	8.62	25.51	390.00	---	6.61	123.50	---	3.39
46.67	-0.19	35.59	36.82	7.08	22.13	390.00	---	8.14	123.50	---	3.97
48.79	13.09	58.32	32.52	5.51	18.92	390.00	---	4.92	123.50	---	4.73
50.91	23.01	73.41	28.32	3.94	15.57	390.00	---	3.77	123.50	---	5.85
53.03	29.98	82.13	24.27	2.45	14.97	390.00	---	3.29	123.50	---	6.18
55.15	30.49	85.57	19.42	0.52	12.37	390.00	---	3.15	123.50	---	7.64
57.27	27.75	81.09	14.57	2.06	13.25	390.00	---	3.36	123.50	---	7.01
59.39	21.76	67.89	9.71	3.59	16.65	390.00	---	4.10	123.50	---	5.49
61.51	12.51	42.35	4.86	5.13	20.77	390.00	---	6.79	123.50	---	4.33
63.64	0.00	0.00	0.00	6.66	23.56	390.00	---	N/A	123.50	---	3.75

3F1

Stringer S2-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.49	26.84	390.00	---	N/A	123.50	---	3.30
2.12	12.10	45.43	6.00	4.92	22.23	390.00	---	6.34	123.50	---	4.05
4.24	20.87	74.05	12.00	3.35	18.11	390.00	---	3.77	123.50	---	5.06
6.37	26.31	89.81	18.00	1.78	14.64	390.00	---	3.05	123.50	---	6.37
8.49	28.41	97.28	24.00	0.21	13.57	390.00	---	2.79	123.50	---	6.99
10.61	27.17	96.43	29.99	1.91	14.15	390.00	---	2.83	123.50	---	6.58
12.73	21.45	84.22	32.28	3.48	17.53	390.00	---	3.31	123.50	---	5.22
14.85	12.39	64.85	34.84	5.06	21.05	390.00	---	4.44	123.50	---	4.27
16.98	0.00	37.99	37.61	6.63	24.45	390.00	---	7.90	123.50	---	3.61
19.1	-15.74	15.54	42.76	8.20	27.85	390.00	---	6.65	123.50	---	3.12
21.22	-34.79	18.41	69.95	9.77	28.10	390.00	---	3.79	123.50	---	3.03
23.34	-19.45	14.17	53.70	6.45	25.53	390.00	---	5.22	123.50	---	3.47
25.46	-7.45	41.50	45.95	4.88	22.10	390.00	---	6.37	123.50	---	4.08
27.58	1.23	62.27	39.48	3.30	18.42	390.00	---	4.80	123.50	---	4.98
29.7	6.57	75.66	33.31	1.73	14.75	390.00	---	3.88	123.50	---	6.32
31.82	8.59	80.73	27.57	0.03	11.17	390.00	---	3.61	123.50	---	8.50
33.94	6.86	75.53	33.03	1.60	14.86	390.00	---	3.88	123.50	---	6.29
36.06	1.80	61.91	39.17	3.17	18.56	390.00	---	4.82	123.50	---	4.95
38.19	-6.59	40.79	45.61	4.74	22.26	390.00	---	6.43	123.50	---	4.05
40.31	-18.31	13.45	53.17	6.31	25.72	390.00	---	5.30	123.50	---	3.45
42.43	-33.33	17.85	69.36	9.38	27.05	390.00	---	3.84	123.50	---	3.17
44.55	-15.10	15.42	42.90	7.83	27.51	390.00	---	6.64	123.50	---	3.17
46.67	-0.16	37.77	37.62	6.27	24.10	390.00	---	7.94	123.50	---	3.68
48.79	11.47	64.14	34.23	4.72	20.74	390.00	---	4.50	123.50	---	4.35
50.91	19.79	83.19	31.03	3.17	17.31	390.00	---	3.37	123.50	---	5.31
53.03	25.32	95.05	28.16	1.70	17.76	390.00	---	2.89	123.50	---	5.25
55.15	26.76	96.15	22.53	0.09	13.33	390.00	---	2.84	123.50	---	7.12
57.27	24.94	88.97	16.90	1.62	14.54	390.00	---	3.09	123.50	---	6.42
59.39	19.88	73.49	11.27	3.15	18.03	390.00	---	3.81	123.50	---	5.09
61.51	11.57	45.16	5.64	4.69	22.14	390.00	---	6.39	123.50	---	4.08
63.64	0.00	0.00	0.00	6.22	24.58	390.00	---	N/A	123.50	---	3.61

3F1

Stringer S3-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.36	26.66	390.00	---	N/A	123.50	---	3.32
2.12	11.82	45.04	5.88	4.78	22.05	390.00	---	6.40	123.50	---	4.09
4.24	20.31	73.28	11.76	3.21	17.93	390.00	---	3.82	123.50	---	5.12
6.37	25.46	88.65	17.64	1.64	14.45	390.00	---	3.10	123.50	---	6.46
8.49	27.28	95.73	23.52	0.07	13.55	390.00	---	2.85	123.50	---	7.01
10.61	25.76	94.50	29.39	1.70	13.98	390.00	---	2.90	123.50	---	6.67
12.73	20.48	82.77	31.69	3.27	17.36	390.00	---	3.38	123.50	---	5.28
14.85	11.88	63.91	34.32	4.84	20.89	390.00	---	4.51	123.50	---	4.32
16.98	-0.06	37.62	37.14	6.41	24.28	390.00	---	7.97	123.50	---	3.65
19.1	-15.34	15.57	42.61	7.98	27.69	390.00	---	6.68	123.50	---	3.14
21.22	-33.93	18.65	69.86	9.55	27.97	390.00	---	3.81	123.50	---	3.06
23.34	-18.77	14.47	53.40	6.36	25.36	390.00	---	5.27	123.50	---	3.50
25.46	-6.95	41.16	45.38	4.79	21.93	390.00	---	6.46	123.50	---	4.11
27.58	1.55	61.51	39.00	3.22	18.25	390.00	---	4.85	123.50	---	5.03
29.7	6.72	74.48	32.97	1.65	14.58	390.00	---	3.94	123.50	---	6.40
31.82	8.57	79.00	27.38	0.02	11.12	390.00	---	3.69	123.50	---	8.54
33.94	6.86	74.34	32.97	1.59	14.62	390.00	---	3.94	123.50	---	6.39
36.06	1.83	61.28	38.99	3.16	18.40	390.00	---	4.87	123.50	---	4.99
38.19	-6.53	40.79	45.39	4.73	22.10	390.00	---	6.47	123.50	---	4.08
40.31	-18.22	14.06	53.47	6.30	25.56	390.00	---	5.27	123.50	---	3.47
42.43	-33.21	18.21	69.79	9.34	26.94	390.00	---	3.82	123.50	---	3.18
44.55	-15.06	15.57	42.55	7.79	27.54	390.00	---	6.70	123.50	---	3.17
46.67	-0.20	37.64	36.96	6.24	24.14	390.00	---	7.96	123.50	---	3.68
48.79	11.35	63.87	33.83	4.69	20.78	390.00	---	4.52	123.50	---	4.35
50.91	19.60	82.71	30.95	3.14	17.35	390.00	---	3.39	123.50	---	5.29
53.03	25.04	94.59	28.40	1.66	17.82	390.00	---	2.91	123.50	---	5.24
55.15	26.54	95.78	22.72	0.06	13.39	390.00	---	2.86	123.50	---	7.09
57.27	24.78	88.69	17.04	1.59	14.50	390.00	---	3.10	123.50	---	6.44
59.39	19.77	73.30	11.36	3.13	18.00	390.00	---	3.82	123.50	---	5.10
61.51	11.51	45.06	5.69	4.66	22.11	390.00	---	6.40	123.50	---	4.09
63.64	0.00	0.00	0.00	6.19	24.55	390.00	---	N/A	123.50	---	3.62

3F1

Stringer S4-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.46	26.86	390.00	---	N/A	123.50	---	3.30
2.12	12.05	45.46	5.67	4.89	22.24	390.00	---	6.33	123.50	---	4.05
4.24	20.76	74.12	11.33	3.32	18.12	390.00	---	3.77	123.50	---	5.06
6.37	26.14	89.90	17.00	1.75	14.65	390.00	---	3.05	123.50	---	6.37
8.49	28.18	97.40	22.67	0.18	13.42	390.00	---	2.79	123.50	---	7.07
10.61	26.89	96.58	28.33	1.90	14.20	390.00	---	2.83	123.50	---	6.56
12.73	21.19	84.25	31.09	3.47	17.57	390.00	---	3.31	123.50	---	5.21
14.85	12.17	64.67	34.19	5.04	21.09	390.00	---	4.45	123.50	---	4.27
16.98	-0.19	37.60	37.42	6.61	24.49	390.00	---	7.97	123.50	---	3.61
19.1	-15.88	14.86	42.71	8.18	27.90	390.00	---	6.65	123.50	---	3.11
21.22	-34.90	17.35	70.07	9.75	28.12	390.00	---	3.78	123.50	---	3.03
23.34	-19.42	13.50	53.87	6.51	25.47	390.00	---	5.21	123.50	---	3.47
25.46	-7.28	40.82	46.12	4.94	22.04	390.00	---	6.35	123.50	---	4.09
27.58	1.54	61.75	39.38	3.37	18.36	390.00	---	4.83	123.50	---	4.99
29.7	7.03	75.21	32.93	1.80	14.71	390.00	---	3.90	123.50	---	6.34
31.82	9.19	80.19	27.05	0.16	11.15	390.00	---	3.63	123.50	---	8.51
33.94	7.19	75.20	32.23	1.73	14.71	390.00	---	3.89	123.50	---	6.34
36.06	1.86	61.80	38.77	3.30	18.49	390.00	---	4.82	123.50	---	4.96
38.19	-6.80	40.88	45.66	4.87	22.19	390.00	---	6.42	123.50	---	4.06
40.31	-18.80	13.56	53.37	6.44	25.65	390.00	---	5.27	123.50	---	3.45
42.43	-34.09	17.52	69.61	9.51	26.99	390.00	---	3.82	123.50	---	3.17
44.55	-15.57	15.12	42.60	7.96	27.59	390.00	---	6.68	123.50	---	3.15
46.67	-0.34	37.64	37.40	6.41	24.17	390.00	---	7.96	123.50	---	3.67
48.79	11.57	64.00	34.22	4.86	20.81	390.00	---	4.51	123.50	---	4.33
50.91	20.19	83.30	31.19	3.31	17.38	390.00	---	3.36	123.50	---	5.28
53.03	26.00	95.41	28.47	1.83	17.83	390.00	---	2.87	123.50	---	5.23
55.15	27.30	96.43	22.78	0.15	13.35	390.00	---	2.83	123.50	---	7.10
57.27	25.35	89.18	17.09	1.69	14.57	390.00	---	3.08	123.50	---	6.40
59.39	20.15	73.62	11.39	3.22	18.06	390.00	---	3.80	123.50	---	5.08
61.51	11.71	45.22	5.70	4.75	22.18	390.00	---	6.38	123.50	---	4.07
63.64	0.00	0.00	0.00	6.28	24.59	390.00	---	N/A	123.50	---	3.61

3F1

Stringer S5-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	6.26	26.58	390.00	---	N/A	123.50	---	3.34	
2.12	11.56	44.43	4.46	4.63	21.74	390.00	---	6.49	123.50	---	4.16	
4.24	19.66	71.18	8.92	3.00	17.41	390.00	---	3.94	123.50	---	5.28	
6.37	24.30	84.38	13.38	1.37	13.76	390.00	---	3.27	123.50	---	6.80	
8.49	25.50	88.93	17.84	0.25	13.06	390.00	---	3.09	123.50	---	7.25	
10.61	23.22	84.82	22.29	1.31	12.64	390.00	---	3.26	123.50	---	7.41	
12.73	18.72	75.88	25.82	2.93	16.16	390.00	---	3.71	123.50	---	5.70	
14.85	10.78	59.97	29.52	4.55	19.77	390.00	---	4.82	123.50	---	4.58	
16.98	-0.58	36.23	33.30	6.16	22.92	390.00	---	8.26	123.50	---	3.88	
19.1	-15.35	11.46	38.76	7.77	26.71	390.00	---	7.34	123.50	---	3.27	
21.22	-33.53	13.71	66.00	9.37	27.45	390.00	---	4.04	123.50	---	3.12	
23.34	-18.18	12.40	49.67	6.44	24.34	390.00	---	5.67	123.50	---	3.64	
25.46	-6.22	38.72	41.67	4.84	20.81	390.00	---	7.05	123.50	---	4.33	
27.58	2.37	56.58	34.45	3.25	17.05	390.00	---	5.26	123.50	---	5.38	
29.7	7.59	66.81	27.40	1.67	13.22	390.00	---	4.38	123.50	---	7.06	
31.82	9.47	68.75	20.71	0.17	9.80	390.00	---	4.23	123.50	---	9.68	
33.94	8.15	65.72	24.87	1.41	13.34	390.00	---	4.44	123.50	---	7.02	
36.06	3.51	55.15	30.76	2.97	16.90	390.00	---	5.38	123.50	---	5.45	
38.19	-4.45	36.88	36.86	4.53	20.37	390.00	---	8.01	123.50	---	4.44	
40.31	-15.70	10.78	43.77	6.08	23.50	390.00	---	6.50	123.50	---	3.78	
42.43	-30.24	15.09	59.85	8.44	25.36	390.00	---	4.51	123.50	---	3.41	
44.55	-13.96	12.77	38.75	6.93	24.06	390.00	---	7.38	123.50	---	3.66	
46.67	-0.89	33.17	32.81	5.42	20.86	390.00	---	9.02	123.50	---	4.29	
48.79	8.99	53.58	28.48	3.93	17.50	390.00	---	5.43	123.50	---	5.20	
50.91	15.69	67.03	24.27	2.44	14.11	390.00	---	4.24	123.50	---	6.56	
53.03	19.75	72.98	20.24	1.73	17.85	390.00	---	3.84	123.50	---	5.23	
55.15	21.88	76.55	16.19	0.28	11.95	390.00	---	3.63	123.50	---	7.93	
57.27	20.94	72.71	12.15	1.16	11.96	390.00	---	3.84	123.50	---	7.85	
59.39	16.98	61.04	8.10	2.58	14.89	390.00	---	4.64	123.50	---	6.21	
61.51	9.99	37.86	4.05	4.00	18.61	390.00	---	7.66	123.50	---	4.89	
63.64	0.00	0.00	0.00	5.41	21.02	390.00	---	N/A	123.50	---	4.26	

3F1

Stringer S6-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: **DWC** 2/28/2012

Checked: **KMW** 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		From Rear (Ft)	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
3F1	Stringer F2A-3											
	0	0.00	0.00	0.00	6.91	28.74	1212.51	---	N/A	149.61	---	3.76
	2.12	13.15	50.49	1.98	5.49	24.69	1212.51	---	18.21	149.61	---	4.44
	4.24	23.29	85.89	3.96	4.07	20.99	1212.51	---	10.59	149.61	---	5.29
	6.37	30.42	110.16	5.94	2.65	17.94	1212.51	---	8.19	149.61	---	6.27
	8.49	34.55	122.94	7.91	1.24	15.02	1212.51	---	7.31	149.61	---	7.58
	10.61	35.68	128.66	9.90	0.66	12.43	1212.51	---	6.97	149.61	---	9.21
	12.73	32.79	121.66	7.92	2.07	15.11	1212.51	---	7.40	149.61	---	7.48
	14.86	26.91	100.48	5.94	3.47	18.55	1212.51	---	9.01	149.61	---	6.02
	16.98	18.06	68.77	3.96	4.87	22.70	1212.51	---	13.30	149.61	---	4.86
	19.1	6.24	27.69	1.98	6.27	26.85	1212.51	---	33.46	149.61	---	4.05
	21.22	0.00	0.00	0.00	7.66	26.33	1212.51	---	N/A	149.61	---	4.08
	Stringer F2B-3											
	23.34	9.37	46.39	29.11	4.38	22.65	1212.51	---	19.90	149.61	---	4.89
	25.47	17.20	76.96	27.29	3.00	18.97	1212.51	---	11.90	149.61	---	5.91
	27.59	22.11	93.91	25.46	1.62	16.10	1212.51	---	9.70	149.61	---	7.05
	29.71	24.10	103.39	23.63	0.25	12.95	1212.51	---	8.79	149.61	---	8.87
	31.83	23.19	105.31	26.82	1.31	13.22	1212.51	---	8.64	149.61	---	8.61
	33.96	18.96	92.33	28.53	2.67	16.23	1212.51	---	9.90	149.61	---	6.93
	36.08	11.85	76.15	30.24	4.03	18.81	1212.51	---	12.09	149.61	---	5.90
	38.2	1.87	51.73	31.98	5.37	21.81	1212.51	---	17.99	149.61	---	5.03
	40.32	-10.95	17.65	33.84	6.71	24.88	1212.51	---	27.24	149.61	---	4.36
	42.45	-26.57	8.30	47.49	8.04	24.46	1212.51	---	19.08	149.61	---	4.38
	44.57	-11.33	16.57	36.46	6.53	23.86	1212.51	---	25.27	149.61	---	4.55
	46.69	1.15	48.66	34.71	5.24	20.59	1212.51	---	19.14	149.61	---	5.33
	48.82	10.87	71.59	33.73	3.95	17.73	1212.51	---	12.88	149.61	---	6.27
	50.94	17.86	87.56	32.76	2.68	14.95	1212.51	---	10.45	149.61	---	7.52
	53.07	22.71	97.37	31.80	0.93	11.21	1212.51	---	9.35	149.61	---	10.18
	55.19	23.38	93.76	25.44	0.31	11.45	1212.51	---	9.70	149.61	---	10.02
	57.32	21.42	83.51	19.08	1.54	13.55	1212.51	---	10.91	149.61	---	8.38
	59.44	16.85	66.19	12.72	2.76	16.21	1212.51	---	13.84	149.61	---	6.93
	61.56	9.70	38.72	6.36	3.97	18.76	1212.51	---	23.84	149.61	---	5.92
	63.69	0.00	0.00	0.00	5.18	19.02	1212.51	---	N/A	149.61	---	5.78
3F1	Stringer F1-4											
	0	0.00	0.00	0.00	4.81	8.69	643.98	---	N/A	207.60	---	17.82
	2.33	9.99	18.99	5.67	3.77	8.69	643.98	---	25.56	207.60	---	17.94
	4.65	17.53	36.62	11.34	2.72	8.39	643.98	---	13.05	207.60	---	18.71
	6.98	22.65	51.48	17.00	1.67	7.80	643.98	---	9.18	207.60	---	20.26
	9.31	25.33	62.04	22.67	0.63	7.27	643.98	---	7.58	207.60	---	21.88
	11.63	25.50	73.06	28.36	2.52	8.49	643.98	---	6.43	207.60	---	18.51
	13.96	18.31	60.19	28.48	3.66	10.45	643.98	---	7.93	207.60	---	14.93
	16.29	8.46	45.67	28.65	4.81	11.12	643.98	---	10.66	207.60	---	13.93
	18.61	-4.09	26.72	28.83	5.98	12.59	643.98	---	17.04	207.60	---	12.21
	20.94	-19.40	5.47	29.08	7.18	13.62	643.98	---	16.37	207.60	---	11.20
	23.27	-37.47	1.89	32.94	8.77	12.05	643.98	---	13.90	207.60	---	12.52
	25.6	-18.45	7.28	28.96	7.54	14.70	643.98	---	16.47	207.60	---	10.35
	27.93	-2.32	30.84	27.14	6.29	13.49	643.98	---	15.99	207.60	---	11.37
	30.26	10.86	50.33	25.90	5.02	12.00	643.98	---	9.63	207.60	---	12.89
	32.6	21.06	63.45	24.73	3.73	10.82	643.98	---	7.48	207.60	---	14.41
	34.93	28.16	76.92	23.63	1.17	6.08	643.98	---	6.07	207.60	---	26.07
	37.26	29.22	73.85	18.91	0.26	8.28	643.98	---	6.31	207.60	---	19.26
	39.59	26.93	66.32	14.18	1.70	9.59	643.98	---	7.06	207.60	---	16.47
	41.92	21.30	52.24	9.46	3.13	11.68	643.98	---	9.07	207.60	---	13.40
44.26	12.31	30.33	4.73	4.57	13.75	643.98	---	15.93	207.60	---	11.28	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L-I	D		L+I	(kips)	Inventory	Operating		
46.59	0.00	0.06	0.01	6.00	14.34	643.98	---	8256.15	207.60	---	10.72	
0	0.00	0.00	0.00	3.86	17.02	225.39	---	N/A	218.57	---	9.65	
0.75	2.41	9.14	0.27	3.44	15.62	225.39	---	18.71	218.57	---	10.55	
2.32	7.44	28.27	0.84	2.55	12.68	390.00	---	10.35	123.50	---	7.29	
4.64	11.83	44.34	1.67	1.24	9.94	390.00	---	6.50	123.50	---	9.43	
6.96	13.18	48.00	2.51	0.07	9.35	390.00	---	5.98	123.50	---	10.15	
9.27	11.50	45.04	3.35	1.38	10.41	390.00	---	6.41	123.50	---	8.99	
11.59	6.37	26.61	4.18	2.70	15.17	390.00	---	11.03	123.50	---	6.08	
13.91	5.86	33.02	10.37	0.92	9.23	390.00	---	8.75	123.50	---	10.19	
16.23	2.18	32.06	16.84	2.30	9.48	390.00	---	9.29	123.50	---	9.78	
18.55	-4.68	23.70	23.36	3.70	13.08	390.00	---	12.46	123.50	---	6.98	
20.87	-14.79	6.57	29.90	3.41	16.33	390.00	---	9.54	123.50	---	5.50	
22.44	-24.66	2.31	37.88	7.17	18.17	240.15	---	4.23	223.32	---	9.09	
23.19	-29.38	0.28	41.69	8.16	18.95	240.15	---	3.73	223.32	---	8.63	
23.94	-23.82	2.38	36.66	7.98	18.85	240.15	---	4.39	223.32	---	8.70	
25.51	-12.19	6.78	26.12	6.67	18.65	390.00	---	11.02	123.50	---	4.74	
27.83	1.52	36.87	22.57	5.15	16.48	390.00	---	8.10	123.50	---	5.45	
30.14	11.69	58.53	19.06	3.62	14.12	390.00	---	4.93	123.50	---	6.47	
32.46	18.29	70.03	15.55	2.06	11.52	390.00	---	4.02	123.50	---	8.07	
34.78	19.20	68.09	12.10	2.62	16.79	390.00	---	4.12	123.50	---	5.50	
37.1	23.37	75.87	9.69	0.91	11.78	390.00	---	3.65	123.50	---	7.99	
39.42	23.49	73.50	7.27	0.81	10.57	390.00	---	3.76	123.50	---	8.91	
41.74	19.63	63.55	4.85	2.52	14.29	390.00	---	4.41	123.50	---	6.47	
44.06	11.80	40.17	2.42	4.24	18.06	390.00	---	7.17	123.50	---	5.03	
46.38	0.00	0.05	0.09	5.95	21.68	390.00	---	3333.33	123.50	---	4.11	
0	0.00	0.00	0.00	6.74	29.24	390.00	---	N/A	123.50	---	3.02	
2.32	13.70	56.12	7.32	5.07	25.17	390.00	---	5.10	123.50	---	3.57	
4.64	23.51	95.76	14.64	3.39	21.01	390.00	---	2.89	123.50	---	4.36	
6.96	29.44	119.58	21.96	1.72	17.47	390.00	---	2.26	123.50	---	5.34	
9.27	31.48	129.77	29.28	0.04	14.21	390.00	---	2.07	123.50	---	6.68	
11.59	29.65	131.59	36.61	3.14	24.74	390.00	---	2.05	123.50	---	3.71	
13.91	20.42	113.81	43.60	4.82	21.40	390.00	---	2.46	123.50	---	4.21	
16.23	7.31	89.38	50.58	6.49	24.09	390.00	---	3.27	123.50	---	3.67	
18.55	-9.69	51.24	57.57	8.17	27.90	390.00	---	5.04	123.50	---	3.11	
20.87	-30.57	5.38	64.56	9.84	31.04	390.00	---	4.17	123.50	---	2.74	
23.19	-55.37	1.59	91.44	11.58	30.24	390.00	---	2.68	123.50	---	2.76	
25.51	-30.46	6.39	69.06	9.91	30.56	390.00	---	3.90	123.50	---	2.78	
27.83	-9.43	51.24	60.55	8.23	26.69	390.00	---	4.80	123.50	---	3.25	
30.14	7.71	86.01	52.04	6.55	22.91	390.00	---	3.40	123.50	---	3.86	
32.46	20.96	108.73	43.55	4.88	19.55	390.00	---	2.57	123.50	---	4.61	
34.78	30.29	125.36	35.27	3.20	24.67	390.00	---	2.15	123.50	---	3.72	
37.1	32.00	125.30	28.21	0.10	13.85	390.00	---	2.14	123.50	---	6.85	
39.42	29.83	116.30	21.16	1.77	16.67	390.00	---	2.32	123.50	---	5.59	
41.74	23.77	93.72	14.10	3.45	20.62	390.00	---	2.95	123.50	---	4.44	
44.06	13.83	55.48	7.05	5.12	24.92	390.00	---	5.16	123.50	---	3.61	
46.38	0.00	0.03	0.06	6.80	27.24	390.00	---	5000.00	123.50	---	3.24	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
3F1 Stringer S3-4	0	0.00	0.00	0.00	6.32	28.93	390.00	---	N/A	123.50	---	3.07
	2.32	12.70	53.86	6.19	4.64	24.16	390.00	---	5.33	123.50	---	3.74
	4.64	21.52	89.84	12.37	2.97	19.72	390.00	---	3.10	123.50	---	4.67
	6.96	26.46	109.29	18.56	1.29	15.99	390.00	---	2.50	123.50	---	5.86
	9.27	27.51	116.39	24.75	0.38	12.60	390.00	---	2.34	123.50	---	7.51
	11.59	24.68	113.48	30.94	2.16	23.94	390.00	---	2.43	123.50	---	3.88
	13.91	17.74	100.87	38.01	3.83	18.18	390.00	---	2.80	123.50	---	5.01
	16.23	6.92	80.93	45.09	5.51	21.87	390.00	---	3.62	123.50	---	4.09
	18.55	-7.79	49.07	52.16	7.18	25.72	390.00	---	5.60	123.50	---	3.41
	20.87	-26.38	6.61	59.23	8.86	29.31	390.00	---	4.62	123.50	---	2.94
	23.19	-48.89	1.74	82.13	10.53	29.88	390.00	---	3.06	123.50	---	2.83
	25.51	-26.45	8.45	60.70	8.84	29.50	390.00	---	4.51	123.50	---	2.92
	27.83	-7.90	50.37	53.53	7.16	25.32	390.00	---	5.46	123.50	---	3.47
	30.14	6.77	80.13	46.37	5.49	21.43	390.00	---	3.66	123.50	---	4.18
	32.46	17.55	98.12	39.20	3.81	17.44	390.00	---	2.88	123.50	---	5.23
	34.78	24.41	107.41	32.05	2.14	20.02	390.00	---	2.57	123.50	---	4.64
	37.1	27.30	109.31	25.64	0.41	13.16	390.00	---	2.49	123.50	---	7.19
	39.42	26.30	101.35	19.23	1.27	15.00	390.00	---	2.70	123.50	---	6.25
41.74	21.42	82.30	12.82	2.94	17.97	390.00	---	3.38	123.50	---	5.12	
44.06	12.66	48.31	6.41	4.62	21.70	390.00	---	5.95	123.50	---	4.16	
46.38	0.00	0.06	0.07	6.29	23.41	390.00	---	4285.71	123.50	---	3.79	
3F1 Stringer S4-4	0	0.00	0.00	0.00	6.37	29.75	390.00	---	N/A	123.50	---	2.98
	2.32	12.83	54.59	6.40	4.69	24.48	390.00	---	5.26	123.50	---	3.69
	4.64	21.77	90.39	12.80	3.02	19.97	390.00	---	3.08	123.50	---	4.61
	6.96	26.83	109.27	19.20	1.34	15.97	390.00	---	2.50	123.50	---	5.86
	9.27	28.00	116.35	25.59	0.33	12.79	390.00	---	2.34	123.50	---	7.40
	11.59	25.30	113.47	32.00	2.29	23.96	390.00	---	2.42	123.50	---	3.87
	13.91	18.04	100.34	38.80	3.97	18.18	390.00	---	2.81	123.50	---	5.01
	16.23	6.90	80.76	46.07	5.64	21.73	390.00	---	3.63	123.50	---	4.11
	18.55	-8.12	48.97	53.34	7.32	25.40	390.00	---	5.47	123.50	---	3.45
	20.87	-27.03	7.39	60.62	8.99	29.29	390.00	---	4.50	123.50	---	2.94
	23.19	-49.85	2.11	78.88	10.68	29.78	390.00	---	3.17	123.50	---	2.83
	25.51	-27.02	7.36	60.57	9.01	29.32	390.00	---	4.51	123.50	---	2.93
	27.83	-8.08	48.91	53.37	7.33	25.42	390.00	---	5.47	123.50	---	3.45
	30.14	6.98	80.83	46.17	5.66	21.74	390.00	---	3.63	123.50	---	4.11
	32.46	18.15	100.30	38.96	3.98	18.24	390.00	---	2.81	123.50	---	4.99
	34.78	25.40	113.30	32.16	2.31	23.96	390.00	---	2.42	123.50	---	3.87
	37.1	28.09	116.36	25.72	0.32	12.61	390.00	---	2.34	123.50	---	7.51
	39.42	26.90	109.19	19.29	1.35	15.98	390.00	---	2.50	123.50	---	5.86
41.74	21.82	89.64	12.85	3.03	19.61	390.00	---	3.10	123.50	---	4.69	
44.06	12.85	53.68	6.42	4.70	24.11	390.00	---	5.35	123.50	---	3.75	
46.38	0.00	0.03	0.06	6.38	27.02	390.00	---	5000.00	123.50	---	3.28	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
3F1 Stringer S5-4	0	0.00	0.00	0.00	6.52	28.61	390.00	---	N/A	123.50	---	3.09
	2.32	13.18	53.31	5.59	4.85	23.91	390.00	---	5.38	123.50	---	3.77
	4.64	22.48	88.93	11.19	3.17	19.43	390.00	---	3.12	123.50	---	4.73
	6.96	27.90	108.18	16.78	1.50	15.80	390.00	---	2.52	123.50	---	5.92
	9.27	29.43	115.15	22.37	0.18	12.49	390.00	---	2.35	123.50	---	7.59
	11.59	27.09	112.33	27.97	2.48	24.09	390.00	---	2.43	123.50	---	3.84
	13.91	19.39	100.22	34.51	4.16	18.03	390.00	---	2.80	123.50	---	5.04
	16.23	7.80	80.45	41.04	5.83	21.80	390.00	---	3.63	123.50	---	4.09
	18.55	-7.67	48.54	47.58	7.51	25.59	390.00	---	6.02	123.50	---	3.42
	20.87	-27.02	6.42	54.12	9.18	28.76	390.00	---	5.04	123.50	---	2.98
	23.19	-50.30	1.25	76.13	10.86	28.52	390.00	---	3.28	123.50	---	2.95
	25.51	-27.58	6.63	60.19	8.96	26.52	390.00	---	4.53	123.50	---	3.24
	27.83	-8.75	44.01	53.09	7.28	22.73	390.00	---	5.49	123.50	---	3.86
	30.14	6.19	71.82	45.99	5.61	19.37	390.00	---	4.09	123.50	---	4.61
	32.46	17.25	89.64	38.88	3.93	16.08	390.00	---	3.15	123.50	---	5.66
	34.78	24.39	100.76	31.80	2.26	17.82	390.00	---	2.74	123.50	---	5.20
	37.1	27.28	100.49	25.44	0.41	11.50	390.00	---	2.71	123.50	---	8.23
	39.42	26.28	92.00	19.07	1.27	13.58	390.00	---	2.98	123.50	---	6.90
41.74	21.40	74.37	12.71	2.94	16.40	390.00	---	3.75	123.50	---	5.61	
44.06	12.64	44.02	6.35	4.62	19.78	390.00	---	6.53	123.50	---	4.57	
46.38	0.00	0.06	0.08	6.29	21.71	390.00	---	3750.00	123.50	---	4.09	
3F1 Stringer S6-4	0	0.00	0.00	0.00	5.52	18.81	390.00	---	N/A	123.50	---	4.76
	2.32	10.98	33.73	2.78	3.95	15.13	390.00	---	8.57	123.50	---	6.02
	4.64	18.34	53.92	5.55	2.39	11.97	390.00	---	5.22	123.50	---	7.74
	6.96	22.06	62.62	8.33	0.83	9.26	390.00	---	4.44	123.50	---	10.17
	9.27	22.16	64.85	11.11	0.74	9.91	390.00	---	4.28	123.50	---	9.51
	11.59	18.64	59.26	13.89	2.30	15.69	390.00	---	4.75	123.50	---	5.91
	13.91	14.73	54.40	16.87	2.43	10.43	390.00	---	5.24	123.50	---	8.88
	16.23	7.32	43.54	19.85	3.90	12.96	390.00	---	6.72	123.50	---	7.03
	18.55	-3.54	25.55	22.83	5.36	15.21	390.00	---	11.60	123.50	---	5.89
	20.87	-17.80	1.82	26.20	6.80	17.64	390.00	---	10.77	123.50	---	5.00
	23.19	-33.73	0.83	46.42	7.98	18.28	390.00	---	5.74	123.50	---	4.76
	25.51	-18.63	7.37	36.41	5.84	15.52	390.00	---	7.73	123.50	---	5.74
	27.83	-6.62	26.91	29.30	4.52	13.00	390.00	---	10.01	123.50	---	6.96
	30.14	2.34	38.43	22.18	3.21	10.36	390.00	---	7.75	123.50	---	8.86
	32.46	8.29	42.60	15.08	1.93	7.62	390.00	---	6.85	123.50	---	12.21
	34.78	11.32	41.45	8.05	2.01	17.82	390.00	---	6.96	123.50	---	5.22
	37.1	14.59	52.88	6.43	0.81	11.12	390.00	---	5.40	123.50	---	8.47
	39.42	15.09	54.56	4.81	0.38	8.38	390.00	---	5.22	123.50	---	11.29
41.74	12.81	49.12	3.19	1.58	11.44	390.00	---	5.85	123.50	---	8.17	
44.06	7.76	31.09	1.57	2.77	13.98	390.00	---	9.40	123.50	---	6.60	
46.38	-0.05	0.04	0.23	3.97	16.74	390.00	---	1304.13	123.50	---	5.44	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	5.78	17.72	1212.51	---	N/A	149.61	---	6.17	
2.33	12.26	33.55	4.06	4.68	15.36	1212.51	---	27.43	149.61	---	7.19	
4.65	22.16	57.78	8.11	3.58	13.04	1212.51	---	15.76	149.61	---	8.55	
6.98	29.68	73.33	12.17	2.49	10.94	1212.51	---	12.31	149.61	---	10.29	
9.3	34.82	82.22	16.23	1.39	9.20	1212.51	---	10.92	149.61	---	12.36	
11.63	30.98	85.84	20.30	1.64	9.52	1212.51	---	10.50	149.61	---	11.92	
13.96	25.63	72.90	19.39	2.93	10.97	1212.51	---	12.44	149.61	---	10.22	
16.28	17.29	59.79	18.49	4.20	12.22	1212.51	---	15.31	149.61	---	9.07	
18.61	5.98	39.30	17.61	5.46	13.69	1212.51	---	23.58	149.61	---	8.01	
20.94	-8.25	14.37	16.99	6.69	14.74	1212.51	---	54.41	149.61	---	7.35	
23.26	-24.30	1.58	23.05	7.75	12.28	1212.51	---	39.41	149.61	---	8.74	
25.59	-8.86	11.90	22.26	6.04	12.19	1212.51	---	41.50	149.61	---	8.95	
27.92	3.89	31.00	24.30	4.90	10.93	1212.51	---	29.96	149.61	---	10.08	
30.25	13.99	46.50	26.40	3.78	9.53	1212.51	---	19.76	149.61	---	11.68	
32.59	21.50	59.08	28.55	2.67	8.49	1212.51	---	15.42	149.61	---	13.24	
34.92	26.48	70.18	30.77	0.35	6.79	1212.51	---	12.91	149.61	---	16.90	
37.25	26.04	56.18	24.62	0.72	6.61	1212.51	---	16.14	149.61	---	17.30	
39.58	23.14	42.18	18.47	1.77	6.61	1212.51	---	21.56	149.61	---	17.14	
41.91	17.80	28.18	12.32	2.80	6.61	1212.51	---	32.47	149.61	---	16.99	
44.24	10.09	14.18	6.17	3.82	6.61	1212.51	---	65.06	149.61	---	16.83	
46.57	0.07	0.30	0.07	4.81	4.17	1212.51	---	3108.77	149.61	---	26.44	

3F1

Stringer F2-4

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
				L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
Stringer F1A-1	0	0.00	0.05	0.02	4.24	14.91	643.98	---	9907.38	207.60	---	10.43
	1.51	5.74	18.77	0.84	3.36	13.14	643.98	---	26.09	207.60	---	11.90
	3.01	10.14	30.70	1.67	2.49	10.79	643.98	---	15.81	207.60	---	14.57
	4.52	13.24	36.47	2.49	1.62	8.54	643.98	---	13.22	207.60	---	18.51
	6.03	15.04	43.70	3.32	0.77	6.35	643.98	---	10.99	207.60	---	25.03
	7.53	15.56	44.97	4.15	0.08	4.76	643.98	---	10.67	207.60	---	33.53
	9.04	14.54	40.60	3.98	1.23	7.01	643.98	---	11.84	207.60	---	22.61
	10.55	12.05	35.21	2.98	2.06	8.84	643.98	---	13.73	207.60	---	17.83
	12.05	8.32	24.98	1.99	2.89	10.91	643.98	---	19.50	207.60	---	14.37
	13.56	3.36	11.29	0.99	3.70	12.02	643.98	---	43.58	207.60	---	12.98
15.07	0.00	0.00	0.00	4.19	12.94	643.98	---	N/A	207.60	---	12.02	
Stringer F1B-1	17.07	6.67	20.24	6.09	3.13	10.46	643.98	---	24.15	207.60	---	14.97
	19.08	11.90	33.08	6.69	2.09	8.85	643.98	---	14.62	207.60	---	17.81
	21.09	15.05	41.66	9.40	1.05	7.22	643.98	---	11.53	207.60	---	21.97
	23.1	16.15	48.03	12.54	0.04	6.04	643.98	---	9.98	207.60	---	26.43
	25.1	15.22	49.65	15.69	1.64	8.41	643.98	---	9.67	207.60	---	18.79
	27.11	10.95	40.20	16.43	2.62	9.12	643.98	---	12.05	207.60	---	17.22
	29.12	4.71	30.32	17.30	3.60	9.57	643.98	---	16.18	207.60	---	16.31
	31.13	-3.49	17.43	18.25	4.56	10.17	643.98	---	26.95	207.60	---	15.25
	33.14	-13.62	2.63	19.34	5.52	10.43	643.98	---	24.91	207.60	---	14.78
	35.14	-25.65	3.54	27.19	6.46	10.95	643.98	---	17.28	207.60	---	13.99
	37.15	-13.27	3.46	21.49	5.72	9.37	643.98	---	22.43	207.60	---	16.43
	39.15	-2.73	12.54	20.38	4.80	8.82	643.98	---	24.17	207.60	---	17.56
	41.16	5.97	24.88	20.45	3.89	8.01	643.98	---	19.67	207.60	---	19.45
	43.16	12.88	36.23	20.52	3.00	7.22	643.98	---	13.32	207.60	---	21.70
	45.17	18.03	47.59	20.80	2.12	6.65	643.98	---	10.03	207.60	---	23.70
	47.17	17.86	38.27	16.62	0.52	5.77	643.98	---	12.48	207.60	---	27.59
	49.17	15.95	28.92	12.46	1.38	5.26	643.98	---	16.58	207.60	---	30.10
51.18	12.29	19.27	8.30	2.25	5.26	643.98	---	25.07	207.60	---	29.93	
53.18	6.89	9.62	4.15	3.11	5.26	643.98	---	50.78	207.60	---	29.77	
55.19	0.00	0.00	0.00	3.94	5.26	643.98	---	N/A	207.60	---	29.61	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V							
0	0.00	0.04	0.07	4.19	19.95	348.45	---	3829.12	228.95	---	8.62
0.75	2.72	11.28	1.15	3.66	17.92	348.45	---	23.52	228.95	---	9.02
1.61	5.84	24.17	2.39	3.05	15.59	390.00	---	12.17	123.50	---	5.90
3.23	9.83	39.02	4.79	1.91	12.58	390.00	---	7.44	123.50	---	7.40
4.84	12.01	46.02	7.18	0.78	10.45	390.00	---	6.26	123.50	---	9.02
6.46	12.37	50.56	9.58	0.33	7.62	390.00	---	5.69	123.50	---	12.42
8.07	10.93	50.34	11.98	1.44	9.46	390.00	---	5.74	123.50	---	9.89
9.69	8.70	41.79	15.01	2.18	11.44	390.00	---	6.97	123.50	---	8.11
11.3	4.31	32.18	18.63	3.26	14.30	390.00	---	9.19	123.50	---	6.42
12.92	-1.83	18.97	22.24	4.34	15.95	390.00	---	13.41	123.50	---	5.68
14.53	-9.69	5.51	29.03	5.40	18.49	390.00	---	10.00	123.50	---	4.85
15.4	-14.77	5.83	34.90	5.97	19.78	286.83	---	5.90	208.33	---	7.80
16.15	-19.14	6.10	39.96	6.46	20.90	286.83	---	5.04	208.33	---	7.36
16.9	-15.28	5.17	34.30	5.73	18.89	286.83	---	5.99	208.33	---	8.18
18.15	-8.85	3.62	24.86	4.50	15.54	390.00	---	11.71	123.50	---	5.82
20.15	-1.14	20.10	19.15	3.22	12.31	390.00	---	14.87	123.50	---	7.46
22.15	4.03	29.45	14.51	1.55	10.71	390.00	---	10.05	123.50	---	8.69
24.15	6.69	37.19	9.88	0.70	7.53	390.00	---	7.89	123.50	---	12.52
26.15	7.24	32.23	7.86	0.53	7.20	390.00	---	9.08	123.50	---	7.74
28.15	6.98	34.53	11.10	0.74	8.90	390.00	---	8.49	123.50	---	10.59
30.15	4.29	31.10	14.40	1.95	10.99	390.00	---	9.51	123.50	---	8.47
32.15	-0.80	19.58	17.79	3.15	13.00	390.00	---	15.28	123.50	---	7.07
34.15	-8.29	3.21	23.67	4.33	16.30	390.00	---	12.32	123.50	---	5.56
35.4	-14.33	4.35	31.43	4.97	18.86	225.23	---	5.06	200.08	---	7.90
36.15	-17.96	5.03	36.09	5.36	20.39	225.23	---	4.30	200.08	---	7.29
36.9	-14.38	4.73	31.21	4.93	18.57	225.33	---	5.09	200.08	---	8.02
38.15	-8.41	4.24	23.07	4.20	15.53	390.00	---	12.64	123.50	---	5.85
40.15	-1.16	21.38	17.74	3.05	12.93	390.00	---	13.58	123.50	---	7.11
42.15	3.78	28.36	12.97	1.90	11.84	390.00	---	10.44	123.50	---	7.86
44.15	8.46	34.40	9.86	0.78	7.23	390.00	---	8.53	123.50	---	13.03
46.15	6.91	24.90	3.83	1.97	16.98	390.00	---	11.77	123.50	---	5.48
48.15	9.77	37.22	3.07	0.90	12.07	390.00	---	7.80	123.50	---	7.80
50.15	10.51	42.68	2.30	0.16	8.50	390.00	---	6.78	123.50	---	11.16
52.15	9.13	36.96	1.53	1.22	11.47	390.00	---	7.87	123.50	---	8.18
54.15	5.63	26.06	0.77	2.28	15.29	390.00	---	11.30	123.50	---	6.06
55.4	2.11	9.77	0.29	2.95	17.81	235.05	---	18.29	201.11	---	8.52
56.15	0.00	0.00	0.00	3.35	19.32	235.05	---	N/A	201.11	---	7.83

4F1

Stringer S1-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.02	0.03	5.01	27.65	390.00	---	10000.00	123.50	---	3.25
1.73	7.59	38.83	5.54	3.76	23.35	390.00	---	7.53	123.50	---	3.91
3.46	13.01	63.78	11.08	2.51	19.17	390.00	---	4.50	123.50	---	4.82
5.19	16.26	75.86	16.63	1.26	15.16	390.00	---	3.74	123.50	---	6.18
6.92	17.35	85.69	22.18	0.01	11.45	390.00	---	3.30	123.50	---	8.30
8.65	16.28	86.30	27.73	1.24	12.37	390.00	---	3.29	123.50	---	7.58
10.38	12.55	75.24	33.23	3.02	18.19	390.00	---	3.82	123.50	---	5.06
12.11	6.24	56.05	38.71	4.27	22.52	390.00	---	5.24	123.50	---	4.03
13.84	-2.23	31.55	44.18	5.52	26.24	390.00	---	6.74	123.50	---	3.41
15.58	-12.86	15.33	55.53	6.77	29.81	390.00	---	5.17	123.50	---	2.96
17.31	-25.65	17.14	78.81	7.30	32.78	390.00	---	3.48	123.50	---	2.68
19.31	-12.49	9.30	48.75	5.86	29.44	390.00	---	5.90	123.50	---	3.03
21.31	-2.23	36.38	39.36	4.41	25.51	390.00	---	7.57	123.50	---	3.55
23.31	5.15	62.39	33.16	2.97	21.27	390.00	---	4.73	123.50	---	4.33
25.31	9.63	79.69	26.96	1.52	16.58	390.00	---	3.64	123.50	---	5.64
27.31	11.21	86.29	25.27	0.79	18.66	390.00	---	3.35	123.50	---	5.05
29.31	8.19	81.44	31.22	2.23	18.31	390.00	---	3.58	123.50	---	5.07
31.31	2.28	65.62	39.52	3.68	22.68	390.00	---	4.54	123.50	---	4.03
33.31	-6.52	40.38	47.82	5.12	27.35	390.00	---	6.14	123.50	---	3.29
35.31	-18.21	7.71	57.04	6.57	30.71	390.00	---	4.94	123.50	---	2.88
37.31	-32.82	13.75	82.67	9.27	34.16	390.00	---	3.23	123.50	---	2.51
39.31	-15.73	12.29	51.82	7.82	29.96	390.00	---	5.49	123.50	---	2.91
41.31	-1.53	33.68	40.63	6.38	26.37	390.00	---	7.35	123.50	---	3.36
43.31	9.78	62.19	35.59	4.93	22.43	390.00	---	4.67	123.50	---	4.02
45.31	18.20	85.08	30.55	3.49	18.11	390.00	---	3.31	123.50	---	5.05
47.31	23.71	99.32	25.52	2.04	18.00	390.00	---	2.78	123.50	---	5.16
49.31	24.74	97.85	20.41	0.20	12.89	390.00	---	2.81	123.50	---	7.35
51.31	22.89	86.06	15.30	1.65	15.94	390.00	---	3.22	123.50	---	5.86
53.31	18.15	70.14	10.20	3.09	19.47	390.00	---	4.02	123.50	---	4.72
55.31	10.51	41.94	5.09	4.54	23.00	390.00	---	6.90	123.50	---	3.93
57.31	0.00	0.00	0.00	5.98	26.75	390.00	---	N/A	123.50	---	3.33

4F1

Stringer S2-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.04	0.05	5.30	24.59	390.00	---	6000.00	123.50	---	3.65
1.85	8.56	36.63	4.81	3.97	20.66	390.00	---	7.96	123.50	---	4.41
3.69	14.67	61.14	9.63	2.64	17.24	390.00	---	4.67	123.50	---	5.36
5.54	18.30	74.05	14.45	1.30	13.84	390.00	---	3.80	123.50	---	6.77
7.39	19.48	83.26	19.27	0.03	10.72	390.00	---	3.37	123.50	---	8.86
9.23	18.19	82.68	24.09	1.36	12.96	390.00	---	3.41	123.50	---	7.23
11.08	14.36	72.60	29.11	2.79	16.72	390.00	---	3.93	123.50	---	5.51
12.92	7.98	54.57	34.24	4.12	21.07	390.00	---	5.35	123.50	---	4.31
14.77	-0.87	30.47	39.36	5.46	25.42	390.00	---	7.60	123.50	---	3.52
16.62	-12.17	14.87	50.32	6.79	29.67	390.00	---	5.72	123.50	---	2.97
18.46	-25.92	16.59	76.28	7.02	32.90	390.00	---	3.59	123.50	---	2.67
20.46	-13.32	8.64	49.67	5.58	28.37	390.00	---	5.77	123.50	---	3.15
22.46	-3.61	36.29	40.14	4.13	24.13	390.00	---	7.38	123.50	---	3.77
24.46	3.21	59.61	33.12	2.69	19.82	390.00	---	4.98	123.50	---	4.66
26.46	7.14	73.98	26.11	1.24	15.26	390.00	---	3.96	123.50	---	6.14
28.46	8.17	77.32	24.37	0.21	18.38	390.00	---	3.77	123.50	---	5.16
30.46	6.31	74.78	31.45	1.65	16.42	390.00	---	3.93	123.50	---	5.69
32.46	1.56	60.65	39.74	3.10	19.60	390.00	---	4.92	123.50	---	4.69
34.46	-6.07	37.93	48.03	4.54	24.06	390.00	---	6.12	123.50	---	3.76
36.46	-16.60	8.65	57.15	5.99	29.56	390.00	---	4.96	123.50	---	3.01
38.46	-30.04	13.12	80.39	8.84	33.11	390.00	---	3.36	123.50	---	2.60
40.46	-13.82	11.71	48.19	7.39	30.10	390.00	---	5.94	123.50	---	2.91
42.46	-0.48	34.53	37.52	5.95	26.63	390.00	---	7.98	123.50	---	3.34
44.46	9.97	62.46	32.66	4.50	22.69	390.00	---	4.64	123.50	---	3.99
46.46	17.52	85.41	27.79	3.06	18.37	390.00	---	3.31	123.50	---	5.00
48.46	22.17	98.70	23.42	1.61	21.08	390.00	---	2.81	123.50	---	4.43
50.46	23.52	100.76	18.74	0.05	12.80	390.00	---	2.74	123.50	---	7.42
52.46	21.98	88.58	14.06	1.49	16.70	390.00	---	3.14	123.50	---	5.60
54.46	17.54	74.58	9.38	2.94	20.88	390.00	---	3.79	123.50	---	4.41
56.46	10.22	45.68	4.69	4.38	25.30	390.00	---	6.34	123.50	---	3.58
58.46	0.00	0.00	0.00	5.83	29.87	390.00	---	N/A	123.50	---	2.99

4F1

Stringer S3-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.02	0.04	5.81	26.86	390.00	---	7500.00	123.50	---	3.32
1.96	10.00	44.78	4.66	4.39	23.03	390.00	---	6.48	123.50	---	3.93
3.92	17.22	73.27	9.33	2.97	18.10	390.00	---	3.86	123.50	---	5.08
5.89	21.65	87.09	14.01	1.55	14.10	390.00	---	3.20	123.50	---	6.63
7.85	23.31	99.06	18.68	0.14	10.51	390.00	---	2.79	123.50	---	9.03
9.81	22.18	97.26	23.35	1.28	13.90	390.00	---	2.86	123.50	---	6.74
11.77	17.77	83.62	28.20	3.12	18.47	390.00	---	3.38	123.50	---	4.97
13.74	10.25	61.43	33.18	4.54	22.76	390.00	---	4.72	123.50	---	3.97
15.7	0.00	33.79	38.16	5.96	26.67	390.00	---	7.86	123.50	---	3.34
17.66	-13.12	13.19	48.96	7.37	30.20	390.00	---	5.86	123.50	---	2.90
19.62	-29.01	14.69	79.02	7.26	33.49	390.00	---	3.43	123.50	---	2.62
21.62	-15.93	8.90	56.07	5.81	28.26	390.00	---	5.07	123.50	---	3.16
23.62	-5.75	37.49	46.80	4.37	24.14	390.00	---	6.29	123.50	---	3.75
25.62	1.55	60.54	38.75	2.92	19.74	390.00	---	4.93	123.50	---	4.66
27.62	5.95	74.92	30.71	1.48	15.19	390.00	---	3.92	123.50	---	6.16
29.62	7.45	77.78	26.00	0.07	18.46	390.00	---	3.76	123.50	---	5.14
31.62	5.86	74.99	29.06	1.52	16.61	390.00	---	3.92	123.50	---	5.63
33.62	1.39	60.76	36.85	2.96	21.24	390.00	---	4.91	123.50	---	4.33
35.62	-5.98	37.81	44.64	4.41	25.66	390.00	---	6.59	123.50	---	3.53
37.62	-16.24	8.25	53.88	5.85	29.69	390.00	---	5.27	123.50	---	3.00
39.62	-29.41	15.51	81.90	7.30	33.60	390.00	---	3.30	123.50	---	2.61
41.62	-13.27	13.86	48.97	7.34	29.05	390.00	---	5.86	123.50	---	3.02
43.62	0.00	35.02	37.73	5.90	25.18	390.00	---	7.95	123.50	---	3.54
45.62	10.32	60.21	32.74	4.45	25.55	390.00	---	4.81	123.50	---	3.54
47.62	17.78	80.27	27.74	3.01	15.79	390.00	---	3.52	123.50	---	5.83
49.62	22.33	86.34	22.77	1.56	15.58	390.00	---	3.22	123.50	---	6.00
51.62	23.65	86.37	18.21	0.06	11.31	390.00	---	3.20	123.50	---	8.39
53.62	22.07	75.81	13.66	1.51	14.25	390.00	---	3.67	123.50	---	6.56
55.62	17.61	62.06	9.11	2.95	17.43	390.00	---	4.55	123.50	---	5.28
57.62	10.26	37.87	4.56	4.40	21.06	390.00	---	7.65	123.50	---	4.30
59.62	0.00	0.00	0.00	5.84	24.89	390.00	---	N/A	123.50	---	3.58

4F1

Stringer S4-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.05	0.07	5.96	23.04	390.00	---	4285.71	123.50	---	3.86
2.08	10.84	38.49	4.48	4.49	19.29	390.00	---	7.51	123.50	---	4.69
4.16	18.67	63.48	8.97	3.03	15.90	390.00	---	4.43	123.50	---	5.78
6.23	23.45	78.01	13.47	1.57	12.82	390.00	---	3.55	123.50	---	7.29
8.31	25.21	87.81	17.97	0.11	10.03	390.00	---	3.13	123.50	---	9.46
10.39	23.92	88.06	22.46	1.35	12.84	390.00	---	3.14	123.50	---	7.29
12.47	19.23	77.26	27.04	3.09	15.91	390.00	---	3.63	123.50	---	5.78
14.55	11.30	57.21	31.71	4.55	19.79	390.00	---	5.05	123.50	---	4.57
16.62	0.33	30.07	36.38	6.01	23.44	390.00	---	8.24	123.50	---	3.80
18.7	-13.67	13.92	46.44	7.47	26.88	390.00	---	6.17	123.50	---	3.26
20.78	-30.73	15.56	76.78	7.32	30.35	390.00	---	3.51	123.50	---	2.89
22.78	-17.50	8.20	52.13	5.91	27.09	390.00	---	5.42	123.50	---	3.29
24.78	-7.08	37.43	44.24	4.51	23.41	390.00	---	6.62	123.50	---	3.87
26.78	0.52	60.03	36.54	3.10	19.32	390.00	---	4.99	123.50	---	4.76
28.78	5.32	74.62	28.83	1.69	14.96	390.00	---	3.95	123.50	---	6.24
30.78	7.32	77.91	25.31	0.29	18.80	390.00	---	3.76	123.50	---	5.04
32.78	5.64	75.21	31.60	1.54	16.66	390.00	---	3.91	123.50	---	5.61
34.78	1.16	60.63	39.66	2.95	21.15	390.00	---	4.93	123.50	---	4.35
36.78	-6.14	37.45	47.73	4.35	25.56	390.00	---	6.16	123.50	---	3.55
38.78	-16.25	8.55	56.55	5.76	29.55	390.00	---	5.02	123.50	---	3.02
40.78	-29.16	14.55	79.36	8.73	32.98	390.00	---	3.41	123.50	---	2.62
42.78	-13.11	13.00	48.77	7.32	29.75	390.00	---	5.88	123.50	---	2.95
44.78	0.13	34.35	37.98	5.92	26.28	390.00	---	7.90	123.50	---	3.39
46.78	10.55	62.39	32.84	4.51	22.41	390.00	---	4.64	123.50	---	4.04
48.78	18.17	84.28	27.71	3.10	18.10	390.00	---	3.34	123.50	---	5.08
50.78	22.95	97.31	22.94	1.70	21.20	390.00	---	2.85	123.50	---	4.40
52.78	23.98	99.30	18.36	0.18	12.62	390.00	---	2.78	123.50	---	7.51
54.78	22.21	87.88	13.77	1.59	16.45	390.00	---	3.16	123.50	---	5.68
56.78	17.62	73.40	9.19	3.00	20.55	390.00	---	3.85	123.50	---	4.48
58.78	10.22	44.92	4.60	4.40	24.87	390.00	---	6.45	123.50	---	3.64
60.78	0.00	0.00	0.00	5.81	29.34	390.00	---	N/A	123.50	---	3.04

4F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	-0.06	0.04	0.26	3.86	16.77	390.00	---	1153.62	123.50	---	5.43	
2.18	7.18	28.03	0.96	2.77	13.54	390.00	---	10.45	123.50	---	6.81	
4.37	12.03	43.26	1.95	1.66	10.44	390.00	---	6.66	123.50	---	8.94	
6.55	14.43	50.32	2.95	0.54	7.81	390.00	---	5.68	123.50	---	12.09	
8.74	14.35	49.30	3.94	0.61	9.35	390.00	---	5.79	123.50	---	10.10	
10.92	11.75	39.34	4.93	1.77	13.73	390.00	---	7.33	123.50	---	6.79	
13.11	9.34	35.75	8.68	1.00	7.29	390.00	---	8.13	123.50	---	12.89	
15.29	5.84	32.55	14.05	2.20	10.09	390.00	---	9.04	123.50	---	9.20	
17.48	-0.29	20.81	19.50	3.42	13.10	390.00	---	14.40	123.50	---	6.99	
19.66	-9.10	8.47	26.62	4.65	15.98	390.00	---	10.93	123.50	---	5.65	
21.85	-20.61	10.24	41.22	5.65	18.89	390.00	---	6.78	123.50	---	4.73	
23.85	-10.47	5.74	27.86	4.49	16.02	390.00	---	10.39	123.50	---	5.65	
25.85	-2.66	19.82	22.76	3.32	13.10	390.00	---	13.06	123.50	---	7.00	
27.85	2.79	33.36	19.79	2.13	10.45	390.00	---	8.91	123.50	---	8.89	
29.85	5.85	40.87	16.84	0.93	7.84	390.00	---	7.20	123.50	---	12.00	
31.85	6.48	41.15	13.91	0.08	7.55	390.00	---	7.13	123.50	---	12.57	
33.85	5.08	41.75	18.57	1.31	8.36	390.00	---	7.06	123.50	---	11.21	
35.85	1.22	35.42	24.86	2.55	11.27	390.00	---	8.44	123.50	---	8.20	
37.85	-5.13	22.73	31.15	3.80	14.26	390.00	---	9.47	123.50	---	6.40	
39.85	-13.99	4.65	37.90	5.06	17.25	390.00	---	7.55	123.50	---	5.21	
41.85	-25.40	7.28	52.86	7.58	22.32	390.00	---	5.19	123.50	---	3.92	
43.85	-11.52	6.60	28.08	6.30	20.15	390.00	---	10.27	123.50	---	4.40	
45.85	-0.21	22.00	21.07	5.00	17.69	390.00	---	13.63	123.50	---	5.09	
47.85	8.50	41.14	18.10	3.70	15.09	390.00	---	7.09	123.50	---	6.05	
49.85	14.58	55.22	15.13	2.38	12.18	390.00	---	5.17	123.50	---	7.60	
51.85	17.99	62.63	12.17	1.63	14.79	390.00	---	4.50	123.50	---	6.31	
53.85	19.87	66.37	9.74	0.26	8.65	390.00	---	4.22	123.50	---	10.95	
55.85	19.02	60.70	7.30	1.11	11.20	390.00	---	4.63	123.50	---	8.38	
57.85	15.42	50.71	4.87	2.49	14.42	390.00	---	5.61	123.50	---	6.42	
59.85	9.08	32.02	2.43	3.86	18.01	390.00	---	9.09	123.50	---	5.06	
61.85	0.00	0.00	0.00	5.23	21.90	390.00	---	N/A	123.50	---	4.10	

4F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		Inventory							Operating
		D	L+I	L+I	D		L+I	(kips)	Operating				
4F1	Stringer F2A-1	0	0.07	0.30	0.04	5.34	6.43	1212.51	---	3108.77	149.61	---	17.07
		2.21	10.90	13.32	3.01	4.44	6.43	1212.51	---	69.20	149.61	---	17.21
		4.43	19.72	26.42	5.99	3.52	6.43	1212.51	---	34.56	149.61	---	17.35
		6.64	26.47	39.51	8.98	2.58	6.44	1212.51	---	22.94	149.61	---	17.47
		8.86	31.11	52.61	11.97	1.61	6.43	1212.51	---	17.14	149.61	---	17.65
		11.07	33.60	65.70	14.95	0.63	6.44	1212.51	---	13.68	149.61	---	17.77
		13.29	31.25	61.81	13.55	2.10	7.07	1212.51	---	14.58	149.61	---	15.98
		15.5	25.47	49.61	10.16	3.12	8.14	1212.51	---	18.29	149.61	---	13.75
		17.71	17.42	33.85	6.78	4.15	9.11	1212.51	---	27.04	149.61	---	12.18
		19.93	7.06	15.19	3.39	5.21	10.23	1212.51	---	60.94	149.61	---	10.74
	22.14	0.00	0.00	0.00	4.18	12.05	1212.51	---	N/A	149.61	---	9.20	
	Stringer F2B-1	24.15	6.19	21.09	7.68	3.19	11.03	1212.51	---	43.93	149.61	---	10.14
		26.16	11.60	37.01	8.85	2.19	10.04	1212.51	---	24.89	149.61	---	11.24
		28.16	14.98	46.76	13.28	1.18	8.85	1212.51	---	19.63	149.61	---	12.87
		30.17	16.32	55.18	17.71	0.15	7.39	1212.51	---	16.61	149.61	---	15.55
		32.18	15.58	59.99	22.14	1.10	9.33	1212.51	---	15.29	149.61	---	12.22
		34.19	12.33	53.73	23.15	2.15	10.40	1212.51	---	17.13	149.61	---	10.86
		36.19	6.94	41.93	24.18	3.22	12.53	1212.51	---	22.08	149.61	---	8.93
		38.2	-0.59	27.57	25.21	4.29	14.57	1212.51	---	33.81	149.61	---	7.60
		40.21	-10.29	7.94	26.30	5.38	16.43	1212.51	---	35.07	149.61	---	6.68
42.21		-22.21	3.02	35.75	7.06	19.03	1212.51	---	25.47	149.61	---	5.68	
44.22	-9.18	8.50	22.23	5.95	17.63	1212.51	---	41.54	149.61	---	6.19		
46.22	1.62	31.61	21.38	4.83	16.07	1212.51	---	29.46	149.61	---	6.86		
48.23	10.15	49.82	20.71	3.69	14.20	1212.51	---	18.52	149.61	---	7.84		
50.23	16.42	63.80	20.03	2.55	11.90	1212.51	---	14.36	149.61	---	9.46		
52.23	20.37	74.42	19.36	1.40	9.12	1212.51	---	12.26	149.61	---	12.47		
54.24	21.03	72.11	15.47	0.25	9.51	1212.51	---	12.64	149.61	---	12.08		
56.24	19.36	61.71	11.61	1.42	11.82	1212.51	---	14.80	149.61	---	9.62		
58.25	15.31	50.45	7.74	2.61	14.23	1212.51	---	18.18	149.61	---	7.90		
60.25	8.88	29.96	3.88	3.81	16.70	1212.51	---	30.84	149.61	---	6.66		
62.26	0.00	0.00	0.00	5.02	19.16	1212.51	---	N/A	149.61	---	5.74		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1	Stringer F1A-2	0	0.00	0.00	0.00	4.49	10.00	643.98	---	N/A	207.60	---	15.52
		2	8.23	16.93	4.50	3.73	8.64	643.98	---	28.77	207.60	---	18.05
		4	14.93	29.47	9.00	2.97	7.82	643.98	---	16.30	207.60	---	20.04
		6.01	20.11	40.28	13.49	2.21	6.85	643.98	---	11.80	207.60	---	22.99
		8.01	23.77	49.11	17.99	1.44	6.21	643.98	---	9.60	207.60	---	25.48
		10.01	25.90	55.66	22.50	3.49	9.38	643.98	---	8.43	207.60	---	16.65
		12.01	18.17	41.04	28.15	4.25	10.78	643.98	---	11.63	207.60	---	14.42
		14.02	8.89	26.03	33.81	5.01	10.53	643.98	---	14.39	207.60	---	14.69
		16.02	-1.91	9.51	39.50	5.77	11.15	643.98	---	12.49	207.60	---	13.80
		18.02	-14.23	1.92	54.76	6.54	11.11	643.98	---	8.79	207.60	---	13.79
		20.02	-28.19	2.21	75.14	6.84	30.07	643.98	---	6.22	207.60	---	5.08
		22.02	-15.56	7.07	13.86	5.78	26.63	643.98	---	34.62	207.60	---	5.78
		24.02	-5.08	39.25	8.76	4.69	23.63	643.98	---	12.49	207.60	---	6.56
		26.02	3.16	63.60	8.86	3.55	19.62	643.98	---	7.74	207.60	---	7.96
		28.02	9.08	85.83	9.14	2.36	15.61	643.98	---	5.67	207.60	---	10.08
		30.03	12.43	89.47	9.42	1.17	11.33	643.98	---	5.40	207.60	---	13.99
	32.03	13.52	82.82	7.58	0.08	13.40	643.98	---	5.82	207.60	---	11.91	
	34.03	12.13	75.05	5.68	1.32	15.90	643.98	---	6.44	207.60	---	9.96	
	36.03	8.24	53.26	3.79	2.56	20.62	643.98	---	9.15	207.60	---	7.62	
	38.03	1.87	20.77	1.89	3.80	25.23	643.98	---	23.76	207.60	---	6.18	
	40.03	0.00	0.00	0.00	6.67	27.87	643.98	---	N/A	207.60	---	5.49	
	42.15	11.31	47.15	22.47	5.36	23.77	643.98	---	10.27	207.60	---	6.49	
	44.27	21.30	81.84	21.33	4.06	21.20	643.98	---	5.79	207.60	---	7.34	
	46.39	28.52	106.65	20.18	2.75	18.22	643.98	---	4.38	207.60	---	8.61	
	48.52	32.97	124.56	19.04	1.45	14.95	643.98	---	3.71	207.60	---	10.58	
	50.64	34.67	125.19	17.89	0.15	13.07	643.98	---	3.68	207.60	---	12.21	
	52.76	33.24	116.77	14.32	1.32	14.80	643.98	---	3.96	207.60	---	10.70	
	54.88	29.07	103.49	10.74	2.62	16.36	643.98	---	4.51	207.60	---	9.60	
	57	22.13	81.52	7.16	3.92	20.00	643.98	---	5.81	207.60	---	7.79	
	59.13	12.43	48.16	3.57	5.22	23.63	643.98	---	10.03	207.60	---	6.54	
	61.25	0.00	0.00	0.00	6.52	26.59	643.98	---	N/A	207.60	---	5.76	
	4F1	Stringer S1-2	0	0.00	0.00	0.00	2.33	12.60	235.47	---	N/A	204.20	---
0.75			1.38	6.62	0.75	1.97	11.31	235.47	---	27.16	204.20	---	13.71
2			3.68	17.65	2.00	1.36	9.17	390.00	---	16.79	123.50	---	10.21
4			5.43	25.25	4.00	0.39	6.45	390.00	---	11.67	123.50	---	14.67
6			5.25	26.33	6.00	0.57	6.35	390.00	---	11.19	123.50	---	14.87
8			3.13	24.95	10.23	1.54	8.06	390.00	---	11.90	123.50	---	11.60
10			0.00	16.44	11.42	2.49	11.26	390.00	---	18.25	123.50	---	8.22
12			3.73	21.93	6.53	1.42	8.53	390.00	---	13.51	123.50	---	10.97
14			5.61	28.26	4.90	0.47	6.91	390.00	---	10.42	123.50	---	13.68
16			5.60	23.67	3.26	0.48	5.88	390.00	---	12.44	123.50	---	16.07
18			3.71	19.09	3.55	1.42	8.04	390.00	---	15.52	123.50	---	11.64
19.25			1.39	7.16	1.33	2.01	11.33	169.69	---	18.04	180.49	---	12.07
20			0.00	0.00	0.00	2.36	13.31	169.69	---	N/A	180.49	---	10.25

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.02	24.33	390.00	---	N/A	123.50	---	3.66
2	10.62	41.54	4.50	4.60	21.58	390.00	---	6.97	123.50	---	4.19
4	18.41	68.12	8.99	3.18	16.51	390.00	---	4.13	123.50	---	5.56
6	23.35	83.35	13.49	1.76	13.11	390.00	---	3.32	123.50	---	7.11
8	25.46	94.94	17.99	0.34	11.10	390.00	---	2.89	123.50	---	8.53
10	24.71	94.92	22.47	1.95	16.76	390.00	---	2.90	123.50	---	5.55
12	19.38	81.06	26.42	3.37	18.96	390.00	---	3.46	123.50	---	4.83
14	11.21	58.99	30.38	4.80	22.47	390.00	---	4.90	123.50	---	4.01
16	0.17	31.24	34.37	6.23	24.83	390.00	---	8.72	123.50	---	3.58
18	-13.72	13.97	46.70	7.67	28.10	390.00	---	6.13	123.50	---	3.11
20	-30.49	16.44	77.13	9.12	32.72	390.00	---	3.49	123.50	---	2.62
22	-17.01	9.02	49.65	6.00	25.88	390.00	---	5.70	123.50	---	3.44
24	-6.50	34.85	41.00	4.51	21.94	390.00	---	7.16	123.50	---	4.12
26	1.04	55.72	34.23	3.03	17.73	390.00	---	5.37	123.50	---	5.19
28	5.61	68.19	27.55	1.54	13.70	390.00	---	4.32	123.50	---	6.82
30	7.20	69.80	22.31	0.20	13.66	390.00	---	4.19	123.50	---	6.94
32	5.31	68.13	30.61	1.69	14.96	390.00	---	4.33	123.50	---	6.24
34	0.43	55.69	38.94	3.19	17.82	390.00	---	5.38	123.50	---	5.15
36	-7.44	35.22	47.29	4.68	21.69	390.00	---	6.19	123.50	---	4.16
38	-18.28	8.09	56.02	6.17	27.01	390.00	---	5.03	123.50	---	3.29
40	-32.07	14.62	77.57	9.24	30.33	390.00	---	3.45	123.50	---	2.83
42.12	-14.13	12.22	42.67	7.67	27.84	390.00	---	6.70	123.50	---	3.14
44.24	0.48	31.16	32.85	6.10	24.37	390.00	---	9.12	123.50	---	3.65
46.37	11.75	60.65	29.02	4.53	20.86	390.00	---	4.75	123.50	---	4.34
48.49	19.70	81.08	25.31	2.96	16.87	390.00	---	3.46	123.50	---	5.46
50.61	24.35	93.17	21.64	1.61	14.19	390.00	---	2.96	123.50	---	6.58
52.73	26.11	94.99	17.31	0.05	10.58	390.00	---	2.88	123.50	---	8.97
54.85	24.56	86.69	12.99	1.51	13.76	390.00	---	3.18	123.50	---	6.79
56.97	19.69	71.07	8.66	3.08	17.45	390.00	---	3.94	123.50	---	5.27
59.1	11.51	43.84	4.33	4.64	21.52	390.00	---	6.58	123.50	---	4.20
61.22	0.00	0.00	0.00	6.20	25.18	390.00	---	N/A	123.50	---	3.53

4F1

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.81	24.09	390.00	---	N/A	123.50	---	3.70
2	10.20	40.99	5.34	4.39	21.29	390.00	---	7.07	123.50	---	4.26
4	17.56	66.78	10.69	2.97	16.13	390.00	---	4.23	123.50	---	5.71
6	22.08	81.66	16.03	1.55	12.75	390.00	---	3.40	123.50	---	7.33
8	23.76	92.26	21.37	0.13	10.69	390.00	---	2.99	123.50	---	8.87
10	22.61	91.54	26.72	1.57	17.07	390.00	---	3.03	123.50	---	5.47
12	18.06	79.13	29.23	2.99	17.96	390.00	---	3.56	123.50	---	5.12
14	10.67	58.47	31.74	4.41	21.77	390.00	---	4.95	123.50	---	4.16
16	0.44	32.03	34.34	5.82	24.15	390.00	---	8.72	123.50	---	3.69
18	-12.63	16.37	43.88	7.24	27.50	390.00	---	6.55	123.50	---	3.19
20	-28.57	19.55	72.36	8.68	31.53	390.00	---	3.75	123.50	---	2.74
22	-15.73	9.54	52.51	5.69	25.32	390.00	---	5.41	123.50	---	3.53
24	-5.81	34.48	44.35	4.24	21.53	390.00	---	6.63	123.50	---	4.22
26	1.21	55.61	37.67	2.78	17.59	390.00	---	5.37	123.50	---	5.24
28	5.31	68.32	31.02	1.32	13.74	390.00	---	4.31	123.50	---	6.82
30	6.52	71.20	26.62	0.30	10.99	390.00	---	4.12	123.50	---	8.62
32	4.45	68.86	34.10	1.76	14.85	390.00	---	4.29	123.50	---	6.28
34	-0.52	56.71	41.67	3.21	18.87	390.00	---	5.28	123.50	---	4.86
36	-8.41	36.15	49.31	4.67	22.87	390.00	---	5.91	123.50	---	3.95
38	-19.20	9.16	57.44	6.13	26.66	390.00	---	4.89	123.50	---	3.33
40	-32.88	16.91	77.96	7.58	30.05	390.00	---	3.43	123.50	---	2.91
42.12	-14.46	14.11	42.45	7.91	28.17	390.00	---	6.73	123.50	---	3.09
44.24	0.69	32.17	33.06	6.37	24.76	390.00	---	9.05	123.50	---	3.58
46.37	12.56	62.89	30.59	4.82	21.38	390.00	---	4.57	123.50	---	4.22
48.49	21.15	84.76	28.20	3.28	17.48	390.00	---	3.29	123.50	---	5.25
50.61	26.49	98.22	25.81	1.36	14.73	390.00	---	2.78	123.50	---	6.36
52.73	27.74	98.87	20.65	0.18	11.02	390.00	---	2.75	123.50	---	8.60
54.85	25.72	89.48	15.49	1.72	14.18	390.00	---	3.07	123.50	---	6.58
56.97	20.43	72.62	10.33	3.27	17.83	390.00	---	3.85	123.50	---	5.14
59.1	11.86	44.56	5.17	4.81	21.87	390.00	---	6.47	123.50	---	4.12
61.22	0.00	0.00	0.00	6.36	25.18	390.00	---	N/A	123.50	---	3.52

4F1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.77	25.63	390.00	---	N/A	123.50	---	3.48
2	10.12	41.10	5.38	4.35	21.35	390.00	---	7.05	123.50	---	4.25
4	17.41	67.02	10.77	2.93	17.40	390.00	---	4.22	123.50	---	5.29
6	21.85	82.02	16.15	1.51	13.84	390.00	---	3.39	123.50	---	6.76
8	23.46	92.75	21.54	0.09	11.73	390.00	---	2.98	123.50	---	8.09
10	22.23	92.14	26.93	1.50	16.43	390.00	---	3.01	123.50	---	5.69
12	17.80	79.60	29.41	2.92	18.04	390.00	---	3.55	123.50	---	5.10
14	10.54	58.82	31.91	4.34	21.85	390.00	---	4.92	123.50	---	4.15
16	0.43	32.11	34.48	5.76	25.42	390.00	---	8.69	123.50	---	3.51
18	-12.51	15.90	44.17	7.18	28.70	390.00	---	6.51	123.50	---	3.06
20	-28.32	19.13	72.98	8.62	31.55	390.00	---	3.72	123.50	---	2.74
22	-15.54	10.56	52.82	5.66	25.33	390.00	---	5.39	123.50	---	3.53
24	-5.67	35.28	44.60	4.21	21.54	390.00	---	6.60	123.50	---	4.21
26	1.28	56.10	38.04	2.75	17.61	390.00	---	5.32	123.50	---	5.24
28	5.33	68.55	31.52	1.30	12.68	390.00	---	4.30	123.50	---	7.39
30	6.44	71.17	27.04	0.25	14.44	390.00	---	4.12	123.50	---	6.56
32	4.48	69.03	34.40	1.71	13.68	390.00	---	4.28	123.50	---	6.82
34	-0.40	57.02	41.85	3.17	17.58	390.00	---	5.25	123.50	---	5.22
36	-8.18	36.65	49.36	4.62	22.89	390.00	---	5.91	123.50	---	3.95
38	-18.88	9.90	57.50	6.08	26.68	390.00	---	4.89	123.50	---	3.33
40	-32.50	17.77	78.30	9.37	30.07	390.00	---	3.42	123.50	---	2.85
42.12	-14.26	14.46	42.67	7.82	28.18	390.00	---	6.70	123.50	---	3.09
44.24	0.69	32.34	33.07	6.28	24.76	390.00	---	9.05	123.50	---	3.58
46.37	12.38	63.08	31.00	4.73	21.39	390.00	---	4.56	123.50	---	4.22
48.49	20.78	84.95	29.00	3.19	17.50	390.00	---	3.29	123.50	---	5.25
50.61	25.93	98.39	27.00	1.41	14.84	390.00	---	2.79	123.50	---	6.31
52.73	27.29	99.02	21.60	0.13	11.05	390.00	---	2.75	123.50	---	8.59
54.85	25.38	89.59	16.20	1.67	14.21	390.00	---	3.07	123.50	---	6.57
56.97	20.19	72.65	10.79	3.22	17.86	390.00	---	3.85	123.50	---	5.14
59.1	11.73	44.56	5.39	4.76	21.90	390.00	---	6.47	123.50	---	4.12
61.22	0.00	0.00	0.00	6.31	25.20	390.00	---	N/A	123.50	---	3.52

4F1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.88	25.60	390.00	---	N/A	123.50	---	3.48
2	10.34	41.02	5.02	4.46	21.33	390.00	---	7.06	123.50	---	4.24
4	17.85	66.84	10.03	3.04	17.38	390.00	---	4.22	123.50	---	5.29
6	22.51	81.75	15.05	1.62	13.81	390.00	---	3.39	123.50	---	6.76
8	24.34	92.38	20.06	0.20	11.55	390.00	---	2.98	123.50	---	8.21
10	23.33	91.67	25.08	1.69	18.50	390.00	---	3.02	123.50	---	5.04
12	18.53	79.18	28.15	3.11	18.02	390.00	---	3.55	123.50	---	5.10
14	10.89	58.43	31.21	4.53	21.82	390.00	---	4.95	123.50	---	4.15
16	0.41	31.91	34.35	5.95	25.40	390.00	---	8.72	123.50	---	3.51
18	-12.91	15.52	43.82	7.37	28.68	390.00	---	6.55	123.50	---	3.06
20	-29.10	18.06	72.39	8.81	31.53	390.00	---	3.74	123.50	---	2.73
22	-16.10	9.56	52.56	5.77	25.31	390.00	---	5.40	123.50	---	3.53
24	-6.01	34.60	44.35	4.32	21.52	390.00	---	6.63	123.50	---	4.21
26	1.17	55.64	37.50	2.86	17.59	390.00	---	5.37	123.50	---	5.24
28	5.43	68.31	30.67	1.41	12.66	390.00	---	4.31	123.50	---	7.39
30	6.76	71.14	26.28	0.36	14.31	390.00	---	4.12	123.50	---	6.61
32	4.58	68.74	33.91	1.82	13.63	390.00	---	4.30	123.50	---	6.84
34	-0.51	56.43	41.61	3.27	17.54	390.00	---	5.31	123.50	---	5.23
36	-8.51	35.75	49.33	4.73	22.86	390.00	---	5.91	123.50	---	3.95
38	-19.43	8.61	57.48	6.18	26.65	390.00	---	4.88	123.50	---	3.33
40	-33.26	16.25	78.04	9.54	30.03	390.00	---	3.42	123.50	---	2.85
42.12	-14.66	13.76	42.46	7.99	28.22	390.00	---	6.72	123.50	---	3.08
44.24	0.66	32.12	33.04	6.45	24.80	390.00	---	9.06	123.50	---	3.57
46.37	12.70	62.97	30.18	4.90	21.43	390.00	---	4.56	123.50	---	4.20
48.49	21.47	84.94	27.40	3.36	17.53	390.00	---	3.28	123.50	---	5.23
50.61	26.99	98.48	24.61	1.32	14.59	390.00	---	2.77	123.50	---	6.42
52.73	28.14	99.09	19.69	0.23	11.06	390.00	---	2.74	123.50	---	8.57
54.85	26.02	89.64	14.76	1.77	14.22	390.00	---	3.06	123.50	---	6.56
56.97	20.62	72.69	9.84	3.32	17.86	390.00	---	3.84	123.50	---	5.13
59.1	11.94	44.58	4.91	4.86	21.91	390.00	---	6.46	123.50	---	4.11
61.22	0.00	0.00	0.00	6.41	25.19	390.00	---	N/A	123.50	---	3.52

4F1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.42	23.40	390.00	---	N/A	123.50	---	3.83
2.04	9.62	38.26	4.24	3.99	19.42	390.00	---	7.59	123.50	---	4.69
4.09	16.32	61.90	8.48	2.57	15.70	390.00	---	4.58	123.50	---	5.89
6.13	20.11	74.68	12.72	1.14	12.32	390.00	---	3.75	123.50	---	7.62
8.17	20.98	82.55	16.96	0.29	10.96	390.00	---	3.38	123.50	---	8.64
10.21	19.06	80.05	21.19	1.19	12.79	390.00	---	3.51	123.50	---	7.33
12.26	15.18	71.60	25.27	2.62	16.82	390.00	---	3.98	123.50	---	5.49
14.3	8.37	52.96	29.35	4.05	20.71	390.00	---	5.51	123.50	---	4.39
16.34	-1.38	27.54	33.69	5.50	24.05	390.00	---	8.86	123.50	---	3.72
18.38	-14.08	14.43	44.86	6.94	27.61	390.00	---	6.37	123.50	---	3.19
20.43	-27.75	16.49	69.34	7.20	30.48	390.00	---	3.93	123.50	---	2.88
22.43	-14.81	9.15	48.94	5.73	24.91	390.00	---	5.83	123.50	---	3.58
24.43	-4.81	33.26	40.60	4.26	21.15	390.00	---	7.27	123.50	---	4.29
26.43	2.24	53.27	33.48	2.79	17.18	390.00	---	5.59	123.50	---	5.37
28.43	6.34	64.90	26.37	1.31	12.07	390.00	---	4.52	123.50	---	7.76
30.43	7.48	66.68	21.83	0.23	13.37	390.00	---	4.39	123.50	---	7.09
32.43	5.53	65.92	30.32	1.72	13.16	390.00	---	4.47	123.50	---	7.09
34.43	0.59	54.79	38.83	3.21	17.33	390.00	---	5.46	123.50	---	5.30
36.43	-7.32	34.94	47.38	4.71	22.76	390.00	---	6.18	123.50	---	3.97
38.43	-18.23	7.84	56.22	6.20	26.75	390.00	---	5.01	123.50	---	3.32
40.43	-32.15	14.07	78.07	9.24	30.48	390.00	---	3.43	123.50	---	2.81
42.55	-14.24	11.79	41.96	7.65	28.06	390.00	---	6.81	123.50	---	3.11
44.67	0.30	31.74	31.81	6.05	24.63	390.00	---	9.42	123.50	---	3.61
46.79	11.45	61.03	28.08	4.45	20.98	390.00	---	4.73	123.50	---	4.32
48.91	19.20	81.31	24.42	2.85	16.92	390.00	---	3.45	123.50	---	5.45
51.04	23.52	92.59	20.76	1.79	14.60	390.00	---	2.99	123.50	---	6.38
53.16	25.62	95.46	16.61	0.19	10.53	390.00	---	2.87	123.50	---	9.00
55.28	24.32	87.64	12.46	1.42	13.92	390.00	---	3.15	123.50	---	6.72
57.4	19.61	72.29	8.31	3.02	17.75	390.00	---	3.88	123.50	---	5.18
59.52	11.50	44.78	4.16	4.62	21.98	390.00	---	6.44	123.50	---	4.11
61.65	0.00	0.00	0.00	6.22	25.97	390.00	---	N/A	123.50	---	3.42

4F1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear				
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF		
		D	M+	M-	V									
				L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
4F1	Stringer F2A-2	0	0.00	0.00	0.00	5.02	23.48	1212.51	---	N/A	149.61	---	4.69	
		2	8.86	37.99	6.20	3.83	19.73	1212.51	---	24.32	149.61	---	5.64	
		4	15.33	64.06	12.40	2.63	16.64	1212.51	---	14.32	149.61	---	6.76	
		6.01	19.40	79.48	18.60	1.44	15.33	1212.51	---	11.49	149.61	---	7.41	
		8.01	21.08	90.24	24.81	0.24	11.07	1212.51	---	10.10	149.61	---	10.37	
		10.01	20.36	89.25	31.02	1.41	15.27	1212.51	---	10.22	149.61	---	7.44	
		12.01	16.34	75.75	34.41	2.61	18.84	1212.51	---	12.10	149.61	---	5.97	
		14.01	9.92	63.29	37.88	3.81	21.40	1212.51	---	14.58	149.61	---	5.20	
		16.02	1.08	35.48	41.35	5.02	23.27	1212.51	---	22.53	149.61	---	4.73	
		18.02	-10.19	7.64	54.92	6.24	25.67	1212.51	---	16.80	149.61	---	4.24	
		20.02	-23.97	2.23	64.19	7.49	29.60	1212.51	---	14.16	149.61	---	3.63	
		22.02	-10.65	2.14	44.45	6.03	26.64	1212.51	---	20.74	149.61	---	4.09	
		24.02	0.13	37.73	40.11	4.76	23.18	1212.51	---	23.25	149.61	---	4.76	
		26.02	8.38	61.73	36.49	3.48	19.70	1212.51	---	14.97	149.61	---	5.67	
		28.02	14.07	82.07	32.97	2.20	15.63	1212.51	---	11.19	149.61	---	7.22	
		30.02	17.17	87.58	29.54	0.92	11.15	1212.51	---	10.45	149.61	---	10.24	
		32.02	17.45	78.91	23.58	0.50	13.80	1212.51	---	11.60	149.61	---	8.30	
		34.02	15.16	70.29	17.69	1.79	18.86	1212.51	---	13.05	149.61	---	6.01	
	36.03	10.28	44.53	11.79	3.09	21.06	1212.51	---	20.71	149.61	---	5.32		
	38.03	2.81	20.54	5.89	4.38	24.96	1212.51	---	45.27	149.61	---	4.44		
		40.03	0.00	0.00	0.00	7.23	28.93	1212.51	---	N/A	149.61	---	3.73	
		Stringer F2B-2	42.15	12.35	50.29	7.24	5.85	24.90	1212.51	---	18.30	149.61	---	4.39
			44.27	23.31	86.55	7.86	4.47	21.60	1212.51	---	10.51	149.61	---	5.12
			46.39	31.33	111.11	8.47	3.09	18.55	1212.51	---	8.11	149.61	---	6.04
			48.51	36.42	128.22	9.09	1.70	15.33	1212.51	---	6.99	149.61	---	7.40
			50.64	38.57	131.62	9.70	0.32	11.38	1212.51	---	6.79	149.61	---	10.08
			52.76	36.77	122.42	7.75	1.54	16.06	1212.51	---	7.32	149.61	---	7.07
			54.88	32.03	113.70	5.81	2.93	19.14	1212.51	---	7.92	149.61	---	5.86
	57		24.32	86.56	3.88	4.33	21.06	1212.51	---	10.49	149.61	---	5.26	
	59.12		13.65	55.42	1.94	5.73	24.48	1212.51	---	16.58	149.61	---	4.47	
	61.25	0.00	0.00	0.00	7.13	28.48	1212.51	---	N/A	149.61	---	3.79		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
4F1	Stringer F1A-3											
	0	0.00	0.00	0.00	6.39	27.63	643.98	---	N/A	207.60	---	5.55
	2.12	12.15	49.88	2.29	5.06	24.38	643.98	---	9.69	207.60	---	6.34
	4.24	21.49	85.88	4.58	3.74	20.97	643.98	---	5.52	207.60	---	7.44
	6.37	28.02	107.00	6.87	2.41	17.40	643.98	---	4.37	207.60	---	9.04
	8.49	31.72	126.17	9.16	1.08	13.80	643.98	---	3.67	207.60	---	11.49
	10.61	32.63	131.62	11.46	0.50	13.85	643.98	---	3.52	207.60	---	11.49
	12.73	30.17	117.95	9.17	1.83	14.55	643.98	---	3.94	207.60	---	10.85
	14.86	24.86	102.46	6.87	3.17	18.46	643.98	---	4.59	207.60	---	8.48
	16.98	16.71	70.80	4.58	4.51	22.72	643.98	---	6.76	207.60	---	6.83
	19.1	5.70	27.29	2.29	5.86	26.27	643.98	---	17.94	207.60	---	5.86
	21.22	-1.36	0.00	26.73	7.22	28.88	643.98	---	18.48	207.60	---	5.28
	Stringer F1B-3											
	23.34	8.42	45.93	23.64	3.93	23.44	643.98	---	10.60	207.60	---	6.65
	25.47	15.31	77.14	22.05	2.57	20.00	643.98	---	6.22	207.60	---	7.86
	27.59	19.31	97.06	20.46	1.20	16.62	643.98	---	4.90	207.60	---	9.54
	29.71	20.39	110.35	18.87	0.17	12.91	643.98	---	4.30	207.60	---	12.36
	31.83	18.56	110.93	17.29	1.49	16.11	643.98	---	4.30	207.60	---	9.82
	33.96	13.93	96.88	14.06	2.87	17.68	643.98	---	4.97	207.60	---	8.87
	36.08	6.36	76.01	13.77	4.26	21.57	643.98	---	6.43	207.60	---	7.21
	38.2	-4.18	45.40	13.53	5.66	25.27	643.98	---	10.82	207.60	---	6.10
	40.32	-17.69	9.60	17.42	7.07	28.76	643.98	---	27.42	207.60	---	5.31
	42.45	-33.67	8.41	60.74	8.08	31.49	643.98	---	7.60	207.60	---	4.81
	44.57	-17.51	7.63	50.52	7.21	7.38	643.98	---	9.46	207.60	---	20.66
	46.7	-2.86	13.07	43.81	6.46	7.05	643.98	---	11.24	207.60	---	21.74
	48.82	10.28	20.92	38.69	5.70	6.24	643.98	---	12.54	207.60	---	24.68
	50.95	21.87	26.98	33.66	4.94	5.13	643.98	---	14.07	207.60	---	30.17
	53.07	28.93	31.82	28.66	0.43	4.51	643.98	---	14.66	207.60	---	35.31
	55.19	27.06	32.80	22.93	1.33	3.36	643.98	---	14.28	207.60	---	47.13
	57.32	23.25	30.44	17.20	2.25	4.56	643.98	---	15.51	207.60	---	34.53
	59.44	17.49	24.86	11.48	3.18	6.11	643.98	---	19.22	207.60	---	25.62
	61.57	9.74	15.92	5.75	4.11	7.59	643.98	---	30.50	207.60	---	20.50
	63.69	0.00	0.00	0.00	5.06	9.55	643.98	---	N/A	207.60	---	16.19
4F1	Stringer S1-3											
	0	0.00	0.00	0.00	2.89	13.25	303.24	---	N/A	216.57	---	12.35
	0.75	1.76	7.09	1.01	2.50	11.85	303.24	---	32.67	216.57	---	13.85
	2.12	4.97	20.03	2.85	1.79	9.28	390.00	---	14.73	123.50	---	10.04
	4.24	7.60	28.92	5.69	0.69	6.51	390.00	---	10.11	123.50	---	14.49
	6.36	7.88	31.27	8.54	0.43	6.68	390.00	---	9.34	123.50	---	14.16
	8.48	5.79	28.84	12.98	1.55	9.04	390.00	---	10.20	123.50	---	10.34
	10.6	2.59	20.14	15.51	2.68	13.63	390.00	---	14.77	123.50	---	6.77
	12.72	6.94	26.64	6.68	1.48	10.21	390.00	---	11.00	123.50	---	9.16
	14.85	8.87	32.37	5.01	0.34	7.17	390.00	---	8.99	123.50	---	13.20
	16.97	8.36	29.19	3.34	0.82	6.64	390.00	---	9.99	123.50	---	14.18
	19.09	5.39	21.51	1.67	1.98	10.16	390.00	---	13.70	123.50	---	9.16
	20.46	1.91	7.61	0.59	2.74	12.79	192.60	---	19.22	183.58	---	10.83
21.21	0.00	0.00	0.00	3.16	14.23	192.60	---	N/A	183.58	---	9.70	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	8.49	26.41	390.00	---	N/A	123.50	---	3.28	
2.12	14.44	44.52	4.93	5.12	21.77	390.00	---	6.41	123.50	---	4.13	
4.24	24.24	72.08	9.86	3.53	17.63	390.00	---	3.83	123.50	---	5.19	
6.37	27.51	88.39	14.79	1.04	13.91	390.00	---	3.08	123.50	---	6.75	
8.49	24.87	96.64	19.72	1.45	11.08	390.00	---	2.85	123.50	---	8.44	
10.61	25.94	94.58	24.66	1.73	15.57	390.00	---	2.90	123.50	---	5.99	
12.73	20.58	84.14	29.07	3.33	16.81	390.00	---	3.32	123.50	---	5.45	
14.85	11.81	64.50	33.49	4.94	20.92	390.00	---	4.47	123.50	---	4.30	
16.98	-0.38	35.19	37.95	6.55	24.72	390.00	---	7.90	123.50	---	3.58	
19.1	-15.98	15.87	47.76	8.16	28.73	390.00	---	5.95	123.50	---	3.02	
21.22	-35.01	18.84	78.23	9.79	30.65	390.00	---	3.39	123.50	---	2.78	
23.34	-19.25	9.46	55.25	6.62	26.82	390.00	---	5.08	123.50	---	3.30	
25.46	-6.94	37.32	46.63	4.99	22.66	390.00	---	6.28	123.50	---	3.97	
27.58	1.91	62.04	38.99	3.35	18.60	390.00	---	4.80	123.50	---	4.93	
29.7	7.28	74.95	31.41	1.71	14.23	390.00	---	3.91	123.50	---	6.56	
31.82	9.18	78.01	24.10	0.26	11.66	390.00	---	3.73	123.50	---	8.13	
33.94	6.89	75.93	30.30	1.90	14.55	390.00	---	3.86	123.50	---	6.40	
36.06	1.13	63.38	36.94	3.54	18.51	390.00	---	4.72	123.50	---	4.94	
38.19	-8.10	38.56	43.79	5.16	23.12	390.00	---	6.67	123.50	---	3.89	
40.31	-20.77	9.91	51.97	6.79	27.60	390.00	---	5.37	123.50	---	3.20	
42.43	-36.84	17.28	75.39	8.40	30.63	390.00	---	3.49	123.50	---	2.83	
44.55	-16.86	14.55	48.04	8.62	26.89	390.00	---	5.89	123.50	---	3.21	
46.67	-0.19	32.62	38.49	7.08	23.31	390.00	---	7.79	123.50	---	3.77	
48.79	13.09	59.96	34.22	5.51	19.77	390.00	---	4.79	123.50	---	4.53	
50.91	23.01	78.03	30.00	3.94	15.87	390.00	---	3.55	123.50	---	5.74	
53.03	29.98	87.62	25.77	2.45	17.15	390.00	---	3.08	123.50	---	5.40	
55.15	30.49	90.52	20.62	0.52	10.71	390.00	---	2.98	123.50	---	8.82	
57.27	27.75	83.45	15.47	2.06	13.10	390.00	---	3.26	123.50	---	7.09	
59.39	21.76	68.42	10.32	3.59	16.77	390.00	---	4.07	123.50	---	5.45	
61.51	12.51	42.61	5.16	5.13	20.88	390.00	---	6.75	123.50	---	4.30	
63.64	0.00	0.00	0.00	6.66	24.51	390.00	---	N/A	123.50	---	3.60	

4F1

Stringer S2-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.49	27.21	390.00	---	N/A	123.50	---	3.25
2.12	12.10	46.09	6.39	4.92	22.55	390.00	---	6.25	123.50	---	3.99
4.24	20.87	74.99	12.78	3.35	18.34	390.00	---	3.72	123.50	---	5.00
6.37	26.31	93.64	19.17	1.78	14.65	390.00	---	2.92	123.50	---	6.36
8.49	28.41	103.65	25.56	0.21	11.85	390.00	---	2.62	123.50	---	8.00
10.61	27.17	103.73	31.94	1.91	16.76	390.00	---	2.63	123.50	---	5.55
12.73	21.45	90.04	34.31	3.48	17.94	390.00	---	3.09	123.50	---	5.10
14.85	12.39	67.66	36.69	5.06	21.83	390.00	---	4.25	123.50	---	4.12
16.98	0.00	35.37	39.18	6.63	25.67	390.00	---	7.66	123.50	---	3.44
19.1	-15.74	17.17	48.14	8.20	29.42	390.00	---	5.90	123.50	---	2.95
21.22	-34.79	20.35	79.60	9.77	30.41	390.00	---	3.33	123.50	---	2.80
23.34	-19.45	11.32	58.11	6.45	26.66	390.00	---	4.83	123.50	---	3.32
25.46	-7.45	38.93	50.03	4.88	22.59	390.00	---	5.85	123.50	---	3.99
27.58	1.23	63.89	43.26	3.30	18.55	390.00	---	4.68	123.50	---	4.94
29.7	6.57	77.92	36.55	1.73	14.57	390.00	---	3.77	123.50	---	6.40
31.82	8.59	81.69	30.08	0.03	12.73	390.00	---	3.57	123.50	---	7.46
33.94	6.86	77.69	36.25	1.60	14.65	390.00	---	3.77	123.50	---	6.38
36.06	1.80	63.44	42.92	3.17	18.60	390.00	---	4.70	123.50	---	4.94
38.19	-6.59	38.13	49.65	4.74	22.74	390.00	---	5.91	123.50	---	3.97
40.31	-18.31	10.58	57.50	6.31	26.82	390.00	---	4.90	123.50	---	3.31
42.43	-33.33	19.69	78.95	9.38	28.76	390.00	---	3.38	123.50	---	2.98
44.55	-15.10	16.98	48.28	7.83	29.06	390.00	---	5.90	123.50	---	3.00
46.67	-0.16	35.11	39.19	6.27	25.32	390.00	---	7.65	123.50	---	3.50
48.79	11.47	66.89	35.98	4.72	21.91	390.00	---	4.31	123.50	---	4.12
50.91	19.79	88.90	32.88	3.17	17.95	390.00	---	3.15	123.50	---	5.12
53.03	25.32	102.19	29.84	1.70	20.91	390.00	---	2.69	123.50	---	4.46
55.15	26.76	102.39	23.87	0.09	11.60	390.00	---	2.67	123.50	---	8.18
57.27	24.94	92.68	17.91	1.62	14.52	390.00	---	2.97	123.50	---	6.43
59.39	19.88	74.36	11.94	3.15	18.22	390.00	---	3.77	123.50	---	5.04
61.51	11.57	45.78	5.97	4.69	22.44	390.00	---	6.30	123.50	---	4.02
63.64	0.00	0.00	0.00	6.22	25.42	390.00	---	N/A	123.50	---	3.49

4F1

Stringer S3-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.36	27.01	390.00	---	N/A	123.50	---	3.28
2.12	11.82	45.67	6.26	4.78	22.35	390.00	---	6.31	123.50	---	4.04
4.24	20.31	74.15	12.52	3.21	18.14	390.00	---	3.77	123.50	---	5.06
6.37	25.46	92.37	18.77	1.64	14.44	390.00	---	2.97	123.50	---	6.47
8.49	27.28	101.96	25.03	0.07	11.83	390.00	---	2.67	123.50	---	8.02
10.61	25.76	101.62	31.28	1.70	16.57	390.00	---	2.70	123.50	---	5.63
12.73	20.48	88.44	33.71	3.27	17.75	390.00	---	3.16	123.50	---	5.17
14.85	11.88	66.63	36.19	4.84	21.63	390.00	---	4.32	123.50	---	4.17
16.98	-0.06	34.94	38.76	6.41	25.48	390.00	---	7.74	123.50	---	3.48
19.1	-15.34	17.19	47.98	7.98	29.22	390.00	---	5.93	123.50	---	2.98
21.22	-33.93	20.63	79.48	9.55	30.27	390.00	---	3.35	123.50	---	2.82
23.34	-18.77	11.66	57.73	6.36	26.49	390.00	---	4.87	123.50	---	3.35
25.46	-6.95	38.59	49.39	4.79	22.41	390.00	---	5.93	123.50	---	4.03
27.58	1.55	63.13	42.74	3.22	18.38	390.00	---	4.73	123.50	---	4.99
29.7	6.72	76.65	36.16	1.65	14.38	390.00	---	3.83	123.50	---	6.49
31.82	8.57	79.96	29.86	0.02	12.56	390.00	---	3.64	123.50	---	7.56
33.94	6.86	76.51	36.15	1.59	14.44	390.00	---	3.83	123.50	---	6.47
36.06	1.83	62.86	42.72	3.16	18.43	390.00	---	4.74	123.50	---	4.98
38.19	-6.53	38.19	49.42	4.73	22.57	390.00	---	5.94	123.50	---	4.00
40.31	-18.22	11.26	57.82	6.30	26.64	390.00	---	4.87	123.50	---	3.33
42.43	-33.21	20.16	79.39	9.34	28.65	390.00	---	3.36	123.50	---	2.99
44.55	-15.06	17.18	47.91	7.79	29.10	390.00	---	5.95	123.50	---	3.00
46.67	-0.20	34.95	38.56	6.24	25.36	390.00	---	7.77	123.50	---	3.50
48.79	11.35	66.59	35.65	4.69	21.95	390.00	---	4.33	123.50	---	4.11
50.91	19.60	88.38	32.90	3.14	17.99	390.00	---	3.17	123.50	---	5.11
53.03	25.04	101.73	30.18	1.66	20.96	390.00	---	2.70	123.50	---	4.45
55.15	26.54	102.02	24.14	0.06	11.66	390.00	---	2.68	123.50	---	8.14
57.27	24.78	92.40	18.11	1.59	14.49	390.00	---	2.98	123.50	---	6.45
59.39	19.77	74.17	12.08	3.13	18.19	390.00	---	3.78	123.50	---	5.05
61.51	11.51	45.69	6.04	4.66	22.41	390.00	---	6.31	123.50	---	4.03
63.64	0.00	0.00	0.00	6.19	25.39	390.00	---	N/A	123.50	---	3.50

4F1

Stringer S4-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.46	27.23	390.00	---	N/A	123.50	---	3.25
2.12	12.05	46.13	6.02	4.89	22.57	390.00	---	6.24	123.50	---	3.99
4.24	20.76	75.06	12.03	3.32	18.35	390.00	---	3.72	123.50	---	5.00
6.37	26.14	93.74	18.05	1.75	14.66	390.00	---	2.92	123.50	---	6.36
8.49	28.18	103.78	24.06	0.18	11.69	390.00	---	2.62	123.50	---	8.11
10.61	26.89	103.90	30.07	1.90	16.80	390.00	---	2.63	123.50	---	5.54
12.73	21.19	90.06	33.02	3.47	17.97	390.00	---	3.10	123.50	---	5.09
14.85	12.17	67.46	36.01	5.04	21.86	390.00	---	4.27	123.50	---	4.12
16.98	-0.19	34.94	39.07	6.61	25.71	390.00	---	7.67	123.50	---	3.44
19.1	-15.88	16.36	48.11	8.18	29.45	390.00	---	5.91	123.50	---	2.95
21.22	-34.90	19.14	79.72	9.75	30.43	390.00	---	3.33	123.50	---	2.80
23.34	-19.42	10.58	58.26	6.51	26.61	390.00	---	4.82	123.50	---	3.33
25.46	-7.28	38.20	50.20	4.94	22.54	390.00	---	5.83	123.50	---	4.00
27.58	1.54	63.35	43.14	3.37	18.52	390.00	---	4.71	123.50	---	4.95
29.7	7.03	77.46	36.12	1.80	14.51	390.00	---	3.78	123.50	---	6.42
31.82	9.19	81.27	29.49	0.16	12.66	390.00	---	3.58	123.50	---	7.49
33.94	7.19	77.42	35.30	1.73	14.53	390.00	---	3.78	123.50	---	6.42
36.06	1.86	63.38	42.44	3.30	18.53	390.00	---	4.70	123.50	---	4.95
38.19	-6.80	38.27	49.67	4.87	22.66	390.00	---	5.90	123.50	---	3.98
40.31	-18.80	10.61	57.74	6.44	26.73	390.00	---	4.87	123.50	---	3.31
42.43	-34.09	19.36	79.26	9.51	28.70	390.00	---	3.35	123.50	---	2.98
44.55	-15.57	16.66	47.97	7.96	29.14	390.00	---	5.93	123.50	---	2.99
46.67	-0.34	34.95	39.05	6.41	25.40	390.00	---	7.67	123.50	---	3.49
48.79	11.57	66.68	36.02	4.86	22.00	390.00	---	4.33	123.50	---	4.10
50.91	20.19	88.97	33.11	3.31	18.02	390.00	---	3.14	123.50	---	5.09
53.03	26.00	102.52	30.23	1.83	20.96	390.00	---	2.67	123.50	---	4.45
55.15	27.30	102.64	24.19	0.15	11.61	390.00	---	2.66	123.50	---	8.17
57.27	25.35	92.86	18.14	1.69	14.56	390.00	---	2.96	123.50	---	6.41
59.39	20.15	74.48	12.10	3.22	18.26	390.00	---	3.76	123.50	---	5.03
61.51	11.71	45.84	6.05	4.75	22.47	390.00	---	6.29	123.50	---	4.02
63.64	0.00	0.00	0.00	6.28	25.43	390.00	---	N/A	123.50	---	3.49

4F1

Stringer S5-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.26	26.70	390.00	---	N/A	123.50	---	3.32
2.12	11.56	44.69	4.74	4.63	21.86	390.00	---	6.45	123.50	---	4.13
4.24	19.66	71.55	9.48	3.00	17.50	390.00	---	3.92	123.50	---	5.26
6.37	24.30	86.98	14.23	1.37	13.59	390.00	---	3.17	123.50	---	6.89
8.49	25.50	94.03	18.97	0.25	11.30	390.00	---	2.92	123.50	---	8.38
10.61	23.22	90.34	23.70	1.31	15.12	390.00	---	3.06	123.50	---	6.20
12.73	18.72	80.54	27.39	2.93	16.34	390.00	---	3.49	123.50	---	5.63
14.85	10.78	61.56	31.08	4.55	20.41	390.00	---	4.70	123.50	---	4.43
16.98	-0.58	33.08	34.82	6.16	24.13	390.00	---	8.60	123.50	---	3.68
19.1	-15.35	12.52	44.13	7.77	28.02	390.00	---	6.45	123.50	---	3.11
21.22	-33.53	15.01	75.63	9.37	30.03	390.00	---	3.52	123.50	---	2.85
23.34	-18.18	8.65	53.70	6.44	25.37	390.00	---	5.25	123.50	---	3.49
25.46	-6.22	35.78	45.18	4.84	21.19	390.00	---	6.50	123.50	---	4.25
27.58	2.37	57.86	37.50	3.25	17.01	390.00	---	5.14	123.50	---	5.39
29.7	7.59	68.71	29.86	1.67	12.87	390.00	---	4.26	123.50	---	7.25
31.82	9.47	69.23	22.53	0.17	11.11	390.00	---	4.20	123.50	---	8.54
33.94	8.15	67.77	27.03	1.41	13.04	390.00	---	4.31	123.50	---	7.18
36.06	3.51	56.29	33.36	2.97	16.92	390.00	---	5.27	123.50	---	5.44
38.19	-4.45	34.07	39.79	4.53	20.85	390.00	---	7.43	123.50	---	4.34
40.31	-15.70	9.60	47.57	6.08	24.67	390.00	---	5.98	123.50	---	3.60
42.43	-30.24	16.57	67.88	8.44	27.25	390.00	---	3.97	123.50	---	3.18
44.55	-13.96	13.97	43.33	6.93	25.40	390.00	---	6.60	123.50	---	3.47
46.67	-0.89	30.31	34.31	5.42	21.65	390.00	---	8.72	123.50	---	4.14
48.79	8.99	55.37	29.99	3.93	18.10	390.00	---	5.26	123.50	---	5.03
50.91	15.69	70.75	25.74	2.44	14.31	390.00	---	4.02	123.50	---	6.47
53.03	19.75	77.93	21.52	1.73	17.68	390.00	---	3.60	123.50	---	5.28
55.15	21.88	81.03	17.22	0.28	10.34	390.00	---	3.43	123.50	---	9.16
57.27	20.94	74.88	12.91	1.16	11.80	390.00	---	3.73	123.50	---	7.95
59.39	16.98	61.33	8.61	2.58	14.96	390.00	---	4.61	123.50	---	6.18
61.51	9.99	38.19	4.31	4.00	18.76	390.00	---	7.59	123.50	---	4.85
63.64	0.00	0.00	0.00	5.41	21.80	390.00	---	N/A	123.50	---	4.11

4F1

Stringer S6-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
4F1	Stringer F2A-3	0	0.00	0.00	0.00	6.91	29.09	1212.51	---	N/A	149.61	---	3.72
		2.12	13.15	52.35	2.17	5.49	25.59	1212.51	---	17.57	149.61	---	4.28
		4.24	23.29	90.30	4.33	4.07	22.07	1212.51	---	10.07	149.61	---	5.03
		6.37	30.42	112.68	6.50	2.65	18.30	1212.51	---	8.01	149.61	---	6.14
		8.49	34.55	133.13	8.67	1.24	14.48	1212.51	---	6.75	149.61	---	7.86
		10.61	35.68	138.86	10.84	0.66	14.64	1212.51	---	6.46	149.61	---	7.82
		12.73	32.79	124.14	8.67	2.07	15.35	1212.51	---	7.25	149.61	---	7.36
		14.86	26.91	106.88	6.50	3.47	19.32	1212.51	---	8.47	149.61	---	5.78
		16.98	18.06	73.47	4.34	4.87	23.18	1212.51	---	12.45	149.61	---	4.75
		19.1	6.24	28.42	2.17	6.27	26.91	1212.51	---	32.60	149.61	---	4.04
	21.22	0.00	0.00	0.00	7.66	29.16	1212.51	---	N/A	149.61	---	3.68	
	Stringer F2B-3	23.34	9.37	45.28	24.28	4.38	23.09	1212.51	---	20.39	149.61	---	4.79
		25.47	17.20	76.04	23.25	3.00	19.74	1212.51	---	12.04	149.61	---	5.68
		27.59	22.11	96.47	22.23	1.62	16.40	1212.51	---	9.44	149.61	---	6.92
		29.71	24.10	108.84	23.23	0.25	12.74	1212.51	---	8.35	149.61	---	9.01
		31.83	23.19	108.46	29.06	1.31	14.99	1212.51	---	8.39	149.61	---	7.59
		33.96	18.96	97.08	30.99	2.67	16.55	1212.51	---	9.41	149.61	---	6.79
		36.08	11.85	77.40	32.93	4.03	19.91	1212.51	---	11.90	149.61	---	5.58
		38.2	1.87	49.81	34.90	5.37	23.02	1212.51	---	18.69	149.61	---	4.77
		40.32	-10.95	13.50	36.94	6.71	25.77	1212.51	---	24.95	149.61	---	4.21
		42.45	-26.57	7.45	55.38	8.04	27.68	1212.51	---	16.36	149.61	---	3.87
		44.57	-11.33	12.58	38.54	6.53	24.92	1212.51	---	23.91	149.61	---	4.36
		46.69	1.15	47.18	36.80	5.24	21.83	1212.51	---	19.74	149.61	---	5.03
		48.82	10.87	73.79	35.87	3.95	18.71	1212.51	---	12.49	149.61	---	5.94
		50.94	17.86	94.23	34.94	2.68	15.22	1212.51	---	9.71	149.61	---	7.39
		53.07	22.71	106.24	34.04	0.93	10.71	1212.51	---	8.57	149.61	---	10.66
		55.19	23.38	99.49	27.23	0.31	11.49	1212.51	---	9.14	149.61	---	9.99
		57.32	21.42	86.67	20.42	1.54	14.04	1212.51	---	10.51	149.61	---	8.09
59.44		16.85	68.22	13.61	2.76	16.69	1212.51	---	13.42	149.61	---	6.73	
61.56	9.70	39.45	6.80	3.97	19.11	1212.51	---	23.40	149.61	---	5.81		
63.69	0.00	0.00	0.00	5.18	20.97	1212.51	---	N/A	149.61	---	5.24		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	0.00	0.00	0.00	4.81	9.89	643.98	---	N/A	207.60	---	15.66	
2.33	9.99	20.72	6.12	3.77	9.88	643.98	---	23.43	207.60	---	15.78	
4.65	17.53	39.34	12.24	2.72	9.18	643.98	---	12.15	207.60	---	17.10	
6.98	22.65	55.24	18.37	1.67	8.48	643.98	---	8.56	207.60	---	18.63	
9.31	25.33	66.83	24.49	0.63	7.67	643.98	---	7.03	207.60	---	20.74	
11.63	25.50	76.51	30.63	2.52	8.67	643.98	---	6.14	207.60	---	18.13	
13.96	18.31	62.35	30.68	3.66	11.01	643.98	---	7.65	207.60	---	14.17	
16.29	8.46	46.64	31.02	4.81	11.73	643.98	---	10.44	207.60	---	13.20	
18.61	-4.09	26.19	31.37	5.98	13.04	643.98	---	15.66	207.60	---	11.79	
20.94	-19.40	3.07	31.79	7.18	13.99	643.98	---	14.97	207.60	---	10.90	
23.27	-37.47	2.07	39.24	8.77	14.45	643.98	---	11.67	207.60	---	10.44	
25.6	-18.45	5.41	30.64	7.54	16.10	643.98	---	15.57	207.60	---	9.45	
27.93	-2.32	30.55	28.58	6.29	14.36	643.98	---	16.14	207.60	---	10.68	
30.26	10.86	51.26	27.36	5.02	13.19	643.98	---	9.45	207.60	---	11.73	
32.6	21.06	67.58	26.27	3.73	11.67	643.98	---	7.02	207.60	---	13.36	
34.93	28.16	80.28	25.21	1.17	5.94	643.98	---	5.82	207.60	---	26.69	
37.26	29.22	77.08	20.17	0.26	8.39	643.98	---	6.05	207.60	---	19.00	
39.59	26.93	68.46	15.13	1.70	10.08	643.98	---	6.84	207.60	---	15.67	
41.92	21.30	53.40	10.09	3.13	12.19	643.98	---	8.88	207.60	---	12.84	
44.26	12.31	32.24	5.05	4.57	14.63	643.98	---	14.98	207.60	---	10.60	
46.59	0.00	0.07	0.01	6.00	15.98	643.98	---	7076.70	207.60	---	9.62	
0	0.00	0.00	0.00	5.86	17.38	225.39	---	N/A	218.57	---	9.34	
0.75	2.41	9.18	0.30	3.44	16.02	225.39	---	18.62	218.57	---	10.28	
2.32	7.44	28.41	0.92	2.55	12.74	390.00	---	10.30	123.50	---	7.26	
4.64	11.83	41.38	1.83	1.24	9.99	390.00	---	6.96	123.50	---	9.39	
6.96	13.18	43.88	2.75	0.07	8.27	390.00	---	6.54	123.50	---	11.48	
9.27	11.50	42.85	3.66	1.38	10.37	390.00	---	6.73	123.50	---	9.03	
11.59	6.37	23.70	4.58	2.70	16.10	390.00	---	12.33	123.50	---	5.73	
13.91	5.86	32.30	11.29	0.92	8.20	390.00	---	9.11	123.50	---	11.47	
16.23	2.18	31.71	18.34	2.30	8.87	390.00	---	9.39	123.50	---	10.45	
18.55	-4.68	21.02	25.41	3.70	12.64	390.00	---	11.62	123.50	---	7.22	
20.87	-14.79	3.37	32.51	5.11	16.41	390.00	---	8.77	123.50	---	5.48	
22.44	-24.66	1.29	42.99	7.17	18.69	240.15	---	3.72	223.32	---	8.81	
23.19	-29.38	0.30	48.00	8.16	19.78	240.15	---	3.24	223.32	---	8.27	
23.94	-23.82	2.06	41.45	7.68	19.83	240.15	---	3.88	223.32	---	8.28	
25.51	-12.19	5.73	27.73	6.67	19.93	390.00	---	10.38	123.50	---	4.43	
27.83	1.52	35.34	22.91	5.15	17.81	390.00	---	8.45	123.50	---	5.04	
30.14	11.69	55.82	20.18	3.62	14.55	390.00	---	5.16	123.50	---	6.28	
32.46	18.29	70.46	16.46	2.06	11.72	390.00	---	4.00	123.50	---	7.93	
34.78	19.26	66.76	12.77	2.62	17.96	390.00	---	4.21	123.50	---	5.14	
37.1	23.37	75.72	10.22	0.91	11.20	390.00	---	3.65	123.50	---	8.40	
39.42	23.49	75.80	7.67	0.81	9.95	390.00	---	3.65	123.50	---	9.47	
41.74	19.63	62.25	5.11	2.52	13.99	390.00	---	4.50	123.50	---	6.61	
44.06	11.80	41.02	2.56	4.24	18.36	390.00	---	7.03	123.50	---	4.94	
46.38	0.00	0.05	0.10	5.95	22.55	390.00	---	3000.00	123.50	---	3.95	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V								
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
4F1 Stringer S2-4	0	0.00	0.00	0.00	6.74	31.49	390.00	---	N/A	123.50	---	2.80
	2.32	13.70	59.37	7.87	5.07	26.72	390.00	---	4.82	123.50	---	3.37
	4.64	23.51	98.47	15.75	3.39	22.24	390.00	---	2.81	123.50	---	4.12
	6.96	29.44	124.12	23.62	1.72	18.13	390.00	---	2.18	123.50	---	5.15
	9.27	31.48	137.10	31.49	0.04	14.23	390.00	---	1.96	123.50	---	6.67
	11.59	29.65	138.00	39.38	3.14	24.87	390.00	---	1.96	123.50	---	3.69
	13.91	20.42	118.57	46.88	4.82	22.11	390.00	---	2.36	123.50	---	4.08
	16.23	7.31	89.59	54.39	6.49	25.91	390.00	---	3.27	123.50	---	3.42
	18.55	-9.69	48.26	61.90	8.17	29.76	390.00	---	4.69	123.50	---	2.92
	20.87	-30.57	2.36	69.41	9.84	33.74	390.00	---	3.88	123.50	---	2.52
	23.19	-55.37	1.77	107.64	11.58	35.33	390.00	---	2.27	123.50	---	2.36
	25.51	-30.46	1.55	73.77	9.91	33.00	390.00	---	3.65	123.50	---	2.58
	27.83	-9.43	48.44	64.45	8.23	28.91	390.00	---	4.51	123.50	---	3.00
	30.14	7.71	87.02	55.12	6.55	24.79	390.00	---	3.36	123.50	---	3.57
	32.46	20.96	113.66	46.12	4.88	20.32	390.00	---	2.46	123.50	---	4.44
	34.78	30.29	130.66	37.33	3.20	25.31	390.00	---	2.06	123.50	---	3.63
	37.1	32.00	130.65	29.86	0.10	13.82	390.00	---	2.05	123.50	---	6.87
	39.42	29.83	119.23	22.39	1.77	17.24	390.00	---	2.27	123.50	---	5.41
41.74	23.77	95.49	14.92	3.45	21.44	390.00	---	2.89	123.50	---	4.27	
44.06	13.83	58.74	7.46	5.12	26.33	390.00	---	4.87	123.50	---	3.41	
46.38	0.00	0.04	0.07	6.80	29.91	390.00	---	4285.71	123.50	---	2.95	
4F1 Stringer S3-4	0	0.00	0.00	0.00	6.32	30.69	390.00	---	N/A	123.50	---	2.89
	2.32	12.70	56.63	6.58	4.64	25.28	390.00	---	5.07	123.50	---	3.57
	4.64	21.52	91.33	13.17	2.97	20.48	390.00	---	3.05	123.50	---	4.49
	6.96	26.46	112.12	19.75	1.29	16.33	390.00	---	2.44	123.50	---	5.74
	9.27	27.51	121.68	26.33	0.38	12.46	390.00	---	2.24	123.50	---	7.59
	11.59	24.68	118.41	32.93	2.16	23.93	390.00	---	2.33	123.50	---	3.88
	13.91	17.74	104.76	40.41	3.83	18.81	390.00	---	2.69	123.50	---	4.85
	16.23	6.92	81.16	47.90	5.51	23.29	390.00	---	3.61	123.50	---	3.84
	18.55	-7.79	46.12	55.39	7.18	27.39	390.00	---	5.28	123.50	---	3.21
	20.87	-26.38	2.47	62.88	8.86	31.59	390.00	---	4.35	123.50	---	2.73
	23.19	-48.89	1.96	97.15	10.53	34.01	390.00	---	2.58	123.50	---	2.48
	25.51	-26.45	3.28	65.15	8.84	31.89	390.00	---	4.20	123.50	---	2.70
	27.83	-7.90	46.96	57.42	7.16	27.16	390.00	---	5.09	123.50	---	3.23
	30.14	6.77	80.46	49.69	5.49	22.60	390.00	---	3.64	123.50	---	3.96
	32.46	17.55	101.46	41.96	3.81	17.84	390.00	---	2.78	123.50	---	5.11
	34.78	24.41	111.89	34.25	2.14	22.91	390.00	---	2.46	123.50	---	4.05
	37.1	27.30	113.96	27.40	0.41	12.87	390.00	---	2.39	123.50	---	7.35
	39.42	26.30	105.07	20.55	1.27	15.32	390.00	---	2.60	123.50	---	6.12
41.74	21.42	83.92	13.70	2.94	18.81	390.00	---	3.32	123.50	---	4.89	
44.06	12.66	50.85	6.85	4.62	22.68	390.00	---	5.65	123.50	---	3.99	
46.38	0.00	0.06	0.08	6.29	25.63	390.00	---	3750.00	123.50	---	3.46	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
4F1 Stringer S4-4	0	0.00	0.00	0.00	6.37	31.29	390.00	---	N/A	123.50	---	2.83
	2.32	12.83	57.39	6.80	4.69	25.69	390.00	---	5.00	123.50	---	3.52
	4.64	21.77	91.76	13.60	3.02	20.68	390.00	---	3.03	123.50	---	4.45
	6.96	26.83	112.63	20.40	1.34	16.31	390.00	---	2.43	123.50	---	5.74
	9.27	28.00	121.62	27.20	0.33	12.70	390.00	---	2.24	123.50	---	7.45
	11.59	25.30	118.22	34.01	2.29	23.99	390.00	---	2.32	123.50	---	3.86
	13.91	18.04	104.60	41.29	3.97	18.80	390.00	---	2.70	123.50	---	4.84
	16.23	6.90	81.00	49.05	5.64	23.25	390.00	---	3.62	123.50	---	3.84
	18.55	-8.12	46.03	56.80	7.32	27.29	390.00	---	5.14	123.50	---	3.21
	20.87	-27.03	3.23	64.56	8.99	31.36	390.00	---	4.23	123.50	---	2.74
	23.19	-49.85	2.40	93.78	10.68	33.94	390.00	---	2.67	123.50	---	2.48
	25.51	-27.02	2.10	64.80	9.01	31.48	390.00	---	4.21	123.50	---	2.73
	27.83	-8.08	45.93	57.08	7.33	27.31	390.00	---	5.11	123.50	---	3.21
	30.14	6.98	81.06	49.35	5.66	23.28	390.00	---	3.61	123.50	---	3.84
	32.46	18.15	104.82	41.63	3.98	18.87	390.00	---	2.69	123.50	---	4.82
	34.78	25.40	118.35	34.35	2.31	24.83	390.00	---	2.32	123.50	---	3.73
	37.1	28.09	121.72	27.48	0.32	12.47	390.00	---	2.23	123.50	---	7.59
	39.42	26.90	112.02	20.60	1.35	16.33	390.00	---	2.44	123.50	---	5.73
41.74	21.82	91.18	13.73	3.03	20.47	390.00	---	3.05	123.50	---	4.49	
44.06	12.85	56.46	6.86	4.70	25.29	390.00	---	5.09	123.50	---	3.57	
46.38	0.00	0.03	0.06	6.38	29.39	390.00	---	5000.00	123.50	---	3.02	
4F1 Stringer S5-4	0	0.00	0.00	0.00	6.52	30.36	390.00	---	N/A	123.50	---	2.91
	2.32	13.18	56.03	5.94	4.85	25.03	390.00	---	5.12	123.50	---	3.60
	4.64	22.48	90.47	11.87	3.17	20.27	390.00	---	3.07	123.50	---	4.53
	6.96	27.90	111.00	17.81	1.50	16.15	390.00	---	2.45	123.50	---	5.79
	9.27	29.43	120.53	23.74	0.18	12.35	390.00	---	2.24	123.50	---	7.68
	11.59	27.09	117.28	29.69	2.48	24.09	390.00	---	2.33	123.50	---	3.84
	13.91	19.39	103.85	36.66	4.16	18.67	390.00	---	2.70	123.50	---	4.87
	16.23	7.80	80.76	43.63	5.83	23.10	390.00	---	3.62	123.50	---	3.86
	18.55	-7.67	45.66	50.61	7.51	27.27	390.00	---	5.78	123.50	---	3.21
	20.87	-27.02	2.41	57.58	9.18	30.92	390.00	---	4.74	123.50	---	2.78
	23.19	-50.30	1.39	90.36	10.86	32.84	390.00	---	2.76	123.50	---	2.56
	25.51	-27.58	2.03	64.62	8.96	28.30	390.00	---	4.22	123.50	---	3.04
	27.83	-8.75	41.03	56.95	7.28	24.47	390.00	---	5.11	123.50	---	3.58
	30.14	6.19	72.37	49.28	5.61	20.63	390.00	---	4.06	123.50	---	4.33
	32.46	17.25	93.27	41.60	3.93	16.60	390.00	---	3.03	123.50	---	5.49
	34.78	24.39	105.42	33.95	2.26	20.58	390.00	---	2.61	123.50	---	4.51
	37.1	27.28	105.61	27.16	0.41	11.37	390.00	---	2.58	123.50	---	8.32
	39.42	26.28	95.56	20.36	1.27	13.91	390.00	---	2.86	123.50	---	6.74
41.74	21.40	76.03	13.57	2.94	17.08	390.00	---	3.66	123.50	---	5.39	
44.06	12.64	46.37	6.78	4.62	20.74	390.00	---	6.20	123.50	---	4.36	
46.38	0.00	0.07	0.09	6.29	23.22	390.00	---	3333.33	123.50	---	3.82	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
4F1 Stringer S6-4	0	0.00	0.00	0.00	5.52	19.51	390.00	---	N/A	123.50	---	4.59
	2.32	10.98	34.77	2.98	3.95	15.51	390.00	---	8.31	123.50	---	5.87
	4.64	18.34	53.82	5.97	2.39	12.15	390.00	---	5.23	123.50	---	7.62
	6.96	22.06	64.52	8.95	0.83	9.23	390.00	---	4.31	123.50	---	10.20
	9.27	22.16	66.66	11.93	0.74	9.45	390.00	---	4.17	123.50	---	9.97
	11.59	18.64	61.30	14.92	2.30	15.87	390.00	---	4.59	123.50	---	5.84
	13.91	14.73	55.95	18.00	2.43	10.59	390.00	---	5.10	123.50	---	8.74
	16.23	7.32	43.72	21.14	3.90	13.46	390.00	---	6.69	123.50	---	6.77
	18.55	-3.54	23.36	24.28	5.36	16.16	390.00	---	12.21	123.50	---	5.55
	20.87	-17.80	0.28	28.22	6.80	18.75	390.00	---	10.00	123.50	---	4.70
	23.19	-33.73	0.82	54.02	7.98	20.35	390.00	---	4.93	123.50	---	4.28
	25.51	-18.63	4.98	38.59	5.84	16.39	390.00	---	7.29	123.50	---	5.44
	27.83	-6.62	24.86	31.07	4.52	13.48	390.00	---	9.44	123.50	---	6.71
	30.14	2.34	38.32	23.59	3.21	10.46	390.00	---	7.77	123.50	---	8.78
	32.46	8.29	43.25	16.12	1.93	7.52	390.00	---	6.74	123.50	---	12.38
	34.78	11.32	41.11	8.68	2.01	19.24	390.00	---	7.02	123.50	---	4.83
	37.1	14.59	52.83	6.94	0.81	10.35	390.00	---	5.40	123.50	---	9.10
	39.42	15.09	55.11	5.19	0.38	7.89	390.00	---	5.17	123.50	---	11.99
41.74	12.81	47.72	3.44	1.58	11.05	390.00	---	6.02	123.50	---	8.45	
44.06	7.76	31.30	1.70	2.77	14.15	390.00	---	9.34	123.50	---	6.52	
46.38	-0.05	0.05	0.25	3.97	17.59	390.00	---	1199.80	123.50	---	5.18	
4F1 Stringer F2-4	0	0.00	0.00	0.00	5.78	19.01	1212.51	---	N/A	149.61	---	5.75
	2.33	12.26	35.56	4.35	4.68	16.32	1212.51	---	25.88	149.61	---	6.76
	4.65	22.16	59.50	8.70	3.58	13.74	1212.51	---	15.30	149.61	---	8.12
	6.98	29.68	75.93	13.05	2.49	11.52	1212.51	---	11.89	149.61	---	9.77
	9.3	34.82	86.77	17.40	1.39	9.30	1212.51	---	10.35	149.61	---	12.23
	11.63	30.98	90.72	21.77	1.64	11.78	1212.51	---	9.94	149.61	---	9.63
	13.96	25.63	77.61	20.76	2.93	11.76	1212.51	---	11.69	149.61	---	9.54
	16.28	17.29	61.60	19.75	4.20	13.31	1212.51	---	14.86	149.61	---	8.33
	18.61	5.98	40.42	18.75	5.46	14.57	1212.51	---	22.93	149.61	---	7.52
	20.94	-8.25	14.52	18.01	6.69	16.08	1212.51	---	51.33	149.61	---	6.74
	23.26	-24.30	1.77	27.74	7.75	14.96	1212.51	---	32.75	149.61	---	7.17
	25.59	-8.86	11.57	24.26	6.04	13.14	1212.51	---	38.08	149.61	---	8.30
	27.92	3.89	31.49	26.32	4.90	11.62	1212.51	---	29.50	149.61	---	9.48
	30.25	13.99	48.11	28.45	3.78	10.47	1212.51	---	19.10	149.61	---	10.63
	32.59	21.50	62.60	30.62	2.67	8.98	1212.51	---	14.56	149.61	---	12.52
	34.92	26.48	75.34	32.93	0.35	6.85	1212.51	---	12.03	149.61	---	16.75
	37.25	26.04	60.87	26.35	0.72	7.26	1212.51	---	14.90	149.61	---	15.75
	39.58	23.14	45.71	19.76	1.77	7.18	1212.51	---	19.90	149.61	---	15.78
41.91	17.80	30.54	13.18	2.80	7.18	1212.51	---	29.96	149.61	---	15.64	
44.24	10.09	15.38	6.60	3.82	7.18	1212.51	---	59.99	149.61	---	15.50	
46.57	0.07	0.33	0.07	4.81	4.39	1212.51	---	2826.15	149.61	---	25.12	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		From Rear (Ft)	M+	M-	V							
			D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
5C1	Stringer F1A-1											
	0	0.00	0.05	0.01	4.24	14.86	643.98	---	9907.38	207.60	---	10.46
	1.51	5.74	18.76	0.81	3.36	13.15	643.98	---	26.10	207.60	---	11.89
	3.01	10.14	32.06	1.61	2.49	11.28	643.98	---	15.14	207.60	---	13.94
	4.52	13.24	40.19	2.41	1.62	9.47	643.98	---	12.00	207.60	---	16.69
	6.03	15.04	42.69	3.21	0.77	7.48	643.98	---	11.25	207.60	---	21.25
	7.53	15.56	44.87	4.00	0.08	5.78	643.98	---	10.69	207.60	---	27.61
	9.04	14.54	43.60	3.84	1.23	7.74	643.98	---	11.03	207.60	---	20.47
	10.55	12.05	35.42	2.88	2.06	9.01	643.98	---	13.65	207.60	---	17.50
	12.05	8.32	23.38	1.92	2.89	11.66	643.98	---	20.83	207.60	---	13.45
	13.56	3.36	10.50	0.96	3.70	14.64	643.98	---	46.86	207.60	---	10.66
	15.07	0.00	0.00	0.00	4.19	12.02	643.98	---	N/A	207.60	---	12.94
	Stringer F1B-1											
	17.07	6.67	19.66	8.99	3.13	11.42	643.98	---	24.86	207.60	---	13.71
	19.08	11.90	32.69	11.39	2.09	9.53	643.98	---	14.79	207.60	---	16.54
	21.09	15.05	40.49	14.03	1.05	7.52	643.98	---	11.86	207.60	---	21.10
	23.1	16.15	43.33	16.66	0.04	6.46	643.98	---	11.06	207.60	---	24.71
	25.1	15.22	46.12	19.31	1.64	8.41	643.98	---	10.41	207.60	---	18.79
	27.11	10.95	39.13	18.31	2.62	9.04	643.98	---	12.38	207.60	---	17.38
	29.12	4.71	29.77	17.43	3.60	8.84	643.98	---	16.48	207.60	---	17.66
	31.13	-3.49	18.02	16.73	4.56	9.01	643.98	---	27.30	207.60	---	17.22
	33.14	-13.62	4.77	16.57	5.52	9.16	643.98	---	29.07	207.60	---	16.83
	35.14	-25.65	2.20	24.37	6.46	9.42	643.98	---	19.27	207.60	---	16.27
	37.15	-13.27	3.31	19.41	5.72	9.14	643.98	---	24.84	207.60	---	16.85
	39.15	-2.73	13.67	17.87	4.80	8.32	643.98	---	27.57	207.60	---	18.62
	41.16	5.97	25.05	18.06	3.89	7.11	643.98	---	19.54	207.60	---	21.91
	43.16	12.88	34.77	18.42	3.00	7.48	643.98	---	13.88	207.60	---	20.95
	45.17	18.03	43.66	18.78	2.12	6.82	643.98	---	10.93	207.60	---	23.10
47.17	17.86	36.11	15.01	0.52	5.88	643.98	---	13.22	207.60	---	27.07	
49.17	15.95	27.08	11.25	1.38	5.26	643.98	---	17.70	207.60	---	30.10	
51.18	12.29	18.04	7.50	2.25	5.26	643.98	---	26.78	207.60	---	29.93	
53.18	6.89	9.01	3.74	3.11	5.26	643.98	---	54.22	207.60	---	29.77	
55.19	0.00	0.00	0.00	3.94	5.26	643.98	---	N/A	207.60	---	29.61	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
	D	M+	M-	V							
0	0.00	0.04	0.07	4.19	19.69	348.45	---	3829.12	228.95	---	8.73
0.75	2.72	11.72	1.03	3.66	18.40	348.45	---	22.64	228.95	---	9.27
1.61	5.84	25.11	2.14	3.05	16.93	390.00	---	11.71	123.50	---	5.43
3.23	9.83	42.20	4.30	1.91	14.27	390.00	---	6.88	123.50	---	6.52
4.84	12.01	51.87	6.45	0.78	12.46	390.00	---	5.55	123.50	---	7.56
6.46	12.37	55.69	8.60	0.33	10.48	390.00	---	5.16	123.50	---	9.03
8.07	10.93	52.08	10.76	1.44	11.35	390.00	---	5.55	123.50	---	8.24
9.69	9.70	45.28	13.50	2.18	11.90	390.00	---	6.43	123.50	---	7.80
11.3	4.31	37.85	16.79	3.26	14.31	390.00	---	7.81	123.50	---	6.41
12.92	-1.83	26.35	20.07	4.34	15.68	390.00	---	11.32	123.50	---	5.78
14.53	-9.69	19.32	26.24	5.40	18.10	390.00	---	11.06	123.50	---	4.95
15.4	-14.77	6.69	31.67	5.97	19.09	286.83	---	6.50	208.33	---	8.08
16.15	-19.14	3.56	36.35	6.46	19.95	286.83	---	5.54	208.33	---	7.71
16.9	-15.28	4.17	31.39	5.73	18.57	286.83	---	6.54	208.33	---	8.32
18.15	-8.85	5.19	23.12	4.50	16.27	390.00	---	12.59	123.50	---	5.56
20.15	-1.14	24.17	16.28	3.22	12.70	390.00	---	12.36	123.50	---	7.23
22.15	4.03	33.64	14.27	1.95	12.00	390.00	---	8.80	123.50	---	7.75
24.15	6.69	39.44	12.27	0.70	8.50	390.00	---	7.44	123.50	---	11.09
26.15	7.24	31.32	10.30	0.53	7.22	390.00	---	9.35	123.50	---	6.64
28.15	6.98	33.59	11.77	0.74	9.81	390.00	---	8.72	123.50	---	9.61
30.15	4.29	31.84	13.27	1.95	11.73	390.00	---	9.29	123.50	---	7.93
32.15	-0.80	23.10	14.88	3.15	13.38	390.00	---	12.95	123.50	---	6.86
34.15	-8.29	7.07	21.74	4.33	16.10	390.00	---	13.42	123.50	---	5.63
35.4	-14.33	4.11	29.11	4.97	18.32	225.23	---	5.46	200.08	---	8.13
36.15	-17.96	2.34	33.53	5.36	19.65	225.23	---	4.63	200.08	---	7.56
36.9	-14.38	5.57	29.05	4.93	18.05	225.33	---	5.47	200.08	---	8.25
38.15	-8.41	16.96	21.57	4.20	15.39	390.00	---	13.52	123.50	---	5.90
40.15	-1.16	28.59	16.51	3.05	13.39	390.00	---	10.45	123.50	---	6.87
42.15	3.79	35.56	12.02	1.90	13.77	390.00	---	8.33	123.50	---	6.76
44.15	8.46	39.30	8.74	0.78	9.30	390.00	---	7.47	123.50	---	10.13
46.15	6.91	26.64	3.38	1.97	19.35	390.00	---	11.00	123.50	---	4.81
48.15	9.77	38.22	2.70	0.90	15.05	390.00	---	7.59	123.50	---	6.25
50.15	10.51	43.11	2.03	0.16	11.24	390.00	---	6.72	123.50	---	8.44
52.15	9.13	41.39	1.35	1.22	12.98	390.00	---	7.03	123.50	---	7.22
54.15	5.63	28.06	0.67	2.28	16.48	390.00	---	10.49	123.50	---	5.63
55.4	2.11	10.52	0.25	2.95	18.62	235.05	---	16.98	201.11	---	8.45
56.15	0.00	0.00	0.00	3.35	19.91	235.05	---	N/A	201.11	---	7.60

5C1

Stringer S1-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.02	0.03	5.01	26.47	390.00	---	10000.00	123.50	---	3.40
1.73	7.59	38.40	4.92	3.76	23.09	390.00	---	7.61	123.50	---	3.95
3.46	13.01	65.92	9.86	2.51	19.82	390.00	---	4.35	123.50	---	4.67
5.19	16.26	82.71	14.80	1.26	16.52	390.00	---	3.43	123.50	---	5.67
6.92	17.35	88.99	19.74	0.01	13.35	390.00	---	3.18	123.50	---	7.12
8.65	16.28	87.16	24.68	1.24	14.70	390.00	---	3.26	123.50	---	6.38
10.38	12.55	82.79	29.46	3.02	19.32	390.00	---	3.47	123.50	---	4.76
12.11	6.24	68.74	34.33	4.27	23.57	390.00	---	4.27	123.50	---	3.85
13.84	-2.23	45.90	39.19	5.52	27.46	390.00	---	6.49	123.50	---	3.26
15.58	-12.86	19.65	50.06	6.77	31.47	390.00	---	5.74	123.50	---	2.80
17.31	-25.65	10.64	72.34	7.30	29.62	390.00	---	3.79	123.50	---	2.96
19.31	-12.49	10.91	45.15	5.86	29.68	390.00	---	6.37	123.50	---	3.00
21.31	-2.23	41.03	34.50	4.41	25.79	390.00	---	7.26	123.50	---	3.51
23.31	5.15	63.12	35.92	2.97	21.26	390.00	---	4.67	123.50	---	4.33
25.31	9.63	74.63	37.36	1.52	18.02	390.00	---	3.89	123.50	---	5.19
27.31	11.21	81.55	38.84	0.79	21.58	390.00	---	3.54	123.50	---	4.37
29.31	8.19	76.38	39.97	2.23	19.68	390.00	---	3.82	123.50	---	4.71
31.31	2.28	66.85	41.10	3.68	23.12	390.00	---	4.45	123.50	---	3.95
33.31	-6.52	44.92	42.23	5.12	26.84	390.00	---	6.53	123.50	---	3.35
35.31	-18.21	13.09	50.51	6.57	28.72	390.00	---	5.58	123.50	---	3.08
37.31	-32.82	6.40	75.00	9.27	33.35	390.00	---	3.56	123.50	---	2.57
39.31	-15.73	18.04	47.80	7.82	29.99	390.00	---	5.95	123.50	---	2.91
41.31	-1.53	48.07	36.35	6.38	25.95	390.00	---	6.21	123.50	---	3.42
43.31	9.78	71.93	31.83	4.93	21.70	390.00	---	4.03	123.50	---	4.15
45.31	18.20	87.47	27.34	3.49	18.96	390.00	---	3.22	123.50	---	4.83
47.31	23.71	95.35	22.86	2.04	22.17	390.00	---	2.90	123.50	---	4.19
49.31	24.74	95.62	18.28	0.20	14.18	390.00	---	2.88	123.50	---	6.69
51.31	22.89	87.73	13.71	1.65	16.57	390.00	---	3.16	123.50	---	5.63
53.31	18.15	68.62	9.14	3.09	19.40	390.00	---	4.11	123.50	---	4.74
55.31	10.51	40.86	4.56	4.54	22.21	390.00	---	7.08	123.50	---	4.07
57.31	0.00	0.00	0.00	5.98	25.02	390.00	---	N/A	123.50	---	3.56

5C1

Stringer S2-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.04	0.05	5.30	23.53	390.00	---	6000.00	123.50	---	3.81
1.85	8.56	36.17	4.28	3.97	20.45	390.00	---	8.06	123.50	---	4.45
3.69	14.67	62.26	8.57	2.64	17.62	390.00	---	4.58	123.50	---	5.24
5.54	18.30	78.85	12.86	1.30	14.83	390.00	---	3.57	123.50	---	6.32
7.39	19.48	85.93	17.15	0.03	12.54	390.00	---	3.26	123.50	---	7.57
9.23	18.19	84.88	21.45	1.36	15.09	390.00	---	3.32	123.50	---	6.21
11.08	14.36	79.02	25.93	2.79	17.74	390.00	---	3.61	123.50	---	5.20
12.92	7.98	67.30	30.53	4.12	21.13	390.00	---	4.34	123.50	---	4.30
14.77	-0.87	47.29	35.13	5.46	24.51	390.00	---	6.33	123.50	---	3.65
16.62	-12.17	21.18	45.67	6.79	27.77	390.00	---	6.30	123.50	---	3.18
18.46	-25.92	10.52	69.67	7.02	29.90	390.00	---	3.93	123.50	---	2.94
20.46	-13.32	12.51	45.33	5.58	28.57	390.00	---	6.32	123.50	---	3.13
22.46	-3.61	40.95	35.42	4.13	24.61	390.00	---	7.24	123.50	---	3.69
24.46	3.21	60.46	36.05	2.69	20.54	390.00	---	4.91	123.50	---	4.49
26.46	7.14	69.38	36.70	1.24	16.41	390.00	---	4.22	123.50	---	5.71
28.46	8.17	73.34	37.36	0.21	21.12	390.00	---	3.98	123.50	---	4.49
30.46	6.31	70.16	38.95	1.65	17.79	390.00	---	4.19	123.50	---	5.25
32.46	1.56	61.56	40.56	3.10	19.82	390.00	---	4.85	123.50	---	4.64
34.46	-6.07	42.39	42.16	4.54	23.33	390.00	---	6.93	123.50	---	3.88
36.46	-16.60	13.01	50.48	5.99	27.81	390.00	---	5.61	123.50	---	3.20
38.46	-30.04	7.14	72.74	8.84	33.32	390.00	---	3.71	123.50	---	2.59
40.46	-13.82	18.19	44.09	7.39	29.98	390.00	---	6.49	123.50	---	2.92
42.46	-0.48	48.77	33.32	5.95	26.19	390.00	---	6.14	123.50	---	3.40
44.46	9.97	72.74	28.98	4.50	22.31	390.00	---	3.99	123.50	---	4.06
46.46	17.52	88.41	24.64	3.06	19.13	390.00	---	3.20	123.50	---	4.81
48.46	22.17	94.03	20.57	1.61	24.08	390.00	---	2.95	123.50	---	3.88
50.46	23.52	97.51	16.46	0.05	14.23	390.00	---	2.84	123.50	---	6.67
52.46	21.98	91.57	12.34	1.49	17.58	390.00	---	3.04	123.50	---	5.32
54.46	17.54	73.78	8.23	2.94	21.00	390.00	---	3.83	123.50	---	4.38
56.46	10.22	44.97	4.12	4.38	24.46	390.00	---	6.44	123.50	---	3.70
58.46	0.00	0.00	0.00	5.83	27.97	390.00	---	N/A	123.50	---	3.19

5C1

Stringer S3-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.02	0.04	5.81	25.80	390.00	---	7500.00	123.50	---	3.46
1.96	10.00	43.20	4.14	4.39	23.43	390.00	---	6.71	123.50	---	3.87
3.92	17.22	72.91	8.29	2.97	19.18	390.00	---	3.88	123.50	---	4.80
5.89	21.65	90.93	12.44	1.55	15.25	390.00	---	3.06	123.50	---	6.13
7.85	23.31	97.21	16.58	0.14	11.93	390.00	---	2.85	123.50	---	7.95
9.81	22.18	94.13	20.73	1.28	15.48	390.00	---	2.95	123.50	---	6.05
11.77	17.77	88.20	25.05	3.12	18.95	390.00	---	3.20	123.50	---	4.85
13.74	10.25	72.49	29.50	4.54	27.06	390.00	---	4.00	123.50	---	3.34
15.7	0.00	48.75	33.96	5.96	30.17	390.00	---	6.15	123.50	---	2.95
17.66	-13.12	19.12	44.60	7.37	32.88	390.00	---	6.43	123.50	---	2.67
19.62	-29.01	9.25	71.82	7.26	28.75	390.00	---	3.77	123.50	---	3.05
21.62	-15.93	12.66	49.82	5.81	28.53	390.00	---	5.70	123.50	---	3.13
23.62	-5.75	42.01	41.16	4.37	24.55	390.00	---	7.00	123.50	---	3.69
25.62	1.55	61.40	40.33	2.92	20.44	390.00	---	4.86	123.50	---	4.50
27.62	5.95	70.19	39.74	1.48	16.35	390.00	---	4.19	123.50	---	5.72
29.62	7.45	73.83	39.24	0.07	21.48	390.00	---	3.96	123.50	---	4.42
31.62	5.86	70.19	40.03	1.52	17.98	390.00	---	4.19	123.50	---	5.20
33.62	1.39	61.60	40.81	2.96	21.76	390.00	---	4.85	123.50	---	4.23
35.62	-5.98	42.31	41.60	4.41	25.04	390.00	---	6.95	123.50	---	3.62
37.62	-16.24	12.98	51.32	5.85	27.55	390.00	---	5.53	123.50	---	3.24
39.62	-29.41	9.53	74.55	7.30	32.48	390.00	---	3.63	123.50	---	2.70
41.62	-13.27	19.88	44.79	7.34	29.61	390.00	---	6.40	123.50	---	2.96
43.62	0.00	51.53	33.67	5.90	26.01	390.00	---	5.82	123.50	---	3.43
45.62	10.32	72.99	29.18	4.45	27.22	390.00	---	3.97	123.50	---	3.33
47.62	17.78	87.40	24.70	3.01	16.95	390.00	---	3.23	123.50	---	5.43
49.62	22.33	86.72	20.23	1.56	19.77	390.00	---	3.20	123.50	---	4.73
51.62	23.65	86.28	16.19	0.06	14.38	390.00	---	3.20	123.50	---	6.60
53.62	22.07	79.50	12.14	1.51	15.53	390.00	---	3.50	123.50	---	6.02
55.62	17.61	63.75	8.10	2.95	18.47	390.00	---	4.43	123.50	---	4.98
57.62	10.26	38.49	4.06	4.40	21.54	390.00	---	7.53	123.50	---	4.21
59.62	0.00	0.00	0.00	5.84	24.63	390.00	---	N/A	123.50	---	3.62

5C1

Stringer S4-1

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.04	0.07	5.96	22.79	390.00	---	4285.71	123.50	---	3.91
2.08	10.84	38.00	3.97	4.49	19.04	390.00	---	7.61	123.50	---	4.75
4.16	18.67	63.20	7.96	3.03	15.83	390.00	---	4.45	123.50	---	5.81
6.23	23.45	79.20	11.94	1.57	13.31	390.00	---	3.49	123.50	---	7.02
8.31	25.21	86.22	15.93	0.11	11.21	390.00	---	3.19	123.50	---	8.46
10.39	23.92	86.20	19.92	1.35	14.06	390.00	---	3.20	123.50	---	6.66
12.47	19.23	79.85	24.00	3.09	16.22	390.00	---	3.52	123.50	---	5.67
14.55	11.30	66.31	28.18	4.55	19.18	390.00	---	4.35	123.50	---	4.72
16.62	0.33	45.98	32.35	6.01	21.91	390.00	---	6.52	123.50	---	4.06
18.7	-13.67	19.97	42.43	7.47	24.45	390.00	---	6.75	123.50	---	3.58
20.78	-30.73	9.81	69.34	7.32	29.91	390.00	---	3.88	123.50	---	2.93
22.78	-17.50	13.07	46.15	5.91	26.97	390.00	---	6.12	123.50	---	3.30
24.78	-7.08	41.60	38.94	4.51	23.52	390.00	---	7.04	123.50	---	3.85
26.78	0.52	61.16	38.66	3.10	20.02	390.00	---	4.90	123.50	---	4.59
28.78	5.32	70.25	38.56	1.69	16.26	390.00	---	4.19	123.50	---	5.74
30.78	7.32	73.75	38.51	0.29	21.92	390.00	---	3.97	123.50	---	4.32
32.78	5.64	70.57	39.51	1.54	18.06	390.00	---	4.17	123.50	---	5.17
34.78	1.16	61.58	40.54	2.95	21.66	390.00	---	4.85	123.50	---	4.25
36.78	-6.14	41.97	41.63	4.35	24.73	390.00	---	7.00	123.50	---	3.67
38.78	-16.25	14.52	50.26	5.76	27.26	390.00	---	5.65	123.50	---	3.27
40.78	-29.16	9.47	71.84	8.73	32.80	390.00	---	3.77	123.50	---	2.63
42.78	-13.11	18.47	44.15	7.32	29.47	390.00	---	6.50	123.50	---	2.98
44.78	0.13	49.35	33.74	5.92	25.69	390.00	---	6.08	123.50	---	3.47
46.78	10.55	72.33	29.17	4.51	21.91	390.00	---	4.00	123.50	---	4.13
48.78	18.17	87.42	24.59	3.10	18.80	390.00	---	3.22	123.50	---	4.89
50.78	22.95	93.61	20.50	1.70	24.20	390.00	---	2.96	123.50	---	3.86
52.78	23.98	96.11	16.40	0.18	14.04	390.00	---	2.87	123.50	---	6.75
54.78	22.21	90.18	12.31	1.59	17.32	390.00	---	3.08	123.50	---	5.39
56.78	17.62	72.65	8.21	3.00	20.66	390.00	---	3.89	123.50	---	4.45
58.78	10.22	44.20	4.11	4.40	24.02	390.00	---	6.56	123.50	---	3.77
60.78	0.00	0.00	0.00	5.81	27.69	390.00	---	N/A	123.50	---	3.22

5C1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating		
0	-0.06	0.04	0.24	3.86	16.06	390.00	---	1249.75	123.50	---	5.67	
2.18	7.18	27.91	0.86	2.77	13.38	390.00	---	10.49	123.50	---	6.89	
4.37	12.03	45.03	1.75	1.66	10.78	390.00	---	6.40	123.50	---	8.66	
6.55	14.43	50.94	2.64	0.54	8.41	390.00	---	5.61	123.50	---	11.23	
8.74	14.35	48.57	3.53	0.61	10.93	390.00	---	5.88	123.50	---	8.64	
10.92	11.75	39.79	4.42	1.77	14.49	390.00	---	7.24	123.50	---	6.43	
13.11	9.34	37.28	7.77	1.00	8.84	390.00	---	7.80	123.50	---	10.63	
15.29	5.84	36.28	12.60	2.20	10.42	390.00	---	8.11	123.50	---	8.91	
17.48	-0.29	29.32	17.50	3.42	12.99	390.00	---	10.22	123.50	---	7.05	
19.66	-9.10	15.67	24.35	4.65	15.31	390.00	---	11.95	123.50	---	5.90	
21.85	-20.61	6.77	37.42	5.65	18.03	390.00	---	7.47	123.50	---	4.96	
23.85	-10.47	6.24	25.11	4.49	15.74	390.00	---	11.53	123.50	---	5.75	
25.85	-2.66	22.96	18.96	3.32	13.25	390.00	---	12.95	123.50	---	6.92	
27.85	2.79	33.95	19.31	2.13	10.74	390.00	---	8.75	123.50	---	8.65	
29.85	5.85	38.56	19.67	0.93	8.34	390.00	---	7.63	123.50	---	11.28	
31.85	6.48	39.06	20.02	0.08	8.32	390.00	---	7.51	123.50	---	11.41	
33.85	5.08	39.23	22.45	1.31	9.08	390.00	---	7.52	123.50	---	10.32	
35.85	1.22	35.75	24.88	2.55	11.57	390.00	---	8.36	123.50	---	7.99	
37.85	-5.13	25.79	27.41	3.80	13.95	390.00	---	10.76	123.50	---	6.54	
39.85	-13.99	9.81	33.51	5.06	16.20	390.00	---	8.54	123.50	---	5.55	
41.85	-25.40	4.91	47.74	7.58	20.33	390.00	---	5.75	123.50	---	4.30	
43.85	-11.52	11.24	25.45	6.30	20.40	390.00	---	11.34	123.50	---	4.35	
45.85	-0.21	31.09	18.98	5.00	17.85	390.00	---	9.64	123.50	---	5.04	
47.85	8.50	46.57	16.25	3.70	15.02	390.00	---	6.26	123.50	---	6.08	
49.85	14.58	56.40	13.52	2.38	12.62	390.00	---	5.06	123.50	---	7.34	
51.85	17.99	60.31	10.80	1.63	16.65	390.00	---	4.68	123.50	---	5.61	
53.85	19.87	63.28	8.64	0.26	11.70	390.00	---	4.43	123.50	---	8.10	
55.85	19.02	61.42	6.48	1.11	12.00	390.00	---	4.57	123.50	---	7.82	
57.85	15.42	51.52	4.32	2.49	14.94	390.00	---	5.52	123.50	---	6.19	
59.85	9.08	32.26	2.16	3.86	18.10	390.00	---	9.02	123.50	---	5.04	
61.85	0.00	0.00	0.00	5.23	21.37	390.00	---	N/A	123.50	---	4.20	

5C1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		Inventory							Operating
		D	L+I	L+I	D		L+I	(kips)	Inventory	Operating			
5C1	Stringer F2A-1	0	0.07	0.29	0.04	5.34	5.96	1212.51	---	3215.97	149.61	---	18.41
		2.21	10.90	12.32	2.69	4.44	5.96	1212.51	---	74.82	149.61	---	18.56
		4.43	19.72	24.44	5.37	3.52	5.96	1212.51	---	37.36	149.61	---	18.72
		6.64	26.47	36.55	8.05	2.58	5.96	1212.51	---	24.79	149.61	---	18.88
		8.86	31.11	48.67	10.73	1.61	6.80	1212.51	---	18.52	149.61	---	16.69
		11.07	33.60	60.78	13.40	0.63	6.66	1212.51	---	14.79	149.61	---	17.19
		13.29	31.25	57.34	12.15	2.10	6.80	1212.51	---	15.72	149.61	---	16.62
		15.5	25.47	45.78	9.11	3.12	7.71	1212.51	---	19.82	149.61	---	14.52
		17.71	17.42	31.47	6.07	4.15	8.81	1212.51	---	29.08	149.61	---	12.59
		19.93	7.06	14.06	3.04	5.21	10.26	1212.51	---	65.83	149.61	---	10.71
	22.14	0.00	0.00	0.00	4.18	11.12	1212.51	---	N/A	149.61	---	9.97	
	24.15	6.19	19.77	11.68	3.19	11.14	1212.51	---	46.86	149.61	---	10.04	
	26.16	11.60	35.33	15.08	2.19	10.07	1212.51	---	26.07	149.61	---	11.21	
	28.16	14.98	46.35	18.48	1.18	8.88	1212.51	---	19.80	149.61	---	12.83	
	30.17	16.32	52.80	21.89	0.15	7.66	1212.51	---	17.36	149.61	---	15.00	
	32.18	15.58	55.09	25.30	1.10	9.12	1212.51	---	16.65	149.61	---	12.50	
	34.19	12.33	50.43	24.51	2.15	10.82	1212.51	---	18.25	149.61	---	10.44	
	36.19	6.94	42.02	23.88	3.22	12.38	1212.51	---	22.03	149.61	---	9.04	
	38.2	-0.59	28.80	23.27	4.29	13.80	1212.51	---	32.36	149.61	---	8.03	
	40.21	-10.29	10.89	22.88	5.38	15.05	1212.51	---	40.32	149.61	---	7.29	
42.21	-22.21	2.09	32.39	7.06	18.99	1212.51	---	28.11	149.61	---	5.69		
44.22	-9.18	11.67	19.85	5.95	17.54	1212.51	---	46.52	149.61	---	6.22		
46.22	1.62	32.50	19.15	4.83	15.81	1212.51	---	28.65	149.61	---	6.97		
48.23	10.15	49.93	18.59	3.69	13.83	1212.51	---	18.48	149.61	---	8.05		
50.23	16.42	62.78	18.03	2.55	12.46	1212.51	---	14.60	149.61	---	9.03		
52.23	20.37	68.68	17.48	1.40	10.57	1212.51	---	13.28	149.61	---	10.76		
54.24	21.03	67.51	13.97	0.25	10.15	1212.51	---	13.50	149.61	---	11.31		
56.24	19.36	61.91	10.48	1.42	12.05	1212.51	---	14.75	149.61	---	9.43		
58.25	15.31	48.51	6.99	2.61	13.93	1212.51	---	18.91	149.61	---	8.07		
60.25	8.88	28.96	3.50	3.81	15.74	1212.51	---	31.90	149.61	---	7.07		
62.26	0.00	0.00	0.00	5.02	17.94	1212.51	---	N/A	149.61	---	6.14		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		Inventory							Operating
		D	L+I	L-I	D		L+I	(kips)	Inventory	Operating			
5C1	Stringer F1A-2	0	0.00	0.00	0.00	4.49	9.83	643.98	---	N/A	207.60	---	15.79
		2	8.23	16.01	4.03	3.73	9.08	643.98	---	30.43	207.60	---	17.18
		4	14.93	27.63	8.06	2.97	7.92	643.98	---	17.39	207.60	---	19.79
		6.01	20.11	36.50	12.10	2.21	6.92	643.98	---	13.02	207.60	---	22.76
		8.01	23.77	43.35	16.13	1.44	6.10	643.98	---	10.88	207.60	---	25.94
		10.01	25.90	49.34	20.17	3.49	9.24	643.98	---	9.51	207.60	---	16.91
		12.01	18.17	37.18	25.19	4.25	10.66	643.98	---	12.83	207.60	---	14.58
		14.02	8.89	24.03	30.23	5.01	9.83	643.98	---	16.09	207.60	---	15.74
		16.02	-1.91	9.89	35.30	5.77	10.26	643.98	---	13.98	207.60	---	15.00
		18.02	-14.23	3.07	48.56	6.54	10.10	643.98	---	9.91	207.60	---	15.16
		20.02	-28.19	2.68	66.83	6.84	29.96	643.98	---	6.99	207.60	---	5.10
		22.02	-15.56	11.89	15.57	5.78	25.57	643.98	---	30.82	207.60	---	6.02
		24.02	-5.08	43.36	7.81	4.69	23.34	643.98	---	11.31	207.60	---	6.64
		26.02	3.16	66.97	8.49	3.55	22.73	643.98	---	7.35	207.60	---	6.87
		28.02	9.08	85.38	9.21	2.36	17.73	643.98	---	5.70	207.60	---	8.87
		30.03	12.43	82.38	9.95	1.17	15.68	643.98	---	5.86	207.60	---	10.11
	32.03	13.52	82.80	8.01	0.08	14.18	643.98	---	5.82	207.60	---	11.26	
	34.03	12.13	75.38	6.01	1.32	16.61	643.98	---	6.41	207.60	---	9.53	
	36.03	8.24	50.31	4.01	2.56	21.32	643.98	---	9.68	207.60	---	7.37	
	38.03	1.87	17.58	2.00	3.80	24.99	643.98	---	28.07	207.60	---	6.24	
	40.03	0.00	0.00	0.00	6.67	26.48	643.98	---	N/A	207.60	---	5.78	
	42.15	11.31	46.07	26.86	5.36	22.57	643.98	---	10.51	207.60	---	6.84	
	44.27	21.30	80.24	25.04	4.06	19.75	643.98	---	5.91	207.60	---	7.88	
	46.39	28.52	101.79	23.22	2.75	17.42	643.98	---	4.59	207.60	---	9.01	
	48.52	32.97	116.66	21.40	1.45	15.18	643.98	---	3.96	207.60	---	10.42	
	50.64	34.67	112.64	19.58	0.15	12.84	643.98	---	4.09	207.60	---	12.43	
	52.76	33.24	108.58	15.67	1.32	14.74	643.98	---	4.26	207.60	---	10.74	
	54.88	29.07	100.59	11.75	2.62	15.89	643.98	---	4.64	207.60	---	9.88	
	57	22.13	78.52	7.83	3.92	19.26	643.98	---	6.03	207.60	---	8.09	
	59.13	12.43	46.96	3.91	5.22	23.04	643.98	---	10.28	207.60	---	6.70	
	61.25	0.00	0.00	0.00	6.52	24.49	643.98	---	N/A	207.60	---	6.25	
	5C1	Stringer S1-2	0	0.00	0.00	0.00	2.33	12.65	235.47	---	N/A	204.20	---
0.75			1.38	7.27	0.82	1.97	11.66	235.47	---	24.73	204.20	---	13.31
2			3.68	19.38	2.19	1.36	10.00	390.00	---	15.29	123.50	---	9.36
4			5.43	29.53	4.39	0.39	7.68	390.00	---	9.98	123.50	---	12.32
6			5.25	28.88	6.58	0.57	7.32	390.00	---	10.21	123.50	---	12.90
8			3.13	28.04	11.00	1.54	9.44	390.00	---	10.59	123.50	---	9.90
10			0.00	17.34	10.97	2.49	13.44	390.00	---	17.30	123.50	---	6.88
12			3.73	22.76	6.04	1.42	10.11	390.00	---	13.02	123.50	---	9.26
14			5.61	28.19	4.53	0.47	8.13	390.00	---	10.44	123.50	---	11.63
16			5.60	24.66	3.02	0.48	6.65	390.00	---	11.94	123.50	---	14.21
18			3.71	21.14	3.74	1.42	8.71	390.00	---	14.02	123.50	---	10.74
19.25			1.39	7.93	1.40	2.01	11.75	169.69	---	16.29	180.49	---	11.64
20			0.00	0.00	0.00	2.36	13.58	169.69	---	N/A	180.49	---	10.05

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.02	23.56	390.00	---	N/A	123.50	---	3.78
2	10.62	41.24	4.02	4.60	21.50	390.00	---	7.02	123.50	---	4.20
4	18.41	67.96	8.05	3.18	17.67	390.00	---	4.14	123.50	---	5.20
6	23.35	84.29	12.07	1.76	14.26	390.00	---	3.28	123.50	---	6.54
8	25.46	90.86	16.09	0.34	12.02	390.00	---	3.02	123.50	---	7.88
10	24.71	90.70	20.11	1.95	17.85	390.00	---	3.04	123.50	---	5.21
12	19.38	82.51	23.68	3.37	19.46	390.00	---	3.40	123.50	---	4.71
14	11.21	67.21	27.26	4.80	22.12	390.00	---	4.30	123.50	---	4.08
16	0.17	44.89	30.90	6.23	23.45	390.00	---	6.68	123.50	---	3.79
18	-13.72	18.24	42.16	7.67	25.91	390.00	---	6.79	123.50	---	3.37
20	-30.49	11.65	69.63	9.12	30.08	390.00	---	3.87	123.50	---	2.86
22	-17.01	14.60	43.76	6.00	26.68	390.00	---	6.47	123.50	---	3.34
24	-6.50	38.99	35.61	4.51	22.46	390.00	---	7.53	123.50	---	4.03
26	1.04	56.03	35.31	3.03	18.72	390.00	---	5.34	123.50	---	4.91
28	5.61	64.00	35.16	1.54	14.72	390.00	---	4.60	123.50	---	6.35
30	7.20	65.73	35.14	0.20	15.96	390.00	---	4.45	123.50	---	5.94
32	5.31	64.21	36.79	1.69	16.20	390.00	---	4.59	123.50	---	5.76
34	0.43	56.06	38.81	3.19	18.20	390.00	---	5.34	123.50	---	5.04
36	-7.44	39.18	41.04	4.68	21.15	390.00	---	7.13	123.50	---	4.27
38	-18.28	13.40	49.01	6.17	25.70	390.00	---	5.75	123.50	---	3.46
40	-32.07	9.70	69.54	9.24	27.59	390.00	---	3.85	123.50	---	3.11
42.12	-14.13	18.57	39.17	7.67	25.53	390.00	---	7.30	123.50	---	3.42
44.24	0.48	44.60	29.32	6.10	22.86	390.00	---	6.72	123.50	---	3.89
46.37	11.75	66.42	25.93	4.53	19.96	390.00	---	4.34	123.50	---	4.53
48.49	19.70	81.04	22.64	2.96	16.83	390.00	---	3.46	123.50	---	5.47
50.61	24.35	88.42	19.45	1.61	13.63	390.00	---	3.12	123.50	---	6.85
52.73	26.11	90.97	15.56	0.05	12.10	390.00	---	3.01	123.50	---	7.85
54.85	24.56	85.92	11.67	1.51	14.06	390.00	---	3.21	123.50	---	6.65
56.97	19.69	70.43	7.78	3.08	17.25	390.00	---	3.98	123.50	---	5.33
59.1	11.51	42.74	3.90	4.64	20.97	390.00	---	6.75	123.50	---	4.31
61.22	0.00	0.00	0.00	6.20	24.20	390.00	---	N/A	123.50	---	3.67

5C1

Stringer S2-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.81	24.71	390.00	---	N/A	123.50	---	3.61
2	10.20	41.16	4.74	4.39	21.40	390.00	---	7.04	123.50	---	4.23
4	17.56	67.60	9.49	2.97	17.52	390.00	---	4.18	123.50	---	5.25
6	22.08	83.42	14.23	1.55	14.15	390.00	---	3.33	123.50	---	6.60
8	23.76	89.56	18.97	0.13	12.49	390.00	---	3.08	123.50	---	7.60
10	22.61	89.22	23.73	1.57	18.22	390.00	---	3.11	123.50	---	5.13
12	18.06	82.05	26.06	2.99	18.42	390.00	---	3.44	123.50	---	5.00
14	10.67	67.93	28.41	4.41	21.51	390.00	---	4.26	123.50	---	4.21
16	0.44	46.80	30.87	5.82	22.90	390.00	---	6.40	123.50	---	3.89
18	-12.63	20.27	39.66	7.24	25.47	390.00	---	7.25	123.50	---	3.45
20	-28.57	14.11	65.50	8.68	29.06	390.00	---	4.14	123.50	---	2.97
22	-15.73	14.41	46.20	5.69	25.74	390.00	---	6.15	123.50	---	3.47
24	-5.81	38.21	39.07	4.24	22.06	390.00	---	7.53	123.50	---	4.11
26	1.21	55.58	39.73	2.78	18.28	390.00	---	5.38	123.50	---	5.04
28	5.31	63.96	40.63	1.32	14.64	390.00	---	4.61	123.50	---	6.40
30	6.52	66.80	41.67	0.30	14.24	390.00	---	4.39	123.50	---	6.65
32	4.45	64.51	41.80	1.76	16.03	390.00	---	4.58	123.50	---	5.82
34	-0.52	56.61	42.34	3.21	19.55	390.00	---	5.29	123.50	---	4.70
36	-8.41	39.71	43.32	4.67	22.75	390.00	---	6.73	123.50	---	3.97
38	-19.20	14.19	50.20	6.13	25.49	390.00	---	5.59	123.50	---	3.49
40	-32.88	11.42	69.90	7.58	27.55	390.00	---	3.82	123.50	---	3.17
42.12	-14.46	19.86	38.96	7.91	25.88	390.00	---	7.33	123.50	---	3.37
44.24	0.69	46.39	29.69	6.37	23.25	390.00	---	6.45	123.50	---	3.81
46.37	12.56	69.24	27.40	4.82	20.35	390.00	---	4.15	123.50	---	4.43
48.49	21.15	85.36	25.18	3.28	17.29	390.00	---	3.27	123.50	---	5.30
50.61	26.49	94.26	22.95	1.36	13.70	390.00	---	2.90	123.50	---	6.84
52.73	27.74	95.28	18.36	0.18	12.56	390.00	---	2.86	123.50	---	7.55
54.85	25.72	88.90	13.77	1.72	14.55	390.00	---	3.09	123.50	---	6.41
56.97	20.43	72.38	9.18	3.27	17.74	390.00	---	3.86	123.50	---	5.17
59.1	11.86	43.62	4.60	4.81	21.41	390.00	---	6.61	123.50	---	4.21
61.22	0.00	0.00	0.00	6.36	24.69	390.00	---	N/A	123.50	---	3.59

5C1

Stringer S3-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.77	24.77	390.00	---	N/A	123.50	---	3.60
2	10.12	41.26	4.80	4.35	23.72	390.00	---	7.03	123.50	---	3.82
4	17.41	67.80	9.60	2.93	19.58	390.00	---	4.17	123.50	---	4.70
6	21.85	83.71	14.40	1.51	15.93	390.00	---	3.32	123.50	---	5.87
8	23.46	89.96	19.20	0.09	14.30	390.00	---	3.07	123.50	---	6.64
10	22.23	89.71	24.01	1.50	15.42	390.00	---	3.10	123.50	---	6.06
12	17.80	82.39	26.33	2.92	18.50	390.00	---	3.43	123.50	---	4.98
14	10.54	68.14	28.67	4.34	21.59	390.00	---	4.25	123.50	---	4.20
16	0.43	46.88	31.10	5.76	24.43	390.00	---	6.39	123.50	---	3.65
18	-12.51	19.86	39.78	7.18	26.92	390.00	---	7.23	123.50	---	3.26
20	-28.32	13.79	65.96	8.62	29.05	390.00	---	4.12	123.50	---	2.97
22	-15.54	15.31	46.47	5.66	25.74	390.00	---	6.12	123.50	---	3.47
24	-5.67	38.89	39.27	4.21	22.05	390.00	---	7.50	123.50	---	4.12
26	1.28	56.08	39.97	2.75	18.28	390.00	---	5.33	123.50	---	5.05
28	5.33	64.33	40.93	1.30	14.65	390.00	---	4.58	123.50	---	6.40
30	6.44	66.96	42.06	0.25	16.86	390.00	---	4.38	123.50	---	5.62
32	4.48	64.75	42.07	1.71	14.55	390.00	---	4.56	123.50	---	6.41
34	-0.40	56.91	42.50	3.17	17.94	390.00	---	5.26	123.50	---	5.12
36	-8.18	40.12	43.34	4.62	22.73	390.00	---	6.73	123.50	---	3.98
38	-18.88	14.83	50.20	6.08	25.48	390.00	---	5.60	123.50	---	3.49
40	-32.50	12.20	70.13	9.37	27.54	390.00	---	3.81	123.50	---	3.11
42.12	-14.26	20.20	39.05	7.82	25.88	390.00	---	7.32	123.50	---	3.37
44.24	0.69	46.54	29.84	6.28	23.24	390.00	---	6.43	123.50	---	3.82
46.37	12.38	69.38	27.83	4.73	20.34	390.00	---	4.15	123.50	---	4.44
48.49	20.78	85.45	25.91	3.19	17.28	390.00	---	3.27	123.50	---	5.31
50.61	25.93	94.31	24.01	1.41	13.82	390.00	---	2.91	123.50	---	6.77
52.73	27.29	95.33	19.21	0.13	12.67	390.00	---	2.86	123.50	---	7.49
54.85	25.38	88.93	14.40	1.67	14.56	390.00	---	3.09	123.50	---	6.41
56.97	20.19	72.37	9.60	3.22	17.74	390.00	---	3.87	123.50	---	5.17
59.1	11.73	43.59	4.79	4.76	21.41	390.00	---	6.61	123.50	---	4.21
61.22	0.00	0.00	0.00	6.31	24.70	390.00	---	N/A	123.50	---	3.59

5C1

Stringer S4-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.88	24.73	390.00	---	N/A	123.50	---	3.60
2	10.34	41.21	4.46	4.46	23.68	390.00	---	7.03	123.50	---	3.82
4	17.85	67.70	8.92	3.04	19.54	390.00	---	4.17	123.50	---	4.71
6	22.51	83.56	13.39	1.62	15.87	390.00	---	3.32	123.50	---	5.88
8	24.34	89.74	17.85	0.20	14.12	390.00	---	3.07	123.50	---	6.71
10	23.33	89.44	22.32	1.69	19.92	390.00	---	3.09	123.50	---	4.68
12	18.53	82.12	25.13	3.11	18.47	390.00	---	3.43	123.50	---	4.98
14	10.89	67.92	27.95	4.53	21.57	390.00	---	4.26	123.50	---	4.19
16	0.41	46.68	30.88	5.95	24.41	390.00	---	6.42	123.50	---	3.65
18	-12.91	19.55	39.58	7.37	26.91	390.00	---	7.25	123.50	---	3.26
20	-29.10	12.80	65.52	8.81	29.03	390.00	---	4.13	123.50	---	2.97
22	-16.10	14.43	46.23	5.77	25.72	390.00	---	6.14	123.50	---	3.47
24	-6.01	38.30	39.12	4.32	22.04	390.00	---	7.52	123.50	---	4.11
26	1.17	55.61	39.64	2.86	18.27	390.00	---	5.37	123.50	---	5.04
28	5.43	63.99	40.44	1.41	14.62	390.00	---	4.60	123.50	---	6.40
30	6.76	66.79	41.38	0.36	16.66	390.00	---	4.39	123.50	---	5.68
32	4.58	64.44	41.66	1.82	14.54	390.00	---	4.58	123.50	---	6.41
34	-0.51	56.39	42.32	3.27	17.93	390.00	---	5.31	123.50	---	5.12
36	-8.51	39.36	43.35	4.73	22.72	390.00	---	6.72	123.50	---	3.97
38	-19.43	13.77	50.21	6.18	25.47	390.00	---	5.59	123.50	---	3.49
40	-33.26	10.87	69.97	9.54	27.53	390.00	---	3.81	123.50	---	3.10
42.12	-14.66	19.59	38.95	7.99	25.90	390.00	---	7.33	123.50	---	3.36
44.24	0.66	46.33	29.70	6.45	23.27	390.00	---	6.46	123.50	---	3.81
46.37	12.70	69.32	27.08	4.90	20.37	390.00	---	4.14	123.50	---	4.42
48.49	21.47	85.51	24.51	3.36	17.31	390.00	---	3.26	123.50	---	5.29
50.61	26.99	94.44	21.94	1.32	13.62	390.00	---	2.89	123.50	---	6.88
52.73	28.14	95.43	17.55	0.23	12.46	390.00	---	2.85	123.50	---	7.61
54.85	26.02	89.01	13.16	1.77	14.59	390.00	---	3.08	123.50	---	6.39
56.97	20.62	72.42	8.77	3.32	17.76	390.00	---	3.86	123.50	---	5.16
59.1	11.94	43.62	4.38	4.86	21.43	390.00	---	6.60	123.50	---	4.21
61.22	0.00	0.00	0.00	6.41	24.75	390.00	---	N/A	123.50	---	3.58

5C1

Stringer S5-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	5.42	22.09	390.00	---	N/A	123.50	---	4.06
2.04	9.62	38.01	3.79	3.99	21.56	390.00	---	7.64	123.50	---	4.22
4.09	16.32	62.14	7.58	2.57	17.70	390.00	---	4.57	123.50	---	5.22
6.13	20.11	75.97	11.37	1.14	14.22	390.00	---	3.68	123.50	---	6.60
8.17	20.98	80.32	15.16	0.29	13.39	390.00	---	3.47	123.50	---	7.07
10.21	19.06	77.45	18.94	1.19	14.13	390.00	---	3.63	123.50	---	6.64
12.26	15.18	73.26	22.59	2.62	17.42	390.00	---	3.89	123.50	---	5.30
14.3	8.37	60.76	26.24	4.05	20.56	390.00	---	4.80	123.50	---	4.42
16.34	-1.38	41.82	30.05	5.50	23.07	390.00	---	7.14	123.50	---	3.88
18.38	-14.08	17.66	40.48	6.94	25.83	390.00	---	7.06	123.50	---	3.41
20.43	-27.75	11.49	62.49	7.20	28.53	390.00	---	4.36	123.50	---	3.08
22.43	-14.81	13.70	43.22	5.73	25.45	390.00	---	6.60	123.50	---	3.51
24.43	-4.81	37.31	34.87	4.26	21.76	390.00	---	7.91	123.50	---	4.17
26.43	2.24	53.81	34.40	2.79	17.80	390.00	---	5.53	123.50	---	5.18
28.43	6.34	61.14	34.13	1.31	14.18	390.00	---	4.80	123.50	---	6.61
30.43	7.48	62.96	33.96	0.23	15.60	390.00	---	4.65	123.50	---	6.08
32.43	5.53	62.05	36.11	1.72	14.21	390.00	---	4.75	123.50	---	6.56
34.43	0.59	55.17	38.50	3.21	17.81	390.00	---	5.43	123.50	---	5.15
36.43	-7.32	39.01	41.10	4.71	22.65	390.00	---	7.12	123.50	---	3.99
38.43	-18.23	13.73	49.03	6.20	25.56	390.00	---	5.75	123.50	---	3.47
40.43	-32.15	9.34	69.97	9.24	27.88	390.00	---	3.83	123.50	---	3.08
42.55	-14.24	17.36	38.40	7.65	25.65	390.00	---	7.44	123.50	---	3.41
44.67	0.30	44.28	28.64	6.05	23.10	390.00	---	6.77	123.50	---	3.85
46.79	11.45	66.33	25.28	4.45	20.14	390.00	---	4.35	123.50	---	4.50
48.91	19.20	81.25	21.97	2.85	16.94	390.00	---	3.46	123.50	---	5.44
51.04	23.52	88.17	18.67	1.79	14.11	390.00	---	3.14	123.50	---	6.61
53.16	25.62	91.71	14.94	0.19	12.43	390.00	---	2.99	123.50	---	7.63
55.28	24.32	87.34	11.21	1.42	14.29	390.00	---	3.16	123.50	---	6.55
57.4	19.61	71.89	7.47	3.02	17.61	390.00	---	3.90	123.50	---	5.22
59.52	11.50	43.73	3.74	4.62	21.47	390.00	---	6.60	123.50	---	4.21
61.65	0.00	0.00	0.00	6.22	24.84	390.00	---	N/A	123.50	---	3.57

5C1

Stringer S6-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	5.02	22.04	1212.51	---	N/A	149.61	---	4.99	
2	8.86	37.72	5.73	3.83	20.65	1212.51	---	24.49	149.61	---	5.39	
4	15.33	64.27	11.46	2.63	18.55	1212.51	---	14.27	149.61	---	6.06	
6.01	19.40	81.29	17.19	1.44	17.40	1212.51	---	11.24	149.61	---	6.53	
8.01	21.08	87.46	22.92	0.24	13.18	1212.51	---	10.42	149.61	---	8.71	
10.01	20.36	83.00	28.66	1.41	12.78	1212.51	---	10.99	149.61	---	8.89	
12.01	16.34	70.30	31.91	2.61	19.46	1212.51	---	13.03	149.61	---	5.78	
14.01	9.92	59.03	35.25	3.81	21.54	1212.51	---	15.63	149.61	---	5.17	
16.02	1.08	36.99	38.60	5.02	22.62	1212.51	---	24.14	149.61	---	4.87	
18.02	-10.19	15.02	48.61	6.24	23.55	1212.51	---	18.98	149.61	---	4.62	
20.02	-23.97	2.42	60.85	7.49	27.91	1212.51	---	14.93	149.61	---	3.86	
22.02	-10.65	9.59	40.00	6.03	24.63	1212.51	---	23.05	149.61	---	4.43	
24.02	0.13	42.32	36.95	4.76	23.15	1212.51	---	22.04	149.61	---	4.77	
26.02	8.38	66.53	34.42	3.48	21.01	1212.51	---	13.89	149.61	---	5.31	
28.02	14.07	81.50	31.90	2.20	20.10	1212.51	---	11.27	149.61	---	5.62	
30.02	17.17	83.83	29.39	0.92	14.01	1212.51	---	10.92	149.61	---	8.15	
32.02	17.45	76.23	23.42	0.50	14.67	1212.51	---	12.01	149.61	---	7.81	
34.02	15.16	69.50	17.56	1.79	20.22	1212.51	---	13.20	149.61	---	5.60	
36.03	10.28	39.72	11.71	3.09	21.71	1212.51	---	23.22	149.61	---	5.16	
38.03	2.81	19.65	5.85	4.38	24.17	1212.51	---	47.32	149.61	---	4.58	
40.03	0.00	0.00	0.00	7.23	27.17	1212.51	---	N/A	149.61	---	3.97	
42.15	12.35	49.09	8.39	5.85	24.07	1212.51	---	18.75	149.61	---	4.54	
44.27	23.31	84.96	8.73	4.47	20.83	1212.51	---	10.70	149.61	---	5.31	
46.39	31.33	108.83	9.07	3.09	18.05	1212.51	---	8.28	149.61	---	6.20	
48.51	36.42	120.76	9.41	1.70	15.04	1212.51	---	7.42	149.61	---	7.54	
50.64	38.57	119.47	9.74	0.32	11.91	1212.51	---	7.48	149.61	---	9.64	
52.76	36.77	110.80	7.78	1.54	16.02	1212.51	---	8.09	149.61	---	7.09	
54.88	32.03	102.18	5.84	2.93	18.97	1212.51	---	8.81	149.61	---	5.91	
57	24.32	81.08	3.89	4.33	20.39	1212.51	---	11.20	149.61	---	5.43	
59.12	13.65	55.49	1.95	5.73	23.64	1212.51	---	16.56	149.61	---	4.63	
61.25	0.00	0.00	0.00	7.13	25.56	1212.51	---	N/A	149.61	---	4.22	

5C1

Stringer F2A-2

Stringer F2B-2

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
5C1	Stringer F1A-3	0	0.00	0.00	0.00	6.39	26.33	643.98	---	N/A	207.60	---	5.82
		2.12	12.15	46.51	2.09	5.06	22.77	643.98	---	10.39	207.60	---	6.79
		4.24	21.49	80.89	4.18	3.74	19.79	643.98	---	5.86	207.60	---	7.88
		6.37	28.02	104.81	6.26	2.41	17.20	643.98	---	4.46	207.60	---	9.14
		8.49	31.72	117.13	8.35	1.08	14.45	643.98	---	3.96	207.60	---	10.98
		10.61	32.63	121.03	10.45	0.50	11.95	643.98	---	3.82	207.60	---	13.32
		12.73	30.17	116.08	8.36	1.83	14.45	643.98	---	4.01	207.60	---	10.92
		14.86	24.86	96.44	6.27	3.17	17.90	643.98	---	4.88	207.60	---	8.74
		16.98	16.71	63.29	4.18	4.51	21.77	643.98	---	7.56	207.60	---	7.13
		19.1	5.70	25.76	2.09	5.86	25.53	643.98	---	19.01	207.60	---	6.03
	21.22	-1.36	0.00	31.46	7.22	26.83	643.98	---	15.70	207.60	---	5.68	
	Stringer F1B-3	23.34	8.42	45.74	30.34	3.93	22.37	643.98	---	10.65	207.60	---	6.96
		25.47	15.31	75.72	29.38	2.57	18.83	643.98	---	6.34	207.60	---	8.34
		27.59	19.31	93.32	28.42	1.20	16.21	643.98	---	5.10	207.60	---	9.78
		29.71	20.39	101.39	27.47	0.17	13.50	643.98	---	4.68	207.60	---	11.82
		31.83	18.56	102.39	26.52	1.49	14.39	643.98	---	4.66	207.60	---	10.99
		33.96	13.93	93.05	21.79	2.87	17.62	643.98	---	5.17	207.60	---	8.90
		36.08	6.36	73.86	17.06	4.26	20.68	643.98	---	6.62	207.60	---	7.52
		38.2	-4.18	47.97	12.44	5.66	23.54	643.98	---	10.24	207.60	---	6.54
		40.32	-17.69	16.53	16.47	7.07	27.23	643.98	---	28.90	207.60	---	5.60
		42.45	-33.67	5.83	53.67	8.08	28.27	643.98	---	8.60	207.60	---	5.36
44.57		-17.51	8.00	44.33	7.21	6.55	643.98	---	10.78	207.60	---	23.28	
46.7		-2.86	17.11	38.74	6.46	6.50	643.98	---	12.71	207.60	---	23.57	
48.82		10.28	25.31	34.26	5.70	6.00	643.98	---	14.16	207.60	---	25.67	
50.95		21.87	30.08	29.89	4.94	5.28	643.98	---	15.74	207.60	---	29.31	
53.07		28.93	31.37	25.55	0.43	4.84	643.98	---	14.87	207.60	---	32.91	
55.19	27.06	31.69	20.44	1.33	4.13	643.98	---	14.78	207.60	---	38.34		
57.32	23.25	29.70	15.34	2.25	4.75	643.98	---	15.90	207.60	---	33.15		
59.44	17.49	24.42	10.23	3.18	6.06	643.98	---	19.57	207.60	---	25.83		
61.57	9.74	15.70	5.12	4.11	7.52	643.98	---	30.93	207.60	---	20.69		
63.69	0.00	0.00	0.00	5.06	8.78	643.98	---	N/A	207.60	---	17.61		
5C1	Stringer S1-3	0	0.00	0.00	0.00	2.89	13.72	303.24	---	N/A	216.57	---	11.93
		0.75	1.76	7.54	1.12	2.50	12.56	303.24	---	30.72	216.57	---	13.06
		2.12	4.97	21.30	3.17	1.79	10.44	390.00	---	13.85	123.50	---	8.93
		4.24	7.60	33.24	6.33	0.69	7.86	390.00	---	8.80	123.50	---	12.00
		6.36	7.88	34.25	9.50	0.43	7.99	390.00	---	8.53	123.50	---	11.84
		8.48	5.79	32.67	14.22	1.55	10.22	390.00	---	9.01	123.50	---	9.14
		10.6	2.59	21.44	16.11	2.68	13.33	390.00	---	13.87	123.50	---	6.93
		12.72	6.94	27.75	6.20	1.48	11.95	390.00	---	10.56	123.50	---	7.83
		14.85	8.87	32.79	4.65	0.34	8.75	390.00	---	8.88	123.50	---	10.82
		16.97	8.36	32.56	3.10	0.82	8.02	390.00	---	8.96	123.50	---	11.74
		19.09	5.39	23.46	1.55	1.98	11.70	390.00	---	12.56	123.50	---	7.95
		20.46	1.91	8.30	0.55	2.74	14.21	192.60	---	17.62	183.58	---	9.74
21.21	0.00	0.00	0.00	3.16	15.59	192.60	---	N/A	183.58	---	8.86		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	8.49	25.82	390.00	---	N/A	123.50	---	3.35
2.12	14.44	43.64	4.40	5.12	21.34	390.00	---	6.54	123.50	---	4.21
4.24	24.24	71.49	8.80	3.53	17.47	390.00	---	3.86	123.50	---	5.24
6.37	27.51	86.88	13.20	1.04	14.37	390.00	---	3.14	123.50	---	6.54
8.49	24.87	92.18	17.60	1.45	13.30	390.00	---	2.98	123.50	---	7.03
10.61	25.94	90.44	22.02	1.73	13.66	390.00	---	3.03	123.50	---	6.83
12.73	20.58	84.43	25.98	3.33	16.93	390.00	---	3.31	123.50	---	5.41
14.85	11.81	70.78	30.06	4.94	20.41	390.00	---	4.07	123.50	---	4.41
16.98	-0.38	49.62	34.26	6.55	23.51	390.00	---	6.04	123.50	---	3.76
19.1	-15.98	24.23	42.10	8.16	26.84	390.00	---	6.75	123.50	---	3.24
21.22	-35.01	13.77	70.22	9.79	29.27	390.00	---	3.77	123.50	---	2.91
23.34	-19.25	16.63	49.21	6.62	24.72	390.00	---	5.71	123.50	---	3.58
25.46	-6.94	40.34	40.33	4.99	21.70	390.00	---	7.26	123.50	---	4.15
27.58	1.91	59.77	38.75	3.35	18.51	390.00	---	4.99	123.50	---	4.95
29.7	7.28	69.93	37.70	1.71	14.94	390.00	---	4.19	123.50	---	6.24
31.82	9.18	74.88	37.21	0.26	12.51	390.00	---	3.88	123.50	---	7.57
33.94	6.89	71.80	37.14	1.90	15.37	390.00	---	4.08	123.50	---	6.06
36.06	1.13	61.06	37.27	3.54	18.60	390.00	---	4.89	123.50	---	4.92
38.19	-8.10	41.75	37.89	5.16	22.40	390.00	---	6.99	123.50	---	4.01
40.31	-20.77	17.59	46.04	6.79	25.64	390.00	---	6.06	123.50	---	3.44
42.43	-36.84	12.36	67.77	8.40	27.68	390.00	---	3.88	123.50	---	3.13
44.55	-16.86	22.55	42.72	8.62	24.94	390.00	---	6.63	123.50	---	3.46
46.67	-0.19	47.08	35.10	7.08	22.12	390.00	---	6.37	123.50	---	3.97
48.79	13.09	66.98	31.01	5.51	19.06	390.00	---	4.28	123.50	---	4.70
50.91	23.01	79.28	27.04	3.94	15.90	390.00	---	3.49	123.50	---	5.73
53.03	29.98	84.40	23.15	2.45	15.47	390.00	---	3.20	123.50	---	5.98
55.15	30.49	86.80	18.52	0.52	12.82	390.00	---	3.10	123.50	---	7.37
57.27	27.75	82.44	13.90	2.06	13.46	390.00	---	3.30	123.50	---	6.90
59.39	21.76	68.07	9.27	3.59	16.69	390.00	---	4.09	123.50	---	5.48
61.51	12.51	41.87	4.64	5.13	20.52	390.00	---	6.87	123.50	---	4.38
63.64	0.00	0.00	0.00	6.66	23.91	390.00	---	N/A	123.50	---	3.69

5C1

Stringer S2-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.49	26.60	390.00	---	N/A	123.50	---	3.33
2.12	12.10	45.29	5.71	4.92	22.12	390.00	---	6.36	123.50	---	4.07
4.24	20.87	74.79	11.42	3.35	18.25	390.00	---	3.73	123.50	---	5.02
6.37	26.31	91.87	17.14	1.78	15.24	390.00	---	2.98	123.50	---	6.12
8.49	28.41	99.11	22.85	0.21	14.16	390.00	---	2.74	123.50	---	6.69
10.61	27.17	100.01	28.55	1.91	14.68	390.00	---	2.73	123.50	---	6.34
12.73	21.45	90.74	30.76	3.48	17.78	390.00	---	3.07	123.50	---	5.15
14.85	12.39	74.59	33.13	5.06	21.09	390.00	---	3.86	123.50	---	4.26
16.98	0.00	51.00	35.72	6.63	24.35	390.00	---	5.88	123.50	---	3.63
19.1	-15.74	24.68	43.02	8.20	27.37	390.00	---	6.61	123.50	---	3.17
21.22	-34.79	14.85	71.47	9.77	29.81	390.00	---	3.71	123.50	---	2.86
23.34	-19.45	18.23	51.47	6.45	24.79	390.00	---	5.45	123.50	---	3.57
25.46	-7.45	41.48	43.89	4.88	21.76	390.00	---	6.67	123.50	---	4.14
27.58	1.23	61.18	44.06	3.30	18.45	390.00	---	4.88	123.50	---	4.97
29.7	6.57	73.22	45.00	1.73	15.18	390.00	---	4.01	123.50	---	6.14
31.82	8.59	77.81	46.24	0.03	12.02	390.00	---	3.75	123.50	---	7.90
33.94	6.86	73.22	44.88	1.60	15.30	390.00	---	4.00	123.50	---	6.10
36.06	1.80	60.90	43.81	3.17	18.63	390.00	---	4.90	123.50	---	4.93
38.19	-6.59	40.79	43.50	4.74	21.96	390.00	---	6.75	123.50	---	4.11
40.31	-18.31	17.33	50.98	6.31	24.98	390.00	---	5.53	123.50	---	3.55
42.43	-33.33	14.16	70.86	9.38	28.71	390.00	---	3.76	123.50	---	2.98
44.55	-15.10	24.59	43.15	7.83	27.01	390.00	---	6.60	123.50	---	3.23
46.67	-0.16	50.81	35.73	6.27	23.98	390.00	---	5.90	123.50	---	3.70
48.79	11.47	73.99	32.59	4.72	20.76	390.00	---	3.90	123.50	---	4.35
50.91	19.79	89.73	29.57	3.17	17.53	390.00	---	3.12	123.50	---	5.24
53.03	25.32	98.60	26.78	1.70	18.03	390.00	---	2.79	123.50	---	5.17
55.15	26.76	97.99	21.43	0.09	13.87	390.00	---	2.79	123.50	---	6.84
57.27	24.94	91.02	16.07	1.62	14.84	390.00	---	3.02	123.50	---	6.29
59.39	19.88	74.23	10.72	3.15	18.18	390.00	---	3.77	123.50	---	5.05
61.51	11.57	45.02	5.36	4.69	22.04	390.00	---	6.41	123.50	---	4.10
63.64	0.00	0.00	0.00	6.22	25.70	390.00	---	N/A	123.50	---	3.45

5C1

Stringer S3-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.36	26.40	390.00	---	N/A	123.50	---	3.36
2.12	11.82	44.90	5.55	4.78	21.93	390.00	---	6.42	123.50	---	4.11
4.24	20.31	74.01	11.10	3.21	18.06	390.00	---	3.78	123.50	---	5.08
6.37	25.46	90.68	16.65	1.64	15.06	390.00	---	3.03	123.50	---	6.20
8.49	27.28	97.53	22.20	0.07	14.09	390.00	---	2.80	123.50	---	6.74
10.61	25.76	98.02	27.74	1.70	14.47	390.00	---	2.80	123.50	---	6.45
12.73	20.48	89.17	29.97	3.27	17.58	390.00	---	3.13	123.50	---	5.22
14.85	11.88	73.50	32.48	4.84	20.89	390.00	---	3.92	123.50	---	4.32
16.98	-0.06	50.50	35.15	6.41	24.13	390.00	---	5.94	123.50	---	3.67
19.1	-15.34	24.73	42.84	7.98	27.17	390.00	---	6.64	123.50	---	3.20
21.22	-33.93	15.07	71.25	9.55	29.61	390.00	---	3.73	123.50	---	2.89
23.34	-18.77	18.39	51.12	6.36	24.60	390.00	---	5.50	123.50	---	3.60
25.46	-6.95	41.03	43.27	4.79	21.58	390.00	---	6.77	123.50	---	4.18
27.58	1.55	60.28	43.40	3.22	18.27	390.00	---	4.95	123.50	---	5.02
29.7	6.72	71.79	44.39	1.65	14.96	390.00	---	4.09	123.50	---	6.24
31.82	8.57	75.67	45.67	0.02	12.02	390.00	---	3.85	123.50	---	7.90
33.94	6.86	71.69	44.37	1.59	15.00	390.00	---	4.09	123.50	---	6.23
36.06	1.83	60.05	43.39	3.16	18.42	390.00	---	4.97	123.50	---	4.99
38.19	-6.53	40.68	43.27	4.73	21.76	390.00	---	6.78	123.50	---	4.15
40.31	-18.22	17.94	51.21	6.30	24.78	390.00	---	5.50	123.50	---	3.58
42.43	-33.21	14.65	71.17	9.34	28.72	390.00	---	3.75	123.50	---	2.98
44.55	-15.06	24.77	42.75	7.79	27.02	390.00	---	6.67	123.50	---	3.23
46.67	-0.20	50.52	34.97	6.24	24.00	390.00	---	5.93	123.50	---	3.70
48.79	11.35	73.48	32.01	4.69	20.78	390.00	---	3.93	123.50	---	4.35
50.91	19.60	89.13	29.25	3.14	17.54	390.00	---	3.15	123.50	---	5.24
53.03	25.04	98.01	26.78	1.66	18.04	390.00	---	2.81	123.50	---	5.17
55.15	26.54	97.52	21.43	0.06	13.89	390.00	---	2.80	123.50	---	6.84
57.27	24.78	90.68	16.07	1.59	14.78	390.00	---	3.04	123.50	---	6.32
59.39	19.77	74.00	10.72	3.13	18.12	390.00	---	3.79	123.50	---	5.07
61.51	11.51	44.90	5.36	4.66	21.99	390.00	---	6.43	123.50	---	4.11
63.64	0.00	0.00	0.00	6.19	25.64	390.00	---	N/A	123.50	---	3.46

5C1

Stringer S4-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V							
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
0	0.00	0.00	0.00	6.46	26.60	390.00	---	N/A	123.50	---	3.33
2.12	12.05	45.29	5.39	4.89	22.12	390.00	---	6.36	123.50	---	4.07
4.24	20.76	74.79	10.78	3.32	18.25	390.00	---	3.73	123.50	---	5.02
6.37	26.14	91.87	16.18	1.75	15.26	390.00	---	2.98	123.50	---	6.11
8.49	28.18	99.12	21.57	0.18	13.99	390.00	---	2.74	123.50	---	6.78
10.61	26.89	100.03	26.95	1.90	14.71	390.00	---	2.73	123.50	---	6.33
12.73	21.19	90.66	29.61	3.47	17.81	390.00	---	3.08	123.50	---	5.14
14.85	12.17	74.34	32.52	5.04	21.12	390.00	---	3.87	123.50	---	4.26
16.98	-0.19	50.56	35.57	6.61	24.37	390.00	---	5.93	123.50	---	3.63
19.1	-15.88	23.99	43.03	8.18	27.40	390.00	---	6.60	123.50	---	3.17
21.22	-34.90	13.68	71.59	9.75	29.85	390.00	---	3.70	123.50	---	2.86
23.34	-19.42	17.43	51.65	6.51	24.76	390.00	---	5.43	123.50	---	3.57
25.46	-7.28	40.81	43.97	4.94	21.74	390.00	---	6.66	123.50	---	4.14
27.58	1.54	60.70	43.83	3.37	18.43	390.00	---	4.92	123.50	---	4.97
29.7	7.03	72.83	44.44	1.80	15.14	390.00	---	4.02	123.50	---	6.16
31.82	9.19	77.29	45.36	0.16	11.87	390.00	---	3.76	123.50	---	7.99
33.94	7.19	72.77	44.30	1.73	15.14	390.00	---	4.02	123.50	---	6.16
36.06	1.86	60.73	43.57	3.30	18.55	390.00	---	4.91	123.50	---	4.94
38.19	-6.80	40.88	43.63	4.87	21.88	390.00	---	6.72	123.50	---	4.12
40.31	-18.80	17.45	51.18	6.44	24.91	390.00	---	5.49	123.50	---	3.56
42.43	-34.09	13.87	71.18	9.51	28.80	390.00	---	3.74	123.50	---	2.97
44.55	-15.57	24.23	42.91	7.96	27.09	390.00	---	6.63	123.50	---	3.21
46.67	-0.34	50.56	35.55	6.41	24.07	390.00	---	5.93	123.50	---	3.68
48.79	11.57	74.00	32.54	4.86	20.85	390.00	---	3.90	123.50	---	4.32
50.91	20.19	89.99	29.70	3.31	17.62	390.00	---	3.11	123.50	---	5.20
53.03	26.00	99.11	27.09	1.83	18.10	390.00	---	2.76	123.50	---	5.15
55.15	27.30	98.40	21.67	0.15	13.88	390.00	---	2.77	123.50	---	6.83
57.27	25.35	91.31	16.26	1.69	14.88	390.00	---	3.01	123.50	---	6.27
59.39	20.15	74.40	10.84	3.22	18.22	390.00	---	3.76	123.50	---	5.04
61.51	11.71	45.11	5.42	4.75	22.09	390.00	---	6.39	123.50	---	4.09
63.64	0.00	0.00	0.00	6.28	25.72	390.00	---	N/A	123.50	---	3.45

5C1

Stringer S5-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

Location	Moment / Shear from MDX Model						RF - Moment			RF - Shear		
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF
	From Rear (Ft)	M+	M-	V		Inventory						
		D	L+I	L+I	D		L+I	(kips)	Operating			
0	0.00	0.00	0.00	6.26	26.17	390.00	---	N/A	123.50	---	3.39	
2.12	11.56	43.91	4.26	4.63	21.47	390.00	---	6.57	123.50	---	4.21	
4.24	19.66	71.38	8.51	3.00	17.45	390.00	---	3.93	123.50	---	5.27	
6.37	24.30	85.60	12.77	1.37	14.11	390.00	---	3.22	123.50	---	6.64	
8.49	25.50	89.56	17.03	0.25	13.54	390.00	---	3.06	123.50	---	7.00	
10.61	23.22	86.72	21.28	1.31	13.18	390.00	---	3.19	123.50	---	7.11	
12.73	18.72	81.12	24.65	2.93	16.46	390.00	---	3.47	123.50	---	5.59	
14.85	10.78	67.72	28.14	4.55	19.88	390.00	---	4.27	123.50	---	4.55	
16.98	-0.58	46.78	31.72	6.16	22.88	390.00	---	6.40	123.50	---	3.88	
19.1	-15.35	20.86	39.64	7.77	26.02	390.00	---	7.18	123.50	---	3.35	
21.22	-33.53	10.53	67.76	9.37	28.26	390.00	---	3.93	123.50	---	3.03	
23.34	-18.18	16.35	47.17	6.44	23.76	390.00	---	5.97	123.50	---	3.73	
25.46	-6.22	38.83	39.10	4.84	20.63	390.00	---	7.51	123.50	---	4.37	
27.58	2.37	55.84	36.93	3.25	17.21	390.00	---	5.33	123.50	---	5.33	
29.7	7.59	64.91	35.27	1.67	13.70	390.00	---	4.50	123.50	---	6.81	
31.82	9.47	66.62	33.74	0.17	10.53	390.00	---	4.36	123.50	---	9.01	
33.94	8.15	63.76	33.59	1.41	13.76	390.00	---	4.58	123.50	---	6.80	
36.06	3.51	54.40	33.57	2.97	16.98	390.00	---	5.45	123.50	---	5.42	
38.19	-4.45	37.03	34.12	4.53	20.07	390.00	---	7.98	123.50	---	4.51	
40.31	-15.70	15.42	42.71	6.08	22.75	390.00	---	6.66	123.50	---	3.91	
42.43	-30.24	11.74	61.06	8.44	25.61	390.00	---	4.42	123.50	---	3.38	
44.55	-13.96	22.22	38.19	6.93	23.93	390.00	---	7.49	123.50	---	3.68	
46.67	-0.89	44.42	31.15	5.42	20.83	390.00	---	6.73	123.50	---	4.30	
48.79	8.99	61.69	27.06	3.93	17.61	390.00	---	4.72	123.50	---	5.17	
50.91	15.69	71.53	23.07	2.44	14.41	390.00	---	3.97	123.50	---	6.42	
53.03	19.75	75.31	19.29	1.73	18.55	390.00	---	3.72	123.50	---	5.03	
55.15	21.88	77.79	15.43	0.28	12.34	390.00	---	3.58	123.50	---	7.68	
57.27	20.94	73.82	11.58	1.16	12.12	390.00	---	3.78	123.50	---	7.74	
59.39	16.98	61.21	7.72	2.58	14.92	390.00	---	4.62	123.50	---	6.19	
61.51	9.99	37.47	3.86	4.00	18.41	390.00	---	7.74	123.50	---	4.94	
63.64	0.00	0.00	0.00	5.41	21.48	390.00	---	N/A	123.50	---	4.17	

5C1

Stringer S6-3

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
5C1	Stringer F2A-3											
	0	0.00	0.00	0.00	6.91	27.66	1212.51	---	N/A	149.61	---	3.91
	2.12	13.15	48.70	1.98	5.49	23.84	1212.51	---	18.88	149.61	---	4.60
	4.24	23.29	84.91	3.96	4.07	20.78	1212.51	---	10.71	149.61	---	5.34
	6.37	30.42	110.37	5.95	2.65	18.12	1212.51	---	8.18	149.61	---	6.21
	8.49	34.55	123.22	7.93	1.24	15.20	1212.51	---	7.29	149.61	---	7.49
	10.61	35.68	128.03	9.92	0.66	12.62	1212.51	---	7.01	149.61	---	9.07
	12.73	32.79	121.94	7.93	2.07	15.18	1212.51	---	7.38	149.61	---	7.44
	14.86	26.91	99.76	5.95	3.47	18.62	1212.51	---	9.08	149.61	---	5.99
	16.98	18.06	65.20	3.97	4.87	21.94	1212.51	---	14.03	149.61	---	5.02
	19.1	6.24	27.14	1.98	6.27	26.02	1212.51	---	34.14	149.61	---	4.18
	21.22	0.00	0.00	0.00	7.66	26.81	1212.51	---	N/A	149.61	---	4.01
	Stringer F2B-3											
	23.34	9.37	45.12	33.33	4.38	22.06	1212.51	---	20.46	149.61	---	5.02
	25.47	17.20	74.80	35.38	3.00	18.45	1212.51	---	12.24	149.61	---	6.08
	27.59	22.11	91.39	37.43	1.62	15.94	1212.51	---	9.96	149.61	---	7.12
	29.71	24.10	99.06	39.48	0.25	13.33	1212.51	---	9.17	149.61	---	8.61
	31.83	23.19	102.20	41.55	1.31	13.60	1212.51	---	8.90	149.61	---	8.37
	33.96	18.96	90.06	38.61	2.67	16.49	1212.51	---	10.15	149.61	---	6.82
	36.08	11.85	74.04	35.76	4.03	18.97	1212.51	---	12.44	149.61	---	5.85
	38.2	1.87	50.87	33.17	5.37	21.25	1212.51	---	18.30	149.61	---	5.16
	40.32	-10.95	20.25	31.17	6.71	23.90	1212.51	---	29.57	149.61	---	4.53
	42.45	-26.57	4.89	49.76	8.04	24.59	1212.51	---	18.21	149.61	---	4.35
	44.57	-11.33	21.89	33.59	6.53	23.05	1212.51	---	27.43	149.61	---	4.71
	46.69	1.15	52.43	32.43	5.24	20.53	1212.51	---	17.77	149.61	---	5.35
	48.82	10.87	76.48	31.70	3.95	17.98	1212.51	---	12.05	149.61	---	6.18
	50.94	17.86	91.58	30.99	2.68	15.28	1212.51	---	9.99	149.61	---	7.36
	53.07	22.71	99.18	30.30	0.93	11.70	1212.51	---	9.18	149.61	---	9.76
55.19	23.38	96.37	24.24	0.31	11.81	1212.51	---	9.44	149.61	---	9.72	
57.32	21.42	84.21	18.18	1.54	13.70	1212.51	---	10.82	149.61	---	8.29	
59.44	16.85	64.22	12.12	2.76	15.77	1212.51	---	14.26	149.61	---	7.12	
61.56	9.70	37.62	6.06	3.97	18.26	1212.51	---	24.53	149.61	---	6.09	
63.69	0.00	0.00	0.00	5.18	19.11	1212.51	---	N/A	149.61	---	5.75	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
			D	L+I	L-I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
5C1 Stringer F1-4	0	0.00	0.00	0.00	4.81	8.21	643.98	---	N/A	207.60	---	18.87
	2.33	9.99	17.91	5.28	3.77	8.21	643.98	---	27.10	207.60	---	18.99
	4.65	17.53	34.49	10.57	2.72	7.91	643.98	---	13.85	207.60	---	19.84
	6.98	22.65	48.48	15.85	1.67	7.79	643.98	---	9.75	207.60	---	20.29
	9.31	25.33	58.48	21.13	0.63	7.68	643.98	---	8.04	207.60	---	20.71
	11.63	25.50	67.82	26.43	2.52	8.60	643.98	---	6.93	207.60	---	18.28
	13.96	18.31	56.37	26.33	3.66	10.46	643.98	---	8.46	207.60	---	14.92
	16.29	8.46	43.08	26.42	4.81	10.60	643.98	---	11.30	207.60	---	14.61
	18.61	-4.09	26.05	26.65	5.98	11.98	643.98	---	18.43	207.60	---	12.83
	20.94	-19.40	5.89	28.76	7.18	13.14	643.98	---	16.55	207.60	---	11.61
	23.27	-37.47	2.14	38.20	8.77	12.24	643.98	---	11.99	207.60	---	12.33
	25.6	-18.45	7.97	27.47	7.54	14.03	643.98	---	17.36	207.60	---	10.84
	27.93	-2.32	29.98	25.00	6.29	12.75	643.98	---	16.45	207.60	---	12.03
	30.26	10.86	47.88	24.00	5.02	11.76	643.98	---	10.12	207.60	---	13.15
	32.6	21.06	60.71	23.08	3.73	10.87	643.98	---	7.81	207.60	---	14.35
	34.93	28.16	72.44	22.19	1.17	6.39	643.98	---	6.45	207.60	---	24.81
	37.26	29.22	70.06	17.75	0.26	8.03	643.98	---	6.65	207.60	---	19.85
	39.59	26.93	63.43	13.32	1.70	9.28	643.98	---	7.39	207.60	---	17.03
	41.92	21.30	50.33	8.88	3.13	11.25	643.98	---	9.42	207.60	---	13.92
	44.26	12.31	29.35	4.44	4.57	13.30	643.98	---	16.46	207.60	---	11.66
46.59	0.00	0.06	0.01	6.00	13.53	643.98	---	8256.15	207.60	---	11.36	
5C1 Stringer S1-4	0	0.00	0.00	0.00	3.86	16.87	225.39	---	N/A	218.57	---	9.74
	0.75	2.41	9.05	0.25	3.44	15.47	225.39	---	18.90	218.57	---	10.64
	2.32	7.44	27.99	0.78	2.55	12.55	390.00	---	10.45	123.50	---	7.37
	4.64	11.83	43.91	1.56	1.24	10.39	390.00	---	6.56	123.50	---	9.02
	6.96	13.18	47.62	2.34	0.07	9.29	390.00	---	6.02	123.50	---	10.22
	9.27	11.50	44.53	6.28	1.38	10.44	390.00	---	6.48	123.50	---	8.97
	11.59	6.37	26.05	3.89	2.70	15.87	390.00	---	11.27	123.50	---	5.82
	13.91	5.86	33.05	9.63	0.92	9.34	390.00	---	8.74	123.50	---	10.07
	16.23	2.18	32.34	15.77	2.30	9.67	390.00	---	9.21	123.50	---	9.59
	18.55	-4.68	24.12	22.00	3.70	13.11	390.00	---	12.24	123.50	---	6.96
	20.87	-14.79	6.95	28.25	5.11	16.30	390.00	---	10.10	123.50	---	5.51
	22.44	-24.66	2.44	37.85	7.17	18.15	240.15	---	4.23	223.32	---	9.07
	23.19	-29.38	0.28	42.44	8.16	19.04	240.15	---	3.66	223.32	---	8.59
	23.94	-23.82	2.57	36.89	7.56	18.73	240.15	---	4.36	223.32	---	8.76
	25.51	-12.19	7.37	25.27	6.67	18.08	390.00	---	11.39	123.50	---	4.89
	27.83	1.52	36.43	21.59	5.15	16.41	390.00	---	8.19	123.50	---	5.48
	30.14	11.69	56.94	18.11	3.62	14.19	390.00	---	5.06	123.50	---	6.44
	32.46	18.29	67.74	14.66	2.06	11.80	390.00	---	4.16	123.50	---	7.88
	34.78	19.28	65.03	11.22	2.62	17.66	390.00	---	4.32	123.50	---	5.23
	37.1	23.37	74.34	8.99	0.91	11.91	390.00	---	3.72	123.50	---	7.90
39.42	23.49	71.71	6.74	0.81	10.29	390.00	---	3.86	123.50	---	9.15	
41.74	19.63	62.39	4.49	2.52	13.83	390.00	---	4.49	123.50	---	6.69	
44.06	11.80	38.82	2.25	4.24	17.46	390.00	---	7.42	123.50	---	5.20	
46.38	0.00	0.04	0.09	5.95	21.34	390.00	---	3333.33	123.50	---	4.17	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012

Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear		
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF
		D	M+	M-	V							
				L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory
5C1 Stringer S2-4	0	0.00	0.00	0.00	6.74	28.30	390.00	---	N/A	123.50	---	3.12
	2.32	13.70	54.21	6.81	5.07	24.31	390.00	---	5.28	123.50	---	3.70
	4.64	23.51	92.26	13.62	3.39	20.27	390.00	---	3.00	123.50	---	4.52
	6.96	29.44	115.23	20.43	1.72	17.09	390.00	---	2.35	123.50	---	5.46
	9.27	31.48	123.97	27.24	0.04	13.86	390.00	---	2.17	123.50	---	6.85
	11.59	29.65	125.38	34.06	3.14	25.24	390.00	---	2.16	123.50	---	3.64
	13.91	20.42	109.61	40.57	4.82	21.75	390.00	---	2.55	123.50	---	4.15
	16.23	7.31	86.18	47.08	6.49	24.27	390.00	---	3.40	123.50	---	3.65
	18.55	-9.69	50.92	53.60	8.17	26.95	390.00	---	5.42	123.50	---	3.22
	20.87	-30.57	7.01	63.22	9.84	29.85	390.00	---	4.26	123.50	---	2.85
	23.19	-55.37	2.02	96.28	11.58	30.22	390.00	---	2.54	123.50	---	2.76
	25.51	-30.46	7.96	65.62	9.91	29.55	390.00	---	4.11	123.50	---	2.88
	27.83	-9.43	50.78	56.15	8.23	26.28	390.00	---	5.17	123.50	---	3.30
	30.14	7.71	83.12	48.30	6.55	23.22	390.00	---	3.52	123.50	---	3.81
	32.46	20.96	104.42	40.65	4.88	19.91	390.00	---	2.67	123.50	---	4.53
	34.78	30.29	118.29	33.02	3.20	25.11	390.00	---	2.28	123.50	---	3.66
	37.1	32.00	119.16	26.41	0.10	13.51	390.00	---	2.25	123.50	---	7.02
	39.42	29.83	111.72	19.81	1.77	16.21	390.00	---	2.42	123.50	---	5.75
41.74	23.77	90.59	13.20	3.45	19.93	390.00	---	3.05	123.50	---	4.59	
44.06	13.83	53.84	6.60	5.12	24.18	390.00	---	5.32	123.50	---	3.72	
46.38	0.00	0.03	0.06	6.80	25.62	390.00	---	5000.00	123.50	---	3.44	
5C1 Stringer S3-4	0	0.00	0.00	0.00	6.32	28.10	390.00	---	N/A	123.50	---	3.16
	2.32	12.70	52.26	5.89	4.64	23.44	390.00	---	5.50	123.50	---	3.85
	4.64	21.52	86.93	11.77	2.97	19.02	390.00	---	3.20	123.50	---	4.84
	6.96	26.46	105.73	17.66	1.29	15.39	390.00	---	2.59	123.50	---	6.09
	9.27	27.51	111.60	23.55	0.38	12.32	390.00	---	2.44	123.50	---	7.68
	11.59	24.68	108.24	29.45	2.16	24.54	390.00	---	2.54	123.50	---	3.78
	13.91	17.74	97.20	35.47	3.83	18.59	390.00	---	2.90	123.50	---	4.90
	16.23	6.92	78.44	42.10	5.51	22.05	390.00	---	3.74	123.50	---	4.06
	18.55	-7.79	48.74	48.74	7.18	25.27	390.00	---	6.00	123.50	---	3.48
	20.87	-26.38	8.08	56.22	8.86	28.55	390.00	---	4.87	123.50	---	3.02
	23.19	-48.89	1.73	85.99	10.53	29.80	390.00	---	2.92	123.50	---	2.83
	25.51	-26.45	9.79	57.22	8.84	28.52	390.00	---	4.78	123.50	---	3.02
	27.83	-7.90	50.07	49.85	7.16	25.32	390.00	---	5.83	123.50	---	3.47
	30.14	6.77	77.87	43.15	5.49	21.69	390.00	---	3.77	123.50	---	4.13
	32.46	17.55	93.70	36.44	3.81	17.83	390.00	---	3.01	123.50	---	5.11
	34.78	24.41	102.57	29.76	2.14	20.52	390.00	---	2.69	123.50	---	4.53
	37.1	27.30	104.56	23.81	0.41	13.52	390.00	---	2.61	123.50	---	7.00
	39.42	26.30	97.87	17.85	1.27	14.61	390.00	---	2.80	123.50	---	6.42
41.74	21.42	79.49	11.90	2.94	17.24	390.00	---	3.50	123.50	---	5.34	
44.06	12.66	46.79	5.95	4.62	21.02	390.00	---	6.14	123.50	---	4.30	
46.38	0.00	0.06	0.07	6.29	23.29	390.00	---	4285.71	123.50	---	3.81	

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		From Rear (Ft)	Unfactored Moment (k-ft)		Unfactored Shear (k)		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating	
			D	M+	M-	V							
				L+I	L+I	D							L+I
5C1	Stringer S4-4	0	0.00	0.00	0.00	6.37	28.92	390.00	---	N/A	123.50	---	3.06
		2.32	12.83	52.98	5.97	4.69	23.76	390.00	---	5.42	123.50	---	3.80
		4.64	21.77	87.49	11.94	3.02	19.39	390.00	---	3.18	123.50	---	4.74
		6.96	26.83	105.73	17.90	1.34	15.52	390.00	---	2.58	123.50	---	6.03
		9.27	28.00	112.02	23.87	0.33	13.28	390.00	---	2.43	123.50	---	7.13
		11.59	25.30	108.38	29.85	2.29	24.57	390.00	---	2.53	123.50	---	3.77
		13.91	18.04	96.67	36.06	3.97	18.57	390.00	---	2.92	123.50	---	4.90
		16.23	6.90	78.31	42.82	5.64	21.99	390.00	---	3.74	123.50	---	4.06
		18.55	-8.12	48.64	49.57	7.32	25.03	390.00	---	5.89	123.50	---	3.50
		20.87	-27.03	8.90	57.66	8.99	28.26	390.00	---	4.73	123.50	---	3.04
		23.19	-49.85	2.65	83.67	10.68	29.74	390.00	---	2.99	123.50	---	2.84
		25.51	-27.02	8.80	57.61	9.01	28.22	390.00	---	4.74	123.50	---	3.05
		27.83	-8.08	48.59	49.55	7.33	25.01	390.00	---	5.89	123.50	---	3.51
		30.14	6.98	78.33	42.88	5.66	22.00	390.00	---	3.74	123.50	---	4.06
		32.46	18.15	96.10	36.21	3.98	18.62	390.00	---	2.93	123.50	---	4.89
		34.78	25.40	107.97	29.99	2.31	24.56	390.00	---	2.54	123.50	---	3.77
		37.1	28.09	110.97	23.99	0.32	12.42	390.00	---	2.45	123.50	---	7.62
		39.42	26.90	105.63	17.99	1.35	15.30	390.00	---	2.59	123.50	---	6.12
		41.74	21.82	86.72	11.99	3.03	19.01	390.00	---	3.21	123.50	---	4.84
44.06	12.85	52.08	5.99	4.70	23.39	390.00	---	5.51	123.50	---	3.86		
46.38	0.00	0.03	0.05	6.38	25.37	390.00	---	6000.00	123.50	---	3.49		
5C1	Stringer S5-4	0	0.00	0.00	0.00	6.52	27.79	390.00	---	N/A	123.50	---	3.18
		2.32	13.18	51.70	5.22	4.85	23.19	390.00	---	5.55	123.50	---	3.89
		4.64	22.48	86.03	10.44	3.17	18.83	390.00	---	3.23	123.50	---	4.88
		6.96	27.90	104.72	15.66	1.50	15.22	390.00	---	2.60	123.50	---	6.14
		9.27	29.43	110.54	20.87	0.18	12.68	390.00	---	2.45	123.50	---	7.48
		11.59	27.09	107.16	26.10	2.48	24.67	390.00	---	2.55	123.50	---	3.75
		13.91	19.39	96.48	32.20	4.16	18.40	390.00	---	2.91	123.50	---	4.94
		16.23	7.80	77.99	38.30	5.83	21.81	390.00	---	3.75	123.50	---	4.09
		18.55	-7.67	48.23	44.40	7.51	25.25	390.00	---	6.06	123.50	---	3.46
		20.87	-27.02	7.83	51.82	9.18	27.87	390.00	---	5.27	123.50	---	3.08
		23.19	-50.30	1.46	80.21	10.86	28.47	390.00	---	3.11	123.50	---	2.96
		25.51	-27.58	7.87	56.92	8.96	25.55	390.00	---	4.79	123.50	---	3.37
		27.83	-8.75	43.67	49.58	7.28	22.58	390.00	---	5.87	123.50	---	3.88
		30.14	6.19	69.61	42.84	5.61	19.62	390.00	---	4.22	123.50	---	4.56
		32.46	17.25	85.55	36.18	3.93	16.45	390.00	---	3.31	123.50	---	5.54
		34.78	24.39	96.08	29.56	2.26	18.23	390.00	---	2.87	123.50	---	5.09
		37.1	27.28	95.94	23.64	0.41	11.94	390.00	---	2.84	123.50	---	7.92
		39.42	26.28	88.66	17.73	1.27	13.04	390.00	---	3.09	123.50	---	7.19
		41.74	21.40	71.76	11.81	2.94	15.71	390.00	---	3.88	123.50	---	5.86
44.06	12.64	42.60	5.90	4.62	19.14	390.00	---	6.75	123.50	---	4.72		
46.38	0.00	0.06	0.08	6.29	21.35	390.00	---	3750.00	123.50	---	4.16		

CUY-2-1441 Load Rating Analysis

Main Ave Bridge
Section L

Calculated: DWC 2/28/2012
Checked: KMW 3/1/2012

*Capacities taken from spreadsheet calculations or MDX

	Location From Rear (Ft)	Moment / Shear from MDX Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		D	M+	M-	V								
				L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
5C1	Stringer S6-4	0	0.00	0.00	0.00	5.52	18.38	390.00	---	N/A	123.50	---	4.87
		2.32	10.98	32.63	2.59	3.95	14.64	390.00	---	8.86	123.50	---	6.22
		4.64	18.34	52.54	5.17	2.39	11.42	390.00	---	5.36	123.50	---	8.11
		6.96	22.06	60.97	7.76	0.83	9.04	390.00	---	4.56	123.50	---	10.42
		9.27	22.16	62.34	10.34	0.74	10.11	390.00	---	4.46	123.50	---	9.32
		11.59	18.64	56.77	12.93	2.30	16.08	390.00	---	4.96	123.50	---	5.76
		13.91	14.73	52.32	15.78	2.43	10.63	390.00	---	5.45	123.50	---	8.71
		16.23	7.32	42.77	18.63	3.90	13.03	390.00	---	6.84	123.50	---	6.99
		18.55	-3.54	25.79	21.48	5.36	15.20	390.00	---	11.50	123.50	---	5.90
		20.87	-17.80	2.71	25.56	6.80	17.10	390.00	---	11.04	123.50	---	5.16
		23.19	-33.73	0.75	48.00	7.98	18.61	390.00	---	5.55	123.50	---	4.68
		25.51	-18.63	8.04	34.21	5.84	15.54	390.00	---	8.22	123.50	---	5.74
		27.83	-6.62	27.05	27.48	4.52	13.14	390.00	---	10.68	123.50	---	6.89
		30.14	2.34	38.11	20.83	3.21	10.64	390.00	---	7.81	123.50	---	8.63
		32.46	8.29	41.49	14.25	1.93	8.06	390.00	---	7.03	123.50	---	11.55
		34.78	11.32	40.58	7.66	2.01	18.43	390.00	---	7.11	123.50	---	5.05
		37.1	14.59	51.69	6.12	0.81	11.34	390.00	---	5.52	123.50	---	8.31
		39.42	15.09	54.01	4.58	0.38	8.37	390.00	---	5.28	123.50	---	11.30
41.74	12.81	48.41	3.04	1.58	11.35	390.00	---	5.93	123.50	---	8.23		
44.06	7.76	30.59	1.50	2.77	13.82	390.00	---	9.55	123.50	---	6.67		
46.38	-0.05	0.05	0.22	3.97	16.54	390.00	---	1363.41	123.50	---	5.50		
5C1	Stringer F2-4	0	0.00	0.00	0.00	5.78	17.13	1212.51	---	N/A	149.61	---	6.38
		2.33	12.26	32.35	3.84	4.68	14.81	1212.51	---	28.45	149.61	---	7.45
		4.65	22.16	55.53	7.67	3.58	12.56	1212.51	---	16.40	149.61	---	8.88
		6.98	29.68	70.48	11.51	2.49	10.75	1212.51	---	12.81	149.61	---	10.47
		9.3	34.82	77.99	15.35	1.39	9.07	1212.51	---	11.51	149.61	---	12.54
		11.63	30.98	81.72	19.20	1.64	9.63	1212.51	---	11.03	149.61	---	11.78
		13.96	25.63	71.05	18.33	2.93	10.97	1212.51	---	12.77	149.61	---	10.22
		16.28	17.29	56.49	17.45	4.20	11.85	1212.51	---	16.20	149.61	---	9.36
		18.61	5.98	37.72	16.66	5.46	12.94	1212.51	---	24.57	149.61	---	8.47
		20.94	-8.25	14.29	16.11	6.69	14.05	1212.51	---	57.38	149.61	---	7.71
		23.26	-24.30	2.19	24.55	7.75	12.51	1212.51	---	37.00	149.61	---	8.58
		25.59	-8.86	11.68	20.60	6.04	11.71	1212.51	---	44.85	149.61	---	9.31
		27.92	3.89	29.49	22.38	4.90	10.42	1212.51	---	31.50	149.61	---	10.57
		30.25	13.99	43.83	24.38	3.78	9.14	1212.51	---	20.96	149.61	---	12.18
		32.59	21.50	55.23	26.54	2.67	8.40	1212.51	---	16.50	149.61	---	13.38
		34.92	26.48	66.08	28.77	0.35	6.41	1212.51	---	13.71	149.61	---	17.90
		37.25	26.04	52.89	23.02	0.72	6.29	1212.51	---	17.14	149.61	---	18.18
		39.58	23.14	39.70	17.27	1.77	6.24	1212.51	---	22.91	149.61	---	18.16
41.91	17.80	26.51	11.52	2.80	6.24	1212.51	---	34.51	149.61	---	17.99		
44.24	10.09	13.33	5.77	3.82	6.24	1212.51	---	69.21	149.61	---	17.83		
46.57	0.07	0.29	0.06	4.81	5.92	1212.51	---	3215.97	149.61	---	18.63		



FLOORBEAM RATINGS



FB Models - Span L Assumptions

Geometry

Two different models, with different beam configurations, were used to account for a stringer dropping out between FB's 5 & 9.

A fictitious deck was used to transfer the loads directly to the FB at stringer pts.

The connections of the FB to the girders were model as pinned connections so that moment/loads could be transferred to either side of the support (if modeled as "fixed" in STAAD, each side of the fixed support would act independently from the other.)

The South Brackets on FB's 2-5 and the North Brackets on FB's 10-11 are comprised of a tapered builtup I-section with a rolled I-section on top. Because STAAD does not have a section fitting this configuration, an equivalent section was calculated, based on the I_x of the Double-I Section and the t_f , b_f , t_w of the rolled section (all of the top rolled beams are W14x176). The equivalent tapered section was assumed to be the height of the W14x176 at the fascia and to have a height at the girder that gives an I_x equivalent to that of the double-I Section. See attached sheets for calculation.

Bump-Ups

A universal bump-up of 5% was added to all members, in addition to any other bump ups that were applied.

Not Using X } Floorbeams 1, 2, 4, 8, 10, 12 are W33x125, which are not made any more (and, therefore, are not in STAAD). Because of this, the beams were modeled as W33x118 and a bump up was applied to make up for the difference in weight:
 Anymore, Using Actual Section Prop. }
 NF 3/1/12

$$\frac{125}{118} = 1.06 + 0.05 = 1.11$$

↑ nominal bump-up

To account for the difference in area of the double-I Section & the equivalent section, a bump-up was applied: (the equivalent sections have smaller areas)

$$\frac{A}{A_e} = \frac{81.89 \text{ in}^2}{69.42 \text{ in}^2} = 1.18 + 0.05 = 1.23$$

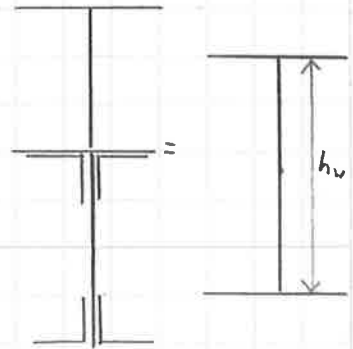
↑ FB 3 Brack.

Determination of Section L FB Bracket Equivalent Section Heights

→ Need to find section with equivalent I_x with b_f, t_f, t_w of WF 14x176

FB 2 - South

Section $I_x = 18,649.28 \text{ in}^4$ From Section Prop Sheet (Typ.)
 $b_f = 15.640 \text{ in}$
 $t_f = 1.313 \text{ in}$
 $t_w = 0.820 \text{ in}$ } WF 14x176



$$\therefore 18,649.28 = 2 \left[\frac{1}{2} (15.64 \text{ in}) (1.313 \text{ in})^3 + (15.64 \text{ in}) (1.313 \text{ in}) \left(\frac{h}{2} + \frac{1.313 \text{ in}}{2} \right)^2 \right] + \frac{1}{12} (0.820 \text{ in}) (h)^3$$

Solving for h: $h = h_w = 37.1032 \text{ in}$

FB 3 - South

Section $I_x = 18,880.45 \text{ in}^4$
 $b_f = 15.640 \text{ in}$
 $t_f = 1.313 \text{ in}$
 $t_w = 0.820 \text{ in}$ } WF 14x176

$$\therefore 18,880.45 = 2 \left[\frac{1}{2} (15.64) (1.313 \text{ in})^3 + (15.64 \text{ in}) (1.313 \text{ in}) \left(\frac{h}{2} + \frac{1.313 \text{ in}}{2} \right)^2 \right] + \frac{1}{12} (0.820) (h)^3$$

Solving for h: $h = h_w = 37.3182 \text{ in}$

FB4 - South

Section $I_x = 18,649.28 \text{ in}^4$
 $b_f = 15.640 \text{ in}$
 $t_f = 1.313 \text{ in}$
 $t_w = 0.820 \text{ in}$ } Same as FB 2 South $\therefore h_w = 37.1032 \text{ in}$

Section L FB Bracket. Equivalent Section (Cont.)

FB 5- South

$$\left. \begin{aligned} \text{Section } I_x &= 18,880.45 \text{ in}^4 \\ b_f &= 15.640 \text{ in} \\ t_f &= 1.313 \text{ in} \\ t_w &= 0.820 \text{ in} \end{aligned} \right\}$$

Same as FB 3 South : $h_v = W F 14 \times 176$

FB 10- North

$$\left. \begin{aligned} \text{Section } I_x &= 18,192.75 \text{ in}^4 \\ b_f &= 15.640 \text{ in} \\ t_f &= 1.313 \text{ in} \\ t_w &= 0.820 \text{ in} \end{aligned} \right\}$$

WF 14 x 176

$$\therefore 18,192.75 = 2 \left[\frac{1}{2} (15.64 \text{ in}) (1.313 \text{ in})^3 + (15.64 \text{ in}) (1.313 \text{ in}) \left(\frac{h}{2} + \frac{1.313 \text{ in}}{2} \right)^2 \right] + \frac{1}{2} (0.820 \text{ in}) (h)^3$$

Solving for h: $h = h_w = 36.6739 \text{ in}$

FB 11-North

$$\left. \begin{aligned} \text{Section } I_x &= 18,996.76 \text{ in}^4 \\ b_f &= 15.64 \text{ in} \\ t_f &= 1.313 \text{ in} \\ t_w &= 0.820 \text{ in} \end{aligned} \right\}$$

$$\therefore 18,996.76 = 2 \left[\frac{1}{2} (15.64 \text{ in}) (1.313 \text{ in})^3 + (15.64 \text{ in}) (1.313 \text{ in}) \left(\frac{h}{2} + \frac{1.313 \text{ in}}{2} \right)^2 \right] + \frac{1}{2} (0.820 \text{ in}) (h)^3$$

Solving for h: $h = h_w = 37.4259 \text{ in}$

SECTION L FB

Changes Made to Equivalent Taper Sections

Looked @ 2-12

Roller Section W 14 x 176

	Old Value	Correct Value	
B4 (Fw)	15.7	15.64	= 1.3033
D4 (D)	15.2	15.25	
I _x ?	2140	2149.6	
I _y	838	837.9	
λ	51.80	51.730	
t _f =	1.1875	1.313	= 0.1094'
t _w =	0.83	0.82	= 0.0083'

W33 x 125

D = 33"	→	2.75'
w _e = 0.570"	→	0.0475'
F _w = 11.50"	→	0.9583'
t _e = 0.805"	→	0.0671'

} FB2, FB4, FB8, FB10, FB12

- Change Bump-up to 1.05

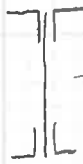
FB2 - Changed South Taper Section, Beams 3 to 7 ADDED W33 x 125 PROPERTIES; Modified Bump-Up to 1.05

FB3 Changed South Taper Section

FB4 Changes South Taper Section, Added W33 x 125, modified Bump-Up to 1.05

FB5 Verified Section Properties

FB6 Might Want to increase Bump-Up or Consider Equivalent Section



→ A = 41.1875 in²



= A = 30.1875

$\frac{41.1875}{30.1875} = 1.364 + 0.05 = 1.42$

FB7 ✓ OK

FB8 Added W33 x 125 Sect Properties, modified Bump-Up to 1.05

FB9 Might Want to increase Bump-Ups similar to FB6

FB10 Added W33 x 125 Sect Properties; Modified Bump-Ups to 1.05, Changed North Taper

FB11 Changed North Taper,

FB12 Added W33 x 125 Section Properties

↳ Look into modifying Bump-Up due to 11 1/2" x 1/4" + 11 1/2" x 1/8" Cover Pls + Web stiffeners

SECTION L

BRACKET 2 NORTH



Made By DWC
Checked By NRF

Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

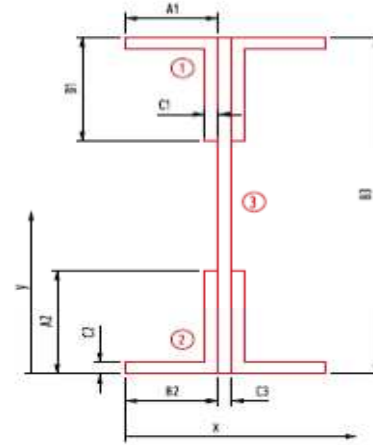
Red text indicates user input

Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:
 $A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in
 $C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.2500$ in
 $d_0 = 41.1250$ in (stiffener spacing for shear check)



**Floorbeam Bracket 2 North
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	44.0625	198.2813	0.0527	21.9375	2165.6426	2165.6953
	Vertical Leg	4.2188	41.0625	173.2324	11.1237	18.9375	1512.9657	1524.0894
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.9375	2165.6426	2165.6953
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.9375	1512.9657	1524.0894
3	Web Plate	16.5938	22.1250	367.1367	2707.6333	0.0000	0.0000	2707.6333
Total		34.03		752.94	2729.99		7357.22	10087.20
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.1250 in	S _{top} =	455.92 in ³	y-bar =	22.1250 in	S _{top} =	455.92 in ³
I _x =	10087.20 in ⁴	S _{bott.} =	455.92 in ³	I _x =	10087.20 in ⁴	S _{bott.} =	455.92 in ³
c _{top} =	22.1250 in	A =	34.0313 in ²	c _{top} =	22.1250 in	A =	34.0313 in ²
c _{bottom} =	22.1250 in	r _x =	17.2166 in	c _{bottom} =	22.1250 in	r _x =	17.2166 in



Made By DWC
 Checked By NRF

Date 3/3/2012
 Date 3/3/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1253.78 k-ft	1253.78 k-ft
V	289.36 k	289.36 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 2 SOUTH



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

$B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.3750$ in
 $A_2 = l_v = 6.0000$ in

Web Plate:

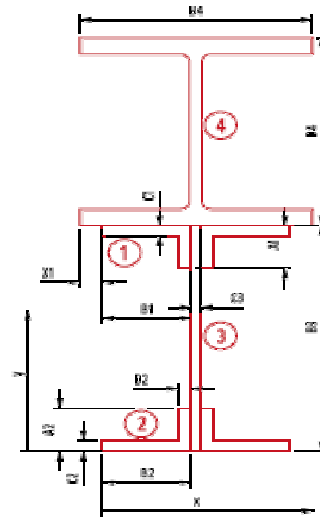
$C_3 = 0.3750$ in
 $B_3 = 33.5000$ in

 $X1 = 1.6325$ in

 $d_o = 24.4688$

Rolled Section:

W14x176
 $B4 = 15.6400$ in
 $D4 = 15.2500$ in
 $I_x = 2149.6$ in⁴
 $I_y = 837.9$ in⁴
 $A = 51.7300$ in²



X-Axis Section Properties:

Floorbeam Bracket 2 South

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	33.3125	149.9063	0.0527	1.1346	5.7934	5.8461
	Vertical Leg	4.2188	30.3125	127.8809	11.1237	1.8654	14.6794	25.8030
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	31.9904	4605.2232	4605.2760
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	28.9904	3545.6096	3556.7333
3	Web Plate	12.5625	16.7500	210.4219	1174.8555	15.4279	2990.1108	4164.9663
4	Rolled Section	51.7300	41.1250	2127.3963	2149.6000	8.9471	4141.0573	6290.6573
Total		81.73		2629.90	3346.81		15302.47	18649.28
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 32.1779 in	S _{top} = 1125.34 in ³			y-bar = 32.1779 in	S _{top} = 1125.34 in ³		
I _x = 18649.28 in ⁴	S _{bott.} = 579.57 in ³			I _x = 18649.28 in ⁴	S _{bott.} = 579.57 in ³		
C _{top} = 16.5721 in	A = 81.7300 in ²			C _{top} = 16.5721 in	A = 81.7300 in ²		
C _{bottom} = 32.1779 in	r _x = 15.1057 in			C _{bottom} = 32.1779 in	r _x = 15.1057 in		

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
1 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
2 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
2 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
3	Web Plate	12.5625	6.1875	77.7305	0.1472	0.0000	0.0000	0.1472
4	Rolled Section	51.7300	6.1875	320.0794	837.9000	0.0000	0.0000	837.9000
Total		81.73		505.70	865.15		92.63	957.77
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar = 6.1875 in	S _{right} = 122.48 in ³			x-bar = 6.1875 in	S _{right} = 122.48 in ³		
I _y = 957.77 in ⁴	S _{left} = 122.48 in ³			I _y = 957.77 in ⁴	S _{left} = 122.48 in ³		
C _{right} = 7.8200 in	A = 81.7300 in ²			C _{right} = 7.8200 in	A = 81.7300 in ²		
C _{left} = 7.8200 in	r _y = 3.4233 in			C _{left} = 7.8200 in	r _y = 3.4233 in		

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1593.81 k-ft	1593.81 k-ft
V	439.32 k	439.32 k

*Noncompact Section

F _y =	33.00 ksi
------------------	-----------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 3 NORTH



Made By DWC
Checked By NRF

Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

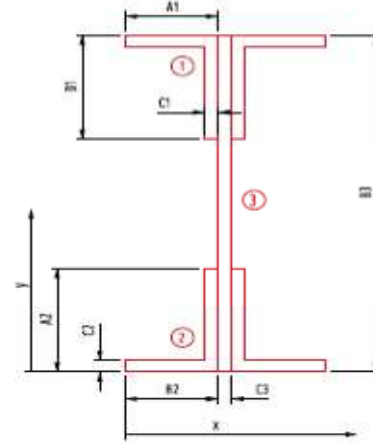
Top Angles: $A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.5000$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles: $B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.5000$ in
 $A_2 = l_v = 6.0000$ in

Web Plate: Rehabbed

$C_3 = 0.3750$ in
 $B_3 = 44.0000$ in

$d_0 = 37.5625$ in (stiffener spacing for shear check)



**Floorbeam Bracket 3 North
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	6.0000	43.7500	262.5000	0.1250	21.7500	2838.3750	2838.5000
	Vertical Leg	5.5000	40.7500	224.1250	13.8646	18.7500	1933.5938	1947.4583
2	Horizontal Leg	6.0000	0.2500	1.5000	0.1250	21.7500	2838.3750	2838.5000
	Vertical Leg	5.5000	3.2500	17.8750	13.8646	18.7500	1933.5938	1947.4583
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		39.50		869.00	2689.98		9543.94	12233.92
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0000 in	S _{top} =	556.09 in ³	y-bar =	22.0000 in	S _{top} =	556.09 in ³
I _x =	12233.92 in ⁴	S _{bott.} =	556.09 in ³	I _x =	12233.92 in ⁴	S _{bott.} =	556.09 in ³
c _{top} =	22.0000 in	A =	39.5000 in ²	c _{top} =	22.0000 in	A =	39.5000 in ²
c _{bottom} =	22.0000 in	r _x =	17.5988 in	c _{bottom} =	22.0000 in	r _x =	17.5988 in



Made By DWC
 Checked By NRF

Date 3/3/2012
 Date 3/3/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1668.26 k-ft	1668.26 k-ft
V	315.59 k	315.59 k

*Noncompact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 3 SOUTH



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

$B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.3750$ in
 $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 33.7500$ in

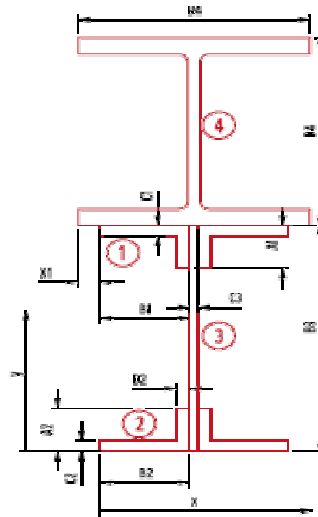
 $X1 = 1.6325$ in

 $d_o = 24.4688$

Rolled Section:

$B4 = 15.6400$ in
 $D4 = 15.2500$ in
 $I_x = 2149.6$ in⁴
 $I_y = 837.9$ in⁴
 $A = 51.7300$ in²

W14x176



X-Axis Section Properties:

Floorbeam Bracket 3 South

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	33.5625	151.0313	0.0527	1.1983	6.4616	6.5143
	Vertical Leg	4.2188	30.5625	128.9355	11.1237	1.8017	13.6947	24.8183
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	32.1767	4659.0321	4659.0849
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	29.1767	3591.3385	3602.4621
3	Web Plate	12.6563	16.8750	213.5742	1201.3550	15.4892	3036.4310	4237.7859
4	Rolled Section	51.7300	41.3750	2140.3288	2149.6000	9.0108	4200.1858	6349.7858
Total		81.82		2648.16	3373.31		15507.14	18880.45
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 32.3642 in	S _{top} = 1134.93 in ³			y-bar = 32.3642 in	S _{top} = 1134.93 in ³		
I _x = 18880.45 in ⁴	S _{bottom} = 583.37 in ³			I _x = 18880.45 in ⁴	S _{bottom} = 583.37 in ³		
C _{top} = 16.6358 in	A = 81.8238 in ²			C _{top} = 16.6358 in	A = 81.8238 in ²		
C _{bottom} = 32.3642 in	r _x = 15.1903 in			C _{bottom} = 32.3642 in	r _x = 15.1903 in		

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
1 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
2 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
2 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
3	Web Plate	12.6563	6.1875	78.3105	0.1483	0.0000	0.0000	0.1483
4	Rolled Section	51.7300	6.1875	320.0794	837.9000	0.0000	0.0000	837.9000
Total		81.82		506.28	865.15		92.63	957.78

Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar = 6.1875 in	S _{right} = 122.48 in ³			x-bar = 6.1875 in	S _{right} = 122.48 in ³		
I _y = 957.78 in ⁴	S _{left} = 122.48 in ³			I _y = 957.78 in ⁴	S _{left} = 122.48 in ³		
C _{right} = 7.8200 in	A = 81.8238 in ²			C _{right} = 7.8200 in	A = 81.8238 in ²		
C _{left} = 7.8200 in	r _y = 3.4213 in			C _{left} = 7.8200 in	r _y = 3.4213 in		

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1604.28 k-ft	1604.28 k-ft
V	441.11 k	441.11 k

*Noncompact Section

F_y = 33.00 ksi

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 4 NORTH



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Checked By NRF

Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

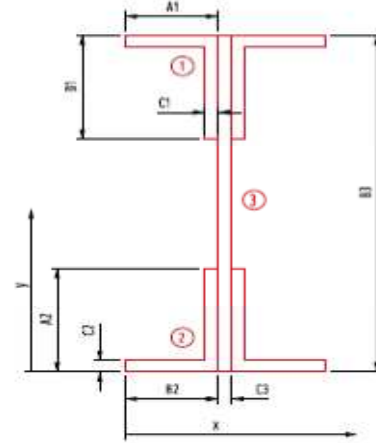
$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.2500$ in

$d_0 = \text{None}$ in (stiffener spacing for shear check)



Floorbeam Bracket 4 North
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	44.0625	198.2813	0.0527	21.9375	2165.6426	2165.6953
	Vertical Leg	4.2188	41.0625	173.2324	11.1237	18.9375	1512.9657	1524.0894
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.9375	2165.6426	2165.6953
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.9375	1512.9657	1524.0894
3	Web Plate	16.5938	22.1250	367.1367	2707.6333	0.0000	0.0000	2707.6333
Total		34.03		752.94	2729.99		7357.22	10087.20
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.1250 in	$S_{top} =$	455.92 in ³	y-bar =	22.1250 in	$S_{top} =$	455.92 in ³
$I_x =$	10087.20 in ⁴	$S_{bott.} =$	455.92 in ³	$I_x =$	10087.20 in ⁴	$S_{bott.} =$	455.92 in ³
$C_{top} =$	22.1250 in	A =	34.0313 in ²	$C_{top} =$	22.1250 in	A =	34.0313 in ²
$C_{bottom} =$	22.1250 in	$r_x =$	17.2166 in	$C_{bottom} =$	22.1250 in	$r_x =$	17.2166 in



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Date 3/3/2012

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Checked By NRF

Date 3/3/2012

Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1253.78 k-ft	1253.78 k-ft
V	158.20 k	158.20 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 4 SOUTH



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Checked By DWC

Date 3/1/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

$B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.3750$ in
 $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 33.5000$ in

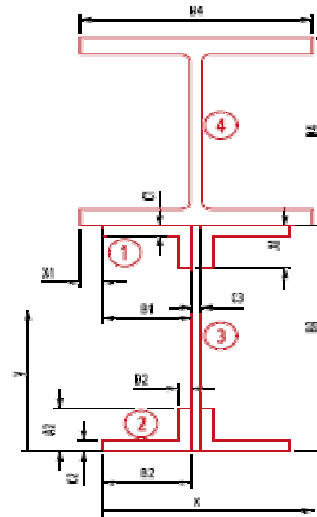
 $X1 = 1.6325$ in

 $d_o = 24.4688$

Rolled Section:

$B4 = 15.6400$ in
 $D4 = 15.2500$ in
 $I_x = 2149.6$ in⁴
 $I_y = 837.9$ in⁴
 $A = 51.7300$ in²

W14x176



X-Axis Section Properties:

Floorbeam Bracket 4 South

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	33.3125	149.9063	0.0527	1.1346	5.7934	5.8461
	Vertical Leg	4.2188	30.3125	127.8809	11.1237	1.8654	14.6794	25.8030
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	31.9904	4605.2232	4605.2760
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	28.9904	3545.6096	3556.7333
3	Web Plate	12.5625	16.7500	210.4219	1174.8555	15.4279	2990.1108	4164.9663
4	Rolled Section	51.7300	41.1250	2127.3963	2149.6000	8.9471	4141.0573	6290.6573
Total		81.73		2629.90	3346.81		15302.47	18649.28
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	32.1779 in	S _{top} =	1125.34 in ³	y-bar =	32.1779 in	S _{top} =	1125.34 in ³
I _x =	18649.28 in ⁴	S _{bott.} =	579.57 in ³	I _x =	18649.28 in ⁴	S _{bott.} =	579.57 in ³
C _{top} =	16.5721 in	A =	81.7300 in ²	C _{top} =	16.5721 in	A =	81.7300 in ²
C _{bottom} =	32.1779 in	r _x =	15.1057 in	C _{bottom} =	32.1779 in	r _x =	15.1057 in

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
1 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
2 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
2 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
3	Web Plate	12.5625	6.1875	77.7305	0.1472	0.0000	0.0000	0.1472
4	Rolled Section	51.7300	6.1875	320.0794	837.9000	0.0000	0.0000	837.9000
Total		81.73		505.70	865.15		92.63	957.77

Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	6.1875 in	S _{right} =	122.48 in ³	x-bar =	6.1875 in	S _{right} =	122.48 in ³
I _y =	957.77 in ⁴	S _{left} =	122.48 in ³	I _y =	957.77 in ⁴	S _{left} =	122.48 in ³
C _{right} =	7.8200 in	A =	81.7300 in ²	C _{right} =	7.8200 in	A =	81.7300 in ²
C _{left} =	7.8200 in	r _y =	3.4233 in	C _{left} =	7.8200 in	r _y =	3.4233 in

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1593.81 k-ft	1593.81 k-ft
V	439.32 k	439.32 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 5 NORTH



Made By DWC
Checked By NRF

Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

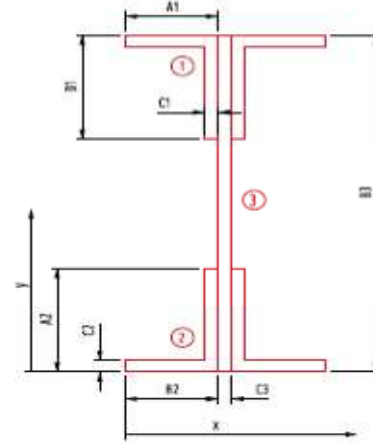
$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 42.8125$ in

$d_0 = \text{None}$ in (stiffener spacing for shear check)



**Floorbeam Bracket 5 North
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	42.6250	191.8125	0.0527	21.2188	2026.0591	2026.1118
	Vertical Leg	4.2188	39.6250	167.1680	11.1237	18.2188	1400.2995	1411.4232
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.2188	2026.0591	2026.1118
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.2188	1400.2995	1411.4232
3	Web Plate	16.0547	21.4063	343.6707	2452.2333	0.0000	0.0000	2452.2333
Total		33.49		716.94	2474.59		6852.72	9327.30
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	21.4063 in	S _{top} =	435.73 in ³	y-bar =	21.4063 in	S _{top} =	435.73 in ³
I _x =	9327.30 in ⁴	S _{bott.} =	435.73 in ³	I _x =	9327.30 in ⁴	S _{bott.} =	435.73 in ³
C _{top} =	21.4063 in	A =	33.4922 in ²	C _{top} =	21.4063 in	A =	33.4922 in ²
C _{bottom} =	21.4063 in	r _x =	16.6881 in	C _{bottom} =	21.4063 in	r _x =	16.6881 in



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Job No. P402110046

Checked By NRF

Date 3/3/2012

Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1198.25 k-ft	1198.25 k-ft
V	163.61 k	163.61 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 5 SOUTH



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

$B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.3750$ in
 $A_2 = l_v = 6.0000$ in

Web Plate:

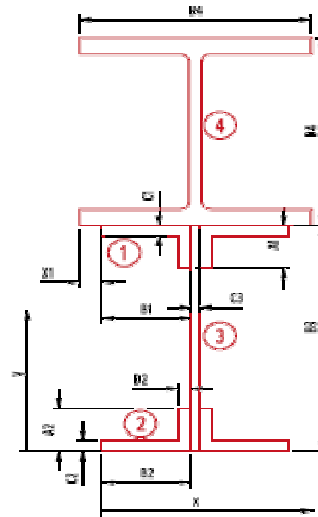
$C_3 = 0.3750$ in
 $B_3 = 33.7500$ in

 $X1 = 1.6325$ in

 $d_o = 24.4688$

Rolled Section:

W14x176
 $B4 = 15.6400$ in
 $D4 = 15.2500$ in
 $I_x = 2149.6$ in⁴
 $I_y = 837.9$ in⁴
 $A = 51.7300$ in²



X-Axis Section Properties:

Floorbeam Bracket 5 South

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		4.5000	33.5625	151.0313	0.0527	1.1983	6.4616	6.5143
	Vertical Leg		4.2188	30.5625	128.9355	11.1237	1.8017	13.6947	24.8183
2	Horizontal Leg		4.5000	0.1875	0.8438	0.0527	32.1767	4659.0321	4659.0849
	Vertical Leg		4.2188	3.1875	13.4473	11.1237	29.1767	3591.3385	3602.4621
3	Web Plate		12.6563	16.8750	213.5742	1201.3550	15.4892	3036.4310	4237.7859
4	Rolled Section		51.7300	41.3750	2140.3288	2149.6000	9.0108	4200.1858	6349.7858
Total			81.82		2648.16	3373.31		15507.14	18880.45
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	32.3642 in	S _{top} =	1134.93 in ³	y-bar =	32.3642 in	S _{top} =	1134.93 in ³
I _x =	18880.45 in ⁴	S _{bott.} =	583.37 in ³	I _x =	18880.45 in ⁴	S _{bott.} =	583.37 in ³
C _{top} =	16.6358 in	A =	81.8238 in ²	C _{top} =	16.6358 in	A =	81.8238 in ²
C _{bottom} =	32.3642 in	r _x =	15.1903 in	C _{bottom} =	32.3642 in	r _x =	15.1903 in

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}	
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)	
1 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104	
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214	
1 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104	
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214	
2 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104	
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214	
2 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104	
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214	
3	Web Plate	12.6563	6.1875	78.3105	0.1483	0.0000	0.0000	0.1483	
4	Rolled Section	51.7300	6.1875	320.0794	837.9000	0.0000	0.0000	837.9000	
Total		81.82		506.28	865.15		92.63	957.78	
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	6.1875 in	S _{right} =	122.48 in ³	x-bar =	6.1875 in	S _{right} =	122.48 in ³
I _y =	957.78 in ⁴	S _{left} =	122.48 in ³	I _y =	957.78 in ⁴	S _{left} =	122.48 in ³
C _{right} =	7.8200 in	A =	81.8238 in ²	C _{right} =	7.8200 in	A =	81.8238 in ²
C _{left} =	7.8200 in	r _y =	3.4213 in	C _{left} =	7.8200 in	r _y =	3.4213 in

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1604.28 k-ft	1604.28 k-ft
V	441.11 k	441.11 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 6 NORTH



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Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

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Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

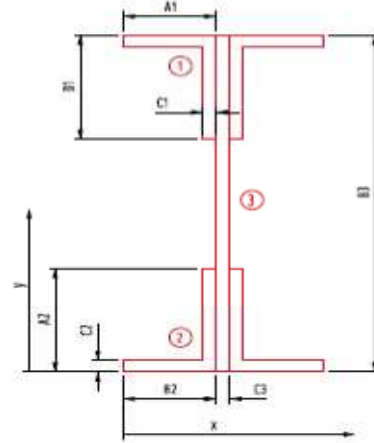
$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.1250$ in

$d_0 = \text{None}$ in (stiffener spacing for shear check)



**Floorbeam Bracket 6 North
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.9375	197.7188	0.0527	21.8750	2153.3203	2153.3730
	Vertical Leg	4.2188	40.9375	172.7051	11.1237	18.8750	1502.9956	1514.1193
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8750	2153.3203	2153.3730
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8750	1502.9956	1514.1193
3	Web Plate	16.5469	22.0625	365.0654	2684.7520	0.0000	0.0000	2684.7520
Total		33.98		749.78	2707.10		7312.63	10019.74
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0625 in	$S_{top} =$	454.15 in ³	y-bar =	22.0625 in	$S_{top} =$	454.15 in ³
$I_x =$	10019.74 in ⁴	$S_{bott.} =$	454.15 in ³	$I_x =$	10019.74 in ⁴	$S_{bott.} =$	454.15 in ³
$C_{top} =$	22.0625 in	A =	33.9844 in ²	$C_{top} =$	22.0625 in	A =	33.9844 in ²
$C_{bottom} =$	22.0625 in	$r_x =$	17.1707 in	$C_{bottom} =$	22.0625 in	$r_x =$	17.1707 in



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Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1248.92 k-ft	1248.92 k-ft
V	158.66 k	158.66 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 6 SOUTH



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Date 3/3/2012

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Calculations For: **CUY-2-1441**

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Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

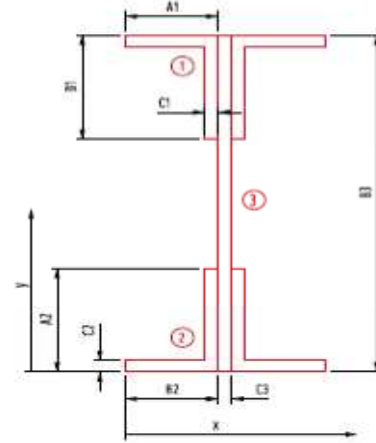
$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.0000$ in

$d_0 = 33.6250$ in (stiffener spacing for shear check)



**Floorbeam Bracket 6 South
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.8125	197.1563	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	40.8125	172.1777	11.1237	18.8125	1493.0585	1504.1821
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8125	1493.0585	1504.1821
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		33.94		746.63	2684.35		7268.18	9952.54
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0000 in	$S_{top} =$	452.39 in ³	y-bar =	22.0000 in	$S_{top} =$	452.39 in ³
$I_x =$	9952.54 in ⁴	$S_{bott.} =$	452.39 in ³	$I_x =$	9952.54 in ⁴	$S_{bott.} =$	452.39 in ³
$C_{top} =$	22.0000 in	A =	33.9375 in ²	$C_{top} =$	22.0000 in	A =	33.9375 in ²
$C_{bottom} =$	22.0000 in	$r_x =$	17.1249 in	$C_{bottom} =$	22.0000 in	$r_x =$	17.1249 in



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Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1244.07 k-ft	1244.07 k-ft
V	310.43 k	310.43 k

*Noncompact Section

$F_y =$ 33.00 ksi

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 7 NORTH



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Calculations For: **CUY-2-1441**

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Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

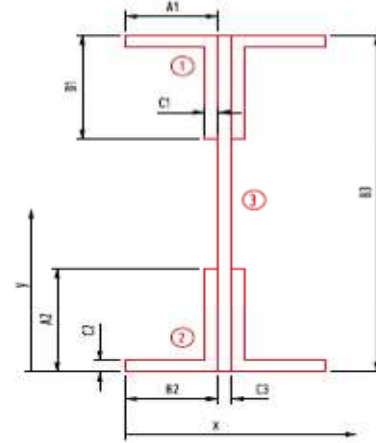
$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.1250$ in

$d_0 = \text{None}$ in (stiffener spacing for shear check)



**Floorbeam Bracket 7 North
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.9375	197.7188	0.0527	21.8750	2153.3203	2153.3730
	Vertical Leg	4.2188	40.9375	172.7051	11.1237	18.8750	1502.9956	1514.1193
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8750	2153.3203	2153.3730
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8750	1502.9956	1514.1193
3	Web Plate	16.5469	22.0625	365.0654	2684.7520	0.0000	0.0000	2684.7520
Total		33.98		749.78	2707.10		7312.63	10019.74
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0625 in	$S_{top} =$	454.15 in ³	y-bar =	22.0625 in	$S_{top} =$	454.15 in ³
$I_x =$	10019.74 in ⁴	$S_{bott.} =$	454.15 in ³	$I_x =$	10019.74 in ⁴	$S_{bott.} =$	454.15 in ³
$C_{top} =$	22.0625 in	A =	33.9844 in ²	$C_{top} =$	22.0625 in	A =	33.9844 in ²
$C_{bottom} =$	22.0625 in	$r_x =$	17.1707 in	$C_{bottom} =$	22.0625 in	$r_x =$	17.1707 in



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Date 3/3/2012

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Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1248.92 k-ft	1248.92 k-ft
V	158.66 k	158.66 k

*Noncompact Section

$F_y =$ **33.00 ksi**

- AB = As-Built
- AI = As-Inspected
- M = Moment
- V = Shear

SECTION L

BRACKET 7 SOUTH



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Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

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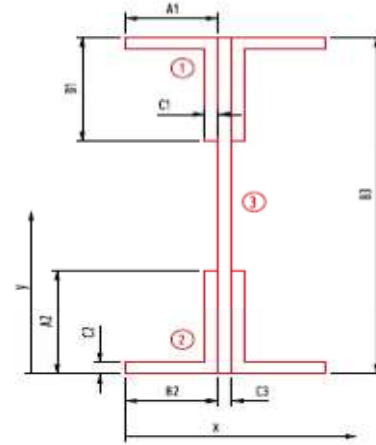
Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:
 $A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in
 $C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.0000$ in

$d_0 = 38.4375$ in (stiffener spacing for shear check)



**Floorbeam Bracket 7 South
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.8125	197.1563	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	40.8125	172.1777	11.1237	18.8125	1493.0585	1504.1821
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8125	1493.0585	1504.1821
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		33.94		746.63	2684.35		7268.18	9952.54
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0000 in	$S_{top} =$	452.39 in ³	y-bar =	22.0000 in	$S_{top} =$	452.39 in ³
$I_x =$	9952.54 in ⁴	$S_{bott.} =$	452.39 in ³	$I_x =$	9952.54 in ⁴	$S_{bott.} =$	452.39 in ³
$C_{top} =$	22.0000 in	A =	33.9375 in ²	$C_{top} =$	22.0000 in	A =	33.9375 in ²
$C_{bottom} =$	22.0000 in	$r_x =$	17.1249 in	$C_{bottom} =$	22.0000 in	$r_x =$	17.1249 in



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Checked By NRF

Date 3/3/2012

Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1244.07 k-ft	1244.07 k-ft
V	299.24 k	299.24 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 8 NORTH



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Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

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Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

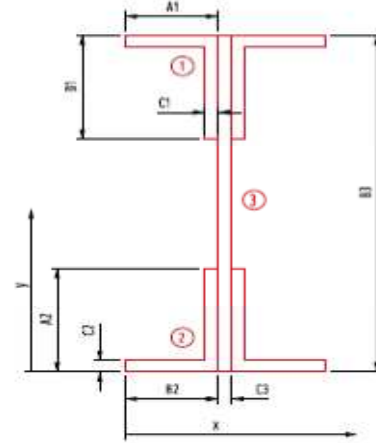
$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.0000$ in

$d_0 = \text{None}$ in (stiffener spacing for shear check)



**Floorbeam Bracket 8 North
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.8125	197.1563	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	40.8125	172.1777	11.1237	18.8125	1493.0585	1504.1821
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8125	1493.0585	1504.1821
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		33.94		746.63	2684.35		7268.18	9952.54
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0000 in	S _{top} =	452.39 in ³	y-bar =	22.0000 in	S _{top} =	452.39 in ³
I _x =	9952.54 in ⁴	S _{bott.} =	452.39 in ³	I _x =	9952.54 in ⁴	S _{bott.} =	452.39 in ³
c _{top} =	22.0000 in	A =	33.9375 in ²	c _{top} =	22.0000 in	A =	33.9375 in ²
c _{bottom} =	22.0000 in	r _x =	17.1249 in	c _{bottom} =	22.0000 in	r _x =	17.1249 in



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Date 3/3/2012
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Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1244.07 k-ft	1244.07 k-ft
V	159.12 k	159.12 k

*Noncompact Section

$F_y =$ **33.00 ksi**

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 8 SOUTH



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Calculations For: **CUY-2-1441**

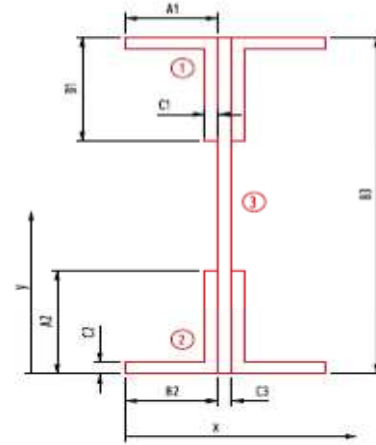
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Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:
 $A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in
 $C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.0000$ in
 $d_0 = 38.3125$ in (stiffener spacing for shear check)



Floorbeam Bracket 8 South
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.8125	197.1563	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	40.8125	172.1777	11.1237	18.8125	1493.0585	1504.1821
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8125	1493.0585	1504.1821
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		33.94		746.63	2684.35		7268.18	9952.54
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0000 in	S _{top} =	452.39 in ³	y-bar =	22.0000 in	S _{top} =	452.39 in ³
I _x =	9952.54 in ⁴	S _{bott.} =	452.39 in ³	I _x =	9952.54 in ⁴	S _{bott.} =	452.39 in ³
C _{top} =	22.0000 in	A =	33.9375 in ²	C _{top} =	22.0000 in	A =	33.9375 in ²
C _{bottom} =	22.0000 in	r _x =	17.1249 in	C _{bottom} =	22.0000 in	r _x =	17.1249 in



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Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1244.07 k-ft	1244.07 k-ft
V	299.79 k	299.79 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 9 NORTH



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Calculations For: **CUY-2-1441**

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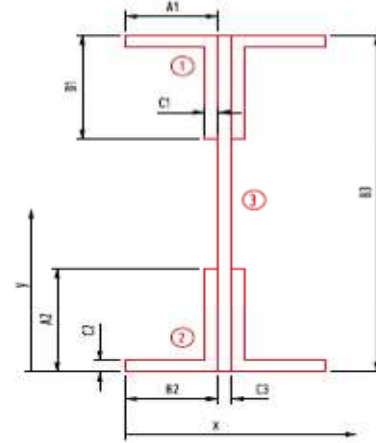
Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:
 $A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in
 $C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 43.8750$ in

$d_0 = \text{None}$ in (stiffener spacing for shear check)



**Floorbeam Bracket 9 North
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.6875	196.5938	0.0527	21.7500	2128.7813	2128.8340
	Vertical Leg	4.2188	40.6875	171.6504	11.1237	18.7500	1483.1543	1494.2780
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.7500	2128.7813	2128.8340
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.7500	1483.1543	1494.2780
3	Web Plate	16.4531	21.9375	360.9404	2639.3769	0.0000	0.0000	2639.3769
Total		33.89		743.48	2661.73		7223.87	9885.60
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	21.9375 in	$S_{top} =$	450.63 in ³	y-bar =	21.9375 in	$S_{top} =$	450.63 in ³
$I_x =$	9885.60 in ⁴	$S_{bott.} =$	450.63 in ³	$I_x =$	9885.60 in ⁴	$S_{bott.} =$	450.63 in ³
$C_{top} =$	21.9375 in	A =	33.8906 in ²	$C_{top} =$	21.9375 in	A =	33.8906 in ²
$C_{bottom} =$	21.9375 in	$r_x =$	17.0790 in	$C_{bottom} =$	21.9375 in	$r_x =$	17.0790 in



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Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1239.22 k-ft	1239.22 k-ft
V	159.58 k	159.58 k

*Noncompact Section

$F_y =$ **33.00 ksi**

- AB = As-Built
- AI = As-Inspected
- M = Moment
- V = Shear

SECTION L

BRACKET 9 SOUTH



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Date 3/3/2012
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Calculations For: **CUY-2-1441**

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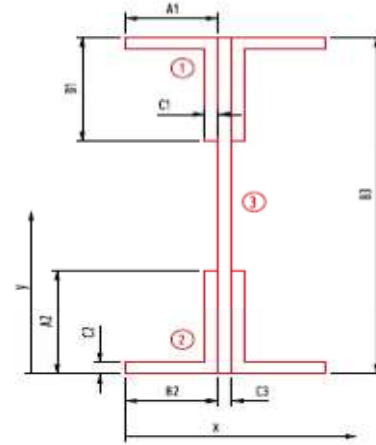
Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:
 $A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in
 $C_1 = t_f = 0.5000$ in $C_2 = t_f = 0.5000$ in
 $B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate: Rehabbed

$C_3 = 0.3750$ in
 $B_3 = 44.0000$ in

$d_0 = 36.8750$ in (stiffener spacing for shear check)



Floorbeam Bracket 9 South
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	6.0000	43.7500	262.5000	0.1250	21.7500	2838.3750	2838.5000
	Vertical Leg	5.5000	40.7500	224.1250	13.8646	18.7500	1933.5938	1947.4583
2	Horizontal Leg	6.0000	0.2500	1.5000	0.1250	21.7500	2838.3750	2838.5000
	Vertical Leg	5.5000	3.2500	17.8750	13.8646	18.7500	1933.5938	1947.4583
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		39.50		869.00	2689.98		9543.94	12233.92
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 22.0000 in	S _{top} = 556.09 in ³			y-bar = 22.0000 in	S _{top} = 556.09 in ³		
I _x = 12233.92 in ⁴	S _{bott.} = 556.09 in ³			I _x = 12233.92 in ⁴	S _{bott.} = 556.09 in ³		
c _{top} = 22.0000 in	A = 39.5000 in ²			c _{top} = 22.0000 in	A = 39.5000 in ²		
c _{bottom} = 22.0000 in	r _x = 17.5988 in			c _{bottom} = 22.0000 in	r _x = 17.5988 in		



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Date 3/3/2012
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Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1668.26 k-ft	1668.26 k-ft
V	318.94 k	318.94 k

*Noncompact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 10 NORTH



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Date 3/1/2012
Date 3/3/2012

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Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

$B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.3750$ in
 $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 33.0000$ in

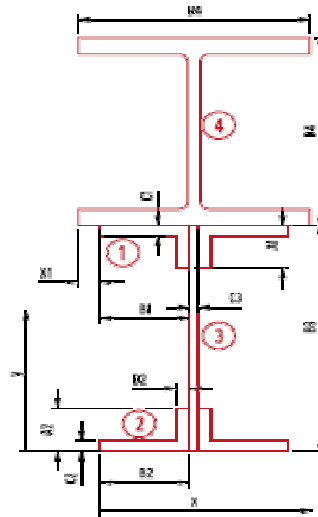
 $X1 = 1.6325$ in

 $d_o = \text{none}$

Rolled Section:

$B4 = 15.6400$ in
 $D4 = 15.2500$ in
 $I_x = 2149.6$ in⁴
 $I_y = 837.9$ in⁴
 $A = 51.7300$ in²

W14x176



X-Axis Section Properties:

Floorbeam Bracket 10 North

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		4.5000	32.8125	147.6563	0.0527	1.0078	4.5702	4.6229
	Vertical Leg		4.2188	29.8125	125.7715	11.1237	1.9922	16.7442	27.8679
2	Horizontal Leg		4.5000	0.1875	0.8438	0.0527	31.6172	4498.4226	4498.4753
	Vertical Leg		4.2188	3.1875	13.4473	11.1237	28.6172	3454.9287	3466.0524
3	Web Plate		12.3750	16.5000	204.1875	1123.0313	15.3047	2898.6566	4021.6878
4	Rolled Section		51.7300	40.6250	2101.5313	2149.6000	8.8203	4024.4438	6174.0438
Total			81.54		2593.44	3294.98		14897.77	18192.75
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 31.8047 in	S _{top} = 1106.26 in ³			y-bar = 31.8047 in	S _{top} = 1106.26 in ³		
I _x = 18192.75 in ⁴	S _{bottom} = 572.01 in ³			I _x = 18192.75 in ⁴	S _{bottom} = 572.01 in ³		
C _{top} = 16.4453 in	A = 81.5425 in ²			C _{top} = 16.4453 in	A = 81.5425 in ²		
C _{bottom} = 31.8047 in	r _x = 14.9368 in			C _{bottom} = 31.8047 in	r _x = 14.9368 in		

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
1 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
2 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
2 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
3	Web Plate	12.3750	6.1875	76.5703	0.1450	0.0000	0.0000	0.1450
4	Rolled Section	51.7300	6.1875	320.0794	837.9000	0.0000	0.0000	837.9000
Total		81.54		504.54	865.14		92.63	957.77

Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar = 6.1875 in	S _{right} = 122.48 in ³			x-bar = 6.1875 in	S _{right} = 122.48 in ³		
I _y = 957.77 in ⁴	S _{left} = 122.48 in ³			I _y = 957.77 in ⁴	S _{left} = 122.48 in ³		
C _{right} = 7.8200 in	A = 81.5425 in ²			C _{right} = 7.8200 in	A = 81.5425 in ²		
C _{left} = 7.8200 in	r _y = 3.4272 in			C _{left} = 7.8200 in	r _y = 3.4272 in		

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1573.04 k-ft	1573.04 k-ft
V	403.04 k	403.04 k

*Noncompact Section

F_y = 33.00 ksi

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 10 SOUTH



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Checked By NRF

Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

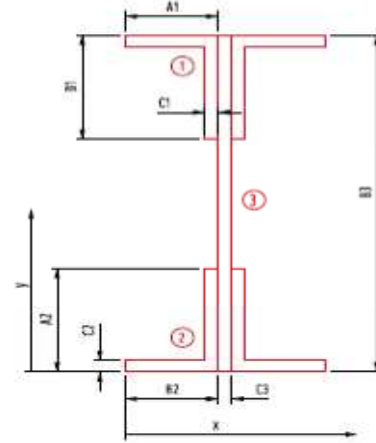
$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 44.0000$ in

$d_0 = 37.1250$ in (stiffener spacing for shear check)



**Floorbeam Bracket 10 South
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.8125	197.1563	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	40.8125	172.1777	11.1237	18.8125	1493.0585	1504.1821
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8125	1493.0585	1504.1821
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		33.94		746.63	2684.35		7268.18	9952.54
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0000 in	$S_{top} =$	452.39 in ³	y-bar =	22.0000 in	$S_{top} =$	452.39 in ³
$I_x =$	9952.54 in ⁴	$S_{bott.} =$	452.39 in ³	$I_x =$	9952.54 in ⁴	$S_{bott.} =$	452.39 in ³
$C_{top} =$	22.0000 in	A =	33.9375 in ²	$C_{top} =$	22.0000 in	A =	33.9375 in ²
$C_{bottom} =$	22.0000 in	$r_x =$	17.1249 in	$C_{bottom} =$	22.0000 in	$r_x =$	17.1249 in



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Date 3/3/2012
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Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1244.07 k-ft	1244.07 k-ft
V	305.20 k	305.20 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 11 NORTH



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Date 3/1/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.3750$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

$B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.3750$ in
 $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 33.8750$ in

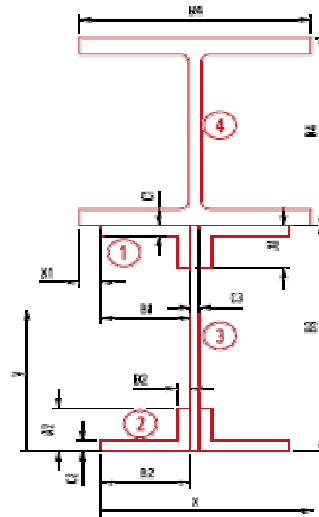
 $X1 = 1.6325$ in

 $d_o = \text{none}$

Rolled Section:

$B4 = 15.6400$ in
 $D4 = 15.2500$ in
 $I_x = 2149.6$ in⁴
 $I_y = 837.9$ in⁴
 $A = 51.7300$ in²

W14x176



X-Axis Section Properties:

Floorbeam Bracket 11 North

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	33.6875	151.5938	0.0527	1.2302	6.8099	6.8627
	Vertical Leg	4.2188	30.6875	129.4629	11.1237	1.7698	13.2144	24.3380
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	32.2698	4686.0385	4686.0912
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	29.2698	3614.2998	3625.4234
3	Web Plate	12.7031	16.9375	215.1592	1214.7529	15.5198	3059.7395	4274.4924
4	Rolled Section	51.7300	41.5000	2146.7950	2149.6000	9.0427	4229.9566	6379.5566
Total		81.87		2657.30	3386.71		15610.06	18996.76
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 32.4573 in	S _{top} = 1139.74 in ³			y-bar = 32.4573 in	S _{top} = 1139.74 in ³		
I _x = 18996.76 in ⁴	S _{bottom} = 585.28 in ³			I _x = 18996.76 in ⁴	S _{bottom} = 585.28 in ³		
C _{top} = 16.6677 in	A = 81.8706 in ²			C _{top} = 16.6677 in	A = 81.8706 in ²		
C _{bottom} = 32.4573 in	r _x = 15.2327 in			C _{bottom} = 32.4573 in	r _x = 15.2327 in		

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
1 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
2 (Left)	Horizontal Leg	2.2500	3.0000	6.7500	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	5.8125	12.2607	0.0247	0.3750	0.2966	0.3214
2 (Right)	Horizontal Leg	2.2500	9.3750	21.0938	6.7500	3.1875	22.8604	29.6104
	Vertical Leg	2.1094	6.5625	13.8428	0.0247	0.3750	0.2966	0.3214
3	Web Plate	12.7031	6.1875	78.6006	0.1489	0.0000	0.0000	0.1489
4	Rolled Section	51.7300	6.1875	320.0794	837.9000	0.0000	0.0000	837.9000
Total		81.87		506.57	865.15		92.63	957.78

Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar = 6.1875 in	S _{right} = 122.48 in ³			x-bar = 6.1875 in	S _{right} = 122.48 in ³		
I _y = 957.78 in ⁴	S _{left} = 122.48 in ³			I _y = 957.78 in ⁴	S _{left} = 122.48 in ³		
C _{right} = 7.8200 in	A = 81.8706 in ²			C _{right} = 7.8200 in	A = 81.8706 in ²		
C _{left} = 7.8200 in	r _y = 3.4203 in			C _{left} = 7.8200 in	r _y = 3.4203 in		

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1609.53 k-ft	1609.53 k-ft
V	403.04 k	403.04 k

*Noncompact Section

F _y =	33.00 ksi
------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

BRACKET 11 SOUTH



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Date 3/3/2012
Date 3/3/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

$C_1 = t_f = 0.3750$ in $C_2 = t_f = 0.3750$ in

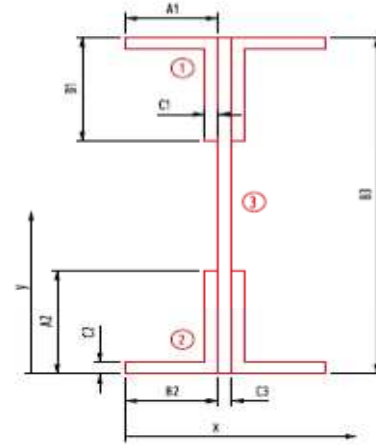
$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in

$B_3 = 44.0000$ in

$d_0 = 29.5000$ in (stiffener spacing for shear check)



**Floorbeam Bracket 11 South
SECTION L**

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	4.5000	43.8125	197.1563	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	40.8125	172.1777	11.1237	18.8125	1493.0585	1504.1821
2	Horizontal Leg	4.5000	0.1875	0.8438	0.0527	21.8125	2141.0332	2141.0859
	Vertical Leg	4.2188	3.1875	13.4473	11.1237	18.8125	1493.0585	1504.1821
3	Web Plate	16.5000	22.0000	363.0000	2662.0000	0.0000	0.0000	2662.0000
Total		33.94		746.63	2684.35		7268.18	9952.54
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	22.0000 in	S _{top} =	452.39 in ³	y-bar =	22.0000 in	S _{top} =	452.39 in ³
I _x =	9952.54 in ⁴	S _{bott.} =	452.39 in ³	I _x =	9952.54 in ⁴	S _{bott.} =	452.39 in ³
c _{top} =	22.0000 in	A =	33.9375 in ²	c _{top} =	22.0000 in	A =	33.9375 in ²
c _{bottom} =	22.0000 in	r _x =	17.1249 in	c _{bottom} =	22.0000 in	r _x =	17.1249 in



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Date 3/3/2012
 Date 3/3/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1244.07 k-ft	1244.07 k-ft
V	310.43 k	310.43 k

*Noncompact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L



Made By NRF
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Date 3/1/2012
Date 3/2/2012

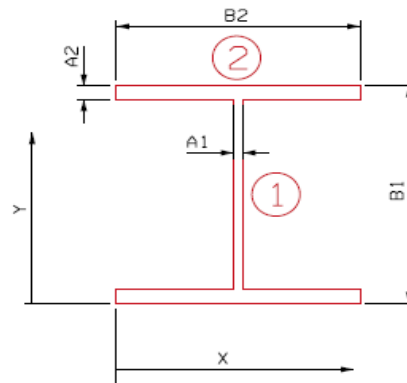
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.7500$ in
- $A_2 = t_f = 1.0000$ in
- $B_1 = d = 26.4752$ in
- $B_2 = b_f = 10.0000$ in



FB1 @ North Frame Girder
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		18.3564	13.2376	242.9947	916.3445	0.0000	0.0000	916.3445
2	Top Flange		10.0000	25.9752	259.7520	0.8333	12.7376	1622.4645	1623.2979
	Bottom Flange		10.0000	0.5000	5.0000	0.8333	12.7376	1622.4645	1623.2979
Total			38.36		507.75	918.01		3244.93	4162.94
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	13.2376	in	S _{top} = 314.48 in ³	y-bar =	13.2376	in	S _{top} = 314.48 in ³
I _x =	4162.94	in ⁴	S _{bott.} = 314.48 in ³	I _x =	4162.94	in ⁴	S _{bott.} = 314.48 in ³
c _{top} =	13.2376	in	A = 38.3564 in ²	c _{top} =	13.2376	in	A = 38.3564 in ²
c _{bottom} =	13.2376	in	r _x = 10.4179 in	c _{bottom} =	13.2376	in	r _x = 10.4179 in
			Z = 367.07 in ³				Z = 367.07 in ³

SECTION L



Made By NRF

Date 3/1/2012

Job No. P402110046

Checked By DWC

Date 3/2/2012

Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1101.21 k-ft	1101.21 k-ft
V	383.28 k	383.28 k

*Compact Section

$F_y =$	36.00 ksi
---------	-----------

AB = As-Built

AI = As-Inspected

M = Moment

V = Shear

SECTION C



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

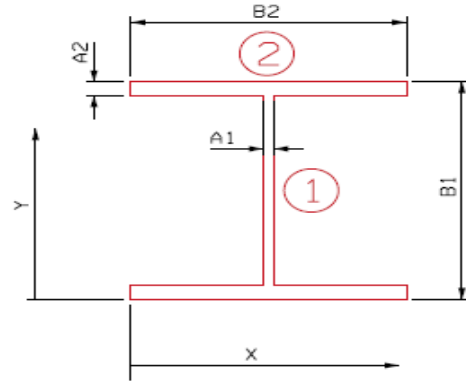
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 33.3143$ in
 $B_2 = b_f = 10.0000$ in



FB1 @ Center between Girders
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		23.4857	16.6571	391.2040	1919.1374	0.0000	0.0000	1919.1374
2	Top Flange		10.0000	32.8143	328.1425	0.8333	16.1571	2610.5269	2611.3602
	Bottom Flange		10.0000	0.5000	5.0000	0.8333	16.1571	2610.5269	2611.3602
Total			43.49		724.35	1920.80		5221.05	7141.86
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	16.6571	in	S _{top} = 428.76 in ³	y-bar =	16.6571	in	S _{top} = 428.76 in ³
I _x =	7141.86	in ⁴	S _{bott.} = 428.76 in ³	I _x =	7141.86	in ⁴	S _{bott.} = 428.76 in ³
c _{top} =	16.6571	in	A = 43.4857 in ²	c _{top} =	16.6571	in	A = 43.4857 in ²
c _{bottom} =	16.6571	in	r _x = 12.8154 in	c _{bottom} =	16.6571	in	r _x = 12.8154 in
			Z = 507.00 in ³				Z = 507.00 in ³

SECTION C



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1521.00 k-ft	1521.00 k-ft
V	490.38 k	490.38 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



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Date 3/1/2012
 Date 3/2/2012

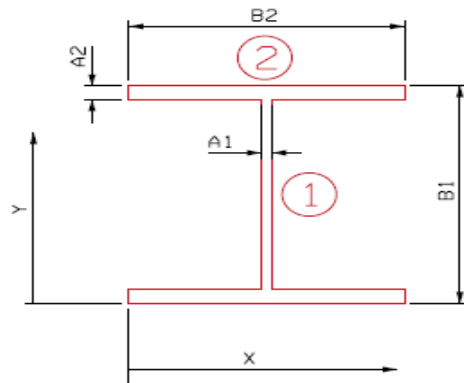
Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.7500$ in
- $A_2 = t_f = 1.0000$ in
- $B_1 = d = 40.1533$ in
- $B_2 = b_f = 10.0000$ in



FB1 @ South Frame Girder
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		28.6150	20.0767	574.4928	3471.1736	0.0000	0.0000	3471.1736
2	Top Flange		10.0000	39.6533	396.5330	0.8333	19.5767	3832.4523	3833.2856
	Bottom Flange		10.0000	0.5000	5.0000	0.8333	19.5767	3832.4523	3833.2856
Total			48.61		976.03	3472.84		7664.90	11137.74
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	20.0767	in	S _{top} = 554.76 in ³	y-bar =	20.0767	in	S _{top} = 554.76 in ³
I _x =	11137.74	in ⁴	S _{bott.} = 554.76 in ³	I _x =	11137.74	in ⁴	S _{bott.} = 554.76 in ³
c _{top} =	20.0767	in	A = 48.6150 in ²	c _{top} =	20.0767	in	A = 48.6150 in ²
c _{bottom} =	20.0767	in	r _x = 15.1361 in	c _{bottom} =	20.0767	in	r _x = 15.1361 in
			Z = 664.47 in ³				Z = 664.47 in ³

SECTION L



Made By NRF

Date 3/1/2012

Job No. P402110046

Checked By DWC

Date 3/2/2012

Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1993.41 k-ft	1993.41 k-ft
V	597.48 k	597.48 k

*Compact Section

$F_y =$	36.00 ksi
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AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
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Date 3/1/2012
Date 3/2/2012

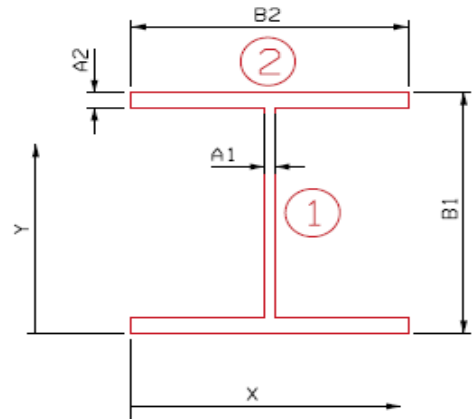
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 26.8803$ in
 $B_2 = b_f = 10.0000$ in



FB12 @ North Frame Girder
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		18.6602	13.4402	250.7962	962.6022	0.0000	0.0000	962.6022
2	Top Flange		10.0000	26.3803	263.8030	0.8333	12.9402	1674.4748	1675.3082
	Bottom Flange		10.0000	0.5000	5.0000	0.8333	12.9402	1674.4748	1675.3082
Total			38.66		519.60	964.27		3348.95	4313.22
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	13.4402	in	$S_{top} = 320.92$	in^3	y-bar =	13.4402	in	$S_{top} = 320.92$	in^3		
$I_x =$	4313.22	in^4	$S_{bott.} = 320.92$	in^3	$I_x =$	4313.22	in^4	$S_{bott.} = 320.92$	in^3		
$c_{top} =$	13.4402	in	A =	38.6602	in^2	$c_{top} =$	13.4402	in	A =	38.6602	in^2
$c_{bottom} =$	13.4402	in	$r_x =$	10.5625	in	$c_{bottom} =$	13.4402	in	$r_x =$	10.5625	in
			Z =	374.87	in^3				Z =	374.87	in^3

SECTION L



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Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1124.61 k-ft	1124.61 k-ft
V	389.63 k	389.63 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

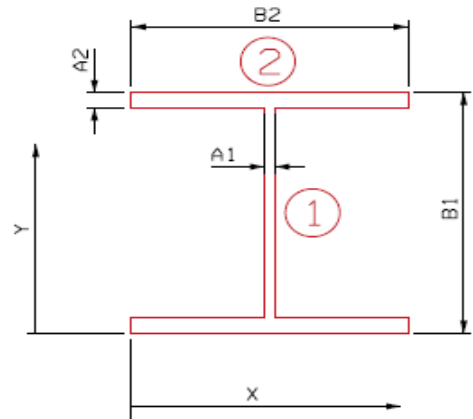
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 33.5747$ in
 $B_2 = b_f = 10.0000$ in



FB12 @ Center between Girders
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		23.6810	16.7874	397.5417	1967.4229	0.0000	0.0000	1967.4229
2	Top Flange		10.0000	33.0747	330.7470	0.8333	16.2874	2652.7777	2653.6110
	Bottom Flange		10.0000	0.5000	5.0000	0.8333	16.2874	2652.7777	2653.6110
Total			43.68		733.29	1969.09		5305.56	7274.64
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.7874	in	$S_{top} = 433.34$	in^3	y-bar =	16.7874	in	$S_{top} = 433.34$	in^3		
$I_x =$	7274.64	in^4	$S_{bott.} = 433.34$	in^3	$I_x =$	7274.64	in^4	$S_{bott.} = 433.34$	in^3		
$c_{top} =$	16.7874	in	A =	43.6810	in^2	$c_{top} =$	16.7874	in	A =	43.6810	in^2
$c_{bottom} =$	16.7874	in	$r_x =$	12.9050	in	$c_{bottom} =$	16.7874	in	$r_x =$	12.9050	in
			Z =	512.68	in^3				Z =	512.68	in^3

SECTION L



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1538.04 k-ft	1538.04 k-ft
V	494.46 k	494.46 k

*Compact Section

$F_y =$	36.00 ksi
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AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
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Date 3/1/2012
Date 3/2/2012

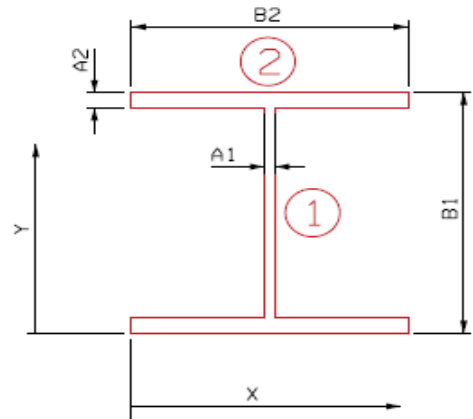
Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7500$ in
 $A_2 = t_f = 1.0000$ in
 $B_1 = d = 40.2691$ in
 $B_2 = b_f = 10.0000$ in



FB12 @ South Frame Girder
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		28.7018	20.1346	577.8983	3502.8760	0.0000	0.0000	3502.8760
2	Top Flange		10.0000	39.7691	397.6910	0.8333	19.6346	3855.1555	3855.9889
	Bottom Flange		10.0000	0.5000	5.0000	0.8333	19.6346	3855.1555	3855.9889
Total			48.70		980.59	3504.54		7710.31	11214.85
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	20.1346	in	$S_{top} = 557.00$	in ³	y-bar =	20.1346	in	$S_{top} = 557.00$	in ³		
$I_x =$	11214.85	in ⁴	$S_{bott.} = 557.00$	in ³	$I_x =$	11214.85	in ⁴	$S_{bott.} = 557.00$	in ³		
$c_{top} =$	20.1346	in	A =	48.7018	in ²	$c_{top} =$	20.1346	in	A =	48.7018	in ²
$c_{bottom} =$	20.1346	in	$r_x =$	15.1748	in	$c_{bottom} =$	20.1346	in	$r_x =$	15.1748	in
			Z =	667.29	in ³				Z =	667.29	in ³

SECTION L



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	2001.87 k-ft	2001.87 k-ft
V	599.29 k	599.29 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
Checked By _____

Date 3/1/2012
Date _____

Job No. P402110046
Sheet No. _____

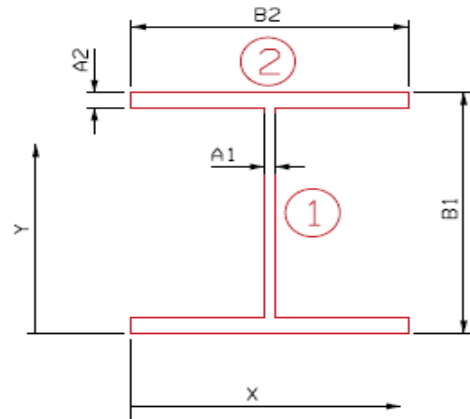
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.3750$ in
- $A_2 = t_f = 0.5000$ in
- $B_1 = d = 48.5000$ in
- $B_2 = b_f = 12.3750$ in

- $d0 = 54.9063$ in (stiffener spacing for shear check)



Floorbeam 6
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.8125	24.2500	431.9531	3349.1211	0.0000	0.0000	3349.1211
2	Top Flange		6.1875	48.2500	298.5469	0.1289	24.0000	3564.0000	3564.1289
	Bottom Flange		6.1875	0.2500	1.5469	0.1289	24.0000	3564.0000	3564.1289
Total			30.19		732.05	3349.38		7128.00	10477.38
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	24.2500	in	$S_{top} = 432.06$	in^3	y-bar =	24.2500	in	$S_{top} = 432.06$	in^3		
$I_x =$	10477.38	in^4	$S_{bott.} = 432.06$	in^3	$I_x =$	10477.38	in^4	$S_{bott.} = 432.06$	in^3		
$c_{top} =$	24.2500	in	A =	30.1875	in^2	$c_{top} =$	24.2500	in	A =	30.1875	in^2
$c_{bottom} =$	24.2500	in	$r_x =$	18.6300	in	$c_{bottom} =$	24.2500	in	$r_x =$	18.6300	in
			Z =	508.52	in^3				Z =	508.52	in^3

SECTION L



Made By NRF

Date 3/1/2012

Job No. P402110046

Checked By _____

Date _____

Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Bracket Capacities

Non-composite Capacities*		
	AB	AI
M	1188.16 k-ft	1188.16 k-ft
V	253.31 k	253.31 k

*Noncompact Section

$F_y =$ **33.00 ksi**

AB = As-Built

AI = As-Inspected

M = Moment

V = Shear

SECTION L



Made By NRF
Checked By _____

Date 3/1/2012
Date _____

Job No. P402110046
Sheet No. _____

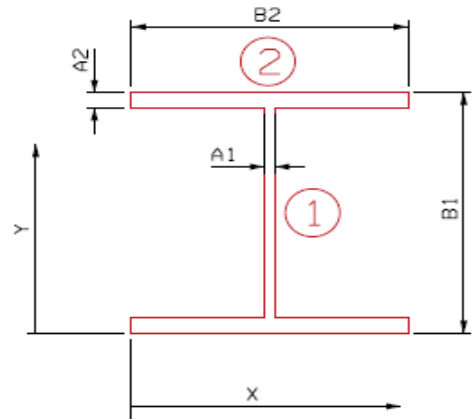
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.3750$ in
- $A_2 = t_f = 0.5000$ in
- $B_1 = d = 48.5000$ in
- $B_2 = b_f = 12.3750$ in

- $d0 = 54.9063$ in (stiffener spacing for shear check)



Floorbeam 9
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.8125	24.2500	431.9531	3349.1211	0.0000	0.0000	3349.1211
2	Top Flange		6.1875	48.2500	298.5469	0.1289	24.0000	3564.0000	3564.1289
	Bottom Flange		6.1875	0.2500	1.5469	0.1289	24.0000	3564.0000	3564.1289
Total			30.19		732.05	3349.38		7128.00	10477.38
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	24.2500	in	$S_{top} = 432.06$	in^3	y-bar =	24.2500	in	$S_{top} = 432.06$	in^3		
$I_x =$	10477.38	in^4	$S_{bott.} = 432.06$	in^3	$I_x =$	10477.38	in^4	$S_{bott.} = 432.06$	in^3		
$c_{top} =$	24.2500	in	A =	30.1875	in^2	$c_{top} =$	24.2500	in	A =	30.1875	in^2
$c_{bottom} =$	24.2500	in	$r_x =$	18.6300	in	$c_{bottom} =$	24.2500	in	$r_x =$	18.6300	in
			Z =	508.52	in^3				Z =	508.52	in^3

SECTION L



Made By NRF
Checked By _____

Date 3/1/2012
Date _____

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Bracket Capacities

Non-composite Capacities*		
	AB	AI
M	1188.16 k-ft	1188.16 k-ft
V	253.31 k	253.31 k

*Noncompact Section

$F_y =$ **33.00 ksi**

AB = As-Built

AI = As-Inspected

M = Moment

V = Shear

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

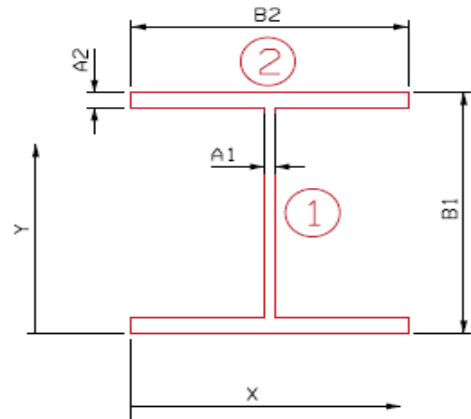
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.6050$ in
 $A_2 = t_f = 0.9600$ in
 $B_1 = d = 33.3000$ in
 $B_2 = b_f = 11.5000$ in

W33x141
Rehabbed



Floorbeam 2
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		18.9849	16.6500	316.0986	1557.8762	0.0000	0.0000	1557.8762
2	Top Flange		11.0400	32.8200	362.3328	0.8479	16.1700	2886.6167	2887.4645
	Bottom Flange		11.0400	0.4800	5.2992	0.8479	16.1700	2886.6167	2887.4645
Total			41.06		683.73	1559.57		5773.23	7332.81
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	16.6500	in	S _{top} = 440.41 in ³	y-bar =	16.6500	in	S _{top} = 440.41 in ³
I _x =	7332.81	in ⁴	S _{bott.} = 440.41 in ³	I _x =	7332.81	in ⁴	S _{bott.} = 440.41 in ³
c _{top} =	16.6500	in	A = 41.0649 in ²	c _{top} =	16.6500	in	A = 41.0649 in ²
c _{bottom} =	16.6500	in	r _x = 13.3629 in	c _{bottom} =	16.6500	in	r _x = 13.3629 in
			Z = 505.97 in ³				Z = 505.97 in ³

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1517.91 k-ft	1517.91 k-ft
V	396.40 k	396.40 k

*Compact Section

$F_y =$	36.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

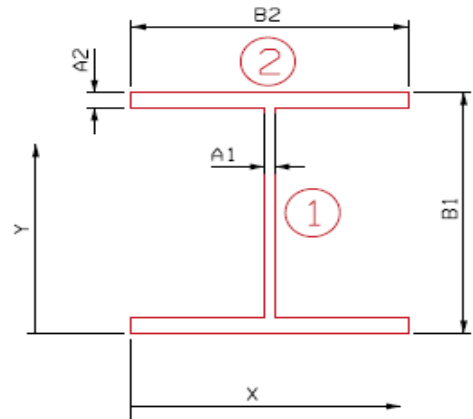
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.6050$ in
 $A_2 = t_f = 0.9600$ in
 $B_1 = d = 33.3100$ in
 $B_2 = b_f = 11.5350$ in

33WF141



Floorbeam 3
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		18.9910	16.6550	316.2943	1559.3661	0.0000	0.0000	1559.3661
2	Top Flange		11.0736	32.8300	363.5463	0.8505	16.1750	2897.1929	2898.0433
	Bottom Flange		11.0736	0.4800	5.3153	0.8505	16.1750	2897.1929	2898.0433
Total			41.14		685.16	1561.07		5794.39	7355.45
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.6550	in	$S_{top} = 441.64$	in ³	y-bar =	16.6550	in	$S_{top} = 441.64$	in ³		
$I_x =$	7355.45	in ⁴	$S_{bott.} = 441.64$	in ³	$I_x =$	7355.45	in ⁴	$S_{bott.} = 441.64$	in ³		
$c_{top} =$	16.6550	in	A =	41.1382	in ²	$c_{top} =$	16.6550	in	A =	41.1382	in ²
$c_{bottom} =$	16.6550	in	$r_x =$	13.3716	in	$c_{bottom} =$	16.6550	in	$r_x =$	13.3716	in
			Z =	507.26	in ³				Z =	507.26	in ³

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1394.97 k-ft	1394.97 k-ft
V	363.49 k	363.49 k

*Compact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

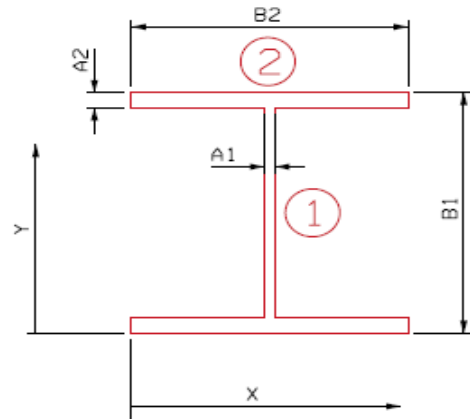
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.5700$ in
 $A_2 = t_f = 0.8050$ in
 $B_1 = d = 33.0000$ in
 $B_2 = b_f = 11.5000$ in

33WF125



Floorbeam 4
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in^2)	(in)	(in^3)	(in^4)	(in)	(in^4)	(in^4)
1	Web plate		17.8923	16.5000	295.2230	1469.1548	0.0000	0.0000	1469.1548
2	Top Flange		9.2575	32.5975	301.7714	0.4999	16.0975	2398.8914	2399.3913
	Bottom Flange		9.2575	0.4025	3.7261	0.4999	16.0975	2398.8914	2399.3913
Total			36.41		600.72	1470.15		4797.78	6267.94
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in^2)	(in)	(in^3)	(in^4)	(in)	(in^4)	(in^4)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.5000	in	$S_{top} = 379.87$	in^3	y-bar =	16.5000	in	$S_{top} = 379.87$	in^3		
$I_x =$	6267.94	in^4	$S_{bott.} = 379.87$	in^3	$I_x =$	6267.94	in^4	$S_{bott.} = 379.87$	in^3		
$c_{top} =$	16.5000	in	A =	36.4073	in^2	$c_{top} =$	16.5000	in	A =	36.4073	in^2
$c_{bottom} =$	16.5000	in	$r_x =$	13.1210	in	$c_{bottom} =$	16.5000	in	$r_x =$	13.1210	in
			Z =	438.46	in^3				Z =	438.46	in^3

SECTION L



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Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1205.77 k-ft	1205.77 k-ft
V	342.46 k	342.46 k

*Compact Section

$F_y =$	33.00 ksi
---------	-----------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



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Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

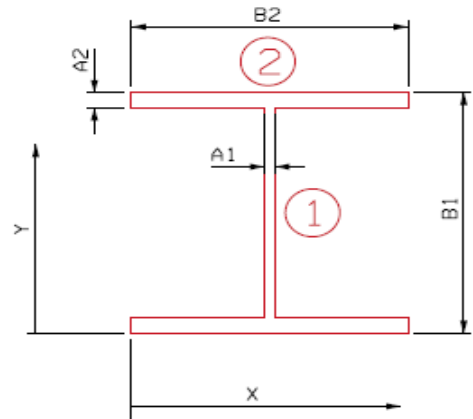
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.6050$ in
 $A_2 = t_f = 0.9600$ in
 $B_1 = d = 33.3100$ in
 $B_2 = b_f = 11.5350$ in

33WF141



Floorbeam 5
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		18.9910	16.6550	316.2943	1559.3661	0.0000	0.0000	1559.3661
2	Top Flange		11.0736	32.8300	363.5463	0.8505	16.1750	2897.1929	2898.0433
	Bottom Flange		11.0736	0.4800	5.3153	0.8505	16.1750	2897.1929	2898.0433
Total			41.14		685.16	1561.07		5794.39	7355.45
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.6550	in	$S_{top} = 441.64$	in ³	y-bar =	16.6550	in	$S_{top} = 441.64$	in ³		
$I_x =$	7355.45	in ⁴	$S_{bott.} = 441.64$	in ³	$I_x =$	7355.45	in ⁴	$S_{bott.} = 441.64$	in ³		
$c_{top} =$	16.6550	in	A =	41.1382	in ²	$c_{top} =$	16.6550	in	A =	41.1382	in ²
$c_{bottom} =$	16.6550	in	$r_x =$	13.3716	in	$c_{bottom} =$	16.6550	in	$r_x =$	13.3716	in
			Z =	507.26	in ³				Z =	507.26	in ³

SECTION L



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1394.97 k-ft	1394.97 k-ft
V	363.49 k	363.49 k

*Compact Section

$F_y =$ **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By DWC
Checked By NRF

Date 3/2/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

Top Angles: Bottom Angles:

$A_1 = l_w = 6.0000$ in $B_2 = l_h = 6.0000$ in

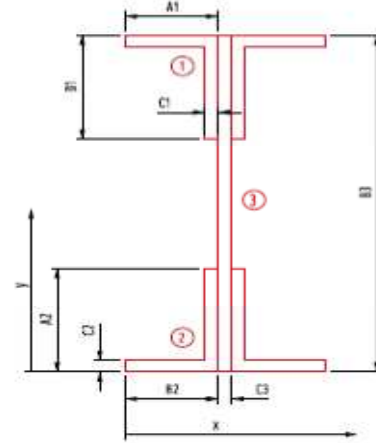
$C_1 = t_f = 0.5000$ in $C_2 = t_f = 0.5000$ in

$B_1 = l_v = 6.0000$ in $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 48.5000$ in

$d_0 = 54.9063$ in (stiffener spacing for shear check)



Floorbeam 6
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	6.0000	48.2500	289.5000	0.1250	24.0000	3456.0000	3456.1250
	Vertical Leg	5.5000	45.2500	248.8750	13.8646	21.0000	2425.5000	2439.3646
2	Horizontal Leg	6.0000	0.2500	1.5000	0.1250	24.0000	3456.0000	3456.1250
	Vertical Leg	5.5000	3.2500	17.8750	13.8646	21.0000	2425.5000	2439.3646
3	Web Plate	18.1875	24.2500	441.0469	3565.1289	0.0000	0.0000	3565.1289
Total		41.19		998.80	3593.11		11763.00	15356.11
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	24.2500 in	$S_{top} =$	633.24 in ³	y-bar =	24.2500 in	$S_{top} =$	633.24 in ³
$I_x =$	15356.11 in ⁴	$S_{bott.} =$	633.24 in ³	$I_x =$	15356.11 in ⁴	$S_{bott.} =$	633.24 in ³
$C_{top} =$	24.2500 in	A =	41.1875 in ²	$C_{top} =$	24.2500 in	A =	41.1875 in ²
$C_{bottom} =$	24.2500 in	$r_x =$	19.3089 in	$C_{bottom} =$	24.2500 in	$r_x =$	19.3089 in

SECTION L



Made By DWC

Date 3/2/2012

Job No. P402110046

Checked By NRF

Date 3/2/2012

Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Bracket Capacities

Non-composite Capacities*		
	AB	AI
M	1741.41 k-ft	1741.41 k-ft
V	253.31 k	253.31 k

*Noncompact Section

$F_y =$ **33.00 ksi**

AB = As-Built

AI = As-Inspected

M = Moment

V = Shear

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

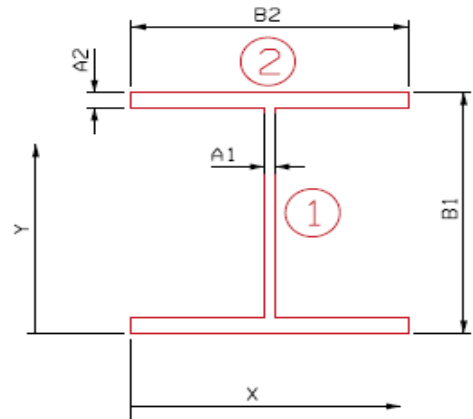
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.6050$ in
 $A_2 = t_f = 0.9600$ in
 $B_1 = d = 33.3100$ in
 $B_2 = b_f = 11.5350$ in

33WF141



Floorbeam 7
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in^2)	(in)	(in^3)	(in^4)	(in)	(in^4)	(in^4)
1	Web plate		18.9910	16.6550	316.2943	1559.3661	0.0000	0.0000	1559.3661
2	Top Flange		11.0736	32.8300	363.5463	0.8505	16.1750	2897.1929	2898.0433
	Bottom Flange		11.0736	0.4800	5.3153	0.8505	16.1750	2897.1929	2898.0433
Total			41.14		685.16	1561.07		5794.39	7355.45
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in^2)	(in)	(in^3)	(in^4)	(in)	(in^4)	(in^4)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.6550	in	$S_{top} = 441.64$	in^3	y-bar =	16.6550	in	$S_{top} = 441.64$	in^3		
$I_x =$	7355.45	in^4	$S_{bott.} = 441.64$	in^3	$I_x =$	7355.45	in^4	$S_{bott.} = 441.64$	in^3		
$c_{top} =$	16.6550	in	A =	41.1382	in^2	$c_{top} =$	16.6550	in	A =	41.1382	in^2
$c_{bottom} =$	16.6550	in	$r_x =$	13.3716	in	$c_{bottom} =$	16.6550	in	$r_x =$	13.3716	in
			Z =	507.26	in^3				Z =	507.26	in^3

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1394.97 k-ft	1394.97 k-ft
V	363.49 k	363.49 k

*Compact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

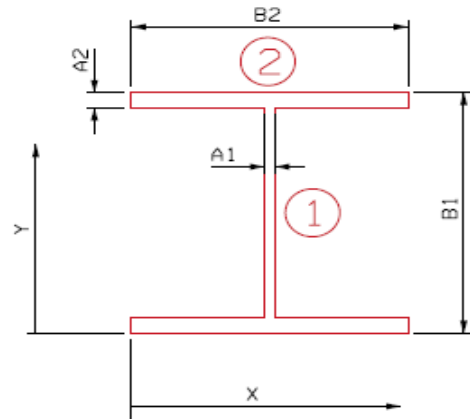
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.5700$ in
 $A_2 = t_f = 0.8050$ in
 $B_1 = d = 33.0000$ in
 $B_2 = b_f = 11.5000$ in

33WF125



Floorbeam 8
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.8923	16.5000	295.2230	1469.1548	0.0000	0.0000	1469.1548
2	Top Flange		9.2575	32.5975	301.7714	0.4999	16.0975	2398.8914	2399.3913
	Bottom Flange		9.2575	0.4025	3.7261	0.4999	16.0975	2398.8914	2399.3913
Total			36.41		600.72	1470.15		4797.78	6267.94
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.5000	in	$S_{top} = 379.87$	in ³	y-bar =	16.5000	in	$S_{top} = 379.87$	in ³		
$I_x =$	6267.94	in ⁴	$S_{bott.} = 379.87$	in ³	$I_x =$	6267.94	in ⁴	$S_{bott.} = 379.87$	in ³		
$c_{top} =$	16.5000	in	A =	36.4073	in ²	$c_{top} =$	16.5000	in	A =	36.4073	in ²
$c_{bottom} =$	16.5000	in	$r_x =$	13.1210	in	$c_{bottom} =$	16.5000	in	$r_x =$	13.1210	in
			Z =	438.46	in ³				Z =	438.46	in ³

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1205.77 k-ft	1205.77 k-ft
V	342.46 k	342.46 k

*Compact Section

$F_y =$ **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By DWC
Checked By NRF

Date 3/2/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

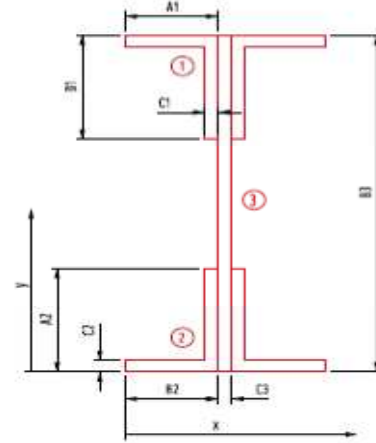
Top Angles: $A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.5000$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles: $B_2 = l_h = 6.0000$ in
 $C_2 = t_f = 0.5000$ in
 $A_2 = l_v = 6.0000$ in

Web Plate:

$C_3 = 0.3750$ in
 $B_3 = 48.5000$ in

$d_0 = 54.9063$ in (stiffener spacing for shear check)



Floorbeam 9
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	6.0000	48.2500	289.5000	0.1250	24.0000	3456.0000	3456.1250
	Vertical Leg	5.5000	45.2500	248.8750	13.8646	21.0000	2425.5000	2439.3646
2	Horizontal Leg	6.0000	0.2500	1.5000	0.1250	24.0000	3456.0000	3456.1250
	Vertical Leg	5.5000	3.2500	17.8750	13.8646	21.0000	2425.5000	2439.3646
3	Web Plate	18.1875	24.2500	441.0469	3565.1289	0.0000	0.0000	3565.1289
Total		41.19		998.80	3593.11		11763.00	15356.11
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	24.2500 in	S _{top} =	633.24 in ³	y-bar =	24.2500 in	S _{top} =	633.24 in ³
I _x =	15356.11 in ⁴	S _{bott.} =	633.24 in ³	I _x =	15356.11 in ⁴	S _{bott.} =	633.24 in ³
c _{top} =	24.2500 in	A =	41.1875 in ²	c _{top} =	24.2500 in	A =	41.1875 in ²
c _{bottom} =	24.2500 in	r _x =	19.3089 in	c _{bottom} =	24.2500 in	r _x =	19.3089 in

SECTION L



Made By DWC
Checked By NRF

Date 3/2/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Bracket Capacities

Non-composite Capacities*		
	AB	AI
M	1741.41 k-ft	1741.41 k-ft
V	253.31 k	253.31 k

*Noncompact Section

$F_y =$ **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

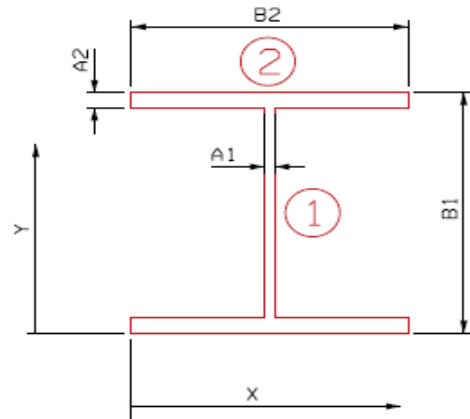
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.5700$ in
 $A_2 = t_f = 0.8050$ in
 $B_1 = d = 33.0000$ in
 $B_2 = b_f = 11.5000$ in

33WF125



Floorbeam 10
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		17.8923	16.5000	295.2230	1469.1548	0.0000	0.0000	1469.1548
2	Top Flange		9.2575	32.5975	301.7714	0.4999	16.0975	2398.8914	2399.3913
	Bottom Flange		9.2575	0.4025	3.7261	0.4999	16.0975	2398.8914	2399.3913
Total			36.41		600.72	1470.15		4797.78	6267.94
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.5000	in	$S_{top} = 379.87$	in ³	y-bar =	16.5000	in	$S_{top} = 379.87$	in ³		
$I_x =$	6267.94	in ⁴	$S_{bott.} = 379.87$	in ³	$I_x =$	6267.94	in ⁴	$S_{bott.} = 379.87$	in ³		
$c_{top} =$	16.5000	in	A =	36.4073	in ²	$c_{top} =$	16.5000	in	A =	36.4073	in ²
$c_{bottom} =$	16.5000	in	$r_x =$	13.1210	in	$c_{bottom} =$	16.5000	in	$r_x =$	13.1210	in
			Z =	438.46	in ³				Z =	438.46	in ³

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1205.77 k-ft	1205.77 k-ft
V	342.46 k	342.46 k

*Compact Section

$F_y =$	33.00 ksi
---------	-----------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

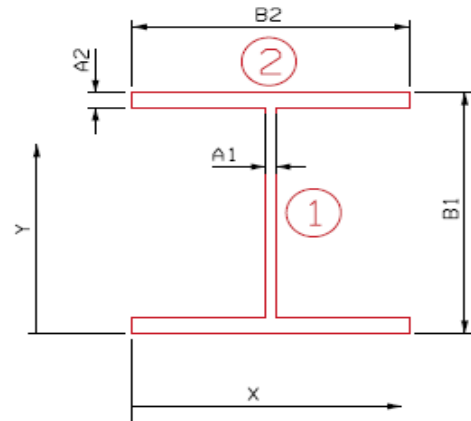
Calculations For: **CUY-2-1441**

Red text indicates user input

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.6350$ in
 $A_2 = t_f = 1.0550$ in
 $B_1 = d = 33.5000$ in
 $B_2 = b_f = 11.5650$ in

33WF152



Floorbeam 11
SECTION L

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web plate		19.9327	16.7500	333.8719	1636.6900	0.0000	0.0000	1636.6900
2	Top Flange		12.2011	32.9725	402.2999	1.1317	16.2225	3210.9509	3212.0826
	Bottom Flange		12.2011	0.5275	6.4361	1.1317	16.2225	3210.9509	3212.0826
Total			44.33		742.61	1638.95		6421.90	8060.86
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	16.7500	in	$S_{top} = 481.25$	in ³	y-bar =	16.7500	in	$S_{top} = 481.25$	in ³		
$I_x =$	8060.86	in ⁴	$S_{bott.} = 481.25$	in ³	$I_x =$	8060.86	in ⁴	$S_{bott.} = 481.25$	in ³		
$c_{top} =$	16.7500	in	A =	44.3348	in ²	$c_{top} =$	16.7500	in	A =	44.3348	in ²
$c_{bottom} =$	16.7500	in	$r_x =$	13.4840	in	$c_{bottom} =$	16.7500	in	$r_x =$	13.4840	in
			Z =	552.29	in ³				Z =	552.29	in ³

SECTION L



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Floorbeam Capacities

Non-composite Capacities*		
	AB	AI
M	1518.80 k-ft	1518.80 k-ft
V	381.51 k	381.51 k

*Compact Section

$F_y =$	33.00 ksi
---------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 22-Mar-11
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
***COORDINATES BASED ON STRINGER 6 LENGTHS
1 0 0 0 ;
2 21.8457 0 0 ;
3 41.8457 0 0 ;
4 61.8457 0 0 ;
5 81.8457 0 0 ;
6 101.8457 0 0 ;
7 123.0645 0 0 ;
8 144.2833 0 0 ;
9 165.4916 0 0 ;
10 186.6999 0 0 ;
11 209.8874 0 0 ;
12 233.0749 0 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;
10 10 11 ;
11 11 12 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 4 5 6 7 8 9 10 11 TABLE ST W24x84
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
1 2 3 4 5 6 7 8 9 10 11 12 PINNED
MEMBER RELEASE
1 START MZ
3 END MZ
4 START MZ
6 END MZ
7 START MZ
9 END MZ
10 START MZ
11 END MZ
DEFINE MOVING LOAD
TYPE 1 LOAD 16 16 4
DIST 14 14

TYPE 2 LOAD 10 5
DIST 10
TYPE 3 LOAD 6 8.5 8.5
DIST 10 4
TYPE 4 LOAD 6 7 7 7
DIST 10 4 4
TYPE 5 LOAD 6 8.5 8.5 8.5 8.5
DIST 12 4 31 4
TYPE 6 LOAD 4 16 16
DIST 14 14
TYPE 7 LOAD 5 10
DIST 10
TYPE 8 LOAD 8.5 8.5 6
DIST 4 10
TYPE 9 LOAD 7 7 7 6
DIST 4 4 10
TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
DIST 4 31 4 12

***LANE LOADING DISTRIBUTED LOAD
*LOAD 1 LOADTYPE Live TITLE LANE LOAD DISTRIBUTED
*MEMBER LOAD
*1 TO 11 UNI GY -0.320

*****HS20
*LOAD GENERATION 2620
*TYPE 1 -28 0 0 XINC 0.1
*LOAD GENERATION 2620
*TYPE 6 -28 0 0 XINC 0.1

****2F1
*LOAD GENERATION 2500
*TYPE 2 -10 0 0 XINC 0.1
*LOAD GENERATION 2500
*TYPE 7 -10 0 0 XINC 0.1
*

***3F1
*LOAD GENERATION 2500
*TYPE 3 -14 0 0 XINC 0.1
*LOAD GENERATION 2500
*TYPE 8 -14 0 0 XINC 0.1
*

*****4F1
*LOAD GENERATION 2520
*TYPE 4 -18 0 0 XINC 0.1
*LOAD GENERATION 2520
*TYPE 9 -18 0 0 XINC 0.1
**

***5C1
LOAD GENERATION 2900
TYPE 5 -51 0 0 XINC 0.1
LOAD GENERATION 2900
TYPE 10 -51 0 0 XINC 0.1

*
PERFORM ANALYSIS
PRINT MAXREACTION
FINISH

Section L



Made By CTG
Checked By DWC

Date 3/1/2012
Date 3/1/2012

Job No. P402110046

Calculations For: **CUY-2-1441**

Floorbeam Longitudinal Distribution Factors

Determine amount of load at each floorbeam by running a wheel line longitudinally across the bridge. Because all floorbeams are straight except FB1, run one wheel line with the stringer spacing and support conditions along the centerline of Stringer 6. Use maximum distribution factor for entire floorbeam.

		FB1	FB2	FB3	FB4	FB5	FB6	FB7	FB8	FB9	FB10	FB11	FB12
HS20	LLDF	20.112	27.074	26.203	20.125	26.196	26.769	20.828	27.058	27.053	21.8	28.809	20.714
2F1	LLDF	12.227	13.982	13.755	12.003	13.755	13.903	12.151	13.896	13.894	12.416	14.131	12.358
3F1	LLDF	16.593	20.83	20.44	17.303	20.438	20.694	17.596	20.713	20.711	17.908	21.22	16.918
4F1	LLDF	16.865	23.502	22.994	18.767	22.9	23.319	19.164	23.387	23.385	19.683	24.21	17.367
5C1	LLDF	16.103	20.016	19.667	16.286	19.663	19.889	16.489	19.993	19.991	16.669	20.691	16.433
HS20 Lane Load* (apply half lane only)	LLDF _M	11.833	16.47	15.9	14.169	15.947	16.319	14.466	16.461	16.458	14.523	18.237	11.802
	LLDF _V	15.833	20.47	19.9	18.169	19.947	20.319	18.466	20.461	20.458	18.523	22.237	15.802
	Distributed	2.833	7.47	6.9	5.169	6.947	7.319	5.466	7.461	7.458	5.523	9.237	2.802

* Modeled half of HS20 distributed lane loading (320 k/ft) along with half of concentrated loads for shear and moment (13 kips and 9 kips), as this would correspond to one wheel line (half an axle). Because the total factors never exceed those of the HS20 truck, the lane loading will not govern in Section L.

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 1 Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 6.554 0 0 ;
3 8.6569 0 0 ;
4 13.1563 0 0 ;
5 19.7586 0 0 ;
6 26.3609 0 0 ;
7 32.9632 0 0 ;
8 37.4626 0 0 ;
9 39.0391 0 0 ;
10 40.0466 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 6.554 10 0 ;
104 13.1563 10 0 ;
105 19.7586 10 0 ;
106 26.3609 10 0 ;
107 32.9632 10 0 ;
109 39.0391 10 0 ;
110 40.0466 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03

END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TAPERED 1.8646 0.0625 2.0964 0.8333 0.0833
2 TAPERED 2.0964 0.0625 2.1708 0.8333 0.0833
3 TAPERED 2.1708 0.0625 2.3300 0.8333 0.0833
4 TAPERED 2.3300 0.0625 2.5636 0.8333 0.0833
5 TAPERED 2.5636 0.0625 2.7971 0.8333 0.0833
6 TAPERED 2.7971 0.0625 3.0307 0.8333 0.0833
7 TAPERED 3.0307 0.0625 3.1898 0.8333 0.0833
8 TAPERED 3.1898 0.0625 3.2456 0.8333 0.0833
9 TAPERED 3.2456 0.0625 3.4479 0.8333 0.0833
101 102 103 104 105 106 107 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
3 8 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 TO 107 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
*
LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 TO 9

MEMBER LOAD
101 CON GY -4.74 0
102 CON GY -4.91 0
103 CON GY -5.74 0
104 CON GY -6.02 0
105 CON GY -6.53 0
106 CON GY -6.66 0
107 CON GY -4.27 0
107 CON GY -5.57 1.0075

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD WITH MPF OF 0.9

LOAD GENERATION 1032
TYPE 1 1.9167 10 0 XINC 0.01
**

*** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 2032
TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 2 Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.8691 0 0 ;
3 6.9394 0 0 ;
4 11.3691 0 0 ;
5 17.8691 0 0 ;
6 24.3691 0 0 ;
7 30.8691 0 0 ;
8 35.2988 0 0 ;
9 36.8509 0 0 ;
10 40.1530 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.8691 10 0 ;
103 11.3691 10 0 ;
104 17.8691 10 0 ;
105 24.3691 10 0 ;
106 30.8691 10 0 ;
107 36.8509 10 0 ;
108 40.1530 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN
3 4 5 6 7 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.0625 0.03125 2.9044 1.03125 0.03125 1.03125 0.03125
2 TAPERED 2.9044 0.03125 3.6875 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.3108 0.0683 2.6585 1.3033 0.1094
9 TAPERED 2.6585 0.0683 1.2708 1.3033 0.1094
101 102 103 104 105 106 107 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
3 8 PINNED

***MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 TO 107 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
**
LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 TO 7
***BUMP UP FOR EQUIVALENT SECTION DIFFERENCE IN AREA
SELFWEIGHT Y -1.23 LIST 8 TO 9

MEMBER LOAD
101 CON GY -8.7 0
102 CON GY -12.25 0
103 CON GY -15.32 0
104 CON GY -15.15 0
105 CON GY -16.05 0
106 CON GY -16.25 0
107 CON GY -11.55 0
107 CON GY -10.46 3.3021

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL AND MPF LOAD OF 0.9

LOAD GENERATION 1032
TYPE 1 1.9167 10 0 XINC 0.01
*

** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 2032
TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 3 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES

1 0.0000 0 0 ;
2 3.1198 0 0 ;
3 5.1901 0 0 ;
4 9.6198 0 0 ;
5 16.1198 0 0 ;
6 22.6198 0 0 ;
7 29.1198 0 0 ;
8 33.5495 0 0 ;
9 35.1016 0 0 ;
10 40.0844 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 3.1198 10 0 ;
103 9.6198 10 0 ;
104 16.1198 10 0 ;
105 22.6198 10 0 ;
106 29.1198 10 0 ;
107 35.1016 10 0 ;
108 40.0844 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TABLE ST W33x141
1 TAPERED 0.9896 0.03125 2.5894 1.03125 0.0417 1.03125 0.0417
2 TAPERED 2.5894 0.03125 3.6510 1.03125 0.0417 1.03125 0.0417
8 TAPERED 3.3287 0.0683 2.8399 1.3033 0.1094
9 TAPERED 2.8399 0.0683 1.2708 1.3033 0.1094
101 102 103 104 105 106 107 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

****MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 2

SELFWEIGHT Y -1.05 LIST 3 TO 7

****BUMP UP FOR THE EQUIVALENT SECTION DIFFERENCE IN AREA

SELFWEIGHT Y -1.23 LIST 8 9

MEMBER LOAD

101 CON GY -13.11 0

102 CON GY -10.87 0

103 CON GY -17.28 0

104 CON GY -16.27 0

105 CON GY -16.09 0

106 CON GY -15.89 0

107 CON GY -13.92 0

107 CON GY -13.54 4.9828

*

**** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1026

TYPE 1 1.9167 10 0 XINC 0.01

**

*** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***

LOAD GENERATION 2026

TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 4 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES

1 0.0000 0 0 ;
2 1.7821 0 0 ;
3 3.8524 0 0 ;
4 8.2821 0 0 ;
5 14.7821 0 0 ;
6 21.2821 0 0 ;
7 27.7821 0 0 ;
8 32.2118 0 0 ;
9 33.7639 0 0 ;
10 40.0322 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 1.7821 10 0 ;
103 8.2821 10 0 ;
104 14.7821 10 0 ;
105 21.2821 10 0 ;
106 27.7821 10 0 ;
107 33.7639 10 0 ;
108 40.0322 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.0625 0.03125 2.2672 1.03125 0.03125 1.03125 0.03125
2 TAPERED 2.2672 0.03125 3.6667 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.3108 0.0683 2.9059 1.3033 0.1094
9 TAPERED 2.9059 0.0683 1.2708 1.3033 0.1094
101 102 103 104 105 106 107 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

****MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

*

LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 2

SELFWEIGHT Y -1.05 LIST 3 TO 7

SELFWEIGHT Y -1.23 LIST 8 9

MEMBER LOAD

101 CON GY -8.89 0

102 CON GY -6.3 0

103 CON GY -12.96 0

104 CON GY -12.6 0

105 CON GY -12.57 0

106 CON GY -12.63 0

107 CON GY -11.57 0

107 CON GY -10.85 6.2683

**

**** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1020

TYPE 1 1.9167 10 0 XINC 0.01

**

*** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***

LOAD GENERATION 2020

TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 5 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
***USING FRAMING CONFIGURATION WITH 7 TOTAL STRINGERS
1 0.0000 0 0 ;
2 2.9246 0 0 ;
3 7.3543 0 0 ;
4 13.8543 0 0 ;
5 20.3543 0 0 ;
6 26.8543 0 0 ;
7 31.2840 0 0 ;
8 33.3543 0 0 ;
9 39.9962 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.3543 10 0 ;
103 13.8543 10 0 ;
104 20.3543 10 0 ;
105 26.8543 10 0 ;
106 33.3543 10 0 ;
107 39.9962 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TO 6 TABLE ST W33x141
1 TAPERED 1.0625 0.03125 3.8177 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.3287 0.6833 2.8399 1.3033 0.1094 1.3033 0.1094
8 TAPERED 2.8399 0.6833 1.2708 1.3033 0.1094 1.3033 0.1094

```

101 102 103 104 105 106 TABLE ST W33x118
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
*
LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 TO 6
SELFWEIGHT Y -1.23 LIST 7 8

MEMBER LOAD
101 CON GY -14.27 0
102 CON GY -16.59 0
103 CON GY -15.83 0
104 CON GY -15.74 0
105 CON GY -16.04 0
106 CON GY -15.62 0
101 CON GY -2.65 0.8543
106 CON GY -14.78 6.6419

*
**** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1017
TYPE 1 1.9167 10 0 XINC 0.01
**
*** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 2017
TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 6 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES

1 0.0000 0 0 ;
2 2.4057 0 0 ;
3 6.8354 0 0 ;
4 13.3354 0 0 ;
5 19.8354 0 0 ;
6 26.3354 0 0 ;
7 30.7651 0 0 ;
8 32.8354 0 0 ;
9 39.9763 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 6.8354 10 0 ;
103 13.3354 10 0 ;
104 19.8354 10 0 ;
105 26.3354 10 0 ;
106 32.8354 10 0 ;
107 39.9763 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN
2 TO 6 TAPERED 4.0417 0.03125 4.0417 1.03125 0.0417 1.03125 0.0417
1 TAPERED 1.0625 0.03125 3.6771 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.25 0.03125 2.7513 1.03125 0.03125 1.03125 0.03125
8 TAPERED 2.7513 0.03125 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

2 7 PINNED

****MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1

SLAVE FY MASTER 102 JOINT 3

SLAVE FY MASTER 103 JOINT 4

SLAVE FY MASTER 104 JOINT 5

SLAVE FY MASTER 105 JOINT 6

SLAVE FY MASTER 106 JOINT 8

SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES

MEMBER RELEASE

101 TO 106 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

*

LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 7 8

SELFWEIGHT Y -1.42 LIST 2 TO 6

MEMBER LOAD

101 CON GY -11.72 0

102 CON GY -16.9 0

103 CON GY -17.04 0

104 CON GY -16.9 0

105 CON GY -17.18 0

106 CON GY -16.94 0

106 CON GY -12.91 7.1409

** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1015

TYPE 1 1.9167 10 0 XINC 0.01

*

** 2 TRUCKS SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***

LOAD GENERATION 2015

TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 7 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES

1 0.0000 0 0 ;
2 2.3013 0 0 ;
3 6.7310 0 0 ;
4 13.2310 0 0 ;
5 19.7310 0 0 ;
6 26.2310 0 0 ;
7 30.6607 0 0 ;
8 32.7310 0 0 ;
9 39.9727 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 6.7310 10 0 ;
103 13.2310 10 0 ;
104 19.7310 10 0 ;
105 26.2310 10 0 ;
106 32.7310 10 0 ;
107 39.9727 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN

2 TO 6 TABLE ST W33x141
1 TAPERED 1.0625 0.03125 3.6771 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.6667 0.03125 3.0807 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.0738 0.03125 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 TABLE ST W33x118

CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
*

LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 TO 8

MEMBER LOAD
101 CON GY -13.69 0
102 CON GY -15.67 0
103 CON GY -13.81 0
104 CON GY -13.63 0
105 CON GY -13.83 0
106 CON GY -13.5 0
106 CON GY -14.9 7.2417

*
** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1014
TYPE 1 1.9167 10 0 XINC 0.01

* 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 2014
TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 8 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES

1 0.0000 0 0 ;
2 2.6561 0 0 ;
3 7.0858 0 0 ;
4 13.5858 0 0 ;
5 20.0858 0 0 ;
6 26.5858 0 0 ;
7 31.0155 0 0 ;
8 33.0858 0 0 ;
9 39.9869 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.0858 10 0 ;
103 13.5858 10 0 ;
104 20.0858 10 0 ;
105 26.5858 10 0 ;
106 33.0858 10 0 ;
107 39.9869 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN
2 TO 6 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.0625 0.03125 3.6667 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.6667 0.03125 3.0585 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.0585 0.03125 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

2 7 PINNED

****MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1

SLAVE FY MASTER 102 JOINT 3

SLAVE FY MASTER 103 JOINT 4

SLAVE FY MASTER 104 JOINT 5

SLAVE FY MASTER 105 JOINT 6

SLAVE FY MASTER 106 JOINT 8

SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES

MEMBER RELEASE

101 TO 106 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

*

LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 7 8

SELFWEIGHT Y -1.05 LIST 2 TO 6

MEMBER LOAD

101 CON GY -12.5 0

102 CON GY -18.03 0

103 CON GY -17.79 0

104 CON GY -17.49 0

105 CON GY -17.84 0

106 CON GY -17.41 0

106 CON GY -13.43 6.9011

*

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1016

TYPE 1 1.9167 10 0 XINC 0.01

*

** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***

LOAD GENERATION 2016

TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

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STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 9 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
***USING FRAMING CONFIGURATION WITH 7 TOTAL STRINGERS
1 0.0000 0 0 ;
2 3.4703 0 0 ;
3 7.9000 0 0 ;
4 14.4000 0 0 ;
5 20.9000 0 0 ;
6 27.4000 0 0 ;
7 31.8297 0 0 ;
8 33.9000 0 0 ;
9 40.0194 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.9000 10 0 ;
103 14.4000 10 0 ;
104 20.9000 10 0 ;
105 27.4000 10 0 ;
106 33.9000 10 0 ;
107 40.0194 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TO 6 TAPERED 4.0417 0.03125 4.0417 1.03125 0.0417 1.03215 0.0417
1 TAPERED 1.0625 0.03125 3.6563 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.6667 0.03125 3.0005 1.03125 0.0417 1.03125 0.0417
8 TAPERED 3.0005 0.03125 1.0313 1.03125 0.0417 1.03125 0.0417

```


101 102 103 104 105 106 TABLE ST W33x118
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
*
LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.42 LIST 2 TO 6
SELFWEIGHT Y -1.05 LIST 1 7 8

MEMBER LOAD
101 CON GY -16.03 0
101 CON GY -3.2 1.4
102 CON GY -18.63 0
103 CON GY -17.26 0
104 CON GY -17.21 0
105 CON GY -17.53 0
106 CON GY -16.06 0
106 CON GY -15.87 6.1194

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1019
TYPE 1 1.9167 10 0 XINC 0.01
*

** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 2019
TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 10 Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 2.6745 0 0 ;
3 4.7448 0 0 ;
4 9.1745 0 0 ;
5 15.6745 0 0 ;
6 22.1745 0 0 ;
7 28.6745 0 0 ;
8 33.1042 0 0 ;
9 34.6563 0 0 ;
10 40.0699 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 2.6745 10 0 ;
103 9.1745 10 0 ;
104 15.6745 10 0 ;
105 22.1745 10 0 ;
106 28.6745 10 0 ;
107 34.6563 10 0 ;
108 40.0699 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.2708 0.0683 2.4005 1.3033 0.1094
2 TAPERED 2.4005 0.0683 3.2750 1.3033 0.1094
8 TAPERED 3.6667 0.0692 3.0794 1.03125 0.03125 1.03125 0.03125
9 TAPERED 3.0794 0.0692 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 107 TABLE ST W33x130

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

****MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

*

LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 3 TO 7

SELFWEIGHT y -1.05 LIST 8 9

***BUMP UP FOR EQUIVALENT SECTION DIFFERENCE IN AREA

SELFWEIGHT Y -1.23 LIST 1 TO 2

MEMBER LOAD

101 CON GY -10.4 0

102 CON GY -7.72 0

103 CON GY -14.36 0

104 CON GY -13.5 0

105 CON GY -13.52 0

106 CON GY -13.76 0

107 CON GY -11.8 0

107 CON GY -11.53 5.4136

*

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1024

TYPE 1 1.9167 10 0 XINC 0.01

*

** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***

LOAD GENERATION 2024

TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 11 Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.5971 0 0 ;
3 6.6674 0 0 ;
4 11.0971 0 0 ;
5 17.5971 0 0 ;
6 24.0971 0 0 ;
7 30.5971 0 0 ;
8 35.0268 0 0 ;
9 36.5789 0 0 ;
10 40.1462 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.5971 10 0 ;
103 11.0971 10 0 ;
104 17.5971 10 0 ;
105 24.0971 10 0 ;
106 30.5971 10 0 ;
107 36.5789 10 0 ;
108 40.1462 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TABLE ST W33x152
1 TAPERED 1.2708 0.0683 2.6959 1.3033 0.1094
2 TAPERED 2.6959 0.0683 3.3377 1.3033 0.1094
8 TAPERED 3.6667 0.0692 2.8677 1.03125 0.03125 1.03125 0.03125
9 TAPERED 2.8677 0.0692 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 107 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

****MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9

DIST 6 4 6 4 6

TYPE 2 LOAD 1 1 1 1

DIST 6 4 6

*

LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 3 TO 9

****BUMP UP FOR THE EQUIVALENT SECTION DIFFERENCE IN AREA

SELFWEIGHT Y -1.23 LIST 1 2

MEMBER LOADS

101 CON GY -17.16 0

102 CON GY -14.87 0

103 CON GY -23.1 0

104 CON GY -21.05 0

105 CON GY -21.35 0

106 CON GY -21.5 0

107 CON GY -15.17 0

107 CON GY -14.96 3.5673

*

*** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1032

TYPE 1 1.9167 10 0 XINC 0.01

*

** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***

LOAD GENERATION 2032

TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 12 Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 7.0755 0 0 ;
3 9.1458 0 0 ;
4 13.5755 0 0 ;
5 20.0755 0 0 ;
6 26.5755 0 0 ;
7 33.0755 0 0 ;
8 37.5052 0 0 ;
9 39.0573 0 0 ;
10 40.2448 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.0755 10 0 ;
103 13.5755 10 0 ;
104 20.0755 10 0 ;
105 26.5755 10 0 ;
106 33.0755 10 0 ;
107 39.0573 10 0 ;
108 40.2448 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

1 TAPERED 1.8802 0.0625 2.1586 0.8333 0.0833
2 TAPERED 2.1586 0.0625 2.2400 0.8333 0.0833
3 TAPERED 2.2400 0.0625 2.4143 0.8333 0.0833
4 TAPERED 2.4143 0.0625 2.6700 0.8333 0.0833
5 TAPERED 2.6700 0.0625 2.9258 0.8333 0.0833
6 TAPERED 2.9258 0.0625 3.1815 0.8333 0.0833
7 TAPERED 3.1815 0.0625 3.3558 0.8333 0.0833
8 TAPERED 3.3558 0.0625 3.4168 0.8333 0.0833
9 TAPERED 3.4168 0.0625 3.4635 0.8333 0.0833

101 102 103 104 105 106 107 TABLE ST W33x118
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
3 8 PINNED

***MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 TO 107 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 0.9 0.9 0.9 0.9 0.9 0.9
DIST 6 4 6 4 6
TYPE 2 LOAD 1 1 1 1
DIST 6 4 6
*
LOAD 5 LOADTYPE Dead TITLE SELFWEIGHT DL

SELFWEIGHT Y -1.05 LIST 1 TO 9

MEMBER LOAD
101 CON GY -6.53 0
102 CON GY -6.7 0
103 CON GY -7.52 0
104 CON GY -7.01 0
105 CON GY -7.1 0
106 CON GY -6.98 0
107 CON GY -4.5 0
107 CON GY -4.98 1.1875

*
*** 3 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD AND MPF OF 0.9

LOAD GENERATION 1022
TYPE 1 1.9167 10 0 XINC 0.01
*

** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 2022
TYPE 2 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

Section L



Made By NRF Date 3/1/2012
 Checked By DWC Date 3/1/2012

Job No. P402110046
 Sheet No.

Calculations For: **CUY-2-1441, Floorbeam Live Load**

		FB1	FB2	FB3	FB4	FB5	FB6	FB7	FB8	FB9	FB10	FB11	FB12
GOVERNING VALUES	Mmax- North (k-ft)	-8.804	-6.122	-3.816	-2.144	-2.162	-1.731	-1.646	-1.938	-2.628	-3.229	-5.764	-9.56
	Mmax+ (k-ft)	18.208	17.785	17.785	17.784	17.785	17.786	17.784	17.786	17.785	17.785	17.786	17.786
	Mmax- South (k-ft)	-1.366	-3.280	-5.408	-7.101	-8.845	-9.662	-9.817	-9.269	-7.985	-5.943	-3.623	-1.311
	Vmax North (k)	2.549	2.503	2.412	2.393	2.451	2.370	2.354	2.409	2.539	2.393	2.489	2.531
	Vmax South (k)	2.327	2.378	2.445	2.483	2.531	2.531	2.531	2.531	2.531	2.462	2.389	2.283
	RN (k)	4.227	3.881	3.548	3.293	3.117	3.018	2.998	3.065	3.220	3.463	3.829	4.301
	RS (k)	3.106	3.482	3.804	4.047	4.218	4.313	4.331	4.267	4.118	3.885	3.534	3.043
	Mmax NB (k-ft)	-8.804	-6.122	-3.816	-2.144	-2.162	-1.731	-1.646	-1.938	-2.628	-3.229	-5.764	-9.560
	Vmax NB (k)	1.981	1.531	1.262	1.036	0.739	0.720	0.715	0.730	0.757	1.194	1.489	2.126
	Mmax SB (k-ft)	-1.366	-3.280	-5.408	-7.101	-8.845	-9.662	-9.817	-9.269	-7.985	-5.943	-3.623	-1.311
	Vmax SB (k)	0.866	1.227	1.509	1.777	1.992	2.145	2.174	2.071	1.830	1.580	1.272	0.844

Section L



Made By NRF Date 3/1/2012
 Checked By DWC Date 3/1/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Dead Loads**

		FB1	FB2	FB3	FB4	FB5	FB6	FB7	FB8	FB9	FB10	FB11	FB12
GOVERNING VALUES	Mmax- North (k-ft)	-56.195	-87.255	-91.529	-47.759	-48.857	-28.377	-31.672	-33.424	-65.145	-68.055	-150.600	-79.035
	Mmax+ (k-ft)	78.745	176.783	164.689	134.965	155.081	197.086	145.824	203.244	180.608	141.827	224.860	80.483
	Mmax- South (k-ft)	-21.699	-71.561	-115.275	-110.230	-194.725	-156.554	-169.416	-159.055	-165.683	-101.025	-101.425	-21.188
	Vmax North (k)	15.408	33.357	34.530	25.135	29.519	31.475	26.370	33.086	34.698	28.452	48.010	18.640
	Vmax South (k)	13.919	33.095	35.207	29.307	39.196	40.675	34.777	41.746	40.630	30.370	43.510	14.386
	RN (k)	26.189	54.794	58.925	40.595	46.340	43.364	40.221	45.772	53.603	47.787	81.755	33.078
	RS (k)	24.201	56.351	64.347	53.734	78.542	71.137	63.827	73.212	73.219	54.496	74.226	24.347
	Mmax NB (k-ft)	-56.195	-87.255	-91.529	-47.759	-48.857	-28.377	-31.672	-33.424	-65.145	-68.055	-150.600	-79.035
	Vmax NB (k)	10.781	21.437	24.395	15.460	16.821	11.889	13.851	12.686	18.906	19.334	33.745	14.438
	Mmax SB (k-ft)	-21.699	-71.561	-115.275	-110.230	-194.725	-156.554	-169.416	-159.055	-165.683	-101.025	-101.425	-21.188
Vmax SB (k)	10.281	23.256	29.140	24.427	39.346	30.462	29.049	31.466	32.589	24.126	30.715	9.960	



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 1

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	20.11	12.23	16.59	16.87	16.10

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-230.19	-139.94	-189.91	-193.02	-184.30
Mmax+ (k-ft)	476.06	289.42	392.76	399.20	381.16
Mmax- South (k-ft)	-35.71	-21.71	-29.47	-29.95	-28.60
Vmax North (k)	66.64	40.51	54.98	55.88	53.36
Vmax South (k)	60.83	36.98	50.18	51.01	48.70
RN (k)	110.52	67.19	91.18	92.67	88.49
RS (k)	81.21	49.37	67.00	68.10	65.02

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-230.19	-139.94	-189.91	-193.02	-184.30
Vmax* (k)	51.79	31.49	42.73	43.43	41.47

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-35.71	-21.71	-29.47	-29.95	-28.60
Vmax* (k)	22.64	13.77	18.68	18.99	18.13



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 2

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	27.07	13.98	20.83	23.50	20.02

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-215.47	-111.28	-165.78	-187.04	-159.30
Mmax+ (k-ft)	625.96	323.27	481.60	543.38	462.78
Mmax- South (k-ft)	-115.44	-59.62	-88.82	-100.21	-85.35
Vmax North (k)	88.09	45.49	67.78	76.47	65.13
Vmax South (k)	83.69	43.22	64.39	72.65	61.87
RN (k)	136.59	70.54	105.09	118.57	100.98
RS (k)	122.56	63.29	94.29	106.39	90.61

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-215.47	-111.28	-165.78	-187.04	-159.30
Vmax* (k)	53.89	27.83	41.46	46.78	39.84

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-115.44	-59.62	-88.82	-100.21	-85.35
Vmax* (k)	43.19	22.30	33.23	37.49	31.93


 Made By NRF
 Checked By DWC

 Date 3/1/2012
 Date 3/2/2012

 Job No. P402110046
 Sheet No. _____

 Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**
Section L**Floorbeam 3**

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	26.20	13.76	20.44	22.99	19.67

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-129.99	-68.24	-101.40	-114.07	-97.56
Mmax+ (k-ft)	605.83	318.02	472.58	531.63	454.71
Mmax- South (k-ft)	-184.22	-96.70	-143.70	-161.66	-138.27
Vmax North (k)	82.16	43.13	64.09	72.10	61.67
Vmax South (k)	83.30	43.73	64.98	73.10	62.52
RN (k)	120.85	63.44	94.27	106.05	90.71
RS (k)	129.58	68.02	101.08	113.71	97.26

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-129.99	-68.24	-101.40	-114.07	-97.56
Vmax* (k)	42.99	22.57	33.53	37.72	32.27

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-184.22	-96.70	-143.70	-161.66	-138.27
Vmax* (k)	51.40	26.98	40.10	45.11	38.58



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 4

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	20.13	12.00	17.30	18.77	16.29

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-56.09	-33.45	-48.23	-52.31	-45.39
Mmax+ (k-ft)	465.27	277.50	400.03	433.88	376.52
Mmax- South (k-ft)	-185.78	-110.80	-159.73	-173.24	-150.34
Vmax North (k)	62.61	37.34	53.83	58.38	50.66
Vmax South (k)	64.96	38.75	55.85	60.58	52.57
RN (k)	86.16	51.39	74.07	80.34	69.72
RS (k)	105.89	63.15	91.04	98.74	85.69

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-56.09	-33.45	-48.23	-52.31	-45.39
Vmax* (k)	27.10	16.17	23.30	25.28	21.93

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-185.78	-110.80	-159.73	-173.24	-150.34
Vmax* (k)	46.49	27.73	39.97	43.35	37.62



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 5

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	26.20	13.76	20.44	22.90	19.66

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-73.63	-38.66	-57.44	-64.36	-55.26
Mmax+ (k-ft)	605.66	318.02	472.54	529.46	454.62
Mmax- South (k-ft)	-301.21	-158.16	-235.01	-263.32	-226.10
Vmax North (k)	83.46	43.82	65.11	72.96	62.64
Vmax South (k)	86.19	45.25	67.24	75.34	64.69
RN (k)	106.14	55.73	82.81	92.78	79.67
RS (k)	143.65	75.43	112.08	125.58	107.83

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-73.63	-38.66	-57.44	-64.36	-55.26
Vmax* (k)	25.17	13.21	19.63	22.00	18.89

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-301.21	-158.16	-235.01	-263.32	-226.10
Vmax* (k)	67.84	35.62	52.93	59.30	50.92



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 6

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	26.77	13.90	20.69	23.32	19.89

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-60.24	-31.29	-46.57	-52.47	-44.76
Mmax+ (k-ft)	618.95	321.46	478.48	539.18	459.87
Mmax- South (k-ft)	-336.23	-174.63	-259.93	-292.90	-249.82
Vmax North (k)	82.48	42.84	63.76	71.85	61.28
Vmax South (k)	88.08	45.75	68.09	76.73	65.44
RN (k)	105.03	54.55	81.19	91.49	78.03
RS (k)	150.09	77.95	116.03	130.75	111.52

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-60.24	-31.29	-46.57	-52.47	-44.76
Vmax* (k)	25.06	13.01	19.37	21.83	18.62

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-336.23	-174.63	-259.93	-292.90	-249.82
Vmax* (k)	74.65	38.77	57.71	65.03	55.46


 Made By NRF
 Checked By DWC

 Date 3/1/2012
 Date 3/2/2012

 Job No. P402110046
 Sheet No.

 Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**
Section L**Floorbeam 7**

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	20.83	12.15	17.60	19.16	16.49

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-44.57	-26.00	-37.65	-41.01	-35.28
Mmax+ (k-ft)	481.53	280.92	406.81	443.06	381.21
Mmax- South (k-ft)	-265.81	-155.07	-224.56	-244.57	-210.43
Vmax North (k)	63.74	37.18	53.85	58.65	50.46
Vmax South (k)	68.53	39.98	57.90	63.06	54.25
RN (k)	81.18	47.36	68.58	74.69	64.26
RS (k)	117.27	68.41	99.07	107.90	92.84

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-44.57	-26.00	-37.65	-41.01	-35.28
Vmax* (k)	19.36	11.29	16.36	17.81	15.33

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-265.81	-155.07	-224.56	-244.57	-210.43
Vmax* (k)	58.86	34.34	49.73	54.16	46.60



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 8

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	27.06	13.90	20.71	23.39	19.99

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-68.17	-35.01	-52.18	-58.92	-50.37
Mmax+ (k-ft)	625.63	321.30	478.92	540.75	462.27
Mmax- South (k-ft)	-326.04	-167.44	-249.59	-281.81	-240.91
Vmax North (k)	84.74	43.52	64.87	73.24	62.61
Vmax South (k)	89.03	45.72	68.15	76.95	65.78
RN (k)	107.81	55.37	82.53	93.19	79.66
RS (k)	150.09	77.08	114.90	129.73	110.90

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-68.17	-35.01	-52.18	-58.92	-50.37
Vmax* (k)	25.68	13.19	19.66	22.19	18.97

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-326.04	-167.44	-249.59	-281.81	-240.91
Vmax* (k)	72.85	37.41	55.77	62.96	53.83



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 9

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	27.05	13.89	20.71	23.39	19.99

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-92.42	-47.47	-70.76	-79.89	-68.30
Mmax+ (k-ft)	625.48	321.24	478.85	540.67	462.20
Mmax- South (k-ft)	-280.82	-144.23	-214.99	-242.75	-207.52
Vmax North (k)	89.29	45.86	68.36	77.19	65.98
Vmax South (k)	89.01	45.72	68.15	76.94	65.78
RN (k)	113.24	58.16	86.70	97.89	83.68
RS (k)	144.83	74.38	110.87	125.19	107.02

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-92.42	-47.47	-70.76	-79.89	-68.30
Vmax* (k)	26.62	13.67	20.38	23.01	19.67

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-280.82	-144.23	-214.99	-242.75	-207.52
Vmax* (k)	64.36	33.05	49.27	55.63	47.56



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 10 Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	21.80	12.42	17.91	19.68	16.67

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-91.51	-52.12	-75.17	-82.62	-69.97
Mmax+ (k-ft)	504.03	287.06	414.04	455.08	385.40
Mmax- South (k-ft)	-168.42	-95.92	-138.36	-152.07	-128.78
Vmax North (k)	67.82	38.62	55.71	61.23	51.86
Vmax South (k)	69.77	39.74	57.32	63.00	53.35
RN (k)	98.14	55.90	80.62	88.61	75.04
RS (k)	110.10	62.71	90.44	99.41	84.19

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-91.51	-52.12	-75.17	-82.62	-69.97
Vmax* (k)	33.84	19.27	27.80	30.55	25.87

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-168.42	-95.92	-138.36	-152.07	-128.78
Vmax* (k)	44.78	25.50	36.78	40.43	34.24


 Made By NRF
 Checked By DWC

 Date 3/1/2012
 Date 3/2/2012

 Job No. P402110046
 Sheet No.

 Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**
Section L**Floorbeam 11**

Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	28.81	14.13	21.22	24.21	20.69

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-215.87	-105.89	-159.01	-181.41	-155.04
Mmax+ (k-ft)	666.12	326.73	490.64	559.78	478.41
Mmax- South (k-ft)	-135.69	-66.56	-99.94	-114.03	-97.45
Vmax North (k)	93.22	45.72	68.66	78.34	66.95
Vmax South (k)	89.47	43.89	65.90	75.19	64.26
RN (k)	143.40	70.34	105.63	120.51	102.99
RS (k)	132.35	64.92	97.49	111.23	95.06

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-215.87	-105.89	-159.01	-181.41	-155.04
Vmax* (k)	55.77	27.35	41.08	46.86	40.05

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-135.69	-66.56	-99.94	-114.03	-97.45
Vmax* (k)	47.64	23.37	35.09	40.03	34.21



Made By NRF
 Checked By DWC

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441, Floorbeam Live Load Effects**

Section L

Floorbeam 12 Impact = 30 %

	HS20	2F1	3F1	4F1	5C1
Longitudinal LLDF	20.71	12.36	16.92	17.37	16.43

Interior Floorbeam:

	HS20	2F1	3F1	4F1	5C1
Mmax- North (k-ft)	-257.43	-153.59	-210.26	-215.84	-204.23
Mmax+ (k-ft)	478.94	285.74	391.17	401.56	379.96
Mmax- South (k-ft)	-35.30	-21.06	-28.83	-29.60	-28.01
Vmax North (k)	68.16	40.66	55.67	57.14	54.07
Vmax South (k)	61.48	36.68	50.21	51.54	48.77
RN (k)	115.82	69.10	94.59	97.10	91.88
RS (k)	81.94	48.89	66.93	68.70	65.01

North Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-257.43	-153.59	-210.26	-215.84	-204.23
Vmax* (k)	57.25	34.16	46.76	48.00	45.42

South Bracket:

	HS20	2F1	3F1	4F1	5C1
Mmax- (k-ft)	-35.30	-21.06	-28.83	-29.60	-28.01
Vmax* (k)	22.73	13.56	18.56	19.06	18.03

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
HS20-44	FB 1	North	-56.20	---	-230.19	15.41	66.64	1101.21	2.06	3.43	383.28	2.51	4.19
		Center	78.75	476.06	---	---	---	1521.00	1.37	2.29	490.38	N/A	N/A
		South	-21.70	---	-35.71	13.92	60.83	1993.41	25.36	42.27	597.48	4.39	7.32
		N Bracket	-56.20	---	-230.19	10.78	51.79	1101.21	2.06	3.43	383.28	3.29	5.48
		S Bracket	-21.70	---	-35.71	10.28	22.64	1993.41	25.36	42.27	597.48	11.89	19.82
	FB 2	North	-87.26	---	-215.47	33.36	88.09	1517.91	3.00	5.01	396.40	1.85	3.08
		Center	176.78	625.96	---	---	---	1517.91	0.95	1.58	396.40	N/A	N/A
		South	-71.56	---	-115.44	33.10	83.69	1517.91	5.69	9.48	396.40	1.95	3.24
		N Bracket	-87.26	---	-215.47	21.44	53.89	1253.78	2.44	4.07	289.36	2.24	3.73
		S Bracket	-71.56	---	-115.44	23.26	43.19	1593.81	5.99	9.99	439.32	4.37	7.28
	FB 3	North	-91.53	---	-129.99	34.53	82.16	1394.97	4.52	7.54	363.49	1.79	2.98
		Center	164.69	605.83	---	---	---	1394.97	0.90	1.50	363.49	N/A	N/A
		South	-115.28	---	-184.22	35.21	83.30	1394.97	3.11	5.19	363.49	1.76	2.93
		N Bracket	-91.53	---	-129.99	24.40	42.99	1668.26	5.49	9.16	315.59	3.04	5.07
		S Bracket	-115.28	---	-184.22	29.14	51.40	1604.28	3.64	6.07	441.11	3.61	6.03
	FB 4	North	-47.76	---	-56.09	25.14	62.61	1205.77	9.40	15.66	342.46	2.28	3.80
		Center	134.97	465.27	---	---	---	1205.77	1.02	1.70	342.46	N/A	N/A
		South	-110.23	---	-185.78	29.31	64.96	1205.77	2.64	4.39	342.46	2.16	3.60
		N Bracket	-47.76	---	-56.09	15.46	27.10	1253.78	9.79	16.32	158.20	2.35	3.91
		S Bracket	-110.23	---	-185.78	24.43	46.49	1593.81	3.60	6.00	439.32	4.04	6.73
	FB 5	North	-48.86	---	-73.63	29.52	83.46	1394.97	8.33	13.89	363.49	1.80	2.99
		Center	155.08	605.66	---	---	---	1394.97	0.91	1.51	363.49	N/A	N/A
		South	-194.73	---	-301.21	39.20	86.19	1394.97	1.75	2.91	363.49	1.67	2.79
		N Bracket	-48.86	---	-73.63	16.82	25.17	1198.25	7.10	11.84	163.61	2.60	4.33
S Bracket		-194.73	---	-301.21	39.35	67.84	1604.28	2.07	3.45	441.11	2.65	4.42	
FB 6	North	-28.38	---	-60.24	31.48	82.48	1741.41	13.04	21.74	253.31	1.19	1.98	
	Center	197.09	618.95	---	---	---	1741.41	1.11	1.84	253.31	N/A	N/A	
	South	-156.55	---	-336.23	40.68	88.08	1741.41	2.11	3.51	253.31	1.05	1.75	
	N Bracket	-28.38	---	-60.24	11.89	25.06	1248.92	9.27	15.46	158.66	2.63	4.39	
	S Bracket	-156.55	---	-336.23	30.46	74.65	1244.07	1.43	2.38	310.43	1.67	2.79	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V		C* (k-ft)	Inventory	Operating	C* (kips)	Inventory	Operating		
		D	L+I	L+I	D							L+I	
HS20-44	FB 7	North	-31.67	---	-44.57	26.37	63.74	1394.97	14.00	23.34	363.49	2.38	3.97
		Center	145.82	481.53	---	---	---	1394.97	1.15	1.92	363.49	N/A	N/A
		South	-169.42	---	-265.81	34.78	68.53	1394.97	2.04	3.40	363.49	2.14	3.57
		N Bracket	-31.67	---	-44.57	13.85	19.36	1248.92	12.49	20.82	158.66	3.35	5.58
		S Bracket	-169.42	---	-265.81	29.05	58.86	1244.07	1.77	2.96	299.24	2.05	3.41
	FB 8	North	-33.42	---	-68.17	33.09	84.74	1205.77	7.86	13.10	342.46	1.63	2.71
		Center	203.24	625.63	---	---	---	1205.77	0.69	1.16	342.46	N/A	N/A
		South	-159.06	---	-326.04	41.75	89.03	1205.77	1.41	2.35	342.46	1.49	2.49
		N Bracket	-33.42	---	-68.17	12.69	25.68	1244.07	8.12	13.53	159.12	2.56	4.27
		S Bracket	-159.06	---	-326.04	31.47	72.85	1244.07	1.47	2.44	299.79	1.64	2.73
	FB 9	North	-65.15	---	-92.42	34.70	89.29	1741.41	8.26	13.77	253.31	1.07	1.79
		Center	180.61	625.48	---	---	---	1741.41	1.11	1.85	253.31	N/A	N/A
		South	-165.68	---	-280.82	40.63	89.01	1741.41	2.50	4.17	253.31	1.04	1.73
		N Bracket	-65.15	---	-92.42	18.91	26.62	1239.22	5.76	9.60	159.58	2.34	3.90
		S Bracket	-165.68	---	-280.82	32.59	64.36	1668.26	2.38	3.97	318.94	1.98	3.30
	FB 10	North	-68.06	---	-91.51	28.45	67.82	1205.77	5.63	9.38	342.46	2.08	3.46
		Center	141.83	504.03	---	---	---	1205.77	0.93	1.56	342.46	N/A	N/A
		South	-101.03	---	-168.42	30.37	69.77	1205.77	2.94	4.90	342.46	2.00	3.34
		N Bracket	-68.06	---	-91.51	19.33	33.84	1573.04	7.48	12.46	403.04	5.15	8.58
		S Bracket	-101.03	---	-168.42	24.13	44.78	1244.07	3.04	5.08	305.20	2.82	4.70
FB 11	North	-150.60	---	-215.87	48.01	93.22	1518.80	2.82	4.71	381.51	1.58	2.63	
	Center	224.86	666.12	---	---	---	1518.80	0.85	1.41	381.51	N/A	N/A	
	South	-101.43	---	-135.69	43.51	89.47	1518.80	4.71	7.85	381.51	1.67	2.79	
	N Bracket	-150.60	---	-215.87	33.75	55.77	1609.53	3.02	5.03	403.04	2.97	4.95	
	S Bracket	-101.43	---	-135.69	30.72	47.64	1244.07	3.78	6.30	310.43	2.62	4.36	
FB 12	North	-79.04	---	-257.43	18.64	68.16	1124.61	1.83	3.05	389.63	2.47	4.12	
	Center	80.48	478.94	---	---	---	1538.04	1.38	2.30	494.46	N/A	N/A	
	South	-21.19	---	-35.30	14.39	61.48	2001.87	25.77	42.96	599.29	4.35	7.25	
	N Bracket	-79.04	---	-257.43	14.44	57.25	1124.61	1.83	3.05	389.63	2.99	4.98	
	S Bracket	-21.19	---	-35.30	9.96	22.73	2001.87	25.77	42.96	599.29	11.89	19.82	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

Location	Moment / Shear from STAAD Model						RF - Moment			RF - Shear			
	Unfactored Moment (k-ft)			Unfactored Shear (k)			C*	RF	RF	C*	RF	RF	
	From Rear (Ft)	M+	M-	V									
		D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating	
2F1	FB 1	North	-56.20	---	-139.94	15.41	40.51	1101.21	---	5.65	383.28	---	6.90
		Center	78.75	289.42	---	---	---	1521.00	---	3.77	490.38	---	N/A
		South	-21.70	---	-21.71	13.92	36.98	1993.41	---	69.62	597.48	---	12.05
		N Bracket	-56.20	---	-139.94	10.78	31.49	1101.21	---	5.65	383.28	---	9.02
		S Bracket	-21.70	---	-21.71	10.28	13.77	1993.41	---	69.62	597.48	---	32.64
	FB 2	North	-87.26	---	-111.28	33.36	45.49	1517.91	---	9.71	396.40	---	5.97
		Center	176.78	323.27	---	---	---	1517.91	---	3.07	396.40	---	N/A
		South	-71.56	---	-59.62	33.10	43.22	1517.91	---	18.38	396.40	---	6.29
		N Bracket	-87.26	---	-111.28	21.44	27.83	1253.78	---	7.88	289.36	---	7.23
		S Bracket	-71.56	---	-59.62	23.26	22.30	1593.81	---	19.36	439.32	---	14.11
	FB 3	North	-91.53	---	-68.24	34.53	43.13	1394.97	---	14.38	363.49	---	5.68
		Center	164.69	318.02	---	---	---	1394.97	---	2.86	363.49	---	N/A
		South	-115.28	---	-96.70	35.21	43.73	1394.97	---	9.90	363.49	---	5.59
		N Bracket	-91.53	---	-68.24	24.40	22.57	1668.26	---	17.47	315.59	---	9.68
		S Bracket	-115.28	---	-96.70	29.14	26.98	1604.28	---	11.57	441.11	---	11.50
	FB 4	North	-47.76	---	-33.45	25.14	37.34	1205.77	---	26.30	342.46	---	6.38
		Center	134.97	277.50	---	---	---	1205.77	---	2.86	342.46	---	N/A
		South	-110.23	---	-110.80	29.31	38.75	1205.77	---	7.38	342.46	---	6.04
		N Bracket	-47.76	---	-33.45	15.46	16.17	1253.78	---	27.40	158.20	---	6.57
		S Bracket	-110.23	---	-110.80	24.43	27.73	1593.81	---	10.07	439.32	---	11.31
FB 5	North	-48.86	---	-38.66	29.52	43.82	1394.97	---	26.49	363.49	---	5.71	
	Center	155.08	318.02	---	---	---	1394.97	---	2.89	363.49	---	N/A	
	South	-194.73	---	-158.16	39.20	45.25	1394.97	---	5.55	363.49	---	5.31	
	N Bracket	-48.86	---	-38.66	16.82	13.21	1198.25	---	22.58	163.61	---	8.25	
	S Bracket	-194.73	---	-158.16	39.35	35.62	1604.28	---	6.57	441.11	---	8.42	
FB 6	North	-28.38	---	-31.29	31.48	42.84	1741.41	---	41.91	253.31	---	3.81	
	Center	197.09	321.46	---	---	---	1741.41	---	3.55	253.31	---	N/A	
	South	-156.55	---	-174.63	40.68	45.75	1741.41	---	6.77	253.31	---	3.37	
	N Bracket	-28.38	---	-31.29	11.89	13.01	1248.92	---	29.80	158.66	---	8.47	
	S Bracket	-156.55	---	-174.63	30.46	38.77	1244.07	---	4.58	310.43	---	5.37	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
2F1	FB 7	North	-31.67	---	-26.00	26.37	37.18	1394.97	---	40.05	363.49	---	6.81
		Center	145.82	280.92	---	---	---	1394.97	---	3.30	363.49	---	N/A
		South	-169.42	---	-155.07	34.78	39.98	1394.97	---	5.83	363.49	---	6.12
		N Bracket	-31.67	---	-26.00	13.85	11.29	1248.92	---	35.73	158.66	---	9.58
		S Bracket	-169.42	---	-155.07	29.05	34.34	1244.07	---	5.08	299.24	---	5.86
	FB 8	North	-33.42	---	-35.01	33.09	43.52	1205.77	---	25.54	342.46	---	5.29
		Center	203.24	321.30	---	---	---	1205.77	---	2.25	342.46	---	N/A
		South	-159.06	---	-167.44	41.75	45.72	1205.77	---	4.59	342.46	---	4.85
		N Bracket	-33.42	---	-35.01	12.69	13.19	1244.07	---	26.38	159.12	---	8.32
		S Bracket	-159.06	---	-167.44	31.47	37.41	1244.07	---	4.77	299.79	---	5.32
	FB 9	North	-65.15	---	-47.47	34.70	45.86	1741.41	---	26.85	253.31	---	3.49
		Center	180.61	321.24	---	---	---	1741.41	---	3.61	253.31	---	N/A
		South	-165.68	---	-144.23	40.63	45.72	1741.41	---	8.14	253.31	---	3.37
		N Bracket	-65.15	---	-47.47	18.91	13.67	1239.22	---	18.71	159.58	---	7.60
		S Bracket	-165.68	---	-144.23	32.59	33.05	1668.26	---	7.75	318.94	---	6.44
	FB 10	North	-68.06	---	-52.12	28.45	38.62	1205.77	---	16.49	342.46	---	6.08
		Center	141.83	287.06	---	---	---	1205.77	---	2.74	342.46	---	N/A
		South	-101.03	---	-95.92	30.37	39.74	1205.77	---	8.62	342.46	---	5.86
		N Bracket	-68.06	---	-52.12	19.33	19.27	1573.04	---	21.91	403.04	---	15.08
		S Bracket	-101.03	---	-95.92	24.13	25.50	1244.07	---	8.92	305.20	---	8.26
FB 11	North	-150.60	---	-105.89	48.01	45.72	1518.80	---	9.61	381.51	---	5.37	
	Center	224.86	326.73	---	---	---	1518.80	---	2.89	381.51	---	N/A	
	South	-101.43	---	-66.56	43.51	43.89	1518.80	---	16.03	381.51	---	5.70	
	N Bracket	-150.60	---	-105.89	33.75	27.35	1609.53	---	10.27	403.04	---	10.10	
	S Bracket	-101.43	---	-66.56	30.72	23.37	1244.07	---	12.85	310.43	---	8.90	
FB 12	North	-79.04	---	-153.59	18.64	40.66	1124.61	---	5.12	389.63	---	6.91	
	Center	80.48	285.74	---	---	---	1538.04	---	3.86	494.46	---	N/A	
	South	-21.19	---	-21.06	14.39	36.68	2001.87	---	72.11	599.29	---	12.18	
	N Bracket	-79.04	---	-153.59	14.44	34.16	1124.61	---	5.12	389.63	---	8.35	
	S Bracket	-21.19	---	-21.06	9.96	13.56	2001.87	---	72.11	599.29	---	33.26	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
3F1	FB 1	North	-56.20	---	-189.91	15.41	54.98	1101.21	---	4.16	383.28	---	5.08
		Center	78.75	392.76	---	---	---	1521.00	---	2.78	490.38	---	N/A
		South	-21.70	---	-29.47	13.92	50.18	1993.41	---	51.30	597.48	---	8.88
		N Bracket	-56.20	---	-189.91	10.78	42.73	1101.21	---	4.16	383.28	---	6.65
		S Bracket	-21.70	---	-29.47	10.28	18.68	1993.41	---	51.30	597.48	---	24.05
	FB 2	North	-87.26	---	-165.78	33.36	67.78	1517.91	---	6.52	396.40	---	4.01
		Center	176.78	481.60	---	---	---	1517.91	---	2.06	396.40	---	N/A
		South	-71.56	---	-88.82	33.10	64.39	1517.91	---	12.34	396.40	---	4.22
		N Bracket	-87.26	---	-165.78	21.44	41.46	1253.78	---	5.29	289.36	---	4.85
		S Bracket	-71.56	---	-88.82	23.26	33.23	1593.81	---	13.00	439.32	---	9.47
	FB 3	North	-91.53	---	-101.40	34.53	64.09	1394.97	---	9.68	363.49	---	3.82
		Center	164.69	472.58	---	---	---	1394.97	---	1.92	363.49	---	N/A
		South	-115.28	---	-143.70	35.21	64.98	1394.97	---	6.67	363.49	---	3.76
		N Bracket	-91.53	---	-101.40	24.40	33.53	1668.26	---	11.75	315.59	---	6.51
		S Bracket	-115.28	---	-143.70	29.14	40.10	1604.28	---	7.79	441.11	---	7.74
	FB 4	North	-47.76	---	-48.23	25.14	53.83	1205.77	---	18.24	342.46	---	4.43
		Center	134.97	400.03	---	---	---	1205.77	---	1.98	342.46	---	N/A
		South	-110.23	---	-159.73	29.31	55.85	1205.77	---	5.12	342.46	---	4.19
		N Bracket	-47.76	---	-48.23	15.46	23.30	1253.78	---	19.01	158.20	---	4.56
		S Bracket	-110.23	---	-159.73	24.43	39.97	1593.81	---	6.99	439.32	---	7.84
	FB 5	North	-48.86	---	-57.44	29.52	65.11	1394.97	---	17.83	363.49	---	3.84
		Center	155.08	472.54	---	---	---	1394.97	---	1.94	363.49	---	N/A
		South	-194.73	---	-235.01	39.20	67.24	1394.97	---	3.74	363.49	---	3.58
		N Bracket	-48.86	---	-57.44	16.82	19.63	1198.25	---	15.20	163.61	---	5.55
S Bracket		-194.73	---	-235.01	39.35	52.93	1604.28	---	4.42	441.11	---	5.67	
FB 6	North	-28.38	---	-46.57	31.48	63.76	1741.41	---	28.16	253.31	---	2.56	
	Center	197.09	478.48	---	---	---	1741.41	---	2.39	253.31	---	N/A	
	South	-156.55	---	-259.93	40.68	68.09	1741.41	---	4.55	253.31	---	2.26	
	N Bracket	-28.38	---	-46.57	11.89	19.37	1248.92	---	20.02	158.66	---	5.69	
	S Bracket	-156.55	---	-259.93	30.46	57.71	1244.07	---	3.08	310.43	---	3.61	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

3F1	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
3F1	FB 7	North	-31.67	---	-37.65	26.37	53.85	1394.97	---	27.66	363.49	---	4.70
		Center	145.82	406.81	---	---	---	1394.97	---	2.28	363.49	---	N/A
		South	-169.42	---	-224.56	34.78	57.90	1394.97	---	4.02	363.49	---	4.23
		N Bracket	-31.67	---	-37.65	13.85	16.36	1248.92	---	24.67	158.66	---	6.62
		S Bracket	-169.42	---	-224.56	29.05	49.73	1244.07	---	3.51	299.24	---	4.04
	FB 8	North	-33.42	---	-52.18	33.09	64.87	1205.77	---	17.13	342.46	---	3.55
		Center	203.24	478.92	---	---	---	1205.77	---	1.51	342.46	---	N/A
		South	-159.06	---	-249.59	41.75	68.15	1205.77	---	3.08	342.46	---	3.25
		N Bracket	-33.42	---	-52.18	12.69	19.66	1244.07	---	17.70	159.12	---	5.58
		S Bracket	-159.06	---	-249.59	31.47	55.77	1244.07	---	3.20	299.79	---	3.57
	FB 9	North	-65.15	---	-70.76	34.70	68.36	1741.41	---	18.01	253.31	---	2.34
		Center	180.61	478.85	---	---	---	1741.41	---	2.42	253.31	---	N/A
		South	-165.68	---	-214.99	40.63	68.15	1741.41	---	5.46	253.31	---	2.26
		N Bracket	-65.15	---	-70.76	18.91	20.38	1239.22	---	12.55	159.58	---	5.10
		S Bracket	-165.68	---	-214.99	32.59	49.27	1668.26	---	5.20	318.94	---	4.32
	FB 10	North	-68.06	---	-75.17	28.45	55.71	1205.77	---	11.43	342.46	---	4.22
		Center	141.83	414.04	---	---	---	1205.77	---	1.90	342.46	---	N/A
		South	-101.03	---	-138.36	30.37	57.32	1205.77	---	5.97	342.46	---	4.07
		N Bracket	-68.06	---	-75.17	19.33	27.80	1573.04	---	15.19	403.04	---	10.46
		S Bracket	-101.03	---	-138.36	24.13	36.78	1244.07	---	6.19	305.20	---	5.73
FB 11	North	-150.60	---	-159.01	48.01	68.66	1518.80	---	6.40	381.51	---	3.57	
	Center	224.86	490.64	---	---	---	1518.80	---	1.92	381.51	---	N/A	
	South	-101.43	---	-99.94	43.51	65.90	1518.80	---	10.67	381.51	---	3.79	
	N Bracket	-150.60	---	-159.01	33.75	41.08	1609.53	---	6.84	403.04	---	6.73	
	S Bracket	-101.43	---	-99.94	30.72	35.09	1244.07	---	8.56	310.43	---	5.93	
FB 12	North	-79.04	---	-210.26	18.64	55.67	1124.61	---	3.74	389.63	---	5.05	
	Center	80.48	391.17	---	---	---	1538.04	---	2.82	494.46	---	N/A	
	South	-21.19	---	-28.83	14.39	50.21	2001.87	---	52.67	599.29	---	8.89	
	N Bracket	-79.04	---	-210.26	14.44	46.76	1124.61	---	3.74	389.63	---	6.10	
	S Bracket	-21.19	---	-28.83	9.96	18.56	2001.87	---	52.67	599.29	---	24.30	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
4F1	FB 1	North	-56.20	---	-193.02	15.41	55.88	1101.21	---	4.10	383.28	---	5.00
		Center	78.75	399.20	---	---	---	1521.00	---	2.73	490.38	---	N/A
		South	-21.70	---	-29.95	13.92	51.01	1993.41	---	50.48	597.48	---	8.74
		N Bracket	-56.20	---	-193.02	10.78	43.43	1101.21	---	4.10	383.28	---	6.54
		S Bracket	-21.70	---	-29.95	10.28	18.99	1993.41	---	50.48	597.48	---	23.67
	FB 2	North	-87.26	---	-187.04	33.36	76.47	1517.91	---	5.78	396.40	---	3.55
		Center	176.78	543.38	---	---	---	1517.91	---	1.82	396.40	---	N/A
		South	-71.56	---	-100.21	33.10	72.65	1517.91	---	10.94	396.40	---	3.74
		N Bracket	-87.26	---	-187.04	21.44	46.78	1253.78	---	4.69	289.36	---	4.30
		S Bracket	-71.56	---	-100.21	23.26	37.49	1593.81	---	11.52	439.32	---	8.39
	FB 3	North	-91.53	---	-114.07	34.53	72.10	1394.97	---	8.60	363.49	---	3.40
		Center	164.69	531.63	---	---	---	1394.97	---	1.71	363.49	---	N/A
		South	-115.28	---	-161.66	35.21	73.10	1394.97	---	5.92	363.49	---	3.34
		N Bracket	-91.53	---	-114.07	24.40	37.72	1668.26	---	10.45	315.59	---	5.79
		S Bracket	-115.28	---	-161.66	29.14	45.11	1604.28	---	6.92	441.11	---	6.88
	FB 4	North	-47.76	---	-52.31	25.14	58.38	1205.77	---	16.82	342.46	---	4.08
		Center	134.97	433.88	---	---	---	1205.77	---	1.83	342.46	---	N/A
		South	-110.23	---	-173.24	29.31	60.58	1205.77	---	4.72	342.46	---	3.86
		N Bracket	-47.76	---	-52.31	15.46	25.28	1253.78	---	17.53	158.20	---	4.20
		S Bracket	-110.23	---	-173.24	24.43	43.35	1593.81	---	6.44	439.32	---	7.23
FB 5	North	-48.86	---	-64.36	29.52	72.96	1394.97	---	15.91	363.49	---	3.43	
	Center	155.08	529.46	---	---	---	1394.97	---	1.73	363.49	---	N/A	
	South	-194.73	---	-263.32	39.20	75.34	1394.97	---	3.34	363.49	---	3.19	
	N Bracket	-48.86	---	-64.36	16.82	22.00	1198.25	---	13.56	163.61	---	4.96	
	S Bracket	-194.73	---	-263.32	39.35	59.30	1604.28	---	3.95	441.11	---	5.06	
FB 6	North	-28.38	---	-52.47	31.48	71.85	1741.41	---	24.99	253.31	---	2.27	
	Center	197.09	539.18	---	---	---	1741.41	---	2.12	253.31	---	N/A	
	South	-156.55	---	-292.90	40.68	76.73	1741.41	---	4.04	253.31	---	2.01	
	N Bracket	-28.38	---	-52.47	11.89	21.83	1248.92	---	17.77	158.66	---	5.05	
	S Bracket	-156.55	---	-292.90	30.46	65.03	1244.07	---	2.73	310.43	---	3.20	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
4F1	FB 7	North	-31.67	---	-41.01	26.37	58.65	1394.97	---	25.40	363.49	---	4.32
		Center	145.82	443.06	---	---	---	1394.97	---	2.09	363.49	---	N/A
		South	-169.42	---	-244.57	34.78	63.06	1394.97	---	3.69	363.49	---	3.88
		N Bracket	-31.67	---	-41.01	13.85	17.81	1248.92	---	22.66	158.66	---	6.07
		S Bracket	-169.42	---	-244.57	29.05	54.16	1244.07	---	3.22	299.24	---	3.71
	FB 8	North	-33.42	---	-58.92	33.09	73.24	1205.77	---	15.17	342.46	---	3.15
		Center	203.24	540.75	---	---	---	1205.77	---	1.34	342.46	---	N/A
		South	-159.06	---	-281.81	41.75	76.95	1205.77	---	2.73	342.46	---	2.88
		N Bracket	-33.42	---	-58.92	12.69	22.19	1244.07	---	15.67	159.12	---	4.94
		S Bracket	-159.06	---	-281.81	31.47	62.96	1244.07	---	2.83	299.79	---	3.16
	FB 9	North	-65.15	---	-79.89	34.70	77.19	1741.41	---	15.95	253.31	---	2.07
		Center	180.61	540.67	---	---	---	1741.41	---	2.14	253.31	---	N/A
		South	-165.68	---	-242.75	40.63	76.94	1741.41	---	4.84	253.31	---	2.00
		N Bracket	-65.15	---	-79.89	18.91	23.01	1239.22	---	11.12	159.58	---	4.51
		S Bracket	-165.68	---	-242.75	32.59	55.63	1668.26	---	4.60	318.94	---	3.82
	FB 10	North	-68.06	---	-82.62	28.45	61.23	1205.77	---	10.40	342.46	---	3.84
		Center	141.83	455.08	---	---	---	1205.77	---	1.73	342.46	---	N/A
		South	-101.03	---	-152.07	30.37	63.00	1205.77	---	5.43	342.46	---	3.70
		N Bracket	-68.06	---	-82.62	19.33	30.55	1573.04	---	13.82	403.04	---	9.51
		S Bracket	-101.03	---	-152.07	24.13	40.43	1244.07	---	5.63	305.20	---	5.21
FB 11	North	-150.60	---	-181.41	48.01	78.34	1518.80	---	5.61	381.51	---	3.13	
	Center	224.86	559.78	---	---	---	1518.80	---	1.69	381.51	---	N/A	
	South	-101.43	---	-114.03	43.51	75.19	1518.80	---	9.36	381.51	---	3.32	
	N Bracket	-150.60	---	-181.41	33.75	46.86	1609.53	---	5.99	403.04	---	5.90	
	S Bracket	-101.43	---	-114.03	30.72	40.03	1244.07	---	7.50	310.43	---	5.20	
FB 12	North	-79.04	---	-215.84	18.64	57.14	1124.61	---	3.64	389.63	---	4.92	
	Center	80.48	401.56	---	---	---	1538.04	---	2.75	494.46	---	N/A	
	South	-21.19	---	-29.60	14.39	51.54	2001.87	---	51.31	599.29	---	8.66	
	N Bracket	-79.04	---	-215.84	14.44	48.00	1124.61	---	3.64	389.63	---	5.94	
	S Bracket	-21.19	---	-29.60	9.96	19.06	2001.87	---	51.31	599.29	---	23.67	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

5C1	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
5C1	FB 1	North	-56.20	---	-184.30	15.41	53.36	1101.21	---	4.29	383.28	---	5.24
		Center	78.75	381.16	---	---	---	1521.00	---	2.86	490.38	---	N/A
		South	-21.70	---	-28.60	13.92	48.70	1993.41	---	52.86	597.48	---	9.15
		N Bracket	-56.20	---	-184.30	10.78	41.47	1101.21	---	4.29	383.28	---	6.85
		S Bracket	-21.70	---	-28.60	10.28	18.13	1993.41	---	52.86	597.48	---	24.78
	FB 2	North	-87.26	---	-159.30	33.36	65.13	1517.91	---	6.78	396.40	---	4.17
		Center	176.78	462.78	---	---	---	1517.91	---	2.14	396.40	---	N/A
		South	-71.56	---	-85.35	33.10	61.87	1517.91	---	12.84	396.40	---	4.39
		N Bracket	-87.26	---	-159.30	21.44	39.84	1253.78	---	5.51	289.36	---	5.05
		S Bracket	-71.56	---	-85.35	23.26	31.93	1593.81	---	13.53	439.32	---	9.86
	FB 3	North	-91.53	---	-97.56	34.53	61.67	1394.97	---	10.06	363.49	---	3.97
		Center	164.69	454.71	---	---	---	1394.97	---	2.00	363.49	---	N/A
		South	-115.28	---	-138.27	35.21	62.52	1394.97	---	6.93	363.49	---	3.91
		N Bracket	-91.53	---	-97.56	24.40	32.27	1668.26	---	12.22	315.59	---	6.77
		S Bracket	-115.28	---	-138.27	29.14	38.58	1604.28	---	8.09	441.11	---	8.04
	FB 4	North	-47.76	---	-45.39	25.14	50.66	1205.77	---	19.38	342.46	---	4.70
		Center	134.97	376.52	---	---	---	1205.77	---	2.10	342.46	---	N/A
		South	-110.23	---	-150.34	29.31	52.57	1205.77	---	5.44	342.46	---	4.45
		N Bracket	-47.76	---	-45.39	15.46	21.93	1253.78	---	20.19	158.20	---	4.84
		S Bracket	-110.23	---	-150.34	24.43	37.62	1593.81	---	7.42	439.32	---	8.33
FB 5	North	-48.86	---	-55.26	29.52	62.64	1394.97	---	18.53	363.49	---	3.99	
	Center	155.08	454.62	---	---	---	1394.97	---	2.02	363.49	---	N/A	
	South	-194.73	---	-226.10	39.20	64.69	1394.97	---	3.88	363.49	---	3.72	
	N Bracket	-48.86	---	-55.26	16.82	18.89	1198.25	---	15.79	163.61	---	5.77	
	S Bracket	-194.73	---	-226.10	39.35	50.92	1604.28	---	4.60	441.11	---	5.89	
FB 6	North	-28.38	---	-44.76	31.48	61.28	1741.41	---	29.30	253.31	---	2.67	
	Center	197.09	459.87	---	---	---	1741.41	---	2.48	253.31	---	N/A	
	South	-156.55	---	-249.82	40.68	65.44	1741.41	---	4.74	253.31	---	2.36	
	N Bracket	-28.38	---	-44.76	11.89	18.62	1248.92	---	20.83	158.66	---	5.92	
	S Bracket	-156.55	---	-249.82	30.46	55.46	1244.07	---	3.20	310.43	---	3.76	

CUY-2-1441 Load Rating Analysis

Main Avenue Bridge

Section L - Floorbeam As-Built Ratings

Calculated: NRF 3/1/2012

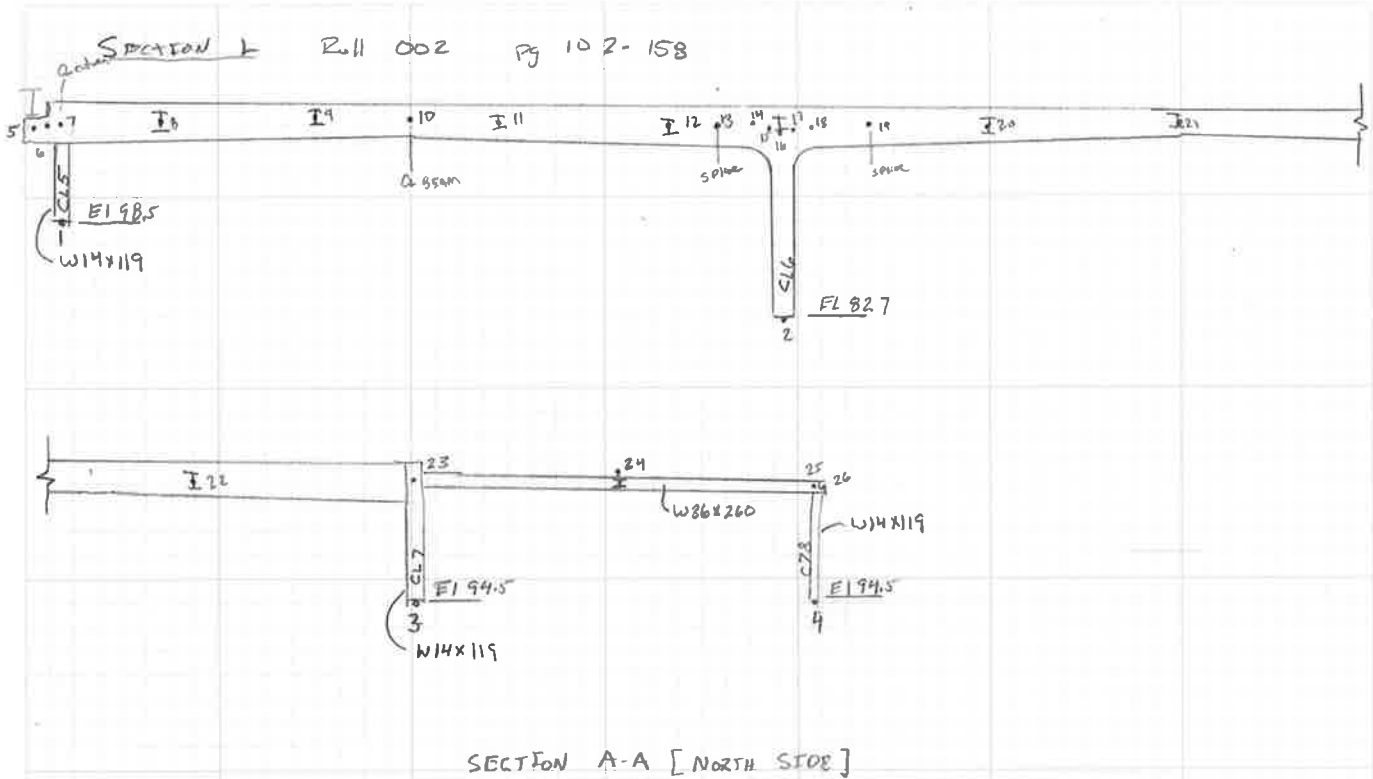
Checked: **DWC** 3/3/2012

*Capacities taken from spreadsheet or hand calculations

5C1	Location	Moment / Shear from STAAD Model					RF - Moment			RF - Shear			
		Unfactored Moment (k-ft)			Unfactored Shear (k)		C*	RF	RF	C*	RF	RF	
		From Rear (Ft)	M+	M-	V								
			D	L+I	L+I	D	L+I	(k-ft)	Inventory	Operating	(kips)	Inventory	Operating
5C1	FB 7	North	-31.67	---	-35.28	26.37	50.46	1394.97	---	29.51	363.49	---	5.02
		Center	145.82	381.21	---	---	---	1394.97	---	2.43	363.49	---	N/A
		South	-169.42	---	-210.43	34.78	54.25	1394.97	---	4.29	363.49	---	4.51
		N Bracket	-31.67	---	-35.28	13.85	15.33	1248.92	---	26.33	158.66	---	7.06
		S Bracket	-169.42	---	-210.43	29.05	46.60	1244.07	---	3.74	299.24	---	4.32
	FB 8	North	-33.42	---	-50.37	33.09	62.61	1205.77	---	17.75	342.46	---	3.68
		Center	203.24	462.27	---	---	---	1205.77	---	1.57	342.46	---	N/A
		South	-159.06	---	-240.91	41.75	65.78	1205.77	---	3.19	342.46	---	3.37
		N Bracket	-33.42	---	-50.37	12.69	18.97	1244.07	---	18.34	159.12	---	5.78
		S Bracket	-159.06	---	-240.91	31.47	53.83	1244.07	---	3.31	299.79	---	3.70
	FB 9	North	-65.15	---	-68.30	34.70	65.98	1741.41	---	18.66	253.31	---	2.43
		Center	180.61	462.20	---	---	---	1741.41	---	2.51	253.31	---	N/A
		South	-165.68	---	-207.52	40.63	65.78	1741.41	---	5.66	253.31	---	2.34
		N Bracket	-65.15	---	-68.30	18.91	19.67	1239.22	---	13.00	159.58	---	5.28
		S Bracket	-165.68	---	-207.52	32.59	47.56	1668.26	---	5.39	318.94	---	4.47
	FB 10	North	-68.06	---	-69.97	28.45	51.86	1205.77	---	12.28	342.46	---	4.53
		Center	141.83	385.40	---	---	---	1205.77	---	2.04	342.46	---	N/A
		South	-101.03	---	-128.78	30.37	53.35	1205.77	---	6.42	342.46	---	4.37
		N Bracket	-68.06	---	-69.97	19.33	25.87	1573.04	---	16.32	403.04	---	11.24
		S Bracket	-101.03	---	-128.78	24.13	34.24	1244.07	---	6.65	305.20	---	6.15
FB 11	North	-150.60	---	-155.04	48.01	66.95	1518.80	---	6.56	381.51	---	3.67	
	Center	224.86	478.41	---	---	---	1518.80	---	1.97	381.51	---	N/A	
	South	-101.43	---	-97.45	43.51	64.26	1518.80	---	10.95	381.51	---	3.89	
	N Bracket	-150.60	---	-155.04	33.75	40.05	1609.53	---	7.01	403.04	---	6.90	
	S Bracket	-101.43	---	-97.45	30.72	34.21	1244.07	---	8.78	310.43	---	6.08	
FB 12	North	-79.04	---	-204.23	18.64	54.07	1124.61	---	3.85	389.63	---	5.20	
	Center	80.48	379.96	---	---	---	1538.04	---	2.90	494.46	---	N/A	
	South	-21.19	---	-28.01	14.39	48.77	2001.87	---	54.23	599.29	---	9.16	
	N Bracket	-79.04	---	-204.23	14.44	45.42	1124.61	---	3.85	389.63	---	6.28	
	S Bracket	-21.19	---	-28.01	9.96	18.03	2001.87	---	54.23	599.29	---	25.02	



FRAME RATINGS



COLUMN HEIGHTS FOR STANO Model

CL5 (Sec 1-7) $\rightarrow 2\frac{1}{2}'' + 8' - 6\frac{3}{4}'' + 1\frac{1}{16}'' + \frac{1}{2}(6' - 1\frac{1}{2}'') + 2(\frac{13}{16}) = 12.0573'$

CL6 (Sec 2-16) $\rightarrow 20' - 5\frac{7}{8}'' + 3' + (9' - 2\frac{3}{8}'' - 5' - 8\frac{1}{16}'') + \frac{1}{2}(5' - 8\frac{1}{16}'') = 27.1016'$

CL7 (Sec 3-23) $\rightarrow 2\frac{1}{2}'' + 15' - 0\frac{1}{16}'' + 5\frac{5}{16}'' + 9'' - \frac{1}{2}(6' - 0\frac{1}{2}'') + 2(\frac{13}{16}) = 13.5229'$

CL8 (Sec 4-26) $\rightarrow 2\frac{1}{2}'' + 11' - 4\frac{1}{4}'' + 1'' + \frac{1}{2}(1' - 9\frac{1}{8}'' + 1 - 3\frac{1}{8}'') = 13.1563'$

GIRDER SECTIONS LENGTHS

SEC 5-6 = $2\frac{1}{4}'' + 4'' = 6\frac{1}{4}'' = 0.5208'$

SEC 6-7 = $1' - 4\frac{1}{2}'' = 6\frac{1}{4}'' = 0.8542'$

SEC 7-8 = $15' - 1\frac{7}{16}'' = 15.1198'$

SEC 8-9 = $20' - 0'' = 20.0'$

SEC 9-10 = $(95' - 17\frac{1}{16}'') \cdot \frac{1}{2} - (15.1198' + 20') = 12.4401'$

SEC 10-11 = $20' - 12.4401' = 7.5599'$

SEC 11-12 = $20'$

SEC 12-13 = $4' - 0\frac{1}{4}'' = 4.0208'$

SEC 13-14 = $20' - 4' - 0\frac{1}{4}'' - 5' - 9'' = 10.2292'$

SEC 14-15 = $5' - 9'' - 1' - 6\frac{1}{4}'' = 4.2292'$

SEC 15-16 = $1' - 6\frac{1}{4}'' = 1.5208'$

SEC 16-17 = $1.5208'$

SEC 17-18 = $4.2292'$

SEC 18-19 = $10.2292'$

SEC 19-20 = $5' - 2\frac{7}{8}'' = 5.2396'$

SEC 20-21 = $21' - 25\frac{1}{8}'' = 21.2188'$

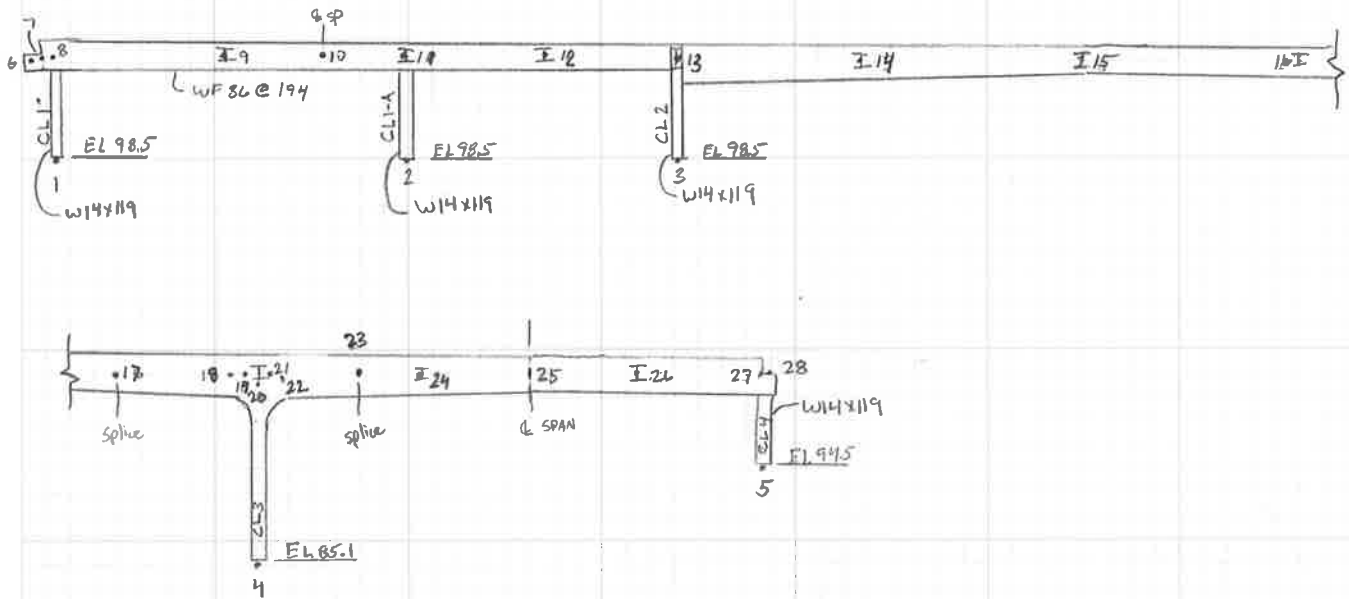
SEC 21-22 = $21' - 2\frac{1}{2}'' = 21.2083'$

SEC 22-23 = $21' - 2\frac{1}{2}'' = 21.2083'$

SEC 23-24 = $23' - 2\frac{5}{16}'' = 23.1927'$

SEC 24-25 = $22' - 25\frac{1}{16}'' - 6\frac{1}{2}'' = 22.6510'$

SEC 25-26 = $6\frac{1}{2}'' = 0.5417'$



SECTION BB - [SOUTH SIDE]

COLUMN HEIGHTS

- CL1 (SEC 1-8) = $2\frac{1}{2}' + 10' - 11\frac{7}{8}" + \frac{1}{2}(36.480) + 1" = 12.8013'$
- CL1-A (SEC 2-11) = $2\frac{1}{2}' + 10' - 9\frac{3}{16}" + 1" + \frac{1}{2}(36.480) = 12.5773'$
- CL2 (SEC 3-13) = $2\frac{1}{2}' + 13' - 2\frac{3}{16}" + 3\frac{5}{8}" - \frac{1}{2}(36.480) + 2(1\frac{13}{16}) = 12.3081'$
- CL3 (SEC 4-20) = $16' - 10\frac{1}{4}" + .3 + (9' - 3" - 5' - 7") + \frac{1}{2}(5' - 7") = 23.5625'$
- CL4 (SEC 5-27) = $2\frac{1}{2}' + 9' - 0\frac{9}{16}" + 1\frac{1}{8}" + \frac{1}{2}(6' - 0\frac{1}{2}") + 2(1\frac{3}{16}) = 12.5052'$

GIRDER LENGTHS

- SEC 6-7 = $3\frac{5}{8}' + 2\frac{1}{4}" = 5\frac{7}{8}" = 0.4895'$
- SEC 7-8 = $1' - 4\frac{3}{4}" = 5\frac{7}{8}" = 0.9063'$
- SEC 8-9 = $21' - 6\frac{13}{16}" - 1' - 4\frac{3}{4}" = 20.1719'$
- SEC 9-10 = $2\frac{3}{4}" + 16' - 9\frac{3}{16}" + 7" + 1\frac{13}{16}" = 17.7292'$
- SEC 10-11 = $2' - 3\frac{3}{4}" = 2.2708'$
- SEC 11-12 = 20'
- SEC 12-13 = 20'
- SEC 13-14 = 20'
- SEC 14-15 = $21' - 2\frac{5}{8}" = 21.2188'$
- SEC 15-16 = $21' - 2\frac{5}{8}" = 21.2188'$
- SEC 16-17 = $21' - 2\frac{1}{2}" - 15' - 11\frac{3}{4}" = 5.2292'$
- SEC 17-18 = $15' - 11\frac{3}{4}" - 5' - 9" = 10.2292'$
- SEC 18-19 = $5' - 9" - 1' - 6\frac{1}{4}" = 4.22917'$
- SEC 19-20 = $1' - 6\frac{1}{4}" = 1.5208'$
- SEC 20-21 = $1' - 6\frac{1}{4}" = 1.5208'$
- SEC 21-22 = 4.2292'
- SEC 22-23 = $15' - 11\frac{3}{4}" - 5' - 9" = 10.2292'$
- SEC 23-24 = $5' - 2\frac{3}{4}" = 5.2292'$
- SEC 24-25 = $\frac{1}{2}(17' - 5") - 21' - 2\frac{1}{2}" = 12.5'$
- SEC 25-26 = $23' - 2\frac{1}{4}" - 12.5' = 10.6875'$
- SEC 26-27 = $23' - 0\frac{1}{4}" - 7" = 22.4375'$
- SEC 27-28 = 7' = 0.5833'

Releases

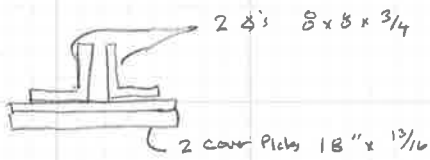
Nodes

1, 2, 3, 4, 5 → Pinned - Supports
 Top of Members 1, 2, 3, 5 Pinned (Release M_y, M_z) } South
 Fictitious Deck End of 102, 105, 108 } North and South
 START OF 103, 106, 109 }
 1, 2, 3, 4 → Supports Pinned
 Top of Members 1, 3, 4 Pinned (Release M_y, M_z) } North

MEMBER PROPERTIES

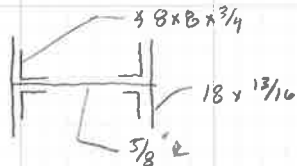
Columns

CL1, CL1-A, CL2, CL4, CL5, CL7, CL8 → W14 x 119
 FOR STAAD - TAPER SECTION w/ EQUIVALENT AREA FOR GIRDERS



Total Area $52.125 \text{ in}^2 / 18" = 2.90"$ - Use as Flange Thickness

COLUMN



Equivalent Cover Plate + A's AREA

Total Area = $37.5 \text{ in}^2 / 18" = 2.083"$ - Use as Flange Thickness

Impact Factors

NORTH GIRDER

SPAN 1 - [STAAD BEAMS 5-14]

$$\frac{50}{125 + 5} \leq 1.3$$

$$\frac{50}{125 + (95')} = 1.227 < 1.3 \quad \text{OK}$$

SPAN 2 - [STAAD Beam 15-22]

$$\frac{50}{125 + (85')} = 1.238 < 1.3 \quad \text{OK}$$

SPAN 3 [STAAD BEAMS 23-25]

$$\frac{50}{125 + (46')} = 1.292 < 1.3 \quad \text{OK}$$

SOUTH GIRDER

SPAN 1 & 2 [STAAD BEAMS 6-12]

$$\frac{50}{125 + 40'} = 1.303 > 1.3 \rightarrow \text{USE } 1.3$$

SPAN 3 [STAAD BEAMS 13-18]

$$\frac{50}{125 + 83'-7"} = 1.240 < 1.3 \quad \text{OK}$$

SPAN 4 [STAAD BEAMS 19-27]

$$\frac{50}{125 + 67'-5"} = 1.260 < 1.3 \quad \text{OK}$$

WEST APPROACH - SECTION L - COLUMNS

WF 14x119

$$A = 34.99 \text{ in}^2$$

$$F_y = 491.8 \text{ ksi}$$

$$h = 14.50 \text{ in}$$

$$S_y = 67.1 \text{ in}^3$$

$$b_f = 14.650 \text{ in}$$

$$r_y = 3.75 \text{ in}$$

$$t_f = 0.938 \text{ in}$$

$$t_w = 0.570 \text{ in}$$

$$I_x = 1373.1 \text{ in}^4$$

$$S_x = 189.4 \text{ in}^3$$

$$r_x = 6.26 \text{ in}$$

- STRONG AXIS PERPENDICULAR TO GIRDERS

CAPACITY - AASHTO 10.54 Concentrically Loaded Columns

$$P_u = 0.85 A_g F_{cr}$$

Check $\frac{K L_c}{r} \leq \sqrt{\frac{2 \pi^2 E}{F_y}}$

$$E = 29,000 \text{ ksi}$$

$$F_y = 33 \text{ ksi}$$

$$r_y: \frac{(1.0)(139.75 \text{ in})}{3.75 \text{ in}} \leq \sqrt{\frac{2(\pi)^2(29,000 \text{ ksi})}{33 \text{ ksi}}}$$

$$K = 1.0 \text{ (Pinned-Pinned) AASHTO Appendix C}$$

$$L_c = 3 \frac{1}{2} \text{ in} + 10 \text{ ft} - 11 \frac{7}{8} \text{ in} = 135.375 \text{ in} \quad \text{CL1 (S) @ FB 1}$$

$$r_y: 37.27 \leq 131.7$$

$$\text{Controls} \rightarrow 3 \frac{1}{2} \text{ in} + 11 \text{ ft} - 4 \frac{1}{4} \text{ in} = 139.75 \text{ in} \quad \text{CL8 (N) @ FB 12}$$

$$r_x: 22.32 \leq 131.7$$

$$F_{cr} = F_y \left[1 - \frac{F_y}{4 \pi^2 E} \left(\frac{K L_c}{r} \right)^2 \right]$$

$$= 33 \text{ ksi} \left[1 - \frac{33 \text{ ksi}}{4 \pi^2 (29,000 \text{ ksi})} (37.27)^2 \right] = 31.679 \text{ ksi}$$

$$P_u = 0.85 (34.99 \text{ in}^2) (31.679 \text{ ksi}) = 942.18 \text{ k}$$

COMBINED AXIAL BENDING

$$\frac{P}{0.85 A_g F_{cr}} + \frac{M C}{A_u (1 - \frac{P}{A_u F_{cr}})} \leq 1.0$$

$$C = 0.6 + 0.4 \frac{M_{max}}{M_u} = 0.6 \quad M_{max} = 0$$

$$F_{cr} = 31.679 \text{ ksi}$$

$$F_{ex} = \frac{E \pi^2}{\left(\frac{K L_c}{r} \right)^2} = \frac{29,000 \text{ ksi} \pi^2}{(37.27)^2} = 206,053 \text{ ksi}$$

$$F_{ey} = 574.526 \text{ ksi}$$

COLUMN COMPACTNESS CHECK

$$\frac{b}{t} \leq \frac{410}{\sqrt{F_y}} = 22.62$$

$$\frac{b}{t} = \frac{14.650 \text{ in}}{0.938 \text{ in}} = 15.6183 < 22.62 \quad \checkmark$$

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}} = 105.86$$

$$\frac{D}{t_w} = \frac{1450 - 2(0.938)}{0.570} = 22.147 < 105.86 \quad \checkmark$$

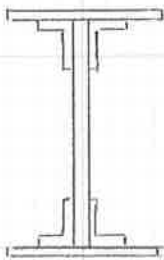
$$\frac{L_b}{r_y} \leq \left(3.6 - 2.2 \frac{M_u}{M_p} \right) \times 109.1 = 109.1$$

$$\frac{L_b}{r_y} = \frac{139.75 \text{ in}}{3.75 \text{ in}} = 37.27 < 109.1 \quad \checkmark$$

THEREFOR COMPACT SECTION $M_u = F_y Z = 33 \text{ ksi} (212 \text{ in}^3) = 583 \text{ k-ft} = M_u$

WEST APPROACH SECTION L-COLUMNS CONT.

BUILT-UP SECTION



Properties Taken From Excel Sheet Built-Up Column Sections
in G:\CL11\0046\Bridge\Analysis\West Approach\Section L\STAAD

$A = 97.81 \text{ in}^2$	$I_x = 24666.88 \text{ in}^4$	$I_y = 1376.14 \text{ in}^4$
$h = 36.5" \text{ b/b } \bar{x}'s$	$S_x = 1294.0 \text{ in}^3$	$S_y = 152.9 \text{ in}^3$
$b_f = 18"$	$r_x = 15.8803 \text{ in}$	$r_y = 3.7509 \text{ in}$
$e_f = 0.8125$		
$e_w = 0.625$		

-STRONG AXIS TO GIRDERS

CAPACITY - AASHTO 10.54 Concentrically Loaded Columns

$$P_u = 0.85 A_s F_{cr}$$

Check $\frac{KL_c}{r} \leq \sqrt{\frac{270^2 E}{F_y}}$

$E = 29,000 \text{ ksi}, F_y = 33 \text{ ksi}$

$K = 0.8$ (Pinned Fixed) AASHTO Appendix C

$r_y: \frac{0.8(245.875")}{3.7509"} \leq 131.7$

$L_c = 20' - 5 \frac{7}{8}" = 245.875"$

CL6 (N) @ FB6 ← Controls

$16' - 10 \frac{1}{4}" = 202.25"$

CL3 (S) @ FB9

$r_y: 52.357 < 131.7 \checkmark$

$r_x: 12.5554 < 131.7$

$$F_{cr} = F_y \left[1 - \frac{F_y}{47^2 E} \left(\frac{KL_c}{r} \right)^2 \right] = 33 \text{ ksi} \left[1 - \frac{33 \text{ ksi}}{47^2 (29,000 \text{ ksi})} (52.357)^2 \right]$$

$F_{cr} = 30.393 \text{ ksi}$

$P_u = 0.85 (97.81 \text{ in}^2) (30.393 \text{ ksi}) = \underline{2518.78 \text{ kips}}$

COMBINED AXIAL BENDING

$$\frac{P}{0.85 A_s F_{cr}} + \frac{M_C}{M_u \left(1 - \frac{P}{A_s F_{cr}} \right)} \leq 1.0$$

$C = 0.16 + 0.4 \frac{M_{small}}{M_{large}} = 0.16$

$F_{cr} = 30.393 \text{ ksi}$

$F_e = \frac{E \pi^2}{\left(\frac{KL_c}{r} \right)^2} \Rightarrow F_{ey} = 104.41 \text{ ksi}$
 $F_{ex} = 1815.67 \text{ ksi}$

COLUMN COMPACTNESS CHECK

$\frac{b_f}{e} \leq 22.62 \Rightarrow \frac{18}{0.8125} = 22.15 < 22.62 \checkmark$

$\frac{D}{e_w} \leq 105.86 \Rightarrow \frac{36}{0.625} = 57.6 < 105.86 \checkmark$

$\frac{L_b}{r_y} \leq 109.1 \Rightarrow \frac{245.875}{3.7509} = 65.45 < 109.1 \checkmark$

THEREFORE COMPACT SECTION

$M_u = F_y Z$
Page 981 of 1181
 $M_u = 33 \text{ ksi} (1702.07 \text{ in}^3) = 4680.69 \text{ k-ft}$

$Z = 1702.07 \text{ in}^3$ For Column Properties Sheet

SECTION L

North Girder Section 5



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

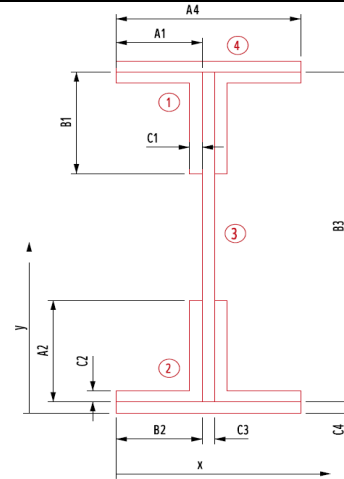
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 48.8750$ in
 $d_o = 8.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 5

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		9.0000	50.1250	451.1250	0.4219	32.7324	9642.6963	9643.1182
	Vertical Leg		7.8750	47.1250	371.1094	18.0879	29.7324	6961.6279	6979.7157
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	15.3926	2843.1817	2843.7442
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	11.3926	1411.4782	1459.1129
3	Web Plate		30.5469	26.0625	796.1279	6080.7771	8.6699	2296.1276	8376.9047
4	Cover Plate Top		0.0000	51.3125	0.0000	0.0000	33.9199	0.0000	0.0000
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	16.5801	8040.8065	8047.2430
Total			99.55		1731.38	6153.92		31195.92	37349.84
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	17.3926	in	$S_{top} = 1075.36$ in ³	y-bar =	17.3926	in	$S_{top} = 1075.36$ in ³
$I_x =$	37349.84	in ⁴	$S_{bott.} = 2147.46$ in ³	$I_x =$	37349.84	in ⁴	$S_{bott.} = 2147.46$ in ³
$C_{top} =$	34.7324	in	$A = 99.5469$ in ²	$C_{top} =$	34.7324	in	$A = 99.5469$ in ²
$C_{bottom} =$	17.3926	in	$r_x = 19.3700$ in	$C_{bottom} =$	17.3926	in	$r_x = 19.3700$ in
			$Z = 1565.1811$ in ³				$Z = 1565.1811$ in ³



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	4.5000	5.6875	25.5938	13.5000	3.3125	49.3770	62.8770
	Vertical Leg	3.9375	8.3125	32.7305	0.1846	0.6875	1.8611	2.0457
1 (Right)	Horizontal Leg	4.5000	12.3125	55.4063	13.5000	3.3125	49.3770	62.8770
	Vertical Leg	3.9375	9.6875	38.1445	0.1846	0.6875	1.8611	2.0457
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	30.5469	9.0000	274.9219	0.9944	0.0000	0.0000	0.9944
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		128.80		1159.17	1672.37		330.79	2003.16
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 222.57 in ³	x-bar =	9.0000	in	S _{right} = 222.57 in ³
I _y =	2003.16	in ⁴	S _{left} = 222.57 in ³	I _y =	2003.16	in ⁴	S _{left} = 222.57 in ³
C _{right} =	9.0000	in	A = 128.7969 in ²	C _{right} =	9.0000	in	A = 128.7969 in ²
C _{left} =	9.0000	in	r _y = 3.9437 in	C _{left} =	9.0000	in	r _y = 3.9437 in

Non-composite Capacities*		
	AB	AI
M	4304.25 k-ft	4304.25 k-ft
V	584.67 k	584.67 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 6



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

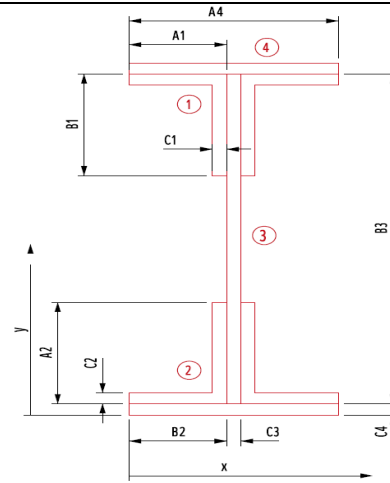
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 73.5000$ in
 $d_o = 6.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 6

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	74.7500	897.0000	0.5625	36.3750	15877.6875	15878.2500
	Vertical Leg		10.8750	70.7500	769.4063	47.6348	32.3750	11398.5293	11446.1641
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	36.3750	15877.6875	15878.2500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	32.3750	11398.5293	11446.1641
3	Web Plate		45.9375	38.3750	1762.8516	20680.4883	0.0000	0.0000	20680.4883
4	Cover Plate Top		29.2500	75.9375	2221.1719	6.4365	37.5625	41270.0361	41276.4727
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	37.5625	41270.0361	41276.4727
Total			150.19		5763.45	20789.76		137092.51	157882.26
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	38.3750	in	$S_{top} = 4114.20$	in ³	y-bar =	38.3750	in	$S_{top} = 4114.20$	in ³		
$I_x =$	157882.26	in ⁴	$S_{bott.} = 4114.20$	in ³	$I_x =$	157882.26	in ⁴	$S_{bott.} = 4114.20$	in ³		
$C_{top} =$	38.3750	in	A =	150.1875	in ²	$C_{top} =$	38.3750	in	A =	150.1875	in ²
$C_{bottom} =$	38.3750	in	$r_x =$	32.4227	in	$C_{bottom} =$	38.3750	in	$r_x =$	32.4227	in
			Z =	4618.6641	in ³				Z =	4618.6641	in ³

SECTION L

North Girder Section 6



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	45.9375	9.0000	413.4375	1.4954	0.0000	0.0000	1.4954
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		150.19		1351.69	1710.01		456.62	2166.64
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.74 in ³	x-bar =	9.0000	in	S _{right} = 240.74 in ³
I _y =	2166.64	in ⁴	S _{left} = 240.74 in ³	I _y =	2166.64	in ⁴	S _{left} = 240.74 in ³
C _{right} =	9.0000	in	A = 150.1875 in ²	C _{right} =	9.0000	in	A = 150.1875 in ²
C _{left} =	9.0000	in	r _y = 3.7982 in	C _{left} =	9.0000	in	r _y = 3.7982 in

Non-composite Capacities*		
	AB	AI
M	11314.04 k-ft	11314.04 k-ft
V	879.24 k	879.24 k

*Noncompact Section

F_y = 33.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



Made By SFH
 Checked By CTG
 Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Date 3/1/2012
 Date 3/2/2012
 Job No. P402110046
 Sheet No.

Element Dimensions (without Section Losses):

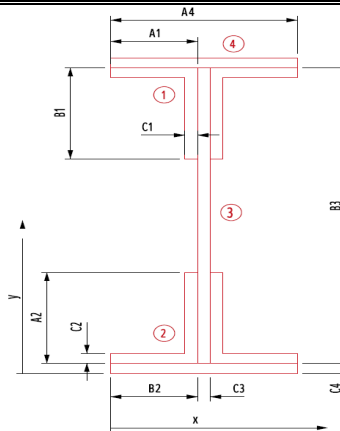
Top Angles: $A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles: $B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:
 $C_3 = 0.6250$ in
 $B_3 = 72.5000$ in

$d_o = 61.4375$ in
 $d_o =$ stiffener spacing for shear check
 Use "N/A" for no stiffeners

Cover Plate:
 $C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 7

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	12.0000	73.7500	885.0000	0.5625	35.8750	15444.1875	15444.7500
	Vertical Leg	10.8750	69.7500	758.5313	47.6348	31.8750	11049.1699	11096.8047
2	Horizontal Leg	12.0000	2.0000	24.0000	0.5625	35.8750	15444.1875	15444.7500
	Vertical Leg	10.8750	6.0000	65.2500	47.6348	31.8750	11049.1699	11096.8047
3	Web Plate	45.3125	37.8750	1716.2109	19847.8190	0.0000	0.0000	19847.8190
4	Cover Plate Top	29.2500	74.9375	2191.9219	6.4365	37.0625	40178.6455	40185.0820
	Cover Plate Bottom	29.2500	0.8125	23.7656	6.4365	37.0625	40178.6455	40185.0820
Total		149.56		5664.68	19957.09		133344.01	153301.09
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	37.8750	in	$S_{top} = 4047.55$	in ³	y-bar =	37.8750	in	$S_{top} = 4047.55$	in ³		
$I_x =$	153301.09	in ⁴	$S_{bott.} = 4047.55$	in ³	$I_x =$	153301.09	in ⁴	$S_{bott.} = 4047.55$	in ³		
$C_{top} =$	37.8750	in	A =	149.5625	in ²	$C_{top} =$	37.8750	in	A =	149.5625	in ²
$C_{bottom} =$	37.8750	in	$r_x =$	32.0156	in	$C_{bottom} =$	37.8750	in	$r_x =$	32.0156	in
			Z =	4543.7266	in ³				Z =	4543.7266	in ³



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012
Revised: CTG 4/16/2012

Job No. P402110046
Sheet No.

Calculations For: CUY-2-1441

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
(Left)	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
(Right)	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
(Left)	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
(Right)	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	45.3125	9.0000	407.8125	1.4750	0.0000	0.0000	1.4750
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		149.56		1346.06	1709.99		456.62	2166.62
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.74 in ³	x-bar =	9.0000	in	S _{right} = 240.74 in ³
I _y =	2166.62	in ⁴	S _{left} = 240.74 in ³	I _y =	2166.62	in ⁴	S _{left} = 240.74 in ³
c _{right} =	9.0000	in	A = 149.5625 in ²	c _{right} =	9.0000	in	A = 149.5625 in ²
c _{left} =	9.0000	in	r _y = 3.8061 in	c _{left} =	9.0000	in	r _y = 3.8061 in

Non-composite Capacities*		
	AB	AI
M	11130.77 k-ft	11130.77 k-ft
V	854.10 k	854.10 k

*Noncompact Section

F_y = 33.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



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Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No.

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

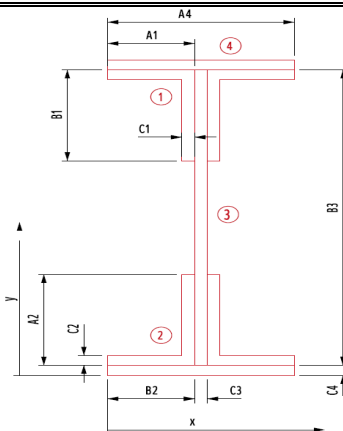
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 62.8750$ in
 $d_o = 60.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 8

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	12.0000	64.1250	769.5000	0.5625	31.0625	11578.5469	11579.1094
	Vertical Leg	10.8750	60.1250	653.8594	47.6348	27.0625	7964.6206	8012.2554
2	Horizontal Leg	12.0000	2.0000	24.0000	0.5625	31.0625	11578.5469	11579.1094
	Vertical Leg	10.8750	6.0000	65.2500	47.6348	27.0625	7964.6206	8012.2554
3	Web Plate	39.2969	33.0625	1299.2529	12945.9154	0.0000	0.0000	12945.9154
4	Cover Plate Top	29.2500	65.3125	1910.3906	6.4365	32.2500	30421.8281	30428.2646
	Cover Plate Bottom	29.2500	0.8125	23.7656	6.4365	32.2500	30421.8281	30428.2646
Total		143.55		4746.02	13055.18		99929.99	112985.17
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total				0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	33.0625	in	$S_{top} = 3417.32$	in ³	y-bar =	33.0625	in	$S_{top} = 3417.32$	in ³		
$I_x =$	112985.17	in ⁴	$S_{bott.} = 3417.32$	in ³	$I_x =$	112985.17	in ⁴	$S_{bott.} = 3417.32$	in ³		
$C_{top} =$	33.0625	in	A =	143.5469	in ²	$C_{top} =$	33.0625	in	A =	143.5469	in ²
$C_{bottom} =$	33.0625	in	$r_x =$	28.0552	in	$C_{bottom} =$	33.0625	in	$r_x =$	28.0552	in
			Z =	3838.4321	in ³				Z =	3838.4321	in ³



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Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No.

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
(Left)	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
(Right)	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
(Left)	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
(Right)	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	39.2969	9.0000	353.6719	1.2792	0.0000	0.0000	1.2792
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		143.55		1291.92	1709.80		456.62	2166.42
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.71 in ³	x-bar =	9.0000	in	S _{right} = 240.71 in ³
I _y =	2166.42	in ⁴	S _{left} = 240.71 in ³	I _y =	2166.42	in ⁴	S _{left} = 240.71 in ³
c _{right} =	9.0000	in	A = 143.5469 in ²	c _{right} =	9.0000	in	A = 143.5469 in ²
c _{left} =	9.0000	in	r _y = 3.8849 in	c _{left} =	9.0000	in	r _y = 3.8849 in

Non-composite Capacities*		
	AB	AI
M	10555.69 k-ft	10555.69 k-ft
V	752.14 k	752.14 k

*Compact Section

F_y = 33.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 9



Made By SFH Date 3/1/2012
 Checked By CTG Date 3/2/2012
 Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Job No. P402110046
 Sheet No. _____

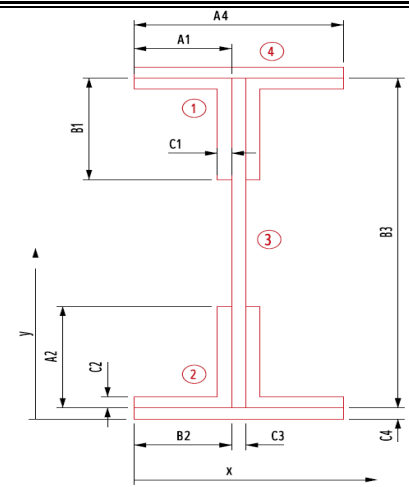
Element Dimensions (without Section Losses):

Top Angles: $A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles: $B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate: $C_3 = 0.6250$ in
 $B_3 = 55.7500$ in
 $d_o = 60.0000$ in
 $d_o =$ stiffener spacing for shear check
 Use "N/A" for no stiffeners

Cover Plate:
 $C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 9

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	12.0000	57.0000	684.0000	0.5625	27.5000	9075.0000	9075.5625
	Vertical Leg	10.8750	53.0000	576.3750	47.6348	23.5000	6005.7188	6053.3535
2	Horizontal Leg	12.0000	2.0000	24.0000	0.5625	27.5000	9075.0000	9075.5625
	Vertical Leg	10.8750	6.0000	65.2500	47.6348	23.5000	6005.7188	6053.3535
3	Web Plate	34.8438	29.5000	1027.8906	9024.7127	0.0000	0.0000	9024.7127
4	Cover Plate Top	29.2500	58.1875	1701.9844	6.4365	28.6875	24071.9502	24078.3867
	Cover Plate Bottom	29.2500	0.8125	23.7656	6.4365	28.6875	24071.9502	24078.3867
Total		139.09		4103.27	9133.98		78305.34	87439.32
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	29.5000	in	S _{top} =	2964.04	in ³	y-bar =	29.5000	in	S _{top} =	2964.04	in ³
I _x =	87439.32	in ⁴	S _{bottom} =	2964.04	in ³	I _x =	87439.32	in ⁴	S _{bottom} =	2964.04	in ³
C _{top} =	29.5000	in	A =	139.0938	in ²	C _{top} =	29.5000	in	A =	139.0938	in ²
C _{bottom} =	29.5000	in	r _x =	25.0726	in	C _{bottom} =	29.5000	in	r _x =	25.0726	in
			Z =	3334.9785	in ³				Z =	3334.9785	in ³

SECTION L

North Girder Section 9



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	34.8438	9.0000	313.5938	1.1342	0.0000	0.0000	1.1342
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		139.09		1251.84	1709.65		456.62	2166.28
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.70 in ³	x-bar =	9.0000	in	S _{right} = 240.70 in ³
I _y =	2166.28	in ⁴	S _{left} = 240.70 in ³	I _y =	2166.28	in ⁴	S _{left} = 240.70 in ³
C _{right} =	9.0000	in	A = 139.0938 in ²	C _{right} =	9.0000	in	A = 139.0938 in ²
C _{left} =	9.0000	in	r _y = 3.9464 in	C _{left} =	9.0000	in	r _y = 3.9464 in

Non-composite Capacities*		
	AB	AI
M	9171.19 k-ft	9171.19 k-ft
V	666.91 k	666.91 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 10



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

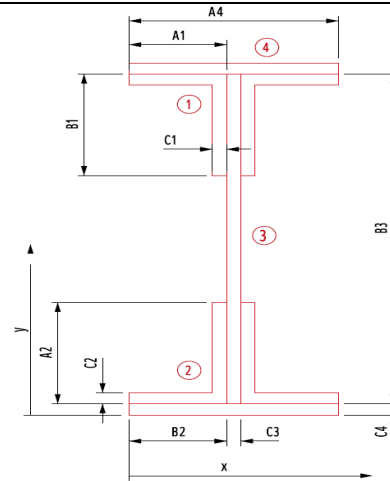
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 54.5000$ in
 $d_o = 60.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 10

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	55.7500	669.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	51.7500	562.7813	47.6348	22.8750	5690.5137	5738.1484
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	22.8750	5690.5137	5738.1484
3	Web Plate		34.0625	28.8750	983.5547	8431.1784	0.0000	0.0000	8431.1784
4	Cover Plate Top		29.2500	56.9375	1665.4219	6.4365	28.0625	23034.4893	23040.9258
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	28.0625	23034.4893	23040.9258
Total			138.31		3993.77	8540.45		74784.38	83324.83
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³	y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³		
$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³	$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³		
$C_{top} =$	28.8750	in	A =	138.3125	in ²	$C_{top} =$	28.8750	in	A =	138.3125	in ²
$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in	$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in
			Z =	3248.2891	in ³				Z =	3248.2891	in ³

SECTION L

North Girder Section 10



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	34.0625	9.0000	306.5625	1.1088	0.0000	0.0000	1.1088
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		138.31		1244.81	1709.63		456.62	2166.25
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.69 in ³	x-bar =	9.0000	in	S _{right} = 240.69 in ³
I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³	I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³
C _{right} =	9.0000	in	A = 138.3125 in ²	C _{right} =	9.0000	in	A = 138.3125 in ²
C _{left} =	9.0000	in	r _y = 3.9575 in	C _{left} =	9.0000	in	r _y = 3.9575 in

Non-composite Capacities*		
	AB	AI
M	8932.79 k-ft	8932.79 k-ft
V	651.96 k	651.96 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 11



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

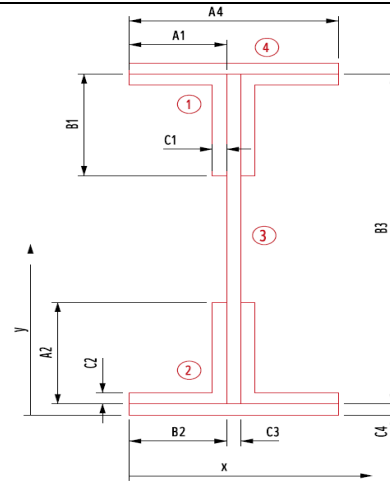
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 55.0000$ in
 $d_o = 60.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 11

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	56.2500	675.0000	0.5625	27.1250	8829.1875	8829.7500
	Vertical Leg		10.8750	52.2500	568.2188	47.6348	23.1250	5815.5762	5863.2109
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	27.1250	8829.1875	8829.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	23.1250	5815.5762	5863.2109
3	Web Plate		34.3750	29.1250	1001.1719	8665.3646	0.0000	0.0000	8665.3646
4	Cover Plate Top		29.2500	57.4375	1680.0469	6.4365	28.3125	23446.7314	23453.1680
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	28.3125	23446.7314	23453.1680
Total			138.63		4037.45	8774.63		76182.99	84957.62
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	29.1250	in	$S_{top} =$	2917.00	in ³	y-bar =	29.1250	in	$S_{top} =$	2917.00	in ³
$I_x =$	84957.62	in ⁴	$S_{bott.} =$	2917.00	in ³	$I_x =$	84957.62	in ⁴	$S_{bott.} =$	2917.00	in ³
$C_{top} =$	29.1250	in	A =	138.6250	in ²	$C_{top} =$	29.1250	in	A =	138.6250	in ²
$C_{bottom} =$	29.1250	in	$r_x =$	24.7560	in	$C_{bottom} =$	29.1250	in	$r_x =$	24.7560	in
			Z =	3282.9063	in ³				Z =	3282.9063	in ³

SECTION L

North Girder Section 11



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	34.3750	9.0000	309.3750	1.1190	0.0000	0.0000	1.1190
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		138.63		1247.63	1709.64		456.62	2166.26
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.70 in ³	x-bar =	9.0000	in	S _{right} = 240.70 in ³
I _y =	2166.26	in ⁴	S _{left} = 240.70 in ³	I _y =	2166.26	in ⁴	S _{left} = 240.70 in ³
C _{right} =	9.0000	in	A = 138.6250 in ²	C _{right} =	9.0000	in	A = 138.6250 in ²
C _{left} =	9.0000	in	r _y = 3.9531 in	C _{left} =	9.0000	in	r _y = 3.9531 in

Non-composite Capacities*		
	AB	AI
M	9027.99 k-ft	9027.99 k-ft
V	657.94 k	657.94 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 12



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

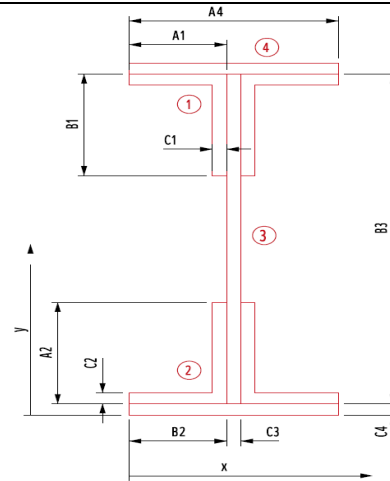
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 60.5625$ in
 $d_o = 60.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 2.5000$ in
 $A_4 = 18.0000$ in



Girder Section 12

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	62.6875	752.2500	0.5625	29.9063	10732.6055	10733.1680
	Vertical Leg		10.8750	58.6875	638.2266	47.6348	25.9063	7298.5800	7346.2147
2	Horizontal Leg		12.0000	2.8750	34.5000	0.5625	29.9063	10732.6055	10733.1680
	Vertical Leg		10.8750	6.8750	74.7656	47.6348	25.9063	7298.5800	7346.2147
3	Web Plate		37.8516	32.7813	1240.8215	11569.3818	0.0000	0.0000	11569.3818
4	Cover Plate Top		45.0000	64.3125	2894.0625	23.4375	31.5313	44739.8877	44763.3252
	Cover Plate Bottom		45.0000	1.2500	56.2500	23.4375	31.5313	44739.8877	44763.3252
Total			173.60		5690.88	11712.65		125542.15	137254.80
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	32.7813	in	$S_{top} = 4186.99$	in ³	y-bar =	32.7813	in	$S_{top} = 4186.99$	in ³		
$I_x =$	137254.80	in ⁴	$S_{bott.} = 4186.99$	in ³	$I_x =$	137254.80	in ⁴	$S_{bott.} = 4186.99$	in ³		
$C_{top} =$	32.7813	in	A =	173.6016	in ²	$C_{top} =$	32.7813	in	A =	173.6016	in ²
$C_{bottom} =$	32.7813	in	$r_x =$	28.1182	in	$C_{bottom} =$	32.7813	in	$r_x =$	28.1182	in
			Z =	4692.1198	in ³				Z =	4692.1198	in ³

SECTION L

North Girder Section 12



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	37.8516	9.0000	340.6641	1.2321	0.0000	0.0000	1.2321
4	Cover Plate	90.0000	9.0000	810.0000	2430.0000	0.0000	0.0000	2430.0000
Total		173.60		1562.41	2560.25		456.62	3016.88
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 335.21 in ³	x-bar =	9.0000	in	S _{right} = 335.21 in ³
I _y =	3016.88	in ⁴	S _{left} = 335.21 in ³	I _y =	3016.88	in ⁴	S _{left} = 335.21 in ³
C _{right} =	9.0000	in	A = 173.6016 in ²	C _{right} =	9.0000	in	A = 173.6016 in ²
C _{left} =	9.0000	in	r _y = 4.1687 in	C _{left} =	9.0000	in	r _y = 4.1687 in

Non-composite Capacities*		
	AB	AI
M	12903.33 k-ft	12903.33 k-ft
V	724.48 k	724.48 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 13



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

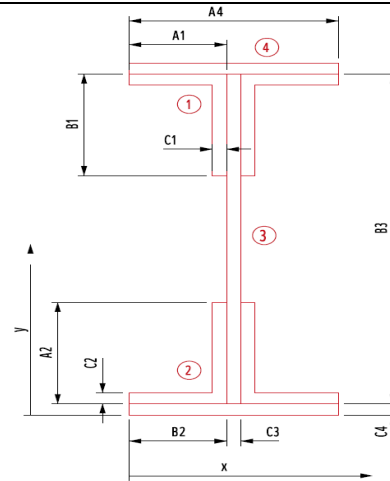
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 62.3750$ in
 $d_o = 63.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 2.5000$ in
 $A_4 = 18.0000$ in



Girder Section 13

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	64.5000	774.0000	0.5625	30.8125	11392.9219	11393.4844
	Vertical Leg		10.8750	60.5000	657.9375	47.6348	26.8125	7818.1479	7865.7827
2	Horizontal Leg		12.0000	2.8750	34.5000	0.5625	30.8125	11392.9219	11393.4844
	Vertical Leg		10.8750	6.8750	74.7656	47.6348	26.8125	7818.1479	7865.7827
3	Web Plate		38.9844	33.6875	1313.2861	12639.5161	0.0000	0.0000	12639.5161
4	Cover Plate Top		45.0000	66.1250	2975.6250	23.4375	32.4375	47348.6133	47372.0508
	Cover Plate Bottom		45.0000	1.2500	56.2500	23.4375	32.4375	47348.6133	47372.0508
Total			174.73		5886.36	12782.79		133119.37	145902.15
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	33.6875	in	$S_{top} = 4331.05$	in ³	y-bar =	33.6875	in	$S_{top} = 4331.05$	in ³		
$I_x =$	145902.15	in ⁴	$S_{bott.} = 4331.05$	in ³	$I_x =$	145902.15	in ⁴	$S_{bott.} = 4331.05$	in ³		
$C_{top} =$	33.6875	in	A =	174.7344	in ²	$C_{top} =$	33.6875	in	A =	174.7344	in ²
$C_{bottom} =$	33.6875	in	$r_x =$	28.8963	in	$C_{bottom} =$	33.6875	in	$r_x =$	28.8963	in
			Z =	4849.9595	in ³				Z =	4849.9595	in ³



Made By SFH
 Checked By CTG

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:
 Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	38.9844	9.0000	350.8594	1.2690	0.0000	0.0000	1.2690
4	Cover Plate	90.0000	9.0000	810.0000	2430.0000	0.0000	0.0000	2430.0000
Total		174.73		1572.61	2560.29		456.62	3016.91
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 335.21 in ³	x-bar =	9.0000	in	S _{right} = 335.21 in ³
I _y =	3016.91	in ⁴	S _{left} = 335.21 in ³	I _y =	3016.91	in ⁴	S _{left} = 335.21 in ³
C _{right} =	9.0000	in	A = 174.7344 in ²	C _{right} =	9.0000	in	A = 174.7344 in ²
C _{left} =	9.0000	in	r _y = 4.1552 in	C _{left} =	9.0000	in	r _y = 4.1552 in

Non-composite Capacities*		
	AB	AI
M	13337.39 k-ft	13337.39 k-ft
V	746.16 k	746.16 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

North Girder Section 14



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

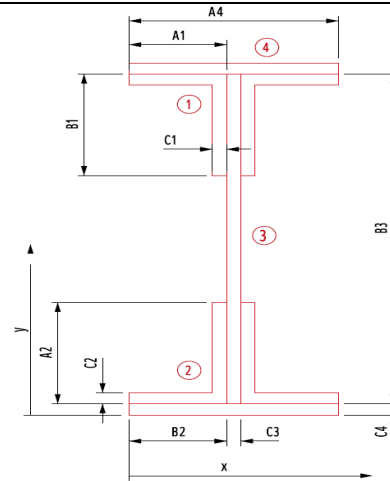
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 68.5000$ in
 $d_o = 63.5000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 14

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	12.0000	69.7500	837.0000	0.5625	33.8750	13770.1875	13770.7500
	Vertical Leg	10.8750	65.7500	715.0313	47.6348	29.8750	9706.1074	9753.7422
2	Horizontal Leg	12.0000	2.0000	24.0000	0.5625	33.8750	13770.1875	13770.7500
	Vertical Leg	10.8750	6.0000	65.2500	47.6348	29.8750	9706.1074	9753.7422
3	Web Plate	42.8125	35.8750	1535.8984	16740.5794	0.0000	0.0000	16740.5794
4	Cover Plate Top	29.2500	70.9375	2074.9219	6.4365	35.0625	35959.3330	35965.7695
	Cover Plate Bottom	29.2500	0.8125	23.7656	6.4365	35.0625	35959.3330	35965.7695
Total		147.06		5275.87	16849.85		118871.26	135721.10
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
$y\text{-bar} = 35.8750$	in	$S_{top} = 3783.17$	in ³	$y\text{-bar} = 35.8750$	in	$S_{top} = 3783.17$	in ³
$I_x = 135721.10$	in ⁴	$S_{bott.} = 3783.17$	in ³	$I_x = 135721.10$	in ⁴	$S_{bott.} = 3783.17$	in ³
$C_{top} = 35.8750$	in	$A = 147.0625$	in ²	$C_{top} = 35.8750$	in	$A = 147.0625$	in ²
$C_{bottom} = 35.8750$	in	$r_x = 30.3789$	in	$C_{bottom} = 35.8750$	in	$r_x = 30.3789$	in
		$Z = 4247.1016$	in ³			$Z = 4247.1016$	in ³



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	42.8125	9.0000	385.3125	1.3936	0.0000	0.0000	1.3936
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		147.06		1323.56	1709.91		456.62	2166.54
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.73 in ³	x-bar =	9.0000	in	S _{right} = 240.73 in ³
I _y =	2166.54	in ⁴	S _{left} = 240.73 in ³	I _y =	2166.54	in ⁴	S _{left} = 240.73 in ³
C _{right} =	9.0000	in	A = 147.0625 in ²	C _{right} =	9.0000	in	A = 147.0625 in ²
C _{left} =	9.0000	in	r _y = 3.8382 in	C _{left} =	9.0000	in	r _y = 3.8382 in

Non-composite Capacities*		
	AB	AI
M	10403.71 k-ft	10403.71 k-ft
V	812.23 k	812.23 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

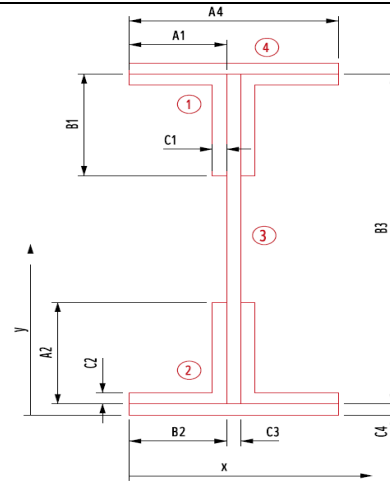
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 2.8750$ in
 $B_3 = 110.3750$ in
 $d_o = n/a$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 15 and 17

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	111.6250	1339.5000	0.5625	54.8125	36052.9219	36053.4844
	Vertical Leg		10.8750	107.6250	1170.4219	47.6348	50.8125	28078.2729	28125.9077
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	54.8125	36052.9219	36053.4844
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	50.8125	28078.2729	28125.9077
3	Web Plate		317.3281	56.8125	18028.2041	322157.8756	0.0000	0.0000	322157.8756
4	Cover Plate Top		29.2500	112.8125	3299.7656	6.4365	56.0000	91728.0000	91734.4365
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	56.0000	91728.0000	91734.4365
Total			421.58		23950.91	322267.14		311718.39	633985.53
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	56.8125	in	$S_{top} = 11159.26$	in ³	y-bar =	56.8125	in	$S_{top} = 11159.26$	in ³		
$I_x =$	633985.53	in ⁴	$S_{bott.} = 11159.26$	in ³	$I_x =$	633985.53	in ⁴	$S_{bott.} = 11159.26$	in ³		
$C_{top} =$	56.8125	in	A =	421.5781	in ²	$C_{top} =$	56.8125	in	A =	421.5781	in ²
$C_{bottom} =$	56.8125	in	$r_x =$	38.7794	in	$C_{bottom} =$	56.8125	in	$r_x =$	38.7794	in
			Z =	14452.9448	in ³				Z =	14452.9448	in ³

SECTION L

North Girder Section 15,17



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
1 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
2 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
2 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
3	Web Plate	317.3281	9.4375	2994.7842	218.5763	0.0000	0.0000	218.5763
4	Cover Plate	58.5000	9.4375	552.0938	1579.5000	0.0000	0.0000	1579.5000
Total		421.58		3978.64	1927.10		781.05	2708.14
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.4375	in	S _{right} = 286.96 in ³	x-bar =	9.4375	in	S _{right} = 286.96 in ³
I _y =	2708.14	in ⁴	S _{left} = 286.96 in ³	I _y =	2708.14	in ⁴	S _{left} = 286.96 in ³
C _{right} =	9.4375	in	A = 421.5781 in ²	C _{right} =	9.4375	in	A = 421.5781 in ²
C _{left} =	9.4375	in	r _y = 2.5345 in	C _{left} =	9.4375	in	r _y = 2.5345 in

Non-composite Capacities*		
	AB	AI
M	39745.60 k-ft	39745.60 k-ft
V	6073.66 k	6073.66 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 16



Made By SFH Date 3/1/2012
 Checked By CTG Date 3/2/2012
 Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Job No. P402110046
 Sheet No. _____

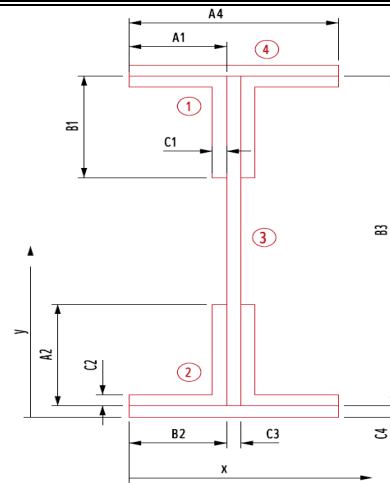
Element Dimensions (without Section Losses):

Top Angles: $A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles: $B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate: $C_3 = 2.8750$ in
 $B_3 = 110.3750$ in
 $d_o = n/a$ in
 $d_o =$ stiffener spacing for shear check
 Use "N/A" for no stiffeners

Cover Plate:
 $C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 16

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	12.0000	111.6250	1339.5000	0.5625	50.6374	30769.7837	30770.3462
	Vertical Leg	10.8750	107.6250	1170.4219	47.6348	46.6374	23653.6607	23701.2954
2	Horizontal Leg	12.0000	2.0000	24.0000	0.5625	58.9876	41754.4104	41754.9729
	Vertical Leg	10.8750	6.0000	65.2500	47.6348	54.9876	32882.0153	32929.6500
3	Web Plate	317.3281	56.8125	18028.2041	322157.8756	4.1751	5531.4307	327689.3063
4	Cover Plate Top	29.2500	112.8125	3299.7656	6.4365	51.8249	78560.3133	78566.7499
	Cover Plate Bottom	0.0000	0.8125	0.0000	0.0000	60.1751	0.0000	0.0000
Total		392.33		23927.14	322260.71		213151.61	535412.32
Section Losses		A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	60.9876	in	S _{top} = 10171.70 in ³	y-bar =	60.9876	in	S _{top} = 10171.70 in ³
I _x =	535412.32	in ⁴	S _{bottom} = 8779.04 in ³	I _x =	535412.32	in ⁴	S _{bottom} = 8779.04 in ³
C _{top} =	52.6374	in	A = 392.3281 in ²	C _{top} =	52.6374	in	A = 392.3281 in ²
C _{bottom} =	60.9876	in	r _x = 36.9419 in	C _{bottom} =	60.9876	in	r _x = 36.9419 in
			Z = 12740.5481 in ³				Z = 12740.5481 in ³



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
1 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
2 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
2 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
3	Web Plate	317.3281	9.4375	2994.7842	218.5763	0.0000	0.0000	218.5763
4	Cover Plate	58.5000	9.4375	552.0938	1579.5000	0.0000	0.0000	1579.5000
Total		421.58		3978.64	1927.10		781.05	2708.14
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.4375	in	S _{right} = 286.96 in ³	x-bar =	9.4375	in	S _{right} = 286.96 in ³
I _y =	2708.14	in ⁴	S _{left} = 286.96 in ³	I _y =	2708.14	in ⁴	S _{left} = 286.96 in ³
C _{right} =	9.4375	in	A = 421.5781 in ²	C _{right} =	9.4375	in	A = 421.5781 in ²
C _{left} =	9.4375	in	r _y = 2.5345 in	C _{left} =	9.4375	in	r _y = 2.5345 in

Non-composite Capacities*		
	AB	AI
M	35036.51 k-ft	35036.51 k-ft
V	6073.66 k	6073.66 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 18



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

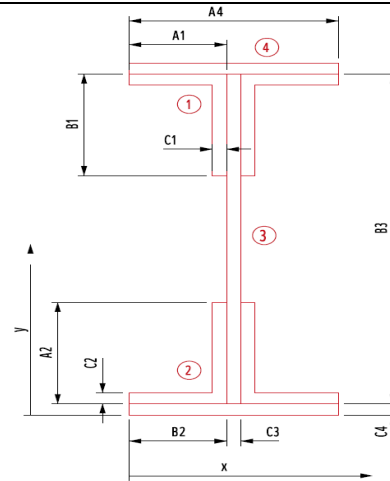
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 68.0625$ in
 $d_o = 63.5000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 18

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	69.3125	831.7500	0.5625	33.6563	13592.9180	13593.4805
	Vertical Leg		10.8750	65.3125	710.2734	47.6348	29.6563	9564.4882	9612.1229
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	33.6563	13592.9180	13593.4805
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	29.6563	9564.4882	9612.1229
3	Web Plate		42.5391	35.6563	1516.7834	16421.8644	0.0000	0.0000	16421.8644
4	Cover Plate Top		29.2500	70.5000	2062.1250	6.4365	34.8438	35512.0422	35518.4788
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	34.8438	35512.0422	35518.4788
Total			146.79		5233.95	16531.13		117338.90	133870.03
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	35.6563	in	$S_{top} = 3754.46$	in ³	y-bar =	35.6563	in	$S_{top} = 3754.46$	in ³		
$I_x =$	133870.03	in ⁴	$S_{bott.} = 3754.46$	in ³	$I_x =$	133870.03	in ⁴	$S_{bott.} = 3754.46$	in ³		
$C_{top} =$	35.6563	in	A =	146.7891	in ²	$C_{top} =$	35.6563	in	A =	146.7891	in ²
$C_{bottom} =$	35.6563	in	$r_x =$	30.1992	in	$C_{bottom} =$	35.6563	in	$r_x =$	30.1992	in
			Z =	4214.9615	in ³				Z =	4214.9615	in ³

SECTION L

North Girder Section 18



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	42.5391	9.0000	382.8516	1.3847	0.0000	0.0000	1.3847
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		146.79		1321.10	1709.90		456.62	2166.53
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.73 in ³	x-bar =	9.0000	in	S _{right} = 240.73 in ³
I _y =	2166.53	in ⁴	S _{left} = 240.73 in ³	I _y =	2166.53	in ⁴	S _{left} = 240.73 in ³
C _{right} =	9.0000	in	A = 146.7891 in ²	C _{right} =	9.0000	in	A = 146.7891 in ²
C _{left} =	9.0000	in	r _y = 3.8418 in	C _{left} =	9.0000	in	r _y = 3.8418 in

Non-composite Capacities*		
	AB	AI
M	10324.77 k-ft	10324.77 k-ft
V	809.44 k	809.44 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 19



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

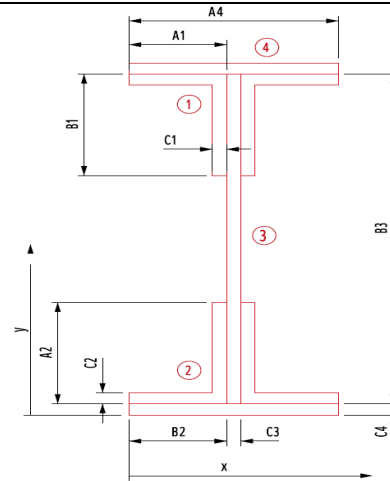
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 61.4375$ in
 $d_o = 63.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 2.5000$ in
 $A_4 = 18.0000$ in



Girder Section 19

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	63.5625	762.7500	0.5625	30.3438	11048.9180	11049.4805
	Vertical Leg		10.8750	59.5625	647.7422	47.6348	26.3438	7547.1757	7594.8104
2	Horizontal Leg		12.0000	2.8750	34.5000	0.5625	30.3438	11048.9180	11049.4805
	Vertical Leg		10.8750	6.8750	74.7656	47.6348	26.3438	7547.1757	7594.8104
3	Web Plate		38.3984	33.2188	1275.5481	12078.1210	0.0000	0.0000	12078.1210
4	Cover Plate Top		45.0000	65.1875	2933.4375	23.4375	31.9688	45990.0439	46013.4814
	Cover Plate Bottom		45.0000	1.2500	56.2500	23.4375	31.9688	45990.0439	46013.4814
Total			174.15		5784.99	12221.39		129172.28	141393.67
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 33.2188	in	$S_{top} = 4256.44$	in ³	y-bar = 33.2188	in	$S_{top} = 4256.44$	in ³
$I_x = 141393.67$	in ⁴	$S_{bott.} = 4256.44$	in ³	$I_x = 141393.67$	in ⁴	$S_{bott.} = 4256.44$	in ³
$C_{top} = 33.2188$	in	A = 174.1484	in ²	$C_{top} = 33.2188$	in	A = 174.1484	in ²
$C_{bottom} = 33.2188$	in	$r_x = 28.4941$	in	$C_{bottom} = 33.2188$	in	$r_x = 28.4941$	in
		Z = 4768.1901	in ³			Z = 4768.1901	in ³



Made By SFH
 Checked By CTG

Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	38.3984	9.0000	345.5859	1.2499	0.0000	0.0000	1.2499
4	Cover Plate	90.0000	9.0000	810.0000	2430.0000	0.0000	0.0000	2430.0000
Total		174.15		1567.34	2560.27		456.62	3016.89
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 335.21 in ³	x-bar =	9.0000	in	S _{right} = 335.21 in ³
I _y =	3016.89	in ⁴	S _{left} = 335.21 in ³	I _y =	3016.89	in ⁴	S _{left} = 335.21 in ³
C _{right} =	9.0000	in	A = 174.1484 in ²	C _{right} =	9.0000	in	A = 174.1484 in ²
C _{left} =	9.0000	in	r _y = 4.1622 in	C _{left} =	9.0000	in	r _y = 4.1622 in

Non-composite Capacities*		
	AB	AI
M	13112.52 k-ft	13112.52 k-ft
V	734.95 k	734.95 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

North Girder Section 20



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

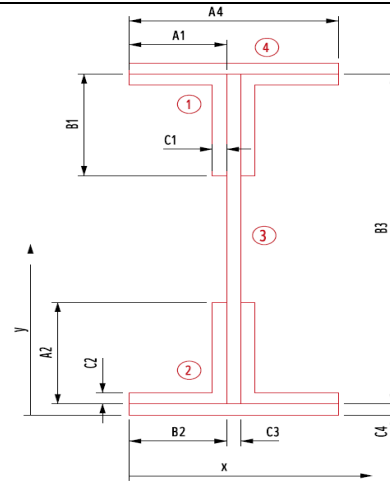
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 59.0000$ in
 $d_o = 63.6875$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 20

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	60.2500	723.0000	0.5625	29.1250	10179.1875	10179.7500
	Vertical Leg		10.8750	56.2500	611.7188	47.6348	25.1250	6865.0137	6912.6484
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	29.1250	10179.1875	10179.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	25.1250	6865.0137	6912.6484
3	Web Plate		36.8750	31.1250	1147.7344	10696.8229	0.0000	0.0000	10696.8229
4	Cover Plate Top		29.2500	61.4375	1797.0469	6.4365	30.3125	26876.2939	26882.7305
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	30.3125	26876.2939	26882.7305
Total			141.13		4392.52	10806.09		87840.99	98647.08
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	31.1250	in	$S_{top} = 3169.38$	in ³	y-bar =	31.1250	in	$S_{top} = 3169.38$	in ³		
$I_x =$	98647.08	in ⁴	$S_{bott.} = 3169.38$	in ³	$I_x =$	98647.08	in ⁴	$S_{bott.} = 3169.38$	in ³		
$C_{top} =$	31.1250	in	A =	141.1250	in ²	$C_{top} =$	31.1250	in	A =	141.1250	in ²
$C_{bottom} =$	31.1250	in	$r_x =$	26.4387	in	$C_{bottom} =$	31.1250	in	$r_x =$	26.4387	in
			Z =	3562.6563	in ³				Z =	3562.6563	in ³



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Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	36.8750	9.0000	331.8750	1.2004	0.0000	0.0000	1.2004
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		141.13		1270.13	1709.72		456.62	2166.34
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.70 in ³	x-bar =	9.0000	in	S _{right} = 240.70 in ³
I _y =	2166.34	in ⁴	S _{left} = 240.70 in ³	I _y =	2166.34	in ⁴	S _{left} = 240.70 in ³
C _{right} =	9.0000	in	A = 141.1250 in ²	C _{right} =	9.0000	in	A = 141.1250 in ²
C _{left} =	9.0000	in	r _y = 3.9180 in	C _{left} =	9.0000	in	r _y = 3.9180 in

Non-composite Capacities*		
	AB	AI
M	9797.30 k-ft	9797.30 k-ft
V	705.79 k	705.79 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 21



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

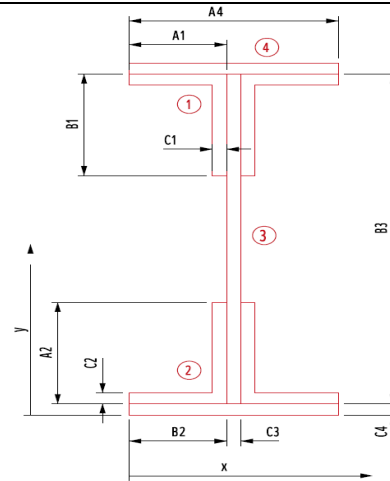
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 54.5000$ in
 $d_o = 63.6875$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 21

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	55.7500	669.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	51.7500	562.7813	47.6348	22.8750	5690.5137	5738.1484
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	22.8750	5690.5137	5738.1484
3	Web Plate		34.0625	28.8750	983.5547	8431.1784	0.0000	0.0000	8431.1784
4	Cover Plate Top		29.2500	56.9375	1665.4219	6.4365	28.0625	23034.4893	23040.9258
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	28.0625	23034.4893	23040.9258
Total			138.31		3993.77	8540.45		74784.38	83324.83
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³	y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³		
$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³	$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³		
$C_{top} =$	28.8750	in	A =	138.3125	in ²	$C_{top} =$	28.8750	in	A =	138.3125	in ²
$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in	$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in
			Z =	3248.2891	in ³				Z =	3248.2891	in ³



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Date 3/1/2012
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Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:
Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	34.0625	9.0000	306.5625	1.1088	0.0000	0.0000	1.1088
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		138.31		1244.81	1709.63		456.62	2166.25
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.69 in ³	x-bar =	9.0000	in	S _{right} = 240.69 in ³
I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³	I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³
C _{right} =	9.0000	in	A = 138.3125 in ²	C _{right} =	9.0000	in	A = 138.3125 in ²
C _{left} =	9.0000	in	r _y = 3.9575 in	C _{left} =	9.0000	in	r _y = 3.9575 in

Non-composite Capacities*		
	AB	AI
M	8932.79 k-ft	8932.79 k-ft
V	651.96 k	651.96 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 22



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

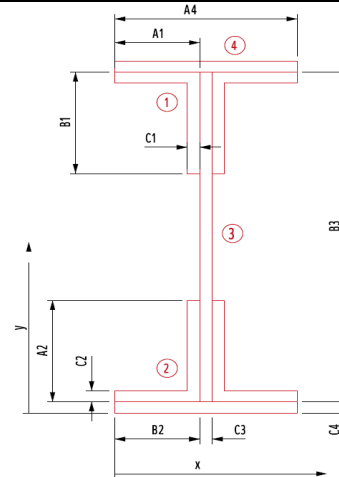
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 59.0000$ in
 $d_o = 63.3750$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 22

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	60.2500	723.0000	0.5625	29.1250	10179.1875	10179.7500
	Vertical Leg		10.8750	56.2500	611.7188	47.6348	25.1250	6865.0137	6912.6484
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	29.1250	10179.1875	10179.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	25.1250	6865.0137	6912.6484
3	Web Plate		36.8750	31.1250	1147.7344	10696.8229	0.0000	0.0000	10696.8229
4	Cover Plate Top		29.2500	61.4375	1797.0469	6.4365	30.3125	26876.2939	26882.7305
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	30.3125	26876.2939	26882.7305
Total			141.13		4392.52	10806.09		87840.99	98647.08
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	31.1250	in	$S_{top} = 3169.38$ in ³	y-bar =	31.1250	in	$S_{top} = 3169.38$ in ³
$I_x =$	98647.08	in ⁴	$S_{bott.} = 3169.38$ in ³	$I_x =$	98647.08	in ⁴	$S_{bott.} = 3169.38$ in ³
$C_{top} =$	31.1250	in	$A = 141.1250$ in ²	$C_{top} =$	31.1250	in	$A = 141.1250$ in ²
$C_{bottom} =$	31.1250	in	$r_x = 26.4387$ in	$C_{bottom} =$	31.1250	in	$r_x = 26.4387$ in
			$Z = 3562.6563$ in ³				$Z = 3562.6563$ in ³



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
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Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	36.8750	9.0000	331.8750	1.2004	0.0000	0.0000	1.2004
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		141.13		1270.13	1709.72		456.62	2166.34
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.70 in ³	x-bar =	9.0000	in	S _{right} = 240.70 in ³
I _y =	2166.34	in ⁴	S _{left} = 240.70 in ³	I _y =	2166.34	in ⁴	S _{left} = 240.70 in ³
C _{right} =	9.0000	in	A = 141.1250 in ²	C _{right} =	9.0000	in	A = 141.1250 in ²
C _{left} =	9.0000	in	r _y = 3.9180 in	C _{left} =	9.0000	in	r _y = 3.9180 in

Non-composite Capacities*		
	AB	AI
M	9797.30 k-ft	9797.30 k-ft
V	705.79 k	705.79 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

North Girder Section 23



Made By SFH
Checked By CTG

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

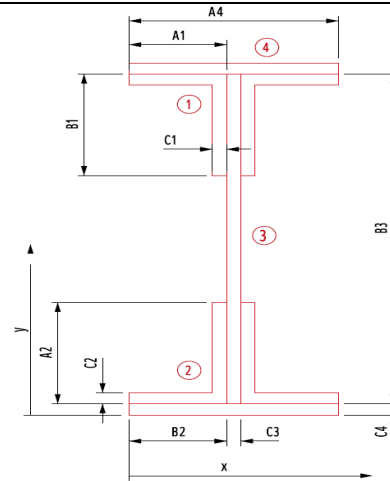
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 72.5000$ in
 $d_o = 63.3750$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 23

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	73.7500	885.0000	0.5625	35.8750	15444.1875	15444.7500
	Vertical Leg		10.8750	69.7500	758.5313	47.6348	31.8750	11049.1699	11096.8047
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	35.8750	15444.1875	15444.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	31.8750	11049.1699	11096.8047
3	Web Plate		45.3125	37.8750	1716.2109	19847.8190	0.0000	0.0000	19847.8190
4	Cover Plate Top		29.2500	74.9375	2191.9219	6.4365	37.0625	40178.6455	40185.0820
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	37.0625	40178.6455	40185.0820
Total			149.56		5664.68	19957.09		133344.01	153301.09
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	37.8750	in	$S_{top} = 4047.55$ in ³	y-bar =	37.8750	in	$S_{top} = 4047.55$ in ³
$I_x =$	153301.09	in ⁴	$S_{bott.} = 4047.55$ in ³	$I_x =$	153301.09	in ⁴	$S_{bott.} = 4047.55$ in ³
$C_{top} =$	37.8750	in	$A = 149.5625$ in ²	$C_{top} =$	37.8750	in	$A = 149.5625$ in ²
$C_{bottom} =$	37.8750	in	$r_x = 32.0156$ in	$C_{bottom} =$	37.8750	in	$r_x = 32.0156$ in
			$Z = 4543.7266$ in ³				$Z = 4543.7266$ in ³



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Date 3/1/2012
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Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	45.3125	9.0000	407.8125	1.4750	0.0000	0.0000	1.4750
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		149.56		1346.06	1709.99		456.62	2166.62
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.74 in ³	x-bar =	9.0000	in	S _{right} = 240.74 in ³
I _y =	2166.62	in ⁴	S _{left} = 240.74 in ³	I _y =	2166.62	in ⁴	S _{left} = 240.74 in ³
C _{right} =	9.0000	in	A = 149.5625 in ²	C _{right} =	9.0000	in	A = 149.5625 in ²
C _{left} =	9.0000	in	r _y = 3.8061 in	C _{left} =	9.0000	in	r _y = 3.8061 in

Non-composite Capacities*		
	AB	AI
M	11130.77 k-ft	11130.77 k-ft
V	839.01 k	839.01 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



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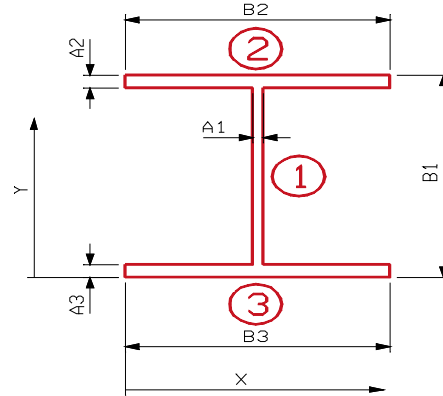
Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.8450$ in
- $B_1 = d = 36.2400$ in
- $A_2 = t_f = 1.4400$ in
- $B_2 = b_f = 16.5550$ in
- $A_3 = t_f = 1.4400$ in
- $B_3 = b_f = 16.5550$ in

$d_o = n/a$ in

d_o = stiffener spacing for shear check for no stiffeners use "N/A"



Frame Girder WF36X260 Full Height

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		28.1892	18.1200	510.7883	2614.2890	0.0000	0.0000	2614.2890
2	Top Flange		23.8392	35.5200	846.7684	4.1194	17.4000	7217.5562	7221.6756
3	Bottom Flange		23.8392	0.7200	17.1642	4.1194	17.4000	7217.5562	7221.6756
Total			75.87		1374.72	2622.53		14435.11	17057.64
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 18.1200 in	$S_{top} = 941.37$ in ³			y-bar = 18.1200 in	$S_{top} = 941.37$ in ³		
$I_x = 17057.64$ in ⁴	$S_{bottom} = 941.37$ in ³			$I_x = 17057.64$ in ⁴	$S_{bottom} = 941.37$ in ³		
$C_{top} = 18.1200$ in	A = 75.8676 in ²			$C_{top} = 18.1200$ in	A = 75.8676 in ²		
$C_{bottom} = 18.1200$ in	$r_x = 14.9945$ in			$C_{bottom} = 18.1200$ in	$r_x = 14.9945$ in		
	Z = 1064.70 in ³				Z = 1064.70 in ³		



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Date 3/1/2012
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Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		28.1892	8.2775	233.3361	1.6773	0.0000	0.0000	1.6773
2	Top Flange		23.8392	8.2775	197.3290	544.4635	0.0000	0.0000	544.4635
3	Bottom Flange		23.8392	8.2775	197.3290	544.4635	0.0000	0.0000	544.4635
Total			75.87		627.99	1090.60		0.00	1090.60
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	8.2775	in	S _{right} = 131.76 in ³	x-bar =	8.2775	in	S _{right} = 131.76 in ³
I _y =	1090.60	in ⁴	S _{left} = 131.76 in ³	I _y =	1090.60	in ⁴	S _{left} = 131.76 in ³
C _{right} =	8.2775	in	A = 75.8676 in ²	C _{right} =	8.2775	in	A = 75.8676 in ²
C _{left} =	8.2775	in	r _y = 3.7915 in	C _{left} =	8.2775	in	r _y = 3.7915 in

Non-composite Capacities*		
	AB	AI
M	2927.93 k-ft	2927.93 k-ft
V	539.54 k	539.54 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear



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Date 3/2/2012
Date 3/2/2012

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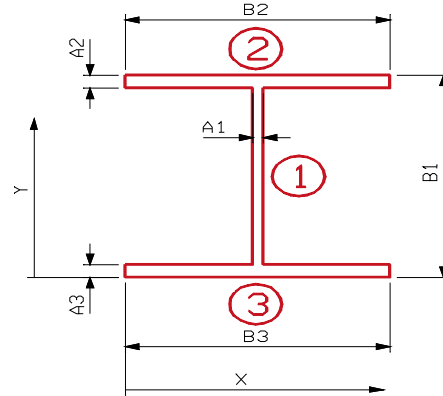
Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.8450$ in
- $B_1 = d = 37.9900$ in
- $A_2 = t_f = 2.3150$ in
- $B_2 = b_f = 16.5550$ in
- $A_3 = t_f = 2.3150$ in
- $B_3 = b_f = 16.5550$ in

$d_o = n/a$ in

d_o = stiffener spacing for shear check for no stiffeners use "N/A"



Frame Girder WF36X260 with Cover Plate

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		28.1892	18.9950	535.4539	2614.2890	0.0000	0.0000	2614.2890
2	Top Flange		38.3248	36.8325	1411.5991	17.1159	17.8375	12194.0551	12211.1710
3	Bottom Flange		38.3248	1.1575	44.3610	17.1159	17.8375	12194.0551	12211.1710
Total			104.84		1991.41	2648.52		24388.11	27036.63
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 18.9950 in	$S_{top} = 1423.36$ in ³			y-bar = 18.9950 in	$S_{top} = 1423.36$ in ³		
$I_x = 27036.63$ in ⁴	$S_{bottom} = 1423.36$ in ³			$I_x = 27036.63$ in ⁴	$S_{bottom} = 1423.36$ in ³		
$C_{top} = 18.9950$ in	$A = 104.8389$ in ²			$C_{top} = 18.9950$ in	$A = 104.8389$ in ²		
$C_{bottom} = 18.9950$ in	$r_x = 16.0589$ in			$C_{bottom} = 18.9950$ in	$r_x = 16.0589$ in		
	$Z = 1602.34$ in ³				$Z = 1602.34$ in ³		

SECTION L

North Girder Section 25



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Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		28.1892	8.2775	233.3361	1.6773	0.0000	0.0000	1.6773
2	Top Flange		38.3248	8.2775	317.2337	875.3008	0.0000	0.0000	875.3008
3	Bottom Flange		38.3248	8.2775	317.2337	875.3008	0.0000	0.0000	875.3008
Total			104.84		867.80	1752.28		0.00	1752.28
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
x-bar =	8.2775	in	S _{right} =	211.69	in ³	x-bar =	8.2775	in	S _{right} =	211.69	in ³
I _y =	1752.28	in ⁴	S _{left} =	211.69	in ³	I _y =	1752.28	in ⁴	S _{left} =	211.69	in ³
C _{right} =	8.2775	in	A =	104.8389	in ²	C _{right} =	8.2775	in	A =	104.8389	in ²
C _{left} =	8.2775	in	r _y =	4.0883	in	C _{left} =	8.2775	in	r _y =	4.0883	in

Non-composite Capacities*		
	AB	AI
M	4406.42 k-ft	4406.42 k-ft
V	539.54 k	539.54 k

*Compact Section

F_y = 33.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



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Date 3/1/2012
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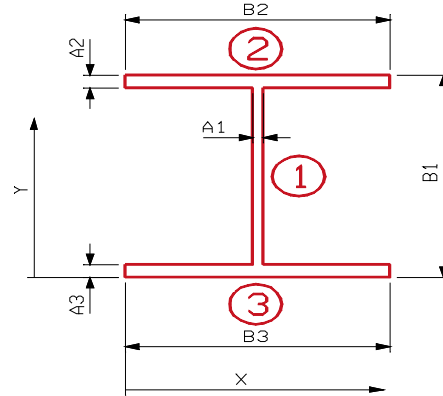
Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.8450$ in
- $B_1 = d = 21.1250$ in
- $A_2 = t_f = 0.7500$ in
- $B_2 = b_f = 12.8450$ in
- $A_3 = t_f = 1.4400$ in
- $B_3 = b_f = 16.5550$ in

$d_o = n/a$ in

d_o = stiffener spacing for shear check for no stiffeners use "N/A"



Frame Girder WF36X260 at FB seat

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x, gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		16.0001	10.5625	169.0008	478.0479	2.7589	121.7893	599.8371
2	Top Flange		9.6338	20.7500	199.9003	0.4516	12.9464	1614.7178	1615.1694
3	Bottom Flange		23.8392	0.7200	17.1642	4.1194	7.0836	1196.1726	1200.2921
Total			49.47		386.07	482.62		2932.68	3415.30
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x, loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
y-bar =	7.8036	in	$S_{top} =$	256.38	in ³	y-bar =	7.8036	in	$S_{top} =$	256.38	in ³
$I_x =$	3415.30	in ⁴	$S_{bott.} =$	437.66	in ³	$I_x =$	3415.30	in ⁴	$S_{bott.} =$	437.66	in ³
$C_{top} =$	13.3214	in	A =	49.4730	in ²	$C_{top} =$	13.3214	in	A =	49.4730	in ²
$C_{bottom} =$	7.8036	in	$r_x =$	8.3086	in	$C_{bottom} =$	7.8036	in	$r_x =$	8.3086	in
			Z =	353.72	in ³				Z =	353.72	in ³



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Date 3/1/2012
Date 3/2/2012

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Calculations For: CUY-2-1441

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web	16.0001	8.2775	132.4406	0.9520	0.0000	0.0000	0.9520
2	Top Flange	9.6338	8.2775	79.7434	132.4593	0.0000	0.0000	132.4593
3	Bottom Flange	23.8392	8.2775	197.3290	544.4635	0.0000	0.0000	544.4635
Total		49.47		409.51	677.87		0.00	677.87
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	8.2775	in	S _{right} = 81.89 in ³	x-bar =	8.2775	in	S _{right} = 81.89 in ³
I _y =	677.87	in ⁴	S _{left} = 81.89 in ³	I _y =	677.87	in ⁴	S _{left} = 81.89 in ³
C _{right} =	8.2775	in	A = 49.4730 in ²	C _{right} =	8.2775	in	A = 49.4730 in ²
C _{left} =	8.2775	in	r _y = 3.7016 in	C _{left} =	8.2775	in	r _y = 3.7016 in

Non-composite Capacities*		
	AB	AI
M	972.73 k-ft	972.73 k-ft
V	306.24 k	306.24 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



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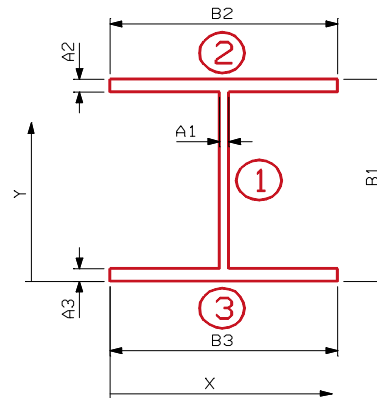
Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

- $A_1 = t_w = 0.7700$ in
- $B_1 = d = 20.5000$ in
- $A_2 = t_f = 0.7500$ in
- $B_2 = b_f = 12.7700$ in
- $A_3 = t_f = 1.2600$ in
- $B_3 = b_f = 12.1170$ in

$d_o = n/a$ in

d_o = stiffener spacing for shear check for no stiffeners use "N/A"



Frame Girder at FB Seat

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		14.2373	10.2500	145.9323	405.6208	1.3381	25.4909	431.1117
2	Top Flange		9.5775	20.1250	192.7472	0.4489	11.2131	1204.2073	1204.6563
3	Bottom Flange		15.2674	0.6300	9.6185	2.0199	8.2819	1047.1978	1049.2176
Total			39.08		348.30	408.09		2276.90	2684.99
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	8.9119	in	$S_{top} = 231.70$	in ³	y-bar =	8.9119	in	$S_{top} = 231.70$	in ³		
$I_x =$	2684.99	in ⁴	$S_{bott.} = 301.28$	in ³	$I_x =$	2684.99	in ⁴	$S_{bott.} = 301.28$	in ³		
$C_{top} =$	11.5881	in	A =	39.0822	in ²	$C_{top} =$	11.5881	in	A =	39.0822	in ²
$C_{bottom} =$	8.9119	in	$r_x =$	8.2886	in	$C_{bottom} =$	8.9119	in	$r_x =$	8.2886	in
			Z =	298.20	in ³				Z =	298.20	in ³



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Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		14.2373	6.3850	90.9052	0.7034	0.0000	0.0000	0.7034
2	Top Flange		9.5775	6.3850	61.1523	130.1526	0.0000	0.0000	130.1526
3	Bottom Flange		15.2674	6.3850	97.4825	186.7990	0.0000	0.0000	186.7990
Total			39.08		249.54	317.66		0.00	317.66
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	6.3850	in	S _{right} = 49.75 in ³	x-bar =	6.3850	in	S _{right} = 49.75 in ³
I _y =	317.66	in ⁴	S _{left} = 49.75 in ³	I _y =	317.66	in ⁴	S _{left} = 49.75 in ³
C _{right} =	6.3850	in	A = 39.0822 in ²	C _{right} =	6.3850	in	A = 39.0822 in ²
C _{left} =	6.3850	in	r _y = 2.8509 in	C _{left} =	6.3850	in	r _y = 2.8509 in

Non-composite Capacities*		
	AB	AI
M	820.05 k-ft	820.05 k-ft
V	272.50 k	272.50 k

*Compact Section

F_y = 33.00 ksi

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear



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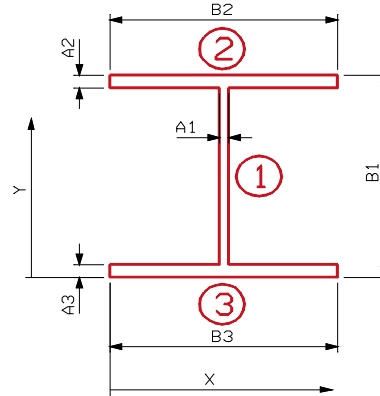
Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

$A_1 = t_w = 0.7700$ in
 $B_1 = d = 36.4800$ in
 $A_2 = t_f = 1.2600$ in
 $B_2 = b_f = 12.1170$ in
 $A_3 = t_f = 1.2600$ in
 $B_3 = b_f = 12.1170$ in

$d_o = n/a$ in

d_o = stiffener spacing for shear check for no stiffeners use "N/A"



Frame Girder W36X194

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web	26.1492	18.2400	476.9614	2513.1159	0.0000	0.0000	2513.1159
2	Top Flange	15.2674	35.8500	547.3370	2.0199	17.6100	4734.6117	4736.6316
3	Bottom Flange	15.2674	0.6300	9.6185	2.0199	17.6100	4734.6117	4736.6316
Total		56.68		1033.92	2517.16		9469.22	11986.38
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	18.2400	in	$S_{top} = 657.15$	in ³	y-bar =	18.2400	in	$S_{top} = 657.15$	in ³		
$I_x =$	11986.38	n ⁴	$S_{bott.} = 657.15$	in ³	$I_x =$	11986.38	in ⁴	$S_{bott.} = 657.15$	in ³		
$C_{top} =$	18.2400	in	A =	56.6840	in ²	$C_{top} =$	18.2400	in	A =	56.6840	in ²
$C_{bottom} =$	18.2400	in	$r_x =$	14.5416	in	$C_{bottom} =$	18.2400	in	$r_x =$	14.5416	in
			Z =	759.73	in ³				Z =	759.73	in ³

Section L

South Girder Section 7-12



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Calculations For: **CUY-2-1441**

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Web		26.1492	6.0585	158.4249	1.2920	0.0000	0.0000	1.2920
2	Top Flange		15.2674	6.0585	92.4977	186.7990	0.0000	0.0000	186.7990
3	Bottom Flange		15.2674	6.0585	92.4977	186.7990	0.0000	0.0000	186.7990
Total			56.68		343.42	374.89		0.00	374.89
Section Losses			A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties					As-Inspected Section Properties						
x-bar =	6.0585	in	S _{right} =	61.88	in ³	x-bar =	6.0585	in	S _{right} =	61.88	in ³
I _y =	374.89	in ⁴	S _{left} =	61.88	in ³	I _y =	374.89	in ⁴	S _{left} =	61.88	in ³
C _{right} =	6.0585	in	A =	56.6840	in ²	C _{right} =	6.0585	in	A =	56.6840	in ²
C _{left} =	6.0585	in	r _y =	2.5717	in	C _{left} =	6.0585	in	r _y =	2.5717	in

Non-composite Capacities*		
	AB	AI
M	2089.24 k-ft	2089.24 k-ft
V	500.50 k	500.50 k

*Compact Section

F_y = 33.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 13



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Date 3/1/2012
Date 3/2/2012

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Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

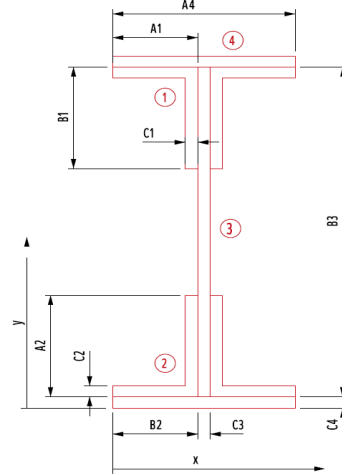
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 71.8750$ in
 $d_o = 60.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 13

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	73.1250	877.5000	0.5625	35.5625	15176.2969	15176.8594
	Vertical Leg		10.8750	69.1250	751.7344	47.6348	31.5625	10833.5815	10881.2163
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	35.5625	15176.2969	15176.8594
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	31.5625	10833.5815	10881.2163
3	Web Plate		44.9219	37.5625	1687.3779	19338.9257	0.0000	0.0000	19338.9257
4	Cover Plate Top		29.2500	74.3125	2173.6406	6.4365	36.7500	39503.9531	39510.3896
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	36.7500	39503.9531	39510.3896
Total			149.17		5603.27	19448.19		131027.66	150475.86
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar =	37.5625	in	$S_{top} = 4006.01$ in ³	y-bar =	37.5625	in	$S_{top} = 4006.01$ in ³
$I_x =$	150475.86	n ⁴	$S_{bott.} = 4006.01$ in ³	$I_x =$	150475.86	in ⁴	$S_{bott.} = 4006.01$ in ³
$C_{top} =$	37.5625	in	$A = 149.1719$ in ²	$C_{top} =$	37.5625	in	$A = 149.1719$ in ²
$C_{bottom} =$	37.5625	in	$r_x = 31.7607$ in	$C_{bottom} =$	37.5625	in	$r_x = 31.7607$ in
			$Z = 4497.0493$ in ³				$Z = 4497.0493$ in ³



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Date 3/1/2012
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Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	44.9219	9.0000	404.2969	1.4623	0.0000	0.0000	1.4623
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		149.17		1342.55	1709.98		456.62	2166.61
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.73 in ³	x-bar =	9.0000	in	S _{right} = 240.73 in ³
I _y =	2166.61	in ⁴	S _{left} = 240.73 in ³	I _y =	2166.61	in ⁴	S _{left} = 240.73 in ³
C _{right} =	9.0000	in	A = 149.1719 in ²	C _{right} =	9.0000	in	A = 149.1719 in ²
C _{left} =	9.0000	in	r _y = 3.8111 in	C _{left} =	9.0000	in	r _y = 3.8111 in

Non-composite Capacities*		
	AB	AI
M	11016.54 k-ft	11016.54 k-ft
V	859.80 k	859.80 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 14



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

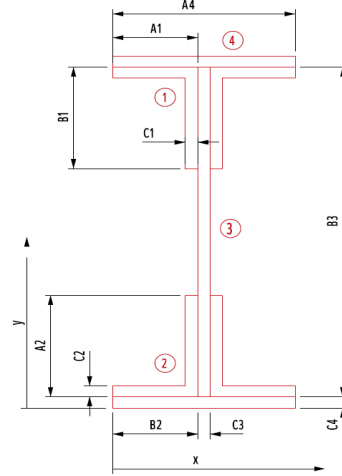
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 59.4063$ in
 $d_o = 63.6875$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 14

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	60.6563	727.8750	0.5625	29.3281	10321.6670	10322.2295
	Vertical Leg		10.8750	56.6563	616.1367	47.6348	25.3281	6976.4638	7024.0986
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	29.3281	10321.6670	10322.2295
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	25.3281	6976.4638	7024.0986
3	Web Plate		37.1289	31.3281	1163.1790	10919.3098	0.0000	0.0000	10919.3098
4	Cover Plate Top		29.2500	61.8438	1808.9297	6.4365	30.5156	27237.6985	27244.1351
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	30.5156	27237.6985	27244.1351
Total			141.38		4429.14	11028.58		89071.66	100100.24
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	31.3281	in	$S_{top} = 3195.22$	in ³	y-bar =	31.3281	in	$S_{top} = 3195.22$	in ³		
$I_x =$	100100.24	n ⁴	$S_{bott.} = 3195.22$	in ³	$I_x =$	100100.24	in ⁴	$S_{bott.} = 3195.22$	in ³		
$C_{top} =$	31.3281	in	A =	141.3789	in ²	$C_{top} =$	31.3281	in	A =	141.3789	in ²
$C_{bottom} =$	31.3281	in	$r_x =$	26.6088	in	$C_{bottom} =$	31.3281	in	$r_x =$	26.6088	in
			Z =	3591.3481	in ³				Z =	3591.3481	in ³



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	37.1289	9.0000	334.1602	1.2086	0.0000	0.0000	1.2086
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		141.38		1272.41	1709.73		456.62	2166.35
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.71 in ³	x-bar =	9.0000	in	S _{right} = 240.71 in ³
I _y =	2166.35	in ⁴	S _{left} = 240.71 in ³	I _y =	2166.35	in ⁴	S _{left} = 240.71 in ³
C _{right} =	9.0000	in	A = 141.3789 in ²	C _{right} =	9.0000	in	A = 141.3789 in ²
C _{left} =	9.0000	in	r _y = 3.9145 in	C _{left} =	9.0000	in	r _y = 3.9145 in

Non-composite Capacities*		
	AB	AI
M	9876.21 k-ft	9876.21 k-ft
V	710.65 k	710.65 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 16



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

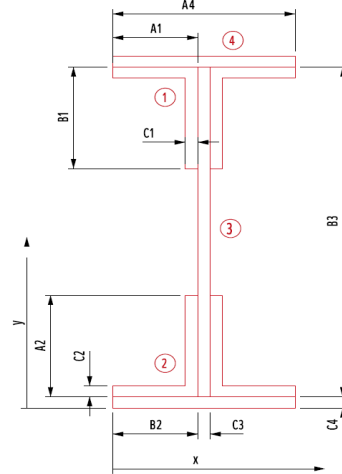
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 58.8750$ in
 $d_o = 63.6875$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 16

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	60.1250	721.5000	0.5625	29.0625	10135.5469	10136.1094
	Vertical Leg		10.8750	56.1250	610.3594	47.6348	25.0625	6830.9019	6878.5366
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	29.0625	10135.5469	10136.1094
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	25.0625	6830.9019	6878.5366
3	Web Plate		36.7969	31.0625	1143.0029	10628.9786	0.0000	0.0000	10628.9786
4	Cover Plate Top		29.2500	61.3125	1793.3906	6.4365	30.2500	26765.5781	26772.0146
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	30.2500	26765.5781	26772.0146
Total			141.05		4381.27	10738.25		87464.05	98202.30
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	31.0625	in	$S_{top} = 3161.44$	in ³	y-bar =	31.0625	in	$S_{top} = 3161.44$	in ³		
$I_x =$	98202.30	in ⁴	$S_{bott.} = 3161.44$	in ³	$I_x =$	98202.30	in ⁴	$S_{bott.} = 3161.44$	in ³		
$C_{top} =$	31.0625	in	A =	141.0469	in ²	$C_{top} =$	31.0625	in	A =	141.0469	in ²
$C_{bottom} =$	31.0625	in	$r_x =$	26.3863	in	$C_{bottom} =$	31.0625	in	$r_x =$	26.3863	in
			Z =	3553.8384	in ³				Z =	3553.8384	in ³



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	36.7969	9.0000	331.1719	1.1978	0.0000	0.0000	1.1978
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		141.05		1269.42	1709.72		456.62	2166.34
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.70 in ³	x-bar =	9.0000	in	S _{right} = 240.70 in ³
I _y =	2166.34	in ⁴	S _{left} = 240.70 in ³	I _y =	2166.34	in ⁴	S _{left} = 240.70 in ³
C _{right} =	9.0000	in	A = 141.0469 in ²	C _{right} =	9.0000	in	A = 141.0469 in ²
C _{left} =	9.0000	in	r _y = 3.9191 in	C _{left} =	9.0000	in	r _y = 3.9191 in

Non-composite Capacities*		
	AB	AI
M	9773.06 k-ft	9773.06 k-ft
V	704.29 k	704.29 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 15



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

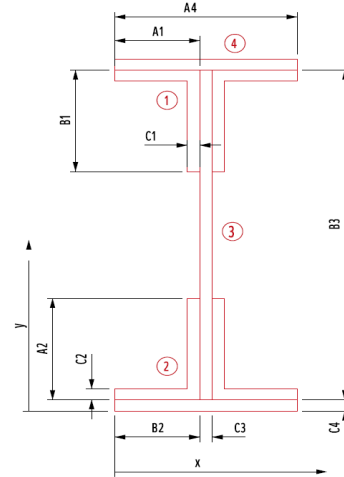
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 54.5000$ in
 $d_o = 63.6875$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 15

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	55.7500	669.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	51.7500	562.7813	47.6348	22.8750	5690.5137	5738.1484
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	22.8750	5690.5137	5738.1484
3	Web Plate		34.0625	28.8750	983.5547	8431.1784	0.0000	0.0000	8431.1784
4	Cover Plate Top		29.2500	56.9375	1665.4219	6.4365	28.0625	23034.4893	23040.9258
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	28.0625	23034.4893	23040.9258
Total			138.31		3993.77	8540.45		74784.38	83324.83
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³	y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³		
$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³	$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³		
$C_{top} =$	28.8750	in	A =	138.3125	in ²	$C_{top} =$	28.8750	in	A =	138.3125	in ²
$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in	$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in
			Z =	3248.2891	in ³				Z =	3248.2891	in ³



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	34.0625	9.0000	306.5625	1.1088	0.0000	0.0000	1.1088
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		138.31		1244.81	1709.63		456.62	2166.25
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.69 in ³	x-bar =	9.0000	in	S _{right} = 240.69 in ³
I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³	I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³
C _{right} =	9.0000	in	A = 138.3125 in ²	C _{right} =	9.0000	in	A = 138.3125 in ²
C _{left} =	9.0000	in	r _y = 3.9575 in	C _{left} =	9.0000	in	r _y = 3.9575 in

Non-composite Capacities*		
	AB	AI
M	8932.79 k-ft	8932.79 k-ft
V	651.96 k	651.96 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 17



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

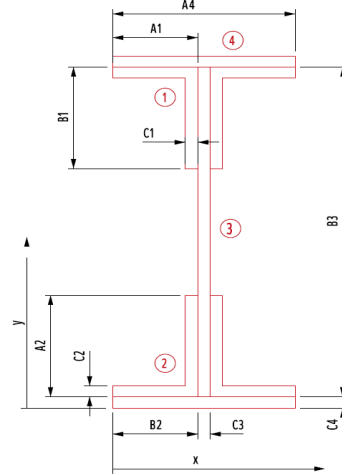
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 61.3125$ in
 $d_o = 63.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 2.5000$ in
 $A_4 = 18.0000$ in



Girder Section 17

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	63.4375	761.2500	0.5625	30.2813	11003.4492	11004.0117
	Vertical Leg		10.8750	59.4375	646.3828	47.6348	26.2813	7511.4071	7559.0419
2	Horizontal Leg		12.0000	2.8750	34.5000	0.5625	30.2813	11003.4492	11004.0117
	Vertical Leg		10.8750	6.8750	74.7656	47.6348	26.2813	7511.4071	7559.0419
3	Web Plate		38.3203	33.1563	1270.5579	12004.5489	0.0000	0.0000	12004.5489
4	Cover Plate Top		45.0000	65.0625	2927.8125	23.4375	31.9063	45810.3955	45833.8330
	Cover Plate Bottom		45.0000	1.2500	56.2500	23.4375	31.9063	45810.3955	45833.8330
Total			174.07		5771.52	12147.82		128650.50	140798.32
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 33.1563 in	$S_{top} = 4246.51$ in ³			y-bar = 33.1563 in	$S_{top} = 4246.51$ in ³		
$I_x = 140798.32$ in ⁴	$S_{bott.} = 4246.51$ in ³			$I_x = 140798.32$ in ⁴	$S_{bott.} = 4246.51$ in ³		
$C_{top} = 33.1563$ in	$A = 174.0703$ in ²			$C_{top} = 33.1563$ in	$A = 174.0703$ in ²		
$C_{bottom} = 33.1563$ in	$r_x = 28.4404$ in			$C_{bottom} = 33.1563$ in	$r_x = 28.4404$ in		
	$Z = 4757.3082$ in ³				$Z = 4757.3082$ in ³		



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Date 3/1/2012
 Date 3/2/2012

Job No. P402110046
 Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y, gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	38.3203	9.0000	344.8828	1.2474	0.0000	0.0000	1.2474
4	Cover Plate	90.0000	9.0000	810.0000	2430.0000	0.0000	0.0000	2430.0000
Total		174.07		1566.63	2560.27		456.62	3016.89
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y, loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 335.21 in ³	x-bar =	9.0000	in	S _{right} = 335.21 in ³
I _y =	3016.89	in ⁴	S _{left} = 335.21 in ³	I _y =	3016.89	in ⁴	S _{left} = 335.21 in ³
C _{right} =	9.0000	in	A = 174.0703 in ²	C _{right} =	9.0000	in	A = 174.0703 in ²
C _{left} =	9.0000	in	r _y = 4.1631 in	C _{left} =	9.0000	in	r _y = 4.1631 in

Non-composite Capacities*		
	AB	AI
M	13082.60 k-ft	13082.60 k-ft
V	733.45 k	733.45 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

South Girder Section 18



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

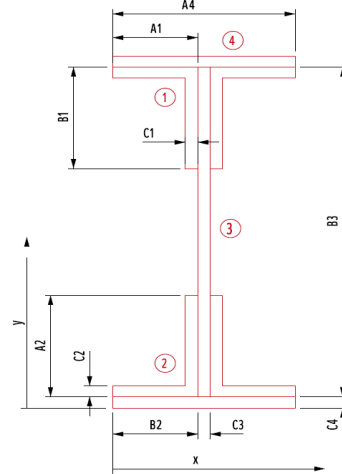
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 68.0000$ in
 $d_o = 63.5000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 18

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	69.2500	831.0000	0.5625	33.6250	13567.6875	13568.2500
	Vertical Leg		10.8750	65.2500	709.5938	47.6348	29.6250	9544.3418	9591.9766
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	33.6250	13567.6875	13568.2500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	29.6250	9544.3418	9591.9766
3	Web Plate		42.5000	35.6250	1514.0625	16376.6667	0.0000	0.0000	16376.6667
4	Cover Plate Top		29.2500	70.4375	2060.2969	6.4365	34.8125	35448.3721	35454.8086
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	34.8125	35448.3721	35454.8086
Total			146.75		5227.97	16485.93		117120.80	133606.74
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 35.6250 in	$S_{top} = 3750.36$ in ³			y-bar = 35.6250 in	$S_{top} = 3750.36$ in ³		
$I_x = 133606.74$ in ⁴	$S_{bott.} = 3750.36$ in ³			$I_x = 133606.74$ in ⁴	$S_{bott.} = 3750.36$ in ³		
$C_{top} = 35.6250$ in	$A = 146.7500$ in ²			$C_{top} = 35.6250$ in	$A = 146.7500$ in ²		
$C_{bottom} = 35.6250$ in	$r_x = 30.1735$ in			$C_{bottom} = 35.6250$ in	$r_x = 30.1735$ in		
	$Z = 4210.3750$ in ³				$Z = 4210.3750$ in ³		

SECTION L

South Girder Section 18



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	42.5000	9.0000	382.5000	1.3835	0.0000	0.0000	1.3835
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		146.75		1320.75	1709.90		456.62	2166.53
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.73 in ³	x-bar =	9.0000	in	S _{right} = 240.73 in ³
I _y =	2166.53	in ⁴	S _{left} = 240.73 in ³	I _y =	2166.53	in ⁴	S _{left} = 240.73 in ³
C _{right} =	9.0000	in	A = 146.7500 in ²	C _{right} =	9.0000	in	A = 146.7500 in ²
C _{left} =	9.0000	in	r _y = 3.8423 in	C _{left} =	9.0000	in	r _y = 3.8423 in

Non-composite Capacities*		
	AB	AI
M	10313.50 k-ft	10313.50 k-ft
V	809.04 k	809.04 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 19,21



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

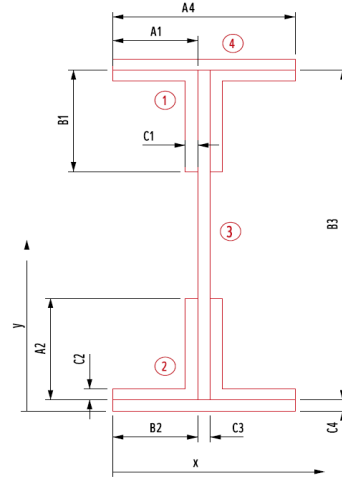
Web Plate:

$C_3 = 2.8750$ in
 $B_3 = 111.0000$ in
 $d_o = n/a$ in

$d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 19,21

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	112.2500	1347.0000	0.5625	55.1250	36465.1875	36465.7500
	Vertical Leg		10.8750	108.2500	1177.2188	47.6348	51.1250	28424.7012	28472.3359
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	55.1250	36465.1875	36465.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	51.1250	28424.7012	28472.3359
3	Web Plate		319.1250	57.1250	18230.0156	327661.5938	0.0000	0.0000	327661.5938
4	Cover Plate Top		29.2500	113.4375	3318.0469	6.4365	56.3125	92754.6064	92761.0430
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	56.3125	92754.6064	92761.0430
Total			423.38		24185.30	327770.86		315288.99	643059.85
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 57.1250 in	$S_{top} = 11257.07$ in ³			y-bar = 57.1250 in	$S_{top} = 11257.07$ in ³		
$I_x = 643059.85$ in ⁴	$S_{bott.} = 11257.07$ in ³			$I_x = 643059.85$ in ⁴	$S_{bott.} = 11257.07$ in ³		
$C_{top} = 57.1250$ in	$A = 423.3750$ in ²			$C_{top} = 57.1250$ in	$A = 423.3750$ in ²		
$C_{bottom} = 57.1250$ in	$r_x = 38.9729$ in			$C_{bottom} = 57.1250$ in	$r_x = 38.9729$ in		
	$Z = 14584.9688$ in ³				$Z = 14584.9688$ in ³		



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
1 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
2 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
2 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
3	Web Plate	319.1250	9.4375	3011.7422	219.8140	0.0000	0.0000	219.8140
4	Cover Plate	29.2500	9.4375	276.0469	1579.5000	0.0000	0.0000	1579.5000
Total		394.13		3719.55	1928.33		781.05	2709.38
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.4375	in	S _{right} = 287.09 in ³	x-bar =	9.4375	in	S _{right} = 287.09 in ³
I _y =	2709.38	in ⁴	S _{left} = 287.09 in ³	I _y =	2709.38	in ⁴	S _{left} = 287.09 in ³
C _{right} =	9.4375	in	A = 394.1250 in ²	C _{right} =	9.4375	in	A = 394.1250 in ²
C _{left} =	9.4375	in	r _y = 2.6219 in	C _{left} =	9.4375	in	r _y = 2.6219 in

Non-composite Capacities*		
	AB	AI
M	40108.66 k-ft	40108.66 k-ft
V	6108.05 k	6108.05 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



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Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

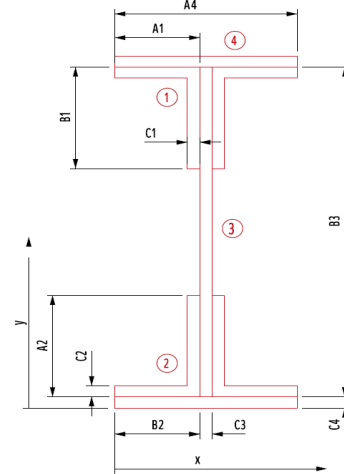
Web Plate:

$C_3 = 2.8750$ in
 $B_3 = 111.0000$ in
 $d_o = n/a$ in

$d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 20

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	112.2500	1347.0000	0.5625	50.9458	31145.6528	31146.2153
	Vertical Leg		10.8750	108.2500	1177.2188	47.6348	46.9458	23967.4662	24015.1010
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	59.3042	42203.9061	42204.4686
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	55.3042	33261.8216	33309.4563
3	Web Plate		319.1250	57.1250	18230.0156	327661.5938	4.1792	5573.8364	333235.4302
4	Cover Plate Top		29.2500	113.4375	3318.0469	6.4365	52.1333	79497.9145	79504.3510
	Cover Plate Bottom		0.0000	0.8125	0.0000	6.4365	60.4917	0.0000	6.4365
Total			394.13		24161.53	327770.86		215650.60	543421.46
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 61.3042 in	$S_{top} = 10263.74$ in ³			y-bar = 61.3042 in	$S_{top} = 10263.74$ in ³		
$I_x = 543421.46$ in ⁴	$S_{bott.} = 8864.34$ in ³			$I_x = 543421.46$ in ⁴	$S_{bott.} = 8864.34$ in ³		
$C_{top} = 52.9458$ in	A = 394.1250 in ²			$C_{top} = 52.9458$ in	A = 394.1250 in ²		
$C_{bottom} = 61.3042$ in	$r_x = 37.1323$ in			$C_{bottom} = 61.3042$ in	$r_x = 37.1323$ in		
	Z = 12863.4314 in ³				Z = 12863.4314 in ³		



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Date 3/1/2012
 Date 3/2/2012

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Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
1 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
2 (Left)	Horizontal Leg	6.0000	4.0000	24.0000	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	7.6250	41.4609	0.2549	1.8125	17.8630	18.1179
2 (Right)	Horizontal Leg	6.0000	14.8750	89.2500	32.0000	5.4375	177.3984	209.3984
	Vertical Leg	5.4375	11.2500	61.1719	0.2549	1.8125	17.8630	18.1179
3	Web Plate	319.1250	9.4375	3011.7422	219.8140	0.0000	0.0000	219.8140
4	Cover Plate	29.2500	9.4375	276.0469	1579.5000	0.0000	0.0000	1579.5000
Total		394.13		3719.55	1928.33		781.05	2709.38
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.4375	in	S _{right} = 287.09 in ³	x-bar =	9.4375	in	S _{right} = 287.09 in ³
I _y =	2709.38	in ⁴	S _{left} = 287.09 in ³	I _y =	2709.38	in ⁴	S _{left} = 287.09 in ³
C _{right} =	9.4375	in	A = 394.1250 in ²	C _{right} =	9.4375	in	A = 394.1250 in ²
C _{left} =	9.4375	in	r _y = 2.6219 in	C _{left} =	9.4375	in	r _y = 2.6219 in

Non-composite Capacities*		
	AB	AI
M	35374.44 k-ft	35374.44 k-ft
V	6108.05 k	6108.05 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
 AI = As-Inspected
 M = Moment
 V = Shear

SECTION L

South Girder Section 22



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

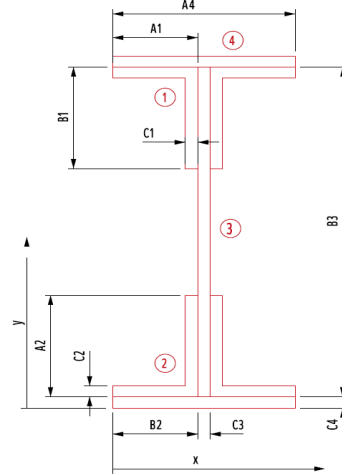
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 67.0000$ in
 $d_o = 63.5000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 22

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	68.2500	819.0000	0.5625	33.1250	13167.1875	13167.7500
	Vertical Leg		10.8750	64.2500	698.7188	47.6348	29.1250	9224.8887	9272.5234
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	33.1250	13167.1875	13167.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	29.1250	9224.8887	9272.5234
3	Web Plate		41.8750	35.1250	1470.8594	15664.7396	0.0000	0.0000	15664.7396
4	Cover Plate Top		29.2500	69.4375	2031.0469	6.4365	34.3125	34437.4189	34443.8555
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	34.3125	34437.4189	34443.8555
Total			146.13		5132.64	15774.01		113658.99	129433.00
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	35.1250	in	$S_{top} = 3684.93$	in ³	y-bar =	35.1250	in	$S_{top} = 3684.93$	in ³		
$I_x =$	129433.00	in ⁴	$S_{bott.} = 3684.93$	in ³	$I_x =$	129433.00	in ⁴	$S_{bott.} = 3684.93$	in ³		
$C_{top} =$	35.1250	in	A =	146.1250	in ²	$C_{top} =$	35.1250	in	A =	146.1250	in ²
$C_{bottom} =$	35.1250	in	$r_x =$	29.7619	in	$C_{bottom} =$	35.1250	in	$r_x =$	29.7619	in
			Z =	4137.1563	in ³				Z =	4137.1563	in ³



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
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Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	41.8750	9.0000	376.8750	1.3631	0.0000	0.0000	1.3631
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		146.13		1315.13	1709.88		456.62	2166.51
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.72 in ³	x-bar =	9.0000	in	S _{right} = 240.72 in ³
I _y =	2166.51	in ⁴	S _{left} = 240.72 in ³	I _y =	2166.51	in ⁴	S _{left} = 240.72 in ³
C _{right} =	9.0000	in	A = 146.1250 in ²	C _{right} =	9.0000	in	A = 146.1250 in ²
C _{left} =	9.0000	in	r _y = 3.8505 in	C _{left} =	9.0000	in	r _y = 3.8505 in

Non-composite Capacities*		
	AB	AI
M	10133.54 k-ft	10133.54 k-ft
V	801.49 k	801.49 k

*Noncompact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 23



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

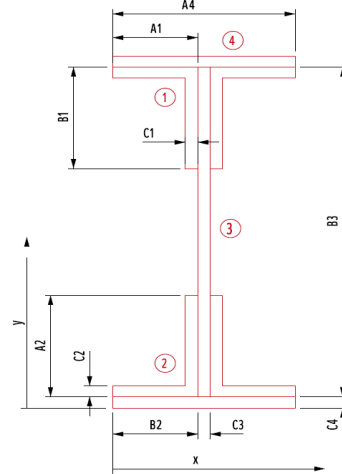
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 59.3750$ in
 $d_o = 63.5000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 23

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	60.6250	727.5000	0.5625	29.3125	10310.6719	10311.2344
	Vertical Leg		10.8750	56.6250	615.7969	47.6348	25.3125	6967.8589	7015.4937
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	29.3125	10310.6719	10311.2344
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	25.3125	6967.8589	7015.4937
3	Web Plate		37.1094	31.3125	1161.9873	10902.0869	0.0000	0.0000	10902.0869
4	Cover Plate Top		29.2500	61.8125	1808.0156	6.4365	30.5000	27209.8125	27216.2490
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	30.5000	27209.8125	27216.2490
Total			141.36		4426.32	11011.35		88976.69	99988.04
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	31.3125	in	$S_{top} = 3193.23$	in ³	y-bar =	31.3125	in	$S_{top} = 3193.23$	in ³		
$I_x =$	99988.04	n ⁴	$S_{bott.} = 3193.23$	in ³	$I_x =$	99988.04	in ⁴	$S_{bott.} = 3193.23$	in ³		
$C_{top} =$	31.3125	in	A =	141.3594	in ²	$C_{top} =$	31.3125	in	A =	141.3594	in ²
$C_{bottom} =$	31.3125	in	$r_x =$	26.5957	in	$C_{bottom} =$	31.3125	in	$r_x =$	26.5957	in
			Z =	3589.1392	in ³				Z =	3589.1392	in ³



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	37.1094	9.0000	333.9844	1.2080	0.0000	0.0000	1.2080
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		141.36		1272.23	1709.73		456.62	2166.35
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.71 in ³	x-bar =	9.0000	in	S _{right} = 240.71 in ³
I _y =	2166.35	in ⁴	S _{left} = 240.71 in ³	I _y =	2166.35	in ⁴	S _{left} = 240.71 in ³
C _{right} =	9.0000	in	A = 141.3594 in ²	C _{right} =	9.0000	in	A = 141.3594 in ²
C _{left} =	9.0000	in	r _y = 3.9147 in	C _{left} =	9.0000	in	r _y = 3.9147 in

Non-composite Capacities*		
	AB	AI
M	9870.13 k-ft	9870.13 k-ft
V	710.27 k	710.27 k

*Compact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 24



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

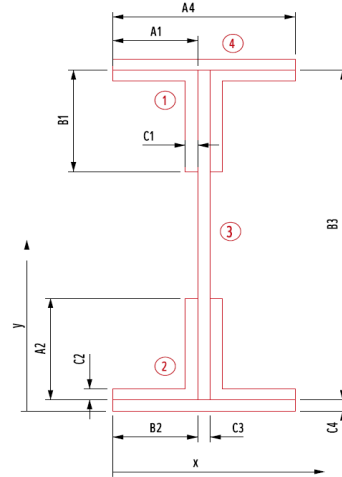
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 57.0000$ in
 $d_o = 61.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 24

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	58.2500	699.0000	0.5625	28.1250	9492.1875	9492.7500
	Vertical Leg		10.8750	54.2500	589.9688	47.6348	24.1250	6329.4199	6377.0547
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	28.1250	9492.1875	9492.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	24.1250	6329.4199	6377.0547
3	Web Plate		35.6250	30.1250	1073.2031	9645.4688	0.0000	0.0000	9645.4688
4	Cover Plate Top		29.2500	59.4375	1738.5469	6.4365	29.3125	25132.2627	25138.6992
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	29.3125	25132.2627	25138.6992
Total			139.88		4213.73	9754.74		81907.74	91662.48
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	30.1250	in	$S_{top} = 3042.74$	in ³	y-bar =	30.1250	in	$S_{top} = 3042.74$	in ³		
$I_x =$	91662.48	n ⁴	$S_{bott.} = 3042.74$	in ³	$I_x =$	91662.48	in ⁴	$S_{bott.} = 3042.74$	in ³		
$C_{top} =$	30.1250	in	A =	139.8750	in ²	$C_{top} =$	30.1250	in	A =	139.8750	in ²
$C_{bottom} =$	30.1250	in	$r_x =$	25.5992	in	$C_{bottom} =$	30.1250	in	$r_x =$	25.5992	in
			Z =	3422.1563	in ³				Z =	3422.1563	in ³



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	35.6250	9.0000	320.6250	1.1597	0.0000	0.0000	1.1597
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		139.88		1258.88	1709.68		456.62	2166.30
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.70 in ³	x-bar =	9.0000	in	S _{right} = 240.70 in ³
I _y =	2166.30	in ⁴	S _{left} = 240.70 in ³	I _y =	2166.30	in ⁴	S _{left} = 240.70 in ³
C _{right} =	9.0000	in	A = 139.8750 in ²	C _{right} =	9.0000	in	A = 139.8750 in ²
C _{left} =	9.0000	in	r _y = 3.9354 in	C _{left} =	9.0000	in	r _y = 3.9354 in

Non-composite Capacities*		
	AB	AI
M	9410.93 k-ft	9410.93 k-ft
V	681.86 k	681.86 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 25



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

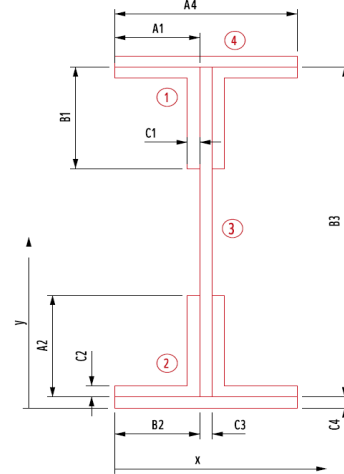
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 54.5000$ in
 $d_o = 58.2500$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 25

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	55.7500	669.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	51.7500	562.7813	47.6348	22.8750	5690.5137	5738.1484
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	26.8750	8667.1875	8667.7500
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	22.8750	5690.5137	5738.1484
3	Web Plate		34.0625	28.8750	983.5547	8431.1784	0.0000	0.0000	8431.1784
4	Cover Plate Top		29.2500	56.9375	1665.4219	6.4365	28.0625	23034.4893	23040.9258
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	28.0625	23034.4893	23040.9258
Total			138.31		3993.77	8540.45		74784.38	83324.83
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³	y-bar =	28.8750	in	$S_{top} = 2885.71$	in ³		
$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³	$I_x =$	83324.83	in ⁴	$S_{bott.} = 2885.71$	in ³		
$C_{top} =$	28.8750	in	A =	138.3125	in ²	$C_{top} =$	28.8750	in	A =	138.3125	in ²
$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in	$C_{bottom} =$	28.8750	in	$r_x =$	24.5446	in
			Z =	3248.2891	in ³				Z =	3248.2891	in ³



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Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	34.0625	9.0000	306.5625	1.1088	0.0000	0.0000	1.1088
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		138.31		1244.81	1709.63		456.62	2166.25
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.69 in ³	x-bar =	9.0000	in	S _{right} = 240.69 in ³
I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³	I _y =	2166.25	in ⁴	S _{left} = 240.69 in ³
C _{right} =	9.0000	in	A = 138.3125 in ²	C _{right} =	9.0000	in	A = 138.3125 in ²
C _{left} =	9.0000	in	r _y = 3.9575 in	C _{left} =	9.0000	in	r _y = 3.9575 in

Non-composite Capacities*		
	AB	AI
M	8932.79 k-ft	8932.79 k-ft
V	651.96 k	651.96 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 26



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

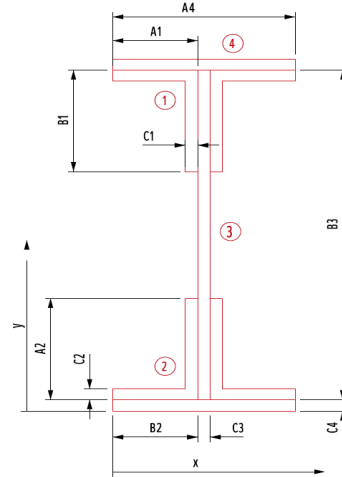
Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 56.3125$ in
 $d_o = 55.0000$ in

d_o = stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 26

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	57.5625	690.7500	0.5625	27.7813	9261.5742	9262.1367
	Vertical Leg		10.8750	53.5625	582.4922	47.6348	23.7813	6150.3329	6197.9677
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	27.7813	9261.5742	9262.1367
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	23.7813	6150.3329	6197.9677
3	Web Plate		35.1953	29.7813	1048.1604	9300.6477	0.0000	0.0000	9300.6477
4	Cover Plate Top		29.2500	58.7500	1718.4375	6.4365	28.9688	24546.2629	24552.6995
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	28.9688	24546.2629	24552.6995
Total			139.45		4152.86	9409.92		79916.34	89326.26
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 29.7813 in	$S_{top} = 2999.41$ in ³			y-bar = 29.7813 in	$S_{top} = 2999.41$ in ³		
$I_x = 89326.26$ in ⁴	$S_{bott.} = 2999.41$ in ³			$I_x = 89326.26$ in ⁴	$S_{bott.} = 2999.41$ in ³		
$C_{top} = 29.7813$ in	$A = 139.4453$ in ²			$C_{top} = 29.7813$ in	$A = 139.4453$ in ²		
$C_{bottom} = 29.7813$ in	$r_x = 25.3097$ in			$C_{bottom} = 29.7813$ in	$r_x = 25.3097$ in		
	$Z = 3374.1481$ in ³				$Z = 3374.1481$ in ³		



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	35.1953	9.0000	316.7578	1.1457	0.0000	0.0000	1.1457
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		139.45		1255.01	1709.67		456.62	2166.29
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.70 in ³	x-bar =	9.0000	in	S _{right} = 240.70 in ³
I _y =	2166.29	in ⁴	S _{left} = 240.70 in ³	I _y =	2166.29	in ⁴	S _{left} = 240.70 in ³
C _{right} =	9.0000	in	A = 139.4453 in ²	C _{right} =	9.0000	in	A = 139.4453 in ²
C _{left} =	9.0000	in	r _y = 3.9415 in	C _{left} =	9.0000	in	r _y = 3.9415 in

Non-composite Capacities*		
	AB	AI
M	9278.91 k-ft	9278.91 k-ft
V	673.64 k	673.64 k

*Compact Section

F_y = 33.00 ksi

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 27



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

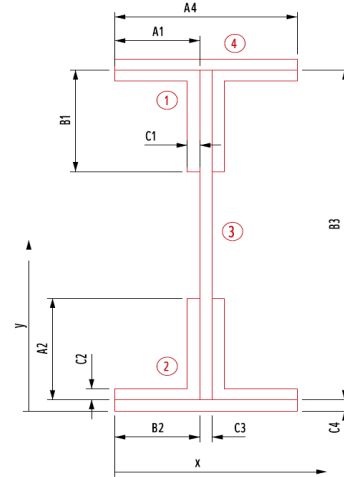
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 72.5000$ in
 $d_o = 58.2500$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 27

X-Axis Section Properties:

Gross Section (without Losses)		A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg	12.0000	73.7500	885.0000	0.5625	35.8750	15444.1875	15444.7500
	Vertical Leg	10.8750	69.7500	758.5313	47.6348	31.8750	11049.1699	11096.8047
2	Horizontal Leg	12.0000	2.0000	24.0000	0.5625	35.8750	15444.1875	15444.7500
	Vertical Leg	10.8750	6.0000	65.2500	47.6348	31.8750	11049.1699	11096.8047
3	Web Plate	45.3125	37.8750	1716.2109	19847.8190	0.0000	0.0000	19847.8190
4	Cover Plate Top	29.2500	74.9375	2191.9219	6.4365	37.0625	40178.6455	40185.0820
	Cover Plate Bottom	29.2500	0.8125	23.7656	6.4365	37.0625	40178.6455	40185.0820
Total		149.56		5664.68	19957.09		133344.01	153301.09
Section Losses		A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties							
y-bar =	37.8750	in	$S_{top} = 4047.55$	in ³	y-bar =	37.8750	in	$S_{top} = 4047.55$	in ³		
$I_x =$	153301.09	in ⁴	$S_{bott.} = 4047.55$	in ³	$I_x =$	153301.09	in ⁴	$S_{bott.} = 4047.55$	in ³		
$C_{top} =$	37.8750	in	A =	149.5625	in ²	$C_{top} =$	37.8750	in	A =	149.5625	in ²
$C_{bottom} =$	37.8750	in	$r_x =$	32.0156	in	$C_{bottom} =$	37.8750	in	$r_x =$	32.0156	in
			Z =	4543.7266	in ³				Z =	4543.7266	in ³



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	45.3125	9.0000	407.8125	1.4750	0.0000	0.0000	1.4750
4	Cover Plate	58.5000	9.0000	526.5000	1579.5000	0.0000	0.0000	1579.5000
Total		149.56		1346.06	1709.99		456.62	2166.62
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 240.74 in ³	x-bar =	9.0000	in	S _{right} = 240.74 in ³
I _y =	2166.62	in ⁴	S _{left} = 240.74 in ³	I _y =	2166.62	in ⁴	S _{left} = 240.74 in ³
C _{right} =	9.0000	in	A = 149.5625 in ²	C _{right} =	9.0000	in	A = 149.5625 in ²
C _{left} =	9.0000	in	r _y = 3.8061 in	C _{left} =	9.0000	in	r _y = 3.8061 in

Non-composite Capacities*		
	AB	AI
M	11130.77 k-ft	11130.77 k-ft
V	867.28 k	867.28 k

*Noncompact Section

F_y =	33.00 ksi
------------------------	------------------

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear

SECTION L

South Girder Section 28



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 6.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 6.0000$ in

Bottom Angles:

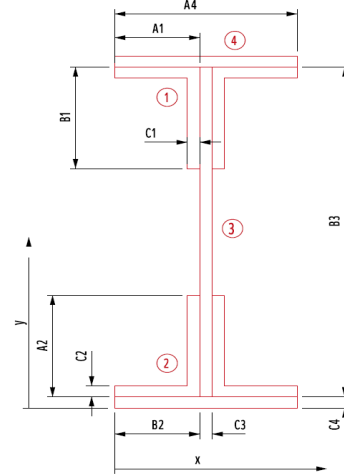
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 48.0000$ in
 $d_o = 8.0000$ in
 $d_o =$ stiffener spacing for shear check
Use "N/A" for no stiffeners

Cover Plate:

$C_4 = 1.6250$ in
 $A_4 = 18.0000$ in



Girder Section 28

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I _o	d	Ad ²	I _{x,gross}
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		9.0000	49.2500	443.2500	0.4219	32.1870	9324.0421	9324.4640
	Vertical Leg		7.8750	46.2500	364.2188	18.0879	29.1870	6708.5748	6726.6627
2	Horizontal Leg		12.0000	2.0000	24.0000	0.5625	15.0630	2722.7180	2723.2805
	Vertical Leg		10.8750	6.0000	65.2500	47.6348	11.0630	1330.9845	1378.6193
3	Web Plate		30.0000	25.6250	768.7500	5760.0000	8.5620	2199.2489	7959.2489
4	Cover Plate Top		0.0000	50.4375	0.0000	6.4365	33.3745	0.0000	6.4365
	Cover Plate Bottom		29.2500	0.8125	23.7656	6.4365	16.2505	7724.2782	7730.7148
Total			99.00		1689.23	5839.58		30009.85	35849.43
Section Losses			A	y	Ay	I _o	d	Ad ²	I _{x,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 17.0630 in	S _{top} = 1048.63 in ³			y-bar = 17.0630 in	S _{top} = 1048.63 in ³		
I _x = 35849.43 in ⁴	S _{bottom} = 2101.01 in ³			I _x = 35849.43 in ⁴	S _{bottom} = 2101.01 in ³		
C _{top} = 34.1870 in	A = 99.0000 in ²			C _{top} = 34.1870 in	A = 99.0000 in ²		
C _{bottom} = 17.0630 in	r _x = 19.0293 in			C _{bottom} = 17.0630 in	r _x = 19.0293 in		
	Z = 1526.3741 in ³				Z = 1526.3741 in ³		



Made By SFH
Checked By NRF

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: CUY-2-1441 Revised: CTG 4/16/2012

Does top are:

Does btm are:

Y-Axis Section Properties:

Gross Section (without Losses)		A	x	Ax	I _o	d	Ad ²	I _{y,gross}
Element	Description	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg	4.5000	5.6875	25.5938	13.5000	3.3125	49.3770	62.8770
	Vertical Leg	3.9375	8.3125	32.7305	0.1846	0.6875	1.8611	2.0457
1 (Right)	Horizontal Leg	4.5000	12.3125	55.4063	13.5000	3.3125	49.3770	62.8770
	Vertical Leg	3.9375	9.6875	38.1445	0.1846	0.6875	1.8611	2.0457
2 (Left)	Horizontal Leg	6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg	6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg	5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate	30.0000	9.0000	270.0000	0.9766	0.0000	0.0000	0.9766
4	Cover Plate	29.2500	9.0000	263.2500	1579.5000	0.0000	0.0000	1579.5000
Total		99.00		891.00	1672.36		330.79	2003.14
Section Losses		A	x	Ax	I _o	d	Ad ²	I _{y,loss}
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar =	9.0000	in	S _{right} = 222.57 in ³	x-bar =	9.0000	in	S _{right} = 222.57 in ³
I _y =	2003.14	in ⁴	S _{left} = 222.57 in ³	I _y =	2003.14	in ⁴	S _{left} = 222.57 in ³
C _{right} =	9.0000	in	A = 99.0000 in ²	C _{right} =	9.0000	in	A = 99.0000 in ²
C _{left} =	9.0000	in	r _y = 4.4982 in	C _{left} =	9.0000	in	r _y = 4.4982 in

Non-composite Capacities*		
	AB	AI
M	4197.53 k-ft	4197.53 k-ft
V	574.20 k	574.20 k

*Compact Section

F_y = **33.00 ksi**

AB = As-Built
AI = As-Inspected
M = Moment
V = Shear



Made KMW
Checked SFH

Date 2/29/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Dead Load

Angles

Assumptions/Notes

Span
L

Element
Section L Girder

Used from STAAD node 19 to Splice on Shop Dwg Sht 7, to include top flange splices, web splices at Node 19 and all intermediate web plates btwn. Note: Node 19 to 21 =36.7 ft, total length of used section = 42.9 ft

		Angle Dimension								Section Subtotals	
		(inches)			Feet	Inches					
		Quantity	Leg 1	Leg 2	Thickness	Length (L)	L(tot./EA)	lb/ft	Total wt.		
Member Weight		4	8	8	0.75	42	10.8	42.900	39.2	6726.720	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
										6726.720	
Members contributing to Total Weight		4	7.25	7.25	0.75	6	0.0313	6.003	39.2	941.209	
		6	6	4	0.38	4	7.599	4.633	12.2	339.154	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
		1	0	0	0.00	0	0	0.000	0.0	0.000	
										1280.363	

Section Total 8007.083 Pounds



Made KMW
Checked SFH

Date #####
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Dead Load	Plates	Assumptions/Notes
Span L	Element Section L Girder	web PL avg ht = 4.838 ft (hand calc, sht 7)

Steel= 490 #/Lf

	Plate Dimension					Area	Total wt.	Section Subtotals
	Quantity	(inches)		Feet	Inches			
		Height	Thickness	Width				
Member Weight	1	58.056	0.63	42	10.8	10.810	5296.854	
	4	18	0.81	42	10.8	17.428	8539.781	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	13836.635
Members contributing to Total Weight	2	18.5	0.75	3	9.75	0.735	360.003	
	2	4	0.75	3	9.125	0.157	76.775	
	4	15	0.75	3	0.5521	0.952	466.420	
	2	18	0.88	7	6.5521	1.651	808.838	
	6	4	0.75	3	4.3802	0.421	206.107	
	1	10.5	1.06	1	6	0.116	56.943	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	1975.087

Section Total 15811.722 Pounds



Made KMW
 Checked SFH

Date 2/29/2012
 Date 3/1/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Dead Load

Plates

Assumptions/Notes

Span
L

Element
Section L Girder

Used from STAAD node 19 to Splice on Shop Dwg Sht 7, to include top flange splices, web splices at Node 19 and all intermediate web plates btwn. Note: Node 19 to 21 =36.7 ft, total length of used section = 42.9 ft

Total Weight

Member Weight

Angles	8007.08
Plates	15811.72

Angles	6726.72
Plates	13836.64

Member Total 23818.81 lbs
 x 5% misc. **25009.75**

Main Member Tot. 20563.36 lbs

Bump-Up Factor = $\frac{25009.75}{20563.36}$ = 1.216



Made KMW
 Checked SFH

Date 2/29/2012
 Date 3/1/2012

Job No. P402110046
 Sheet No. _____

Calculations For: **CUY-2-1441**

Dead Load

Angles

Assumptions/Notes

Span
L

Element
Section L girder haunch

This is a very random sheet. If you have questions about my logic, see me

	Angle Dimension						L(tot./EA)	lb/ft	Total wt.	Section Subtotals
	(inches)			Feet	Inches	Length (L)				
	Quantity	Leg 1	Leg 2	Thickness						
Member Weight	4	8	8	0.75	11	4	11.333	39.2	1777.067	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	1777.067
Members contributing to Total Weight	8	6	4	0.75	5	7.125	5.594	23.6	1056.100	
	0	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	
	1	0	0	0.00	0	0	0.000	0.0	0.000	1056.100

Section Total 2833.167 Pounds



Made KMW
Checked SFH

Date 2/29/2012
Date 3/1/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Dead Load

Plates

Assumptions/Notes

Span
L

Element
Section L girder haunch

bumped up btm flange qty by 25% to account for haunch

Steel= 490 #/Lf

	Quantity	Plate Dimension			Area	Total wt.	Section Subtotals	
		Height	Thickness	Width				
				(inches)				Feet
Member Weight	1	153.2496	2.31	6	11	17.022	8340.873	
	2	18	0.81	12	9.25	2.594	1271.097	
	4	18	0.81	5	6	2.234	1094.844	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	10706.814
Members contributing to Total Weight	2	83.0004	0.38	11	4	4.965	2432.680	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	
	1	0	0.00	0	0	0.000	0.000	2432.680

Section Total 13139.494 Pounds



Made KMW
 Checked SFH

Date 2/29/2012
 Date 3/1/2012

Job No. P402110046
 Sheet No.

Calculations For: **CUY-2-1441**

Dead Load	Plates	Element	Assumptions/Notes
Span L		Section L girder haunch	see sheet 6 for rivet logic

Total Weight

Rivets **180**

Angles	2833.17
Plates	13139.49

Member Weight

Angles	1777.067
Plates	10706.81

Member Total **16152.66 lbs**
 x 5% misc. **16960.29403**

Main Member Tot. **12483.88 lbs**

Bump-Up Factor = $\frac{16960.29}{12483.88074}$ = **1.359**

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
JOB NAME Section L North Frame
JOB NO P402110046
ENGINEER NAME SFH
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 1.375 15.8 0; 2 96.4948 0 0; 3 181.349 11.8 0; 4 227.734 11.8 0;
5 0 27.8682 0; 6 0.5208 27.8641 0; 7 1.375 27.8573 0; 8 16.4948 27.7372
0;
9 36.4948 27.5783 0; 10 48.9349 27.4795 0; 11 56.4948 27.4194 0;
12 76.4948 27.2605 0; 13 80.5156 27.2286 0; 14 90.7448 27.1473 0;
15 94.974 27.1137 0; 16 96.4948 27.1016 0; 17 98.0156 27.0706 0;
18 102.245 26.9845 0; 19 112.474 26.7761 0; 20 117.714 26.6693 0;
21 138.932 26.237 0; 22 160.141 25.805 0; 23 181.349 25.3729 0;
24 204.542 25.1646 0; 25 227.193 24.9612 0; 26 227.734 24.9563 0; 100 0
50 0;
101 16.4948 50 0; 102 36.4948 50 0; 103 56.4948 50 0; 104 76.4948 50 0;
105 96.4948 50 0; 106 117.714 50 0; 107 138.932 50 0; 108 160.141 50 0;
109 181.349 50 0; 110 204.542 50 0; 111 227.734 50 0;
MEMBER INCIDENCES
1 1 7; 2 2 16; 3 3 23; 4 4 26; 5 5 6; 6 6 7; 7 7 8; 8 8 9; 9 9 10; 10 10
11;
11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 17; 17 17 18; 18
18 19;
19 19 20; 20 20 21; 21 21 22; 22 22 23; 23 23 24; 24 24 25; 25 25 26;
100 100 101; 101 101 102; 102 102 103; 103 103 104; 104 104 105; 105 105
106;
106 106 107; 107 107 108; 108 108 109; 109 109 110; 110 110 111;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6.5e-006
DAMP 0.03
END DEFINE MATERIAL
UNIT INCHES KIP
MEMBER PROPERTY AMERICAN
1 TABLE ST W14X120
2 TAPERED 36.5 0.625 36.5 18 2.083
3 TABLE ST W14X120
4 TABLE ST W14X120
5 TAPERED 48.875 0.625 48.875 12.625 0.75 18 2.9
6 TAPERED 78.3 0.625 78.3 18 2.9
7 TAPERED 78.3 0.625 68.675 18 2.9
8 TAPERED 68.675 0.625 61.55 18 2.9
9 TAPERED 61.55 0.625 60.3 18 2.9
10 TAPERED 60.3 0.625 60.8 18 2.9
11 TAPERED 60.8 0.625 66.3625 18 2.9
12 TAPERED 66.3625 0.625 68.175 18 2.9
13 TAPERED 68.175 0.625 74.3 18 2.9
14 TAPERED 74.3 2.125 113.275 18 2.9
15 TAPERED 113.275 2.125 113.275 18 2.9
16 TAPERED 113.275 2.125 113.275 18 2.9
17 TAPERED 113.275 2.125 73.8625 18 2.9
18 TAPERED 73.8625 0.625 67.2375 18 2.9
19 TAPERED 67.2375 0.625 64.8 18 2.9

```

20 TAPERED 64.8 0.625 60.3 18 2.9
21 TAPERED 60.3 0.625 64.8 18 2.9
22 TAPERED 64.8 0.625 78.3 18 2.9
23 TABLE ST W36X260
24 TABLE ST W36X260
25 TAPERED 21.125 0.845 21.125 12.845 0.75 16.555 1.44
100 TO 110 TABLE ST W18X60
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
1 2 3 4 PINNED

MEMBER RELEASE
102 105 108 END MX MY MZ
103 106 109 START MX MY MZ
1 4 END MX MY MZ
SLAVE FY MASTER 100 JOINT 5
SLAVE FY MASTER 101 JOINT 8
SLAVE FY MASTER 102 JOINT 9
SLAVE FY MASTER 103 JOINT 11
SLAVE FY MASTER 104 JOINT 12
SLAVE FY MASTER 105 JOINT 16
SLAVE FY MASTER 106 JOINT 20
SLAVE FY MASTER 107 JOINT 21
SLAVE FY MASTER 108 JOINT 22
SLAVE FY MASTER 109 JOINT 23
SLAVE FY MASTER 110 JOINT 24
SLAVE FY MASTER 111 JOINT 26
UNIT FEET KIP

DEFINE MOVING LOAD
*HS20 Truck
TYPE 1 LOAD 16 16 4
DIST 14 14
TYPE 2 LOAD 4 16 16
DIST 14 14
*2F1 TRUCK
TYPE 3 LOAD 5 10
DIST 10
TYPE 4 LOAD 10 5
DIST 10
*3F1 TRUCK
TYPE 5 LOAD 6 8.5 8.5
DIST 10 4
TYPE 6 LOAD 8.5 8.5 6
DIST 4 10
*4F1 TRUCK
TYPE 7 LOAD 6 7 7 7
DIST 10 4 4
TYPE 8 LOAD 7 7 7 6
DIST 4 4 10
*5C1 TRUCK
TYPE 9 LOAD 6 8.5 8.5 8.5 8.5
DIST 12 4 31 4
TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
DIST 4 31 4 12
*
*LOAD 1 LOADTYPE Dead TITLE SELF WEIGHT
**Built-Up Girder Sections
*SELFWEIGHT Y -1.22 LIST 5 TO 13 18 TO 22
**Built-Up Section over Built-Up Column

*SELFWEIGHT Y -1.36 LIST 14 TO 17
**Non-Built-Up Sections
*SELFWEIGHT Y -1.05 LIST 23 TO 25
**Dead Loads reactions from FB models
*LOAD 2 LOADTYPE Dead TITLE LOAD CASE 2
*JOINT LOAD
*5 FY -26.189
*8 FY -54.794
*9 FY -58.925
*11 FY -40.595
*12 FY -46.34
*16 FY -43.364
*20 FY -40.221
*21 FY -45.772
*22 FY -53.603
*23 FY -47.787
*24 FY -81.755
*26 FY -33.078

*HS20 LOADING 1 TRUCK - FORWARD
LOAD GENERATION 3000
TYPE 1 -28 50 0 XINC 0.1
*HS20 LOADING 1 TRUCK - BACKWARD
LOAD GENERATION 3000
TYPE 2 -28 50 0 XINC 0.1
*2F1 FORWARD
*LOAD GENERATION 3000
*TYPE 3 -10 50 0 XINC 0.1
**2F1 BACKWARD
*LOAD GENERATION 3000
*TYPE 4 -10 50 0 XINC 0.1
**3F1 FORWARD
*LOAD GENERATION 3000
*TYPE 5 -14 50 0 XINC 0.1
**3F1 BACKWARD
*LOAD GENERATION 3000
*TYPE 6 -14 50 0 XINC 0.1
**4F1 FORWARD
*LOAD GENERATION 3000
*TYPE 7 -18 50 0 XINC 0.1
**4F1 BACKWARD
*LOAD GENERATION 3000
*TYPE 8 -18 50 0 XINC 0.1
**5C1 FORWARD
*LOAD GENERATION 3000
*TYPE 9 -51 50 0 XINC 0.1
**5C1 BACKWARD
*LOAD GENERATION 3000
*TYPE 10 -51 50 0 XINC 0.1
**
*LOAD COMB 5000 ALL DEAD LOADS
*1 1.0 2 1.0

PERFORM ANALYSIS
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
JOB NAME Section L South Frame
JOB NO P402110046
ENGINEER NAME SFH
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP

JOINT COORDINATES

1 1.3958 13.4 0 ;
2 41.5677 13.4 0 ;
3 81.5677 13.4 0 ;
4 165.2137 0 0 ;
5 232.6304 9.4 0 ;

6 0.0000 26.2091 0 ;
7 0.4895 26.2064 0 ;
8 1.3958 26.2013 0 ;
9 21.5677 26.0888 0 ;
10 39.2969 25.9900 0 ;
11 41.5677 25.9773 0 ;
12 61.5677 25.8427 0 ;
13 81.5677 25.7081 0 ;
14 101.5677 25.1951 0 ;
15 122.7865 24.6508 0 ;
16 144.0053 24.1065 0 ;
17 149.2345 23.9724 0 ;
18 159.4637 23.7100 0 ;
19 163.6929 23.6015 0 ;
20 165.2137 23.5625 0 ;
21 166.7345 23.5251 0 ;
22 170.9637 23.4211 0 ;
23 181.1929 23.1697 0 ;
24 186.4221 23.0411 0 ;
25 198.9221 22.7338 0 ;
26 209.6096 22.4711 0 ;
27 232.0471 21.9195 0 ;
28 232.6304 21.9052 0 ;

100 0.0000 50.0 0.0 ;
101 21.5677 50.0 0.0 ;
102 41.5677 50.0 0.0 ;
103 61.5677 50.0 0.0 ;
104 81.5677 50.0 0.0 ;
105 101.5677 50.0 0.0 ;
106 122.7865 50.0 0.0 ;
107 144.0053 50.0 0.0 ;
108 165.2137 50.0 0.0 ;
109 186.4221 50.0 0.0 ;
110 209.6096 50.0 0.0 ;
111 232.6304 50.0 0.0 ;

MEMBER INCIDENCES

1 1 8 ;
2 2 11 ;
3 3 13 ;
4 4 20 ;
5 5 28 ;

6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;
10 10 11 ;
11 11 12 ;
12 12 13 ;
13 13 14 ;
14 14 15 ;
15 15 16 ;
16 16 17 ;
17 17 18 ;
18 18 19 ;
19 19 20 ;
20 20 21 ;
21 21 22 ;
22 22 23 ;
23 23 24 ;
24 24 25 ;
25 25 26 ;
26 26 27 ;
27 27 28 ;

100 100 101 ;
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;
108 108 109 ;
109 109 110 ;
110 110 111 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6.5e-006
DAMP 0.03
END DEFINE MATERIAL

UNIT KIP INCH
MEMBER PROPERTY AMERICAN

1 TABLE ST W14X120
2 TABLE ST W14X120
3 TABLE ST W14X120
4 TAPERED 36.5 0.625 36.5 18 2.083
5 TABLE ST W14X120

6 TAPERED 20.5 0.77 20.5 12.77 0.75 12.117 1.26
7 TABLE ST W36X194
8 TABLE ST W36X194
9 TABLE ST W36X194
10 TABLE ST W36X194
11 TABLE ST W36X194
12 TABLE ST W36X194
13 TAPERED 77.675 0.625 65.2063 18 2.9
14 TAPERED 65.2063 0.625 60.3 18 2.9

15 TAPERED 60.3 0.625 64.675 18 2.9
16 TAPERED 64.675 0.625 67.1125 18 2.9
17 TAPERED 67.1125 0.625 73.8 18 2.9
18 TAPERED 73.8 2.125 113.9 18 2.9
19 TAPERED 113.9 2.125 113.9 18 2.9
20 TAPERED 113.9 2.125 113.9 18 2.9
21 TAPERED 113.9 2.125 72.8 18 2.9
22 TAPERED 72.8 0.625 65.175 18 2.9
23 TAPERED 65.175 0.625 62.8 18 2.9
24 TAPERED 62.8 0.625 60.3 18 2.9
25 TAPERED 60.3 0.625 62.1125 18 2.9
26 TAPERED 62.1125 0.625 78.675 18 2.9
27 TAPERED 48 0.625 48 12.625 0.75 18 2.9

100 TO 110 TABLE ST W18x60

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

1 TO 5 PINNED

MEMBER RELEASE

102 105 108 END MX MY MZ

103 106 109 START MX MY MZ

1 2 5 END MX MY MZ

SLAVE FY MASTER 100 JOINT 6

SLAVE FY MASTER 101 JOINT 9

SLAVE FY MASTER 102 JOINT 11

SLAVE FY MASTER 103 JOINT 12

SLAVE FY MASTER 104 JOINT 13

SLAVE FY MASTER 105 JOINT 14

SLAVE FY MASTER 106 JOINT 15

SLAVE FY MASTER 107 JOINT 16

SLAVE FY MASTER 108 JOINT 20

SLAVE FY MASTER 109 JOINT 24

SLAVE FY MASTER 110 JOINT 26

SLAVE FY MASTER 111 JOINT 28

UNIT KIP FEET

DEFINE MOVING LOAD

***HS20 Truck

TYPE 1 LOAD 16 16 4

DIST 14 14

TYPE 2 LOAD 4 16 16

DIST 14 14

**2F1 TRUCK

*TYPE 3 LOAD 5 10

*DIST 10

*TYPE 4 LOAD 10 5

*DIST 10

**3F1 TRUCK

*TYPE 5 LOAD 6 8.5 8.5

*DIST 10 4

*TYPE 6 LOAD 8.5 8.5 6

*DIST 4 10

**4F1 TRUCK

*TYPE 7 LOAD 6 7 7 7

*DIST 10 4 4

*TYPE 8 LOAD 7 7 7 6

*DIST 4 4 10

***5C1 TRUCK

*TYPE 9 LOAD 6 8.5 8.5 8.5 8.5
*DIST 12 4 31 4
*TYPE 10 LOAD 8.5 8.5 8.5 8.5 6
*DIST 4 31 4 12

LOAD 1 LOADTYPE Dead TITLE SELF WEIGHT
*Built-Up Typ Section
SELFWEIGHT Y -1.22 LIST 13 TO 18 22 TO 27

*Built-PUp Section over Built-Up Column
SELFWEIGHT Y -1.36 LIST 18 TO 21

*Non-Built-Up Sections
SELFWEIGHT Y -1.05 LIST 6 TO 12

*Dead Loads reactions from FB models
LOAD 2 LOADTYPE Dead TITLE LOAD CASE 2
JOINT LOAD
6 FY -24.201
9 FY -56.351
11 FY -64.347
12 FY -53.734
13 FY -78.542
14 FY -71.137
15 FY -63.827
16 FY -73.212
20 FY -73.219
24 FY -54.496
26 FY -74.226
28 FY -24.347

****HS20 LOADING 1 TRUCK - FORWARD
*LOAD GENERATION 3000
*TYPE 1 -28 50 0 XINC 0.1
****HS20 LOADING 1 TRUCK - BACKWARD
*LOAD GENERATION 3000
*TYPE 2 -28 50 0 XINC 0.1
***2F1 FORWARD
*LOAD GENERATION 3000
*TYPE 3 -10 50 0 XINC 0.1
***2F1 BACKWARD
*LOAD GENERATION 3000
*TYPE 4 -10 50 0 XINC 0.1
*3F1 FORWARD
*LOAD GENERATION 3000
*TYPE 5 -14 50 0 XINC 0.1
**3F1 BACKWARD
*LOAD GENERATION 3000
*TYPE 6 -14 50 0 XINC 0.1
**4F1 FORWARD
*LOAD GENERATION 3000
*TYPE 7 -18 50 0 XINC 0.1
**4F1 BACKWARD
*LOAD GENERATION 3000
*TYPE 8 -18 50 0 XINC 0.1
***5C1 FORWARD
*LOAD GENERATION 3000
*TYPE 9 -51 50 0 XINC 0.1

***5C1 BACKWARD
*LOAD GENERATION 3000
*TYPE 10 -51 50 0 XINC 0.1

LOAD COMB 5000 ALL DEAD LOADS
1 1.0 2 1.0

PERFORM ANALYSIS
FINISH



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441, Section L North Girder Dead Load Reactions**

	Max M	Max V	
	(k-ft)	(k)	
Governing Values	Beam Seat at FB 1	-13.99	26.765
	Left of CL5	-37.245	27.489
	Right of CL5	-37.245	103.512
	At FB 2	1457.937	39.324
	At FB 3	2126.604	29.281
	Center of Span 1	1717.774	36.438
	At FB 4	1425.893	82.586
	At FB 5	-341.839	139.904
	Short End of Taper at FB 6	-2396.009	148.441
	Tall End of Taper at FB 6	-3035.282	154.133
	At FB 6	-3271.472	156.47
	Short End of Taper at FB 6	-2968.65	121.442
	Tall End of Taper at FB 6	-2467.515	115.759
	At FB 7	-748.295	106.536
	At FB 8	539.137	54.537
	At FB 9	599.543	56.702
	Left of CL7	-737.529	69.486
	Right of CL7	-795.782	63.21
	At FB 11	596.94	56.884
	Forward End Span	15.583	28.754
Beam Seat at FB 12	0	28.85	



Made By NRF
Checked By DWC

Date 3/1/2012
Date 3/2/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441, Section L South Girder Dead Load Reactions**

		Max M	Max V
		(k-ft)	(k)
Governing Values	Beam Seat at FB1	-12.497	25.565
	Left Side CL1	-35.75	25.749
	Right Side CL1	-35.75	20.792
	At FB2	342.312	35.542
	Left Side CL1-A	-409.19	39.607
	Right Side CL1-A	-409.19	39.312
	At FB 4	336.423	35.247
	Left Side CL2	0	18.853
	Right Side CL2	0	90.187
	At FB 6	1682.706	78.136
	At FB 7	1809.336	65.613
	At FB 8	286.604	149.867
	Short End of Taper at FB 9	-2101.608	159.079
	Tall End of Taper at FB 9	-2796.343	169.881
	At FB9	-3056.569	172.228
	Tall End of Taper at FB9	-2857.945	129.393
	Short End of Taper at FB 9	-2857.945	129.393
	At FB 10	-481.332	114.571
	Center Span 4	230.331	53.317
	At FB 11	767.465	47.161
Beam Seat at FB 12	39.962	39.962	
At FB 12	0	40.178	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L North - Frame Girder Ratings

Calculated: SFH 3/1/2012

Checked: CTG 3/3/2012

Revised: CTG 4/16/2012

*capacities taken from spreadsheet or hand calculations

Location	Impact	LLDF	Moment from STAAD Model		Total Moment Total L+H	Shear from STAAD Model			Total Shear Total L+H	RF - Moment			RF - Shear		
			D	L		D	L	C*		RF	RF	C*	RF	RF	
			(k-ft)	Inventory		Operating	(kips)	Inventory		Operating					
Beam Seat at FB 1	1.23	4.23	13.99	0.00	0.00	26.77	17.57	91.33	4304.25	N/A	N/A	584.67	2.77	4.63	
Left of CL5	1.23	4.23	37.25	24.16	125.59	27.49	17.57	91.33	11314.04	41.34	68.91	879.24	4.26	7.09	
Right of CL5	1.23	4.23	37.25	24.16	125.59	103.51	24.58	127.80	11130.77	40.66	67.79	854.10	2.59	4.33	
At FB 2	1.23	3.88	1457.94	371.87	1775.07	39.32	24.58	117.33	10555.69	2.25	3.75	752.14	2.75	4.59	
At FB 3	1.23	3.55	2126.60	558.59	2437.58	29.28	15.85	69.15	9171.19	1.21	2.02	666.91	4.19	6.99	
Center Span 1	1.23	3.42	1717.77	458.22	1927.81	36.44	13.72	57.71	8932.79	1.60	2.67	651.96	4.83	8.05	
At FB 4	1.23	3.29	1425.89	447.76	1813.65	82.59	22.00	89.10	9027.99	1.82	3.04	657.94	2.85	4.75	
At FB 5	1.23	3.12	341.84	219.75	842.43	139.90	30.32	116.24	12903.33	6.82	11.36	724.48	2.15	3.59	
Short End of Taper at FB 6	1.23	3.02	2396.01	312.63	1160.51	148.44	30.32	112.56	10403.71	2.89	4.82	812.23	2.54	4.23	
Tall End of Taper at FB 6	1.23	3.02	3035.28	411.36	1527.04	154.13	30.32	112.56	39745.60	10.80	18.01	6073.66	24.05	40.08	
At FB 6	1.24	3.02	3271.47	449.37	1681.68	156.47	30.32	113.48	35036.51	8.44	14.06	6073.66	23.84	39.74	
Tall End of Taper at FB 6	1.24	3.02	2968.65	371.41	1389.94	121.44	25.45	95.25	39745.60	11.90	19.83	6073.66	28.62	47.71	
Short End of Taper at FB 6	1.24	3.02	2467.52	348.36	1303.67	115.76	25.45	95.25	10403.71	2.54	4.24	812.23	3.20	5.34	
At FB 7	1.24	3.00	748.30	266.35	990.15	106.54	25.45	94.62	9797.30	4.11	6.85	705.79	2.76	4.61	
At FB 8	1.24	3.07	539.14	452.32	1719.10	54.54	16.89	64.19	8932.79	2.21	3.68	651.96	4.17	6.95	
At FB 9	1.24	3.22	599.54	363.86	1452.83	56.70	22.49	89.79	9797.30	2.86	4.77	705.79	3.24	5.41	
Left of CL7 at FB 10	1.24	3.46	737.53	187.51	805.17	69.49	22.49	96.56	11130.77	5.82	9.70	839.01	3.57	5.96	
Right of CL7 at FB 10	1.29	3.46	795.78	198.57	888.43	63.21	18.23	81.58	2927.93	0.98	1.64	539.54	2.58	4.31	
At FB 11	1.29	3.83	596.94	224.36	1109.92	56.88	18.23	90.20	4406.42	1.51	2.51	539.54	2.38	3.97	
Forward End Span	1.29	4.30	15.58	5.23	29.08	28.75	9.67	53.76	2927.93	46.08	76.81	539.54	4.30	7.18	
Beam Seat at FB 12	1.29	4.30	0.00	0.00	0.00	28.85	9.67	53.76	972.73	N/A	N/A	306.24	2.30	3.84	
Beam Seat at FB1	1.30	3.11	12.50	9.95	40.17	25.57	20.33	82.07	820.05	9.22	15.37	272.50	1.34	2.24	
Left Side CL1	1.30	3.11	35.75	28.37	114.55	25.75	20.33	82.07	2089.24	8.22	13.70	500.50	2.62	4.37	
Right Side CL1	1.30	3.11	35.75	28.37	114.55	20.79	10.19	41.14	2089.24	8.22	13.70	500.50	5.30	8.84	
At FB2	1.30	3.48	319.77	64.36	291.32	39.15	14.75	66.77	2089.24	2.65	4.41	500.50	3.10	5.17	
Left Side CL1-A at FB3	1.30	3.80	409.19	97.84	483.84	39.61	14.75	72.94	2089.24	1.48	2.47	500.50	2.84	4.73	
Right Side CL1-A at FB 3	1.30	3.80	409.19	97.84	483.84	39.31	8.55	42.30	2089.24	1.48	2.47	500.50	4.90	8.16	
At FB 4	1.30	4.05	336.42	124.52	655.18	35.25	11.73	61.70	2089.24	1.16	1.94	500.50	3.40	5.66	
Left Side CL2 at FB 5	1.30	4.22	0.00	110.00	603.19	18.85	11.73	64.30	2089.24	1.60	2.66	500.50	3.41	5.69	
Right Side CL2 at FB 5	1.24	4.22	0.00	109.35	571.98	90.19	22.52	117.82	11016.54	8.88	14.80	859.80	2.90	4.84	
At FB 6	1.24	4.31	1682.71	350.50	1874.51	78.14	22.52	120.46	9876.21	1.89	3.15	710.65	2.33	3.88	
At FB 7	1.24	4.33	1809.34	393.62	2113.91	65.61	11.22	60.25	8932.79	1.43	2.39	651.96	4.33	7.23	
At FB 8	1.24	4.27	286.60	244.02	1291.11	149.87	27.34	144.68	9773.06	3.36	5.59	704.29	1.62	2.71	
Short End of Taper at FB 9	1.24	4.12	2101.61	225.38	1150.88	159.08	27.34	139.63	10313.50	3.04	5.06	809.04	1.99	3.31	
Tall End of Taper at FB 9	1.24	4.12	2796.34	328.00	1674.86	169.88	27.34	139.63	40108.66	10.04	16.73	6108.05	19.43	32.39	
At FB9	1.26	4.12	3056.57	365.46	1896.27	172.23	27.34	141.88	35374.44	7.63	12.72	6108.05	19.11	31.86	
Tall End of Taper at FB9	1.26	4.12	2857.95	291.07	1510.29	129.39	23.55	122.18	40108.66	11.10	18.51	6108.05	22.40	37.35	
Short End of Taper at FB 9	1.26	4.12	2857.95	271.45	1408.48	129.39	23.55	122.18	10133.54	2.10	3.50	801.49	2.39	3.98	
At FB 10	1.26	3.89	481.33	241.65	1182.90	114.57	23.55	115.26	9410.93	3.42	5.71	681.86	2.13	3.55	
Center Span 4	1.26	3.71	230.33	282.30	1319.44	53.32	11.96	55.89	8932.79	3.02	5.03	651.96	4.80	8.01	
At FB 11	1.26	3.53	767.47	391.51	1743.32	47.16	17.00	75.71	9278.91	2.19	3.65	673.64	3.73	6.21	
Beam Seat at FB 12	1.26	3.04	39.96	9.92	38.04	39.96	17.00	65.19	11130.77	134.21	223.73	867.28	5.76	9.61	
At FB 12	1.26	3.04	0.00	0.00	0.00	40.18	17.00	65.19	4197.53	N/A	N/A	574.20	3.69	6.15	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L North - Frame Girder Ratings

Calculated: SFH 3/1/2012

Checked: CTG 3/3/2012

Revised: CTG 4/16/2012

*capacities taken from spreadsheet or hand calculations

2F1	Location	Impact	LLDF	Moment from STAAD Model		Total Moment Total L+I	Shear from STAAD Model		Total Shear Total L+I	RF - Moment			RF - Shear		
				D	L		D	L		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
North Girder	Beam Seat at FB 1	1.23	4.23	13.99	0.00	0.00	26.77	11.52	59.91	4304.25	---	N/A	584.67	---	7.06
	Left of CL5	1.23	4.23	37.25	15.84	82.37	27.49	11.52	59.91	11314.04	---	105.21	879.24	---	10.83
	Right of CL5	1.23	4.23	37.25	15.84	82.37	103.51	11.55	60.02	11130.77	---	103.50	854.10	---	9.22
	At FB 2	1.23	3.88	1457.94	175.60	838.21	39.32	11.55	55.11	10555.69	---	7.95	752.14	---	9.78
	At FB 3	1.23	3.55	2126.60	258.02	1125.94	29.28	7.76	33.88	9171.19	---	4.38	666.91	---	14.28
	Center of Span 1	1.23	3.42	1717.77	199.49	839.29	36.44	6.86	28.85	8932.79	---	6.14	651.96	---	16.12
	At FB 4	1.23	3.29	1425.89	213.95	866.62	82.59	10.23	41.45	9027.99	---	6.37	657.94	---	10.22
	At FB 5	1.23	3.12	341.84	112.44	431.04	139.90	13.76	52.74	12903.33	---	22.23	724.48	---	7.91
	Short End of Taper at FB 6	1.23	3.02	2396.01	135.14	501.65	148.44	13.76	51.07	10403.71	---	11.18	812.23	---	9.33
	Tall End of Taper at FB 6	1.23	3.02	3035.28	178.00	660.75	154.13	13.76	51.07	39745.60	---	41.68	6073.66	---	88.47
	At FB 6	1.24	3.02	3271.47	193.41	723.80	156.47	13.76	51.49	35036.51	---	32.72	6073.66	---	87.70
	Tall End of Taper at FB 6	1.24	3.02	2968.65	159.66	597.49	121.44	11.68	43.71	39745.60	---	46.20	6073.66	---	104.11
	Short End of Taper at FB 6	1.24	3.02	2467.52	150.17	561.97	115.76	11.68	43.71	10403.71	---	9.85	812.23	---	11.65
	At FB 7	1.24	3.00	748.30	124.88	464.24	106.54	11.68	43.42	9797.30	---	14.62	705.79	---	10.05
	At FB 8	1.24	3.07	539.14	210.48	799.93	54.54	8.12	30.85	8932.79	---	7.92	651.96	---	14.49
	At FB 9	1.24	3.22	599.54	172.81	689.99	56.70	10.43	41.65	9797.30	---	10.05	705.79	---	11.67
	Left of CL7	1.24	3.46	737.53	91.95	394.84	69.49	10.43	44.80	11130.77	---	19.82	839.01	---	12.86
	Right of CL7	1.29	3.46	795.78	97.37	435.66	63.21	8.94	39.99	2927.93	---	3.34	539.54	---	8.80
	At FB 11	1.29	3.83	596.94	109.94	543.90	56.88	8.94	44.22	4406.42	---	5.13	539.54	---	8.10
	Forward End Span	1.29	4.30	15.58	2.57	14.25	28.75	4.74	26.34	2927.93	---	156.96	539.54	---	14.67
Beam Seat at FB 12	1.29	4.30	0.00	0.00	0.00	28.85	4.74	26.34	972.73	---	N/A	306.24	---	7.85	
South Girder	Beam Seat at FB1	1.30	3.11	12.50	6.00	24.21	25.57	12.25	49.46	820.05	---	25.54	272.50	---	3.72
	Left Side CL1	1.3	3.11	35.75	17.10	69.03	25.75	12.25	49.46	2089.24	---	22.76	500.50	---	7.26
	Right Side CL1	1.3	3.11	35.75	17.10	69.03	20.79	5.19	20.96	2089.24	---	22.76	500.50	---	17.38
	At FB2	1.3	3.48	319.77	34.12	154.47	39.15	7.69	34.82	2089.24	---	8.33	500.50	---	9.93
	Left Side CL1-A at FB3	1.3	3.80	409.19	51.58	255.05	39.61	7.69	38.04	2089.24	---	4.70	500.50	---	9.08
	Right Side CL1-A at FB 3	1.3	3.80	409.19	51.58	255.05	39.31	5.10	25.24	2089.24	---	4.70	500.50	---	13.70
	At FB 4	1.3	4.05	336.42	73.33	385.81	35.25	6.92	36.39	2089.24	---	3.29	500.50	---	9.61
	Left Side CL2 at FB 5	1.3	4.22	0.00	65.00	356.45	18.85	6.92	37.93	2089.24	---	4.51	500.50	---	9.65
	Right Side CL2 at FB 5	1.24	4.22	0.00	61.23	320.25	90.19	10.64	55.63	11016.54	---	26.46	859.80	---	10.27
	At FB 6	1.24	4.31	1682.71	168.73	902.40	78.14	10.64	56.88	9876.21	---	6.55	710.65	---	8.24
	At FB 7	1.24	4.33	1809.34	191.96	1030.90	65.61	5.74	30.84	8932.79	---	4.91	651.96	---	14.13
	At FB 8	1.24	4.27	286.60	121.41	642.40	149.87	12.59	66.63	9773.06	---	11.26	704.29	---	5.88
	Short End of Taper at FB 9	1.24	4.12	2101.61	101.11	516.32	159.08	12.59	64.30	10313.50	---	11.30	809.04	---	7.20
	Tall End of Taper at FB 9	1.24	4.12	2796.34	142.62	728.26	169.88	12.59	64.30	40108.66	---	38.53	6108.05	---	70.43
	At FB9	1.26	4.12	3056.57	159.48	827.50	172.23	12.59	65.34	35374.44	---	29.19	6108.05	---	69.27
	Tall End of Taper at FB9	1.26	4.12	2857.95	127.88	663.50	129.39	11.21	58.14	40108.66	---	42.19	6108.05	---	78.59
	Short End of Taper at FB 9	1.26	4.12	2857.95	118.99	617.41	129.39	11.21	58.14	10133.54	---	8.00	801.49	---	8.38
	At FB 10	1.26	3.89	481.33	124.33	608.61	114.57	11.21	54.85	9410.93	---	11.10	681.86	---	7.47
	Center Span 4	1.26	3.71	230.33	126.46	591.07	53.32	6.09	28.48	8932.79	---	11.24	651.96	---	15.74
	At FB 11	1.26	3.53	767.47	184.93	823.48	47.16	8.03	35.76	9278.91	---	7.74	673.64	---	13.17
Beam Seat at FB 12	1.26	3.04	39.96	4.69	17.97	39.96	8.03	30.79	11130.77	---	474.24	867.28	---	20.37	
At FB 12	1.26	3.04	0.00	0.00	0.00	40.18	8.03	30.79	4197.53	---	N/A	574.20	---	13.04	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L North - Frame Girder Ratings

Calculated: SFH 3/1/2012

Checked: CTG 3/3/2012

Revised: CTG 4/16/2012

*capacities taken from spreadsheet or hand calculations

Location	Impact	LLDF	Moment from STAAD Model		Total Moment Total L+H	Shear from STAAD Model			Total Shear Total L+H	RF - Moment			RF - Shear		
			D	L		D	L	Total L+H		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
			3F1												
North Girder															
Beam Seat at FB 1	1.23	4.23	13.99	0.00	0.00	26.77	15.09	78.43	4304.25	---	N/A	584.67	---	5.39	
Left of CL5	1.23	4.23	37.25	20.74	107.85	27.49	15.09	78.43	11314.04	---	80.35	879.24	---	8.27	
Right of CL5	1.23	4.23	37.25	20.74	107.85	103.51	17.42	90.55	11130.77	---	79.04	854.10	---	6.11	
At FB 2	1.23	3.88	1457.94	264.71	1263.58	39.32	17.42	83.13	10555.69	---	5.27	752.14	---	6.49	
At FB 3	1.23	3.55	2126.60	390.14	1702.51	29.28	11.62	50.71	9171.19	---	2.89	666.91	---	9.54	
Center of Span 1	1.23	3.42	1717.77	304.39	1280.62	36.44	10.27	43.19	8932.79	---	4.02	651.96	---	10.77	
At FB 4	1.23	3.29	1425.89	316.83	1283.34	82.59	15.22	61.63	9027.99	---	4.30	657.94	---	6.87	
At FB 5	1.23	3.12	341.84	167.81	643.30	139.90	20.83	79.84	12903.33	---	14.90	724.48	---	5.23	
Short End of Taper at FB 6	1.23	3.02	2396.01	206.25	765.63	148.44	20.83	77.31	10403.71	---	7.32	812.23	---	6.16	
Tall End of Taper at FB 6	1.23	3.02	3035.28	270.77	1005.14	154.13	20.83	77.31	39745.60	---	27.40	6073.66	---	58.44	
At FB 6	1.24	3.02	3271.47	295.94	1107.51	156.47	20.83	77.94	35036.51	---	21.38	6073.66	---	57.94	
Tall End of Taper at FB 6	1.24	3.02	2968.65	244.43	914.72	121.44	17.43	65.24	39745.60	---	30.18	6073.66	---	69.75	
Short End of Taper at FB 6	1.24	3.02	2467.52	229.62	859.31	115.76	17.43	65.24	10403.71	---	6.44	812.23	---	7.80	
At FB 7	1.24	3.00	748.30	181.25	673.79	106.54	17.43	64.81	9797.30	---	10.07	705.79	---	6.73	
At FB 8	1.24	3.07	539.14	317.99	1208.53	54.54	12.21	46.42	8932.79	---	5.24	651.96	---	9.63	
At FB 9	1.24	3.22	599.54	260.44	1039.86	56.70	15.77	62.96	9797.30	---	6.67	705.79	---	7.72	
Left of CL7	1.24	3.46	737.53	138.09	592.95	69.49	15.77	67.71	11130.77	---	13.20	839.01	---	8.51	
Right of CL7	1.29	3.46	795.78	146.23	654.26	63.21	13.42	60.06	2927.93	---	2.23	539.54	---	5.86	
At FB 11	1.29	3.83	596.94	165.12	816.85	56.88	13.42	66.40	4406.42	---	3.42	539.54	---	5.39	
Forward End Span	1.29	4.30	15.58	3.85	21.41	28.75	7.12	39.56	2927.93	---	104.47	539.54	---	9.76	
Beam Seat at FB 12	1.29	4.30	0.00	0.00	0.00	28.85	7.12	39.56	972.73	---	N/A	306.24	---	5.23	
South Girder															
Beam Seat at FB1	1.30	3.11	12.50	8.17	32.98	25.57	16.68	67.36	820.05	---	18.75	272.50	---	2.73	
Left Side CL1	1.3	3.11	35.75	23.29	94.03	25.75	16.68	67.36	2089.24	---	16.71	500.50	---	5.33	
Right Side CL1	1.3	3.11	35.75	23.29	94.03	20.79	7.75	31.29	2089.24	---	16.71	500.50	---	11.64	
At FB2	1.3	3.48	319.77	50.60	229.05	39.15	11.44	51.78	2089.24	---	5.62	500.50	---	6.68	
Left Side CL1-A at FB3	1.3	3.80	409.19	76.55	378.56	39.61	11.44	56.56	2089.24	---	3.16	500.50	---	6.11	
Right Side CL1-A at FB 3	1.3	3.80	409.19	76.55	378.56	39.31	7.26	35.92	2089.24	---	3.16	500.50	---	9.62	
At FB 4	1.3	4.05	336.42	105.80	556.66	35.25	9.90	52.06	2089.24	---	2.28	500.50	---	6.72	
Left Side CL2 at FB 5	1.3	4.22	0.00	92.11	505.12	18.85	9.90	54.26	2089.24	---	3.18	500.50	---	6.75	
Right Side CL2 at FB 5	1.24	4.22	0.00	86.35	451.68	90.19	16.02	83.80	11016.54	---	18.76	859.80	---	6.82	
At FB 6	1.24	4.31	1682.71	253.57	1356.13	78.14	16.02	85.68	9876.21	---	4.36	710.65	---	5.47	
At FB 7	1.24	4.33	1809.34	285.26	1531.95	65.61	8.29	44.52	8932.79	---	3.30	651.96	---	9.79	
At FB 8	1.24	4.27	286.60	181.90	962.47	149.87	19.03	100.71	9773.06	---	7.51	704.29	---	3.89	
Short End of Taper at FB 9	1.24	4.12	2101.61	153.52	783.92	159.08	19.03	97.19	10313.50	---	7.44	809.04	---	4.77	
Tall End of Taper at FB 9	1.24	4.12	2796.34	217.17	1108.95	169.88	19.03	97.19	40108.66	---	25.30	6108.05	---	46.60	
At FB9	1.26	4.12	3056.57	243.08	1261.27	172.23	19.03	98.76	35374.44	---	19.15	6108.05	---	45.83	
Tall End of Taper at FB9	1.26	4.12	2857.95	195.06	1012.12	129.39	16.57	85.97	40108.66	---	27.66	6108.05	---	53.15	
Short End of Taper at FB 9	1.26	4.12	2857.95	181.57	942.12	129.39	16.57	85.97	10133.54	---	5.24	801.49	---	5.67	
At FB 10	1.26	3.89	481.33	179.98	881.01	114.57	16.57	81.11	9410.93	---	7.67	681.86	---	5.05	
Center Span 4	1.26	3.71	230.33	192.33	898.96	53.32	9.11	42.60	8932.79	---	7.39	651.96	---	10.52	
At FB 11	1.26	3.53	767.47	279.04	1242.54	47.16	12.12	53.96	9278.91	---	5.13	673.64	---	8.73	
Beam Seat at FB 12	1.26	3.04	39.96	7.07	27.11	39.96	12.12	46.46	11130.77	---	314.36	867.28	---	13.50	
At FB 12	1.26	3.04	0.00	0.00	0.00	40.18	12.12	46.46	4197.53	---	N/A	574.20	---	8.64	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L North - Frame Girder Ratings

Calculated: SFH 3/1/2012

Checked: CTG 3/3/2012

Revised: CTG 4/16/2012

*capacities taken from spreadsheet or hand calculations

Location	Impact	LLDF	Moment from STAAD Model		Total Moment Total L+H	Shear from STAAD Model		Total Shear Total L+H	RF - Moment			RF - Shear		
			D	L		D	L		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating
Beam Seat at FB 1	1.23	4.23	13.99	0.00	0.00	26.77	14.95	77.71	4304.25	---	N/A	584.67	---	5.44
Left of CL5	1.23	4.23	37.25	20.55	106.86	27.49	14.95	77.71	11314.04	---	81.10	879.24	---	8.35
Right of CL5	1.23	4.23	37.25	20.55	106.86	103.51	19.99	103.91	11130.77	---	79.78	854.10	---	5.33
At FB 2	1.23	3.88	1457.94	303.44	1448.41	39.32	19.99	95.40	10555.69	---	4.60	752.14	---	5.65
At FB 3	1.23	3.55	2126.60	449.36	1960.92	29.28	13.18	57.53	9171.19	---	2.51	666.91	---	8.41
Center of Span 1	1.23	3.42	1717.77	354.06	1489.60	36.44	11.66	49.05	8932.79	---	3.46	651.96	---	9.48
At FB 4	1.23	3.29	1425.89	362.79	1469.49	82.59	17.24	69.82	9027.99	---	3.76	657.94	---	6.07
At FB 5	1.23	3.12	341.84	189.78	727.52	139.90	24.01	92.05	12903.33	---	13.17	724.48	---	4.53
Short End of Taper at FB 6	1.23	3.02	2396.01	240.19	891.60	148.44	24.01	89.13	10403.71	---	6.29	812.23	---	5.34
Tall End of Taper at FB 6	1.23	3.02	3035.28	315.95	1172.86	154.13	24.01	89.13	39745.60	---	23.48	6073.66	---	50.69
At FB 6	1.24	3.02	3271.47	345.07	1291.37	156.47	24.01	89.86	35036.51	---	18.34	6073.66	---	50.25
Tall End of Taper at FB 6	1.24	3.02	2968.65	285.12	1067.01	121.44	19.84	74.24	39745.60	---	25.87	6073.66	---	61.30
Short End of Taper at FB 6	1.24	3.02	2467.52	267.62	1001.53	115.76	19.84	74.24	10403.71	---	5.53	812.23	---	6.86
At FB 7	1.24	3.00	748.30	204.56	760.47	106.54	19.84	73.74	9797.30	---	8.93	705.79	---	5.92
At FB 8	1.24	3.07	539.14	365.91	1390.69	54.54	13.97	53.09	8932.79	---	4.55	651.96	---	8.42
At FB 9	1.24	3.22	599.54	298.53	1191.99	56.70	18.15	72.46	9797.30	---	5.82	705.79	---	6.71
Left of CL7	1.24	3.46	737.53	157.55	676.54	69.49	18.15	77.93	11130.77	---	11.57	839.01	---	7.39
Right of CL7	1.29	3.46	795.78	166.84	746.49	63.21	15.32	68.53	2927.93	---	1.95	539.54	---	5.13
At FB 11	1.29	3.83	596.94	188.42	932.13	56.88	15.32	75.77	4406.42	---	3.00	539.54	---	4.73
Forward End Span	1.29	4.30	15.58	4.40	24.42	28.75	8.12	45.14	2927.93	---	91.59	539.54	---	8.56
Beam Seat at FB 12	1.29	4.30	0.00	0.00	0.00	28.85	8.12	45.14	972.73	---	N/A	306.24	---	4.58
Beam Seat at FB1	1.30	3.11	12.50	8.34	33.68	25.57	17.04	68.81	820.05	---	16.36	272.50	---	2.67
Left Side CL1	1.3	3.11	35.75	23.79	96.04	25.75	17.04	68.81	2089.24	---	16.36	500.50	---	5.22
Right Side CL1	1.3	3.11	35.75	23.79	96.04	20.79	8.77	35.43	2089.24	---	16.36	500.50	---	10.28
At FB2	1.3	3.48	319.77	56.72	256.76	39.15	12.87	58.27	2089.24	---	5.01	500.50	---	5.94
Left Side CL1-A at FB3	1.3	3.80	409.19	85.92	424.90	39.61	12.87	63.65	2089.24	---	2.82	500.50	---	5.43
Right Side CL1-A at FB 3	1.3	3.80	409.19	85.92	424.90	39.31	7.92	39.18	2089.24	---	2.82	500.50	---	8.82
At FB 4	1.3	4.05	336.42	115.16	605.90	35.25	10.81	56.88	2089.24	---	2.10	500.50	---	6.15
Left Side CL2 at FB 5	1.3	4.22	0.00	101.05	554.12	18.85	10.81	59.28	2089.24	---	2.90	500.50	---	6.18
Right Side CL2 at FB 5	1.24	4.22	0.00	94.83	496.02	90.19	18.34	95.94	11016.54	---	17.08	859.80	---	5.95
At FB 6	1.24	4.31	1682.71	289.48	1548.18	78.14	18.34	98.09	9876.21	---	3.82	710.65	---	4.78
At FB 7	1.24	4.33	1809.34	323.68	1738.30	65.61	9.08	48.74	8932.79	---	2.91	651.96	---	8.94
At FB 8	1.24	4.27	286.60	206.85	1094.46	149.87	21.90	115.86	9773.06	---	6.61	704.29	---	3.38
Short End of Taper at FB 9	1.24	4.12	2101.61	177.14	904.53	159.08	21.90	111.82	10313.50	---	6.45	809.04	---	4.14
Tall End of Taper at FB 9	1.24	4.12	2796.34	251.86	1286.09	169.88	21.90	111.82	40108.66	---	21.82	6108.05	---	40.50
At FB9	1.26	4.12	3056.57	282.38	1465.16	172.23	21.90	113.62	35374.44	---	16.49	6108.05	---	39.84
Tall End of Taper at FB9	1.26	4.12	2857.95	226.35	1174.46	129.39	18.64	96.72	40108.66	---	23.84	6108.05	---	47.24
Short End of Taper at FB 9	1.26	4.12	2857.95	210.71	1093.29	129.39	18.64	96.72	10133.54	---	4.52	801.49	---	5.04
At FB 10	1.26	3.89	481.33	204.19	999.51	114.57	18.64	91.24	9410.93	---	6.76	681.86	---	4.49
Center Span 4	1.26	3.71	230.33	223.23	1043.39	53.32	10.33	48.30	8932.79	---	6.36	651.96	---	9.28
At FB 11	1.26	3.53	767.47	320.42	1426.77	47.16	13.91	61.96	9278.91	---	4.46	673.64	---	7.60
Beam Seat at FB 12	1.26	3.04	39.96	8.12	31.13	39.96	13.91	53.35	11130.77	---	273.76	867.28	---	11.76
At FB 12	1.26	3.04	0.00	0.00	0.00	40.18	13.91	53.35	4197.53	---	N/A	574.20	---	7.53

4F1

North Girder

South Girder

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L North - Frame Girder Ratings

Calculated: SFH 3/1/2012

Checked: CTG 3/3/2012

Revised: CTG 4/16/2012

*capacities taken from spreadsheet or hand calculations

	Location	Impact	LLDF	Moment from STAAD Model		Total Moment Total L+I	Shear from STAAD Model		Total Shear Total L+I	RF - Moment			RF - Shear			
				D	L		D	L		C* (k-ft)	RF Inventory	RF Operating	C* (kips)	RF Inventory	RF Operating	
5C1	North Girder	Beam Seat at FB 1	1.23	4.23	13.99	0.00	0.00	26.77	14.70	76.43	4304.25	---	N/A	584.67	---	5.53
		Left of CL5	1.23	4.23	37.25	20.21	105.10	27.49	14.70	76.43	11314.04	---	82.45	879.24	---	8.49
		Right of CL5	1.23	4.23	37.25	20.21	105.10	103.51	21.05	109.43	11130.77	---	81.11	854.10	---	5.06
		At FB 2	1.23	3.88	1457.94	317.36	1514.89	39.32	21.05	100.47	10555.69	---	4.40	752.14	---	5.37
		At FB 3	1.23	3.55	2126.60	456.73	1993.08	29.28	12.36	53.95	9171.19	---	2.47	666.91	---	8.97
		Center of Span 1	1.23	3.42	1717.77	380.22	1599.65	36.44	9.67	40.70	8932.79	---	3.22	651.96	---	11.43
		At FB 4	1.23	3.29	1425.89	375.14	1519.49	82.59	17.02	68.93	9027.99	---	3.63	657.94	---	6.14
		At FB 5	1.23	3.12	341.84	168.78	647.03	139.90	27.46	105.27	12903.33	---	14.81	724.48	---	3.96
		Short End of Taper at FB 6	1.23	3.02	2396.01	279.73	1038.39	148.44	27.46	101.94	10403.71	---	5.40	812.23	---	4.67
		Tall End of Taper at FB 6	1.23	3.02	3035.28	384.78	1428.35	154.13	27.46	101.94	39745.60	---	19.28	6073.66	---	44.32
		At FB 6	1.24	3.02	3271.47	424.84	1589.88	156.47	27.46	102.76	35036.51	---	14.89	6073.66	---	43.94
		Tall End of Taper at FB 6	1.24	3.02	2968.65	351.04	1313.69	121.44	21.04	78.73	39745.60	---	21.01	6073.66	---	57.80
		Short End of Taper at FB 6	1.24	3.02	2467.52	329.43	1232.82	115.76	21.04	78.73	10403.71	---	4.49	812.23	---	6.47
		At FB 7	1.24	3.00	748.30	250.47	931.11	106.54	21.04	78.21	9797.30	---	7.29	705.79	---	5.58
		At FB 8	1.24	3.07	539.14	337.78	1283.78	54.54	12.07	45.87	8932.79	---	4.93	651.96	---	9.74
		At FB 9	1.24	3.22	599.54	287.09	1146.30	56.70	18.65	74.47	9797.30	---	6.05	705.79	---	6.53
		Left of CL7	1.24	3.46	737.53	178.13	764.92	69.49	18.65	80.09	11130.77	---	10.23	839.01	---	7.19
		Right of CL7	1.29	3.46	795.78	174.30	779.86	63.21	13.80	61.73	2927.93	---	1.87	539.54	---	5.70
		At FB 11	1.29	3.83	596.94	161.04	796.66	56.88	13.80	68.26	4406.42	---	3.51	539.54	---	5.25
		Forward End Span	1.29	4.30	15.58	3.76	20.88	28.75	6.94	38.58	2927.93	---	107.12	539.54	---	10.01
Beam Seat at FB 12	1.29	4.30	0.00	0.00	0.00	28.85	6.94	38.58	972.73	---	N/A	306.24	---	5.36		
5C1	South Girder	Beam Seat at FB1	1.30	3.11	12.50	7.93	32.03	25.57	16.21	65.44	820.05	---	19.30	272.50	---	2.81
		Left Side CL1	1.3	3.11	35.75	22.62	91.34	25.75	16.21	65.44	2089.24	---	17.20	500.50	---	5.49
		Right Side CL1	1.3	3.11	35.75	22.62	91.34	20.79	7.45	30.10	2089.24	---	17.20	500.50	---	12.10
		At FB2	1.3	3.48	319.77	79.54	360.07	39.15	11.52	52.17	2089.24	---	3.58	500.50	---	6.63
		Left Side CL1-A at FB3	1.3	3.80	409.19	105.71	522.76	39.61	11.52	56.99	2089.24	---	2.29	500.50	---	6.06
		Right Side CL1-A at FB 3	1.3	3.80	409.19	105.71	522.76	39.31	8.77	43.36	2089.24	---	2.29	500.50	---	7.97
		At FB 4	1.3	4.05	336.42	88.64	466.37	35.25	10.13	53.27	2089.24	---	2.72	500.50	---	6.57
		Left Side CL2 at FB 5	1.3	4.22	0.00	116.31	637.81	18.85	10.13	55.52	2089.24	---	2.52	500.50	---	6.59
		Right Side CL2 at FB 5	1.24	4.22	0.00	128.59	672.59	90.19	18.22	95.28	11016.54	---	12.60	859.80	---	5.99
		At FB 6	1.24	4.31	1682.71	272.61	1457.97	78.14	18.22	97.42	9876.21	---	4.06	710.65	---	4.81
		At FB 7	1.24	4.33	1809.34	304.18	1633.57	65.61	7.16	38.45	8932.79	---	3.10	651.96	---	11.34
		At FB 8	1.24	4.27	286.60	175.40	928.07	149.87	23.09	122.16	9773.06	---	7.79	704.29	---	3.21
		Short End of Taper at FB 9	1.24	4.12	2101.61	186.65	953.10	159.08	23.09	117.89	10313.50	---	6.12	809.04	---	3.93
		Tall End of Taper at FB 9	1.24	4.12	2796.34	282.55	1442.81	169.88	23.09	117.89	40108.66	---	19.45	6108.05	---	38.41
		At FB9	1.26	4.12	3056.57	317.40	1646.87	172.23	23.09	119.79	35374.44	---	14.67	6108.05	---	37.79
		Tall End of Taper at FB9	1.26	4.12	2857.95	250.18	1298.09	129.39	17.65	91.56	40108.66	---	21.57	6108.05	---	49.90
		Short End of Taper at FB 9	1.26	4.12	2857.95	234.09	1214.62	129.39	17.65	91.56	10133.54	---	4.06	801.49	---	5.32
		At FB 10	1.26	3.89	481.33	183.91	900.27	114.57	17.65	86.38	9410.93	---	7.51	681.86	---	4.75
		Center Span 4	1.26	3.71	230.33	210.41	983.45	53.32	8.76	40.96	8932.79	---	6.75	651.96	---	10.94
		At FB 11	1.26	3.53	767.47	291.01	1295.81	47.16	12.64	56.27	9278.91	---	4.92	673.64	---	8.37
Beam Seat at FB 12	1.26	3.04	39.96	7.37	28.27	39.96	12.64	48.45	11130.77	---	301.46	867.28	---	12.94		
At FB 12	1.26	3.04	0.00	0.00	0.00	40.18	12.64	48.45	4197.53	---	N/A	574.20	---	8.29		



Made By SFH
Checked By CTG

Date 2/28/2012
Date 2/28/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

Element Dimensions (without Section Losses):

Top Angles:

$A_1 = l_w = 8.0000$ in
 $C_1 = t_f = 0.7500$ in
 $B_1 = l_v = 8.0000$ in

Bottom Angles:

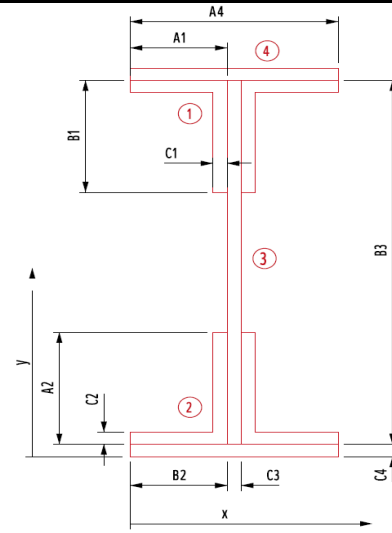
$B_2 = l_h = 8.0000$ in
 $C_2 = t_f = 0.7500$ in
 $A_2 = l_v = 8.0000$ in

Web Plate:

$C_3 = 0.6250$ in
 $B_3 = 36.5000$ in

Cover Plate:

$C_4 = 0.8125$ in
 $A_4 = 18.0000$ in



Column CL3, CL6

X-Axis Section Properties:

Gross Section (without Losses)			A	y	Ay	I_o	d	Ad^2	$I_{x,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	Horizontal Leg		12.0000	36.9375	443.2500	0.5625	17.8750	3834.1875	3834.7500
	Vertical Leg		10.8750	32.9375	358.1953	47.6348	13.8750	2093.6074	2141.2422
2	Horizontal Leg		12.0000	1.1875	14.2500	0.5625	17.8750	3834.1875	3834.7500
	Vertical Leg		10.8750	5.1875	56.4141	47.6348	13.8750	2093.6074	2141.2422
3	Web Plate		22.8125	19.0625	434.8633	2532.6628	0.0000	0.0000	2532.6628
4	Cover Plate Top		14.6250	37.7188	551.6367	0.8046	18.6563	5090.3141	5091.1187
	Cover Plate Bottom		14.6250	0.4063	5.9414	0.8046	18.6563	5090.3141	5091.1187
Total			97.81		1864.55	2630.67		22036.22	24666.88
Section Losses			A	y	Ay	I_o	d	Ad^2	$I_{x,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00



Made By SFH
Checked By CTG

Date 2/28/2012
Date 2/28/2012

Job No. P402110046
Sheet No. _____

Calculations For: **CUY-2-1441**

As-Built Section Properties				As-Inspected Section Properties			
y-bar = 19.0625 in	$S_{top} = 1294.00 \text{ in}^3$			y-bar = 19.0625 in	$S_{top} = 1294.00 \text{ in}^3$		
$I_x = 24666.88 \text{ in}^4$	$S_{bott.} = 1294.00 \text{ in}^3$			$I_x = 24666.88 \text{ in}^4$	$S_{bott.} = 1294.00 \text{ in}^3$		
$C_{top} = 19.0625 \text{ in}$	$A = 97.8125 \text{ in}^2$			$C_{top} = 19.0625 \text{ in}$	$A = 97.8125 \text{ in}^2$		
$C_{bottom} = 19.0625 \text{ in}$	$r_x = 15.8803 \text{ in}$			$C_{bottom} = 19.0625 \text{ in}$	$r_x = 15.8803 \text{ in}$		
	$Z = 1702.0723 \text{ in}^3$				$Z = 1702.0723 \text{ in}^3$		

Does top area

Does btm area

Y-Axis Section Properties:

Gross Section (without Losses)			A	x	Ax	I_o	d	Ad^2	$I_{y,gross}$
Element	Description		(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1 (Left)	Horizontal Leg		6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg		5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
1 (Right)	Horizontal Leg		6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg		5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
2 (Left)	Horizontal Leg		6.0000	4.6875	28.1250	32.0000	4.3125	111.5859	143.5859
	Vertical Leg		5.4375	8.3125	45.1992	0.2549	0.6875	2.5701	2.8250
2 (Right)	Horizontal Leg		6.0000	13.3125	79.8750	32.0000	4.3125	111.5859	143.5859
	Vertical Leg		5.4375	9.6875	52.6758	0.2549	0.6875	2.5701	2.8250
3	Web Plate		22.8125	9.0000	205.3125	0.7426	0.0000	0.0000	0.7426
4	Cover Plate		29.2500	9.0000	263.2500	789.7500	0.0000	0.0000	789.7500
Total			97.81		880.31	919.51		456.62	1376.14
Section Losses			A	x	Ax	I_o	d	Ad^2	$I_{y,loss}$
Loss #	b (in)	h (in)	(in ²)	(in)	(in ³)	(in ⁴)	(in)	(in ⁴)	(in ⁴)
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total			0.00		0.00	0.00		0.00	0.00

As-Built Section Properties				As-Inspected Section Properties			
x-bar = 9.0000 in	$S_{right} = 152.90 \text{ in}^3$			x-bar = 9.0000 in	$S_{right} = 152.90 \text{ in}^3$		
$I_y = 1376.14 \text{ in}^4$	$S_{left} = 152.90 \text{ in}^3$			$I_y = 1376.14 \text{ in}^4$	$S_{left} = 152.90 \text{ in}^3$		
$C_{right} = 9.0000 \text{ in}$	$A = 97.8125 \text{ in}^2$			$C_{right} = 9.0000 \text{ in}$	$A = 97.8125 \text{ in}^2$		
$C_{left} = 9.0000 \text{ in}$	$r_y = 3.7509 \text{ in}$			$C_{left} = 9.0000 \text{ in}$	$r_y = 3.7509 \text{ in}$		

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL2

Section Properties W14X119

A =	34.990	in ²	I _x =	1373.100	in ⁴
h =	14.500	in	S _x =	189.400	in ³
b _f =	14.650	in	r _x =	6.260	in
t _f =	0.938	in	I _y =	491.800	in ⁴
t _w =	0.570	in	S _y =	67.100	in ³
			r _y =	3.750	in
F _y =	33.0	ksi	Z	212	in ³
E =	29000	ksi			
L _c =	127.40	in			
K =	1.000	AASHTO Appendix C			

Axial Loading

$$P_u = 0.85 A_s F_{cr}$$

AASHTO 10.54 Centrically Loaded Columns

$$F_{cr} = F_y \left(1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right)$$

For: $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$$\left(\frac{KL_c}{r} \right)^2$$

For: $\frac{KL_c}{r} > \sqrt{\frac{2\pi^2 E}{F_y}}$

r _y =	33.972	<	131.706
r _x =	20.351	<	131.706

F_{CR} = 31.902 ksi

P_u = 948.8 k

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL2

Axial Loading and Bending

$$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$$

AASHTO 10.54.2 Combined Axial Load and Bending

$$= 0.6 + 0.4$$

a = 0 **When moment is small assume a = 0
 C = 0.600

$$F_e = \frac{E\pi^2}{\left(\frac{KL_c}{r}\right)^2}$$

F_{ex} = 691.101 ksi
 F_{ey} = 248.002 ksi

Column Compactness Check

M_u = F_yZ For Compact Section

M_u = F_yS For Non-Compact Section

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}} \quad 15.618 < 22.625$$

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}} \quad 22.147 < 105.858$$

$$\frac{L}{r_y} \leq \frac{\left(3.6 - 2.2 \frac{M_1}{M_u}\right) \times 10^6}{F_y} \quad 33.972 < 109.091$$

Column Moment Capacity

Compact Section

M_{ux} = 583.0 k-ft

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL3

Section Properties	Built-up I (properties from section properties spreadsheet)	
A = 97.810 in ²	I _x = 24666.884 in ⁴	
h = 38.125 in	S _x = 1294.000 in ³	
b _f = 18.000 in	r _x = 15.880 in	
t _f = 0.813 in	I _y = 1376.140 in ⁴	
t _w = 0.625 in	S _y = 152.900 in ³	
F _y = 33.0 ksi	r _y = 3.751 in	Z = 1702.072 in ³
E = 29000 ksi		
L _c = 202.25 in		
K = 0.800	AASHTO Appendix C	

Axial Loading

$$P_u = 0.85 A_s F_{cr}$$

AASHTO 10.54 Concentrically Loaded Columns

$$F_{cr} = F_y \left(1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right)$$

For: $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$$\left(\frac{KL_c}{r} \right)^2$$

For: $\frac{KL_c}{r} > \sqrt{\frac{2\pi^2 E}{F_y}}$

r_y = 43.135 < 131.706
 r_x = 10.189 < 131.706

F_{CR} = 31.230 ksi

P_u = 2596.4 k

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL3

Axial Loading and Bending

$$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$$

AASHTO 10.54.2 Combined Axial Load and Bending

$$= 0.6 + 0.4$$

a = 0 **When moment is small assume a = 0
 C = 0.600

$$F_e = \frac{E\pi^2}{\left(\frac{KL_c}{r}\right)^2}$$

F_{ex} = 2757.031 ksi
 F_{ey} = 153.828 ksi

Column Compactness Check

M_u = F_yZ For Compact Section

M_u = F_yS For Non-Compact Section

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}} \quad 22.154 < 22.625$$

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}} \quad 58.400 < 105.858$$

$$\frac{L}{r_y} \leq \frac{\left(3.6 - 2.2 \frac{M_1}{M_u}\right) \times 10^6}{F_y} \quad 53.919 < 109.091$$

Column Moment Capacity

Compact Section

M_{ux} = 4680.7 k-ft

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL4, CL5

Section Properties	W14X119	
A =	34.990	in ²
h =	14.500	in
b _f =	14.650	in
t _f =	0.938	in
t _w =	0.570	in
F _y =	33.0	ksi
E =	29000	ksi
L _c =	112.20	in
K =	1.000	AASHTO Appendix C
I _x =	1373.100	in ⁴
S _x =	189.400	in ³
r _x =	6.260	in
I _y =	491.800	in ⁴
S _y =	67.100	in ³
r _y =	3.750	in
Z	212	in ³

Axial Loading

$$P_u = 0.85 A_s F_{cr}$$

AASHTO 10.54 Centrically Loaded Columns

$$F_{cr} = F_y \left(1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right)$$

For: $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$$\left(\frac{KL_c}{r} \right)^2$$

For: $\frac{KL_c}{r} > \sqrt{\frac{2\pi^2 E}{F_y}}$

r _y =	29.920	<	131.706
r _x =	17.923	<	131.706

F_{CR} = 32.148 ksi

$$P_u = 956.1 \text{ k}$$

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL4, CL5

Axial Loading and Bending

$$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$$

AASHTO 10.54.2 Combined Axial Load and Bending

$$= 0.6 + 0.4$$

a = 0 **When moment is small assume a = 0
 C = 0.600

$$F_e = \frac{E\pi^2}{\left(\frac{KL_c}{r}\right)^2}$$

F_{ex} = 890.965 ksi
 F_{ey} = 319.724 ksi

Column Compactness Check

M_u = F_yZ For Compact Section

M_u = F_yS For Non-Compact Section

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}}$$

15.618 < 22.625

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}}$$

22.147 < 105.858

$$\frac{L}{r_y} \leq \frac{\left(3.6 - 2.2 \frac{M_1}{M_u}\right) \times 10^6}{F_y}$$

29.920 < 109.091

Column Moment Capacity

Compact Section

M_{ux} = 583.0 k-ft

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL6

Section Properties	Built-up I (properties from section properties spreadsheet)	
A = 97.810 in ²	I _x = 24666.884 in ⁴	
h = 38.125 in	S _x = 1294.000 in ³	
b _f = 18.000 in	r _x = 15.880 in	
t _f = 0.813 in	I _y = 1376.140 in ⁴	
t _w = 0.625 in	S _y = 152.900 in ³	
	r _y = 3.751 in	
F _y = 33.0 ksi	Z = 1702.072 in ³	
E = 29000 ksi		
L _c = 245.88 in		
K = 0.800	AASHTO Appendix C	

Axial Loading

$$P_u = 0.85 A_s F_{cr}$$

AASHTO 10.54 Concentrically Loaded Columns

$$F_{cr} = F_y \left(1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right)$$

For: $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$$\left(\frac{KL_c}{r} \right)^2$$

For: $\frac{KL_c}{r} > \sqrt{\frac{2\pi^2 E}{F_y}}$

r _y = 52.440	<	131.706
r _x = 12.387	<	131.706

F_{CR} = 30.384 ksi

$$P_u = 2526.1 \text{ k}$$

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL6

Axial Loading and Bending

$$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$$

AASHTO 10.54.2 Combined Axial Load and Bending

$$= 0.6 + 0.4$$

$$a = 0 \quad \text{**When moment is small assume } a = 0$$

$$C = 0.600$$

$F_e = \frac{E\pi^2}{\left(\frac{KL_c}{r}\right)^2}$	$F_{ex} = 1865.402 \text{ ksi}$ $F_{ey} = 104.080 \text{ ksi}$
--	---

Column Compactness Check
 $M_u = F_y Z$ For Compact Section

 $M_u = F_y S$ For Non-Compact Section

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}}$$

$$22.154 < 22.625$$

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}}$$

$$58.400 < 105.858$$

$$\frac{L}{r_y} \leq \frac{\left(3.6 - 2.2 \frac{M_1}{M_u}\right) \times 10^6}{F_y}$$

$$65.551 < 109.091$$

Column Moment Capacity

Compact Section

$M_{ux} = 4680.7 \text{ k-ft}$

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL7

Section Properties W14X119

A =	34.990	in ²	I _x =	1373.100	in ⁴
h =	14.500	in	S _x =	189.400	in ³
b _f =	14.650	in	r _x =	6.260	in
t _f =	0.938	in	I _y =	491.800	in ⁴
t _w =	0.570	in	S _y =	67.100	in ³
			r _y =	3.750	in
F _y =	33.0	ksi	Z	212	in ³
E =	29000	ksi			
L _c =	151.64	in			
K =	1.000	AASHTO Appendix C			

Axial Loading

$$P_u = 0.85 A_s F_{cr}$$

AASHTO 10.54 Centrically Loaded Columns

$$F_{cr} = F_y \left(1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right)$$

For: $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$$\left(\frac{KL_c}{r} \right)^2$$

For: $\frac{KL_c}{r} > \sqrt{\frac{2\pi^2 E}{F_y}}$

r _y =	40.436	<	131.706
r _x =	24.223	<	131.706

F_{CR} = 31.445 ksi

P_u = 935.2 k

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL7

Axial Loading and Bending

$$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$$

AASHTO 10.54.2 Combined Axial Load and Bending

$$= 0.6 + 0.4$$

a = 0 **When moment is small assume a = 0
 C = 0.600

$$F_e = \frac{E\pi^2}{\left(\frac{KL_c}{r}\right)^2}$$

F_{ex} = 487.806 ksi
 F_{ey} = 175.050 ksi

Column Compactness Check

M_u = F_yZ For Compact Section

M_u = F_yS For Non-Compact Section

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}}$$

15.618 < 22.625

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}}$$

22.147 < 105.858

$$\frac{L}{r_y} \leq \frac{\left(3.6 - 2.2 \frac{M_1}{M_u}\right) \times 10^6}{F_y}$$

40.436 < 109.091

Column Moment Capacity

Compact Section

M_{ux} = 583.0 k-ft

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL1, CL1A, CL8

Section Properties		W14X119	
A =	34.990 in ²	I _x =	1373.100 in ⁴
h =	14.500 in	S _x =	189.400 in ³
b _f =	14.650 in	r _x =	6.260 in
t _f =	0.938 in	I _y =	491.800 in ⁴
t _w =	0.570 in	S _y =	67.100 in ³
		r _y =	3.750 in
F _y =	33.0 ksi	Z	212 in ³
E =	29000 ksi		
L _c =	139.75 in		
K =	1.000 AASHTO Appendix C		

Axial Loading

$$P_u = 0.85 A_s F_{cr}$$

AASHTO 10.54 Centrically Loaded Columns

$$F_{cr} = F_y \left(1 - \frac{F_y}{4\pi^2 E} \left(\frac{KL_c}{r} \right)^2 \right)$$

For: $\frac{KL_c}{r} \leq \sqrt{\frac{2\pi^2 E}{F_y}}$

$$\left(\frac{KL_c}{r} \right)^2$$

For: $\frac{KL_c}{r} > \sqrt{\frac{2\pi^2 E}{F_y}}$

r _y =	37.267	<	131.706
r _x =	22.324	<	131.706

F_{CR} = 31.679 ksi

$$P_u = 942.2 \text{ k}$$

CUY-2-1441 Load Rating Analysis - As-Built
Main Ave Bridge
Section L - Columns

Column: CL1, CL1A, CL8

Axial Loading and Bending

$$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$$

AASHTO 10.54.2 Combined Axial Load and Bending

$$= 0.6 + 0.4$$

a = 0 **When moment is small assume a = 0
 C = 0.600

$$F_e = \frac{E\pi^2}{\left(\frac{KL_c}{r}\right)^2}$$

F_{ex} = 574.305 ksi
 F_{ey} = 206.090 ksi

Column Compactness Check

M_u = F_yZ For Compact Section

M_u = F_yS For Non-Compact Section

$$\frac{b}{t} \leq \frac{4110}{\sqrt{F_y}}$$

15.618 < 22.625

$$\frac{D}{t_w} \leq \frac{19230}{\sqrt{F_y}}$$

22.147 < 105.858

$$\frac{L}{r_y} \leq \frac{\left(3.6 - 2.2 \frac{M_1}{M_u}\right) \times 10^6}{F_y}$$

37.267 < 109.091

Column Moment Capacity

Compact Section

M_{ux} = 583.0 k-ft

SECTION L - COLUMNS

Centrifugal Force

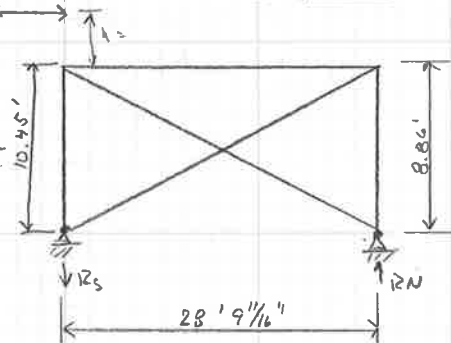
ASHRAE 3.10
16.7%

CL5, CL1

$$C = \frac{6.68(s)^2}{R}$$

$$= \frac{6.68(50\text{MPH})^2}{1000'}$$

$$= 16.7\%$$



$$h = 6.04' + 1.45' + 0.75' + 6' + \frac{1.31'}{2} = 14.895'$$

Girder stringer haunch

At FB 1	Elev Str 1	690.56
	Elev Str 6	691.87
	Diff	1.31'

$$\frac{14.895' + 8.86'}{8.86'} = 2.68 \times 16.7\% = 44.78\%$$

$$R_N = 44.78\% \left(\frac{8.86'}{28.51'} \right) = 13.91\%$$

$$R_N = 40.7\% \left(\frac{8.86'}{28.51'} \right) = 12.52\%$$

CL8, CL4

$$C = 16.7$$

$$h = 1.45' + 0.75' + 6.04' + \frac{1.35'}{2} + 6' = 14.915'$$

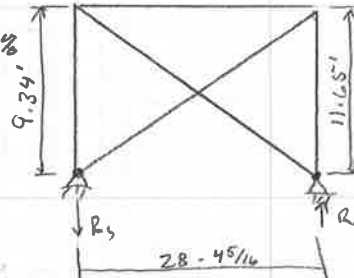
stringer haunch

At FB 12	Elev Str 1	687.01
	Elev Str 6	688.38
	Diff	1.35'

R_s

$$\frac{14.915' + 9.34'}{9.34'} = 2.60 \times 16.7\% = 43.37\%$$

$$R_s = 43.37\% \left(\frac{9.34'}{28.36'} \right) = 13.0\%$$



STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 22-Mar-11
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
***COORDINATES BASED ON STRINGER 6 LENGTHS
1 0 0 0 ;
2 21.8457 0 0 ;
3 41.8457 0 0 ;
4 61.8457 0 0 ;
5 81.8457 0 0 ;
6 101.8457 0 0 ;
7 123.0645 0 0 ;
8 144.2833 0 0 ;
9 165.4916 0 0 ;
10 186.6999 0 0 ;
11 209.8874 0 0 ;
12 233.0749 0 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;
10 10 11 ;
11 11 12 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 2 3 4 5 6 7 8 9 10 11 TABLE ST W24x84
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
1 2 3 4 5 6 7 8 9 10 11 12 PINNED
MEMBER RELEASE
1 START MZ
3 END MZ
4 START MZ
6 END MZ
7 START MZ
9 END MZ
10 START MZ
11 END MZ
DEFINE MOVING LOAD
TYPE 1 LOAD 12 12 3
DIST 30 14

TYPE 2 LOAD 3 12 12
DIST 14 30

****HS20
LOAD GENERATION 2620
TYPE 1 -28 0 0 XINC 0.1
LOAD GENERATION 2620
TYPE 2 -28 0 0 XINC 0.1

PERFORM ANALYSIS
PRINT MAXREACTION
FINISH

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Columns 5 & 8 Ratings



Calculated: SFH 3/3/2012

Checked: CTG 3/5/2012

DL Factor 1.30

LL Factor 2.17 INV 1.30 OPER

Impact 1.3

Member	LLDF	Impact	Centrifugal	Axial Forces From STAAD						Capacity	Rating Factors					
				Dead Load	HS20 LL	2F1 LL	3F1 LL	4F1 LL	5C1	P _u	HS20	HS20	2F1	3F1	4F1	5C1
				kips	kips	kips	kips	kips	kips	kips	RF _{INV}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}
COL L5	4.227	1.23	13.91	131.005	31.926	14.573	21.759	24.785	27.54	956.1	1.96	3.27	7.17	4.80	4.21	3.79
COL L8	4.301	1.29	14.28	63.075	26.253	13.443	19.384	21.206	19.06	942.2	2.45	4.09	7.99	5.54	5.06	5.63

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 6 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _{ex}			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
HS20 INV	COL CL6	3.02	422.695	183.38	151.21	605.64	2526.10	4680.70	182454.94	1.00	5.39				
HS20 INV	COL CL6	3.02	422.695	188.21	151.21	604.83	2526.10	4680.70	182454.94	1.00	5.33				
HS20 INV	COL CL6	3.02	422.695	190.62	151.21	604.03	2526.10	4680.70	182454.94	1.00	5.30				
HS20 INV	COL CL6	3.02	422.695	192.23	151.21	603.22	2526.10	4680.70	182454.94	1.00	5.28				
HS20 INV	COL CL6	3.02	422.695	193.03	151.21	602.42	2526.10	4680.70	182454.94	1.00	5.27				
HS20 INV	COL CL6	3.02	422.695	193.84	151.21	601.61	2526.10	4680.70	182454.94	1.00	5.26				
HS20 INV	COL CL6	3.02	422.695	194.64	151.21	600.81	2526.10	4680.70	182454.94	1.00	5.26				
HS20 INV	COL CL6	3.02	422.695	195.44	151.21	600.01	2526.10	4680.70	182454.94	1.00	5.25				
HS20 INV	COL CL6	3.02	422.695	196.25	151.21	599.20	2526.10	4680.70	182454.94	1.00	5.24				
HS20 INV	COL CL6	3.02	422.695	197.05	151.21	598.40	2526.10	4680.70	182454.94	1.00	5.23				
HS20 INV	COL CL6	3.02	422.695	197.86	151.21	597.59	2526.10	4680.70	182454.94	1.00	5.23				
HS20 INV	COL CL6	3.02	422.695	198.66	151.21	596.79	2526.10	4680.70	182454.94	1.00	5.22				
HS20 INV	COL CL6	3.02	422.695	199.47	151.21	595.98	2526.10	4680.70	182454.94	1.00	5.21				
HS20 INV	COL CL6	3.02	422.695	200.27	151.21	595.18	2526.10	4680.70	182454.94	1.00	5.21				
HS20 INV	COL CL6	3.02	422.695	201.07	151.21	593.57	2526.10	4680.70	182454.94	1.00	5.20				
HS20 INV	COL CL6	3.02	422.695	201.88	151.21	592.77	2526.10	4680.70	182454.94	1.00	5.20				
HS20 INV	COL CL6	3.02	422.695	202.68	151.21	591.96	2526.10	4680.70	182454.94	1.00	5.19				
HS20 INV	COL CL6	3.02	422.695	203.49	151.21	590.35	2526.10	4680.70	182454.94	1.00	5.18				
HS20 INV	COL CL6	3.02	422.695	204.29	151.21	589.55	2526.10	4680.70	182454.94	1.00	5.18				
HS20 INV	COL CL6	3.02	422.695	205.10	151.21	588.75	2526.10	4680.70	182454.94	1.00	5.17				
HS20 INV	COL CL6	3.02	422.695	205.90	151.21	587.94	2526.10	4680.70	182454.94	1.00	5.16				
HS20 INV	COL CL6	3.02	422.695	206.70	151.21	586.33	2526.10	4680.70	182454.94	1.00	5.16				
HS20 INV	COL CL6	3.02	422.695	207.51	151.21	585.53	2526.10	4680.70	182454.94	1.00	5.15				
HS20 INV	COL CL6	3.02	422.695	208.31	151.21	583.92	2526.10	4680.70	182454.94	1.00	5.15				
HS20 INV	COL CL6	3.02	422.695	209.12	151.21	583.12	2526.10	4680.70	182454.94	1.00	5.14				
HS20 INV	COL CL6	3.02	422.695	209.92	151.21	581.51	2526.10	4680.70	182454.94	1.00	5.14				
HS20 INV	COL CL6	3.02	422.695	210.73	151.21	580.70	2526.10	4680.70	182454.94	1.00	5.13				
HS20 INV	COL CL6	3.02	422.695	211.53	151.21	579.90	2526.10	4680.70	182454.94	1.00	5.12				
HS20 INV	COL CL6	3.02	422.695	212.33	151.21	578.29	2526.10	4680.70	182454.94	1.00	5.12				
HS20 INV	COL CL6	3.02	422.695	213.14	151.21	576.68	2526.10	4680.70	182454.94	1.00	5.12				
HS20 INV	COL CL6	3.02	422.695	213.94	151.21	575.88	2526.10	4680.70	182454.94	1.00	5.11				
HS20 INV	COL CL6	3.02	422.695	214.75	151.21	574.27	2526.10	4680.70	182454.94	1.00	5.11				
HS20 INV	COL CL6	3.02	422.695	215.55	151.21	572.66	2526.10	4680.70	182454.94	1.00	5.11				
HS20 INV	COL CL6	3.02	422.695	216.36	151.21	571.86	2526.10	4680.70	182454.94	1.00	5.10				
HS20 INV	COL CL6	3.02	422.695	217.16	151.21	569.44	2526.10	4680.70	182454.94	1.00	5.10				
HS20 INV	COL CL6	3.02	422.695	217.96	151.21	568.64	2526.10	4680.70	182454.94	1.00	5.09				
HS20 INV	COL CL6	3.02	422.695	218.77	151.21	567.03	2526.10	4680.70	182454.94	1.00	5.09				
HS20 INV	COL CL6	3.02	422.695	219.57	151.21	565.42	2526.10	4680.70	182454.94	1.00	5.08				
HS20 INV	COL CL6	3.02	422.695	234.85	151.21	563.81	2526.10	4680.70	182454.94	1.00	4.90				
HS20 INV	COL CL6	3.02	422.695	238.88	151.21	563.01	2526.10	4680.70	182454.94	1.00	4.86				
HS20 INV	COL CL6	3.02	422.695	241.29	151.21	562.20	2526.10	4680.70	182454.94	1.00	4.83				
HS20 INV	COL CL6	3.02	422.695	242.90	151.21	561.40	2526.10	4680.70	182454.94	1.00	4.82				
HS20 INV	COL CL6	3.02	422.695	246.92	151.21	560.60	2526.10	4680.70	182454.94	1.00	4.78				
HS20 INV	COL CL6	3.02	422.695	250.94	151.21	559.79	2526.10	4680.70	182454.94	1.00	4.73				
HS20 INV	COL CL6	3.02	422.695	252.55	151.21	558.99	2526.10	4680.70	182454.94	1.00	4.72				
HS20 INV	COL CL6	3.02	422.695	254.16	151.21	558.18	2526.10	4680.70	182454.94	1.00	4.71				
HS20 INV	COL CL6	3.02	422.695	255.77	151.21	557.38	2526.10	4680.70	182454.94	1.00	4.69				
HS20 INV	COL CL6	3.02	422.695	257.38	151.21	556.57	2526.10	4680.70	182454.94	1.00	4.68				
HS20 INV	COL CL6	3.02	422.695	258.18	151.21	555.77	2526.10	4680.70	182454.94	1.00	4.67				
HS20 INV	COL CL6	3.02	422.695	259.79	151.21	554.96	2526.10	4680.70	182454.94	1.00	4.66				
HS20 INV	COL CL6	3.02	422.695	260.59	151.21	554.16	2526.10	4680.70	182454.94	1.00	4.65				
HS20 INV	COL CL6	3.02	422.695	261.40	151.21	553.36	2526.10	4680.70	182454.94	1.00	4.65				
HS20 INV	COL CL6	3.02	422.695	262.20	151.21	551.75	2526.10	4680.70	182454.94	1.00	4.64				
HS20 INV	COL CL6	3.02	422.695	263.01	151.21	549.33	2526.10	4680.70	182454.94	1.00	4.64				
HS20 INV	COL CL6	3.02	422.695	263.81	151.21	547.73	2526.10	4680.70	182454.94	1.00	4.64				
HS20 INV	COL CL6	3.02	422.695	264.61	151.21	545.31	2526.10	4680.70	182454.94	1.00	4.64				
HS20 INV	COL CL6	3.02	422.695	265.42	151.21	542.90	2526.10	4680.70	182454.94	1.00	4.64				
HS20 INV	COL CL6	3.02	422.695	266.22	151.21	539.68	2526.10	4680.70	182454.94	1.00	4.64				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 6 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.23	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 INV	COL CL6	3.02	422.695	267.03	151.21	537.27	2526.10	4680.70	182454.94	1.00	4.64
HS20 INV	COL CL6	3.02	422.695	267.83	151.21	535.66	2526.10	4680.70	182454.94	1.00	4.64
HS20 INV	COL CL6	3.02	422.695	268.64	151.21	532.44	2526.10	4680.70	182454.94	1.00	4.64
HS20 INV	COL CL6	3.02	422.695	269.44	151.21	530.03	2526.10	4680.70	182454.94	1.00	4.64
HS20 INV	COL CL6	3.02	422.695	270.24	151.21	528.42	2526.10	4680.70	182454.94	1.00	4.64
HS20 OPER	COL CL6	3.02	422.695	110.03	151.21	363.38	2526.10	4680.70	182454.94	1.00	8.99
HS20 OPER	COL CL6	3.02	422.695	112.92	151.21	362.90	2526.10	4680.70	182454.94	1.00	8.88
HS20 OPER	COL CL6	3.02	422.695	114.37	151.21	362.42	2526.10	4680.70	182454.94	1.00	8.83
HS20 OPER	COL CL6	3.02	422.695	115.34	151.21	361.93	2526.10	4680.70	182454.94	1.00	8.80
HS20 OPER	COL CL6	3.02	422.695	115.82	151.21	361.45	2526.10	4680.70	182454.94	1.00	8.79
HS20 OPER	COL CL6	3.02	422.695	116.30	151.21	360.97	2526.10	4680.70	182454.94	1.00	8.77
HS20 OPER	COL CL6	3.02	422.695	116.78	151.21	360.49	2526.10	4680.70	182454.94	1.00	8.76
HS20 OPER	COL CL6	3.02	422.695	117.27	151.21	360.00	2526.10	4680.70	182454.94	1.00	8.75
HS20 OPER	COL CL6	3.02	422.695	117.75	151.21	359.52	2526.10	4680.70	182454.94	1.00	8.74
HS20 OPER	COL CL6	3.02	422.695	118.23	151.21	359.04	2526.10	4680.70	182454.94	1.00	8.72
HS20 OPER	COL CL6	3.02	422.695	118.71	151.21	358.56	2526.10	4680.70	182454.94	1.00	8.71
HS20 OPER	COL CL6	3.02	422.695	119.20	151.21	358.07	2526.10	4680.70	182454.94	1.00	8.70
HS20 OPER	COL CL6	3.02	422.695	119.68	151.21	357.59	2526.10	4680.70	182454.94	1.00	8.69
HS20 OPER	COL CL6	3.02	422.695	120.16	151.21	357.11	2526.10	4680.70	182454.94	1.00	8.68
HS20 OPER	COL CL6	3.02	422.695	120.64	151.21	356.14	2526.10	4680.70	182454.94	1.00	8.67
HS20 OPER	COL CL6	3.02	422.695	121.13	151.21	355.66	2526.10	4680.70	182454.94	1.00	8.66
HS20 OPER	COL CL6	3.02	422.695	121.61	151.21	355.18	2526.10	4680.70	182454.94	1.00	8.65
HS20 OPER	COL CL6	3.02	422.695	122.09	151.21	354.21	2526.10	4680.70	182454.94	1.00	8.64
HS20 OPER	COL CL6	3.02	422.695	122.57	151.21	353.73	2526.10	4680.70	182454.94	1.00	8.63
HS20 OPER	COL CL6	3.02	422.695	123.06	151.21	353.25	2526.10	4680.70	182454.94	1.00	8.62
HS20 OPER	COL CL6	3.02	422.695	123.54	151.21	352.76	2526.10	4680.70	182454.94	1.00	8.61
HS20 OPER	COL CL6	3.02	422.695	124.02	151.21	351.80	2526.10	4680.70	182454.94	1.00	8.60
HS20 OPER	COL CL6	3.02	422.695	124.51	151.21	351.32	2526.10	4680.70	182454.94	1.00	8.59
HS20 OPER	COL CL6	3.02	422.695	124.99	151.21	350.35	2526.10	4680.70	182454.94	1.00	8.59
HS20 OPER	COL CL6	3.02	422.695	125.47	151.21	349.87	2526.10	4680.70	182454.94	1.00	8.58
HS20 OPER	COL CL6	3.02	422.695	125.95	151.21	348.90	2526.10	4680.70	182454.94	1.00	8.56
HS20 OPER	COL CL6	3.02	422.695	126.44	151.21	348.42	2526.10	4680.70	182454.94	1.00	8.55
HS20 OPER	COL CL6	3.02	422.695	126.92	151.21	347.94	2526.10	4680.70	182454.94	1.00	8.54
HS20 OPER	COL CL6	3.02	422.695	127.40	151.21	346.97	2526.10	4680.70	182454.94	1.00	8.53
HS20 OPER	COL CL6	3.02	422.695	127.88	151.21	346.01	2526.10	4680.70	182454.94	1.00	8.53
HS20 OPER	COL CL6	3.02	422.695	128.37	151.21	345.53	2526.10	4680.70	182454.94	1.00	8.52
HS20 OPER	COL CL6	3.02	422.695	128.85	151.21	344.56	2526.10	4680.70	182454.94	1.00	8.51
HS20 OPER	COL CL6	3.02	422.695	129.33	151.21	343.60	2526.10	4680.70	182454.94	1.00	8.50
HS20 OPER	COL CL6	3.02	422.695	129.81	151.21	343.11	2526.10	4680.70	182454.94	1.00	8.49
HS20 OPER	COL CL6	3.02	422.695	130.30	151.21	341.67	2526.10	4680.70	182454.94	1.00	8.49
HS20 OPER	COL CL6	3.02	422.695	130.78	151.21	341.18	2526.10	4680.70	182454.94	1.00	8.48
HS20 OPER	COL CL6	3.02	422.695	131.26	151.21	340.22	2526.10	4680.70	182454.94	1.00	8.48
HS20 OPER	COL CL6	3.02	422.695	131.74	151.21	339.25	2526.10	4680.70	182454.94	1.00	8.47
HS20 OPER	COL CL6	3.02	422.695	140.91	151.21	338.29	2526.10	4680.70	182454.94	1.00	8.18
HS20 OPER	COL CL6	3.02	422.695	143.33	151.21	337.80	2526.10	4680.70	182454.94	1.00	8.11
HS20 OPER	COL CL6	3.02	422.695	144.77	151.21	337.32	2526.10	4680.70	182454.94	1.00	8.06
HS20 OPER	COL CL6	3.02	422.695	145.74	151.21	336.84	2526.10	4680.70	182454.94	1.00	8.03
HS20 OPER	COL CL6	3.02	422.695	148.15	151.21	336.36	2526.10	4680.70	182454.94	1.00	7.96
HS20 OPER	COL CL6	3.02	422.695	150.56	151.21	335.87	2526.10	4680.70	182454.94	1.00	7.89
HS20 OPER	COL CL6	3.02	422.695	151.53	151.21	335.39	2526.10	4680.70	182454.94	1.00	7.87
HS20 OPER	COL CL6	3.02	422.695	152.49	151.21	334.91	2526.10	4680.70	182454.94	1.00	7.84
HS20 OPER	COL CL6	3.02	422.695	153.46	151.21	334.43	2526.10	4680.70	182454.94	1.00	7.82
HS20 OPER	COL CL6	3.02	422.695	154.43	151.21	333.94	2526.10	4680.70	182454.94	1.00	7.79
HS20 OPER	COL CL6	3.02	422.695	154.91	151.21	333.46	2526.10	4680.70	182454.94	1.00	7.78
HS20 OPER	COL CL6	3.02	422.695	155.87	151.21	332.98	2526.10	4680.70	182454.94	1.00	7.76
HS20 OPER	COL CL6	3.02	422.695	156.36	151.21	332.50	2526.10	4680.70	182454.94	1.00	7.75
HS20 OPER	COL CL6	3.02	422.695	156.84	151.21	332.01	2526.10	4680.70	182454.94	1.00	7.74
HS20 OPER	COL CL6	3.02	422.695	157.32	151.21	331.05	2526.10	4680.70	182454.94	1.00	7.74

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 6 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.23	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation
HS20 OPER	COL CL6	3.02	422.695	157.80	151.21	329.60	2526.10	4680.70	182454.94	1.00	7.74
HS20 OPER	COL CL6	3.02	422.695	158.29	151.21	328.64	2526.10	4680.70	182454.94	1.00	7.73
HS20 OPER	COL CL6	3.02	422.695	158.77	151.21	327.19	2526.10	4680.70	182454.94	1.00	7.73
HS20 OPER	COL CL6	3.02	422.695	159.25	151.21	325.74	2526.10	4680.70	182454.94	1.00	7.73
HS20 OPER	COL CL6	3.02	422.695	159.73	151.21	323.81	2526.10	4680.70	182454.94	1.00	7.74
HS20 OPER	COL CL6	3.02	422.695	160.22	151.21	322.36	2526.10	4680.70	182454.94	1.00	7.73
HS20 OPER	COL CL6	3.02	422.695	160.70	151.21	321.40	2526.10	4680.70	182454.94	1.00	7.73
HS20 OPER	COL CL6	3.02	422.695	161.18	151.21	319.47	2526.10	4680.70	182454.94	1.00	7.73
HS20 OPER	COL CL6	3.02	422.695	161.66	151.21	318.02	2526.10	4680.70	182454.94	1.00	7.73
HS20 OPER	COL CL6	3.02	422.695	162.15	151.21	317.05	2526.10	4680.70	182454.94	1.00	7.73
2F1	COL CL6	3.02	422.695	46.81	151.21	157.80	2526.10	4680.70	182454.94	1.00	20.90
2F1	COL CL6	3.02	422.695	47.78	151.21	157.32	2526.10	4680.70	182454.94	1.00	20.72
2F1	COL CL6	3.02	422.695	48.74	151.21	156.84	2526.10	4680.70	182454.94	1.00	20.56
2F1	COL CL6	3.02	422.695	49.22	151.21	156.36	2526.10	4680.70	182454.94	1.00	20.49
2F1	COL CL6	3.02	422.695	49.71	151.21	155.87	2526.10	4680.70	182454.94	1.00	20.42
2F1	COL CL6	3.02	422.695	50.19	151.21	155.39	2526.10	4680.70	182454.94	1.00	20.36
2F1	COL CL6	3.02	422.695	50.67	151.21	154.91	2526.10	4680.70	182454.94	1.00	20.29
2F1	COL CL6	3.02	422.695	51.15	151.21	153.94	2526.10	4680.70	182454.94	1.00	20.26
2F1	COL CL6	3.02	422.695	51.64	151.21	153.46	2526.10	4680.70	182454.94	1.00	20.19
2F1	COL CL6	3.02	422.695	52.12	151.21	152.98	2526.10	4680.70	182454.94	1.00	20.13
2F1	COL CL6	3.02	422.695	52.60	151.21	152.01	2526.10	4680.70	182454.94	1.00	20.09
2F1	COL CL6	3.02	422.695	53.08	151.21	151.05	2526.10	4680.70	182454.94	1.00	20.06
2F1	COL CL6	3.02	422.695	53.57	151.21	150.08	2526.10	4680.70	182454.94	1.00	20.03
2F1	COL CL6	3.02	422.695	54.05	151.21	149.12	2526.10	4680.70	182454.94	1.00	19.99
2F1	COL CL6	3.02	422.695	54.53	151.21	148.15	2526.10	4680.70	182454.94	1.00	19.96
2F1	COL CL6	3.02	422.695	55.01	151.21	147.19	2526.10	4680.70	182454.94	1.00	19.93
2F1	COL CL6	3.02	422.695	61.29	151.21	146.22	2526.10	4680.70	182454.94	1.00	18.84
2F1	COL CL6	3.02	422.695	62.25	151.21	145.74	2526.10	4680.70	182454.94	1.00	18.70
2F1	COL CL6	3.02	422.695	64.18	151.21	145.26	2526.10	4680.70	182454.94	1.00	18.40
2F1	COL CL6	3.02	422.695	65.63	151.21	144.77	2526.10	4680.70	182454.94	1.00	18.19
2F1	COL CL6	3.02	422.695	66.11	151.21	143.33	2526.10	4680.70	182454.94	1.00	18.19
2F1	COL CL6	3.02	422.695	66.60	151.21	142.36	2526.10	4680.70	182454.94	1.00	18.16
2F1	COL CL6	3.02	422.695	67.08	151.21	140.91	2526.10	4680.70	182454.94	1.00	18.16
2F1	COL CL6	3.02	422.695	67.56	151.21	139.95	2526.10	4680.70	182454.94	1.00	18.13
2F1	COL CL6	3.02	422.695	68.04	151.21	138.50	2526.10	4680.70	182454.94	1.00	18.13
2F1	COL CL6	3.02	422.695	68.53	151.21	137.05	2526.10	4680.70	182454.94	1.00	18.13
2F1	COL CL6	3.02	422.695	69.01	151.21	135.12	2526.10	4680.70	182454.94	1.00	18.15
2F1	COL CL6	3.02	422.695	69.49	151.21	133.19	2526.10	4680.70	182454.94	1.00	18.18
2F1	COL CL6	3.02	422.695	69.97	151.21	130.78	2526.10	4680.70	182454.94	1.00	18.23
2F1	COL CL6	3.02	422.695	70.46	151.21	128.37	2526.10	4680.70	182454.94	1.00	18.28
2F1	COL CL6	3.02	422.695	70.94	151.21	125.47	2526.10	4680.70	182454.94	1.00	18.36
2F1	COL CL6	3.02	422.695	71.42	151.21	121.61	2526.10	4680.70	182454.94	1.00	18.49
2F1	COL CL6	3.02	422.695	71.90	151.21	117.75	2526.10	4680.70	182454.94	1.00	18.62
2F1	COL CL6	3.02	422.695	72.39	151.21	111.96	2526.10	4680.70	182454.94	1.00	18.86
2F1	COL CL6	3.02	422.695	72.87	151.21	105.20	2526.10	4680.70	182454.94	1.00	19.16
2F1	COL CL6	3.02	422.695	73.35	151.21	95.07	2526.10	4680.70	182454.94	1.00	19.68
3F1	COL CL6	3.02	422.695	69.97	151.21	240.81	2526.10	4680.70	182454.94	1.00	13.83
3F1	COL CL6	3.02	422.695	72.39	151.21	240.32	2526.10	4680.70	182454.94	1.00	13.62
3F1	COL CL6	3.02	422.695	73.35	151.21	239.84	2526.10	4680.70	182454.94	1.00	13.55
3F1	COL CL6	3.02	422.695	74.32	151.21	239.36	2526.10	4680.70	182454.94	1.00	13.48
3F1	COL CL6	3.02	422.695	74.80	151.21	238.88	2526.10	4680.70	182454.94	1.00	13.45
3F1	COL CL6	3.02	422.695	75.28	151.21	238.39	2526.10	4680.70	182454.94	1.00	13.42
3F1	COL CL6	3.02	422.695	75.76	151.21	237.91	2526.10	4680.70	182454.94	1.00	13.39
3F1	COL CL6	3.02	422.695	76.25	151.21	237.43	2526.10	4680.70	182454.94	1.00	13.36
3F1	COL CL6	3.02	422.695	76.73	151.21	236.95	2526.10	4680.70	182454.94	1.00	13.33
3F1	COL CL6	3.02	422.695	77.21	151.21	236.46	2526.10	4680.70	182454.94	1.00	13.30
3F1	COL CL6	3.02	422.695	77.70	151.21	235.98	2526.10	4680.70	182454.94	1.00	13.28
3F1	COL CL6	3.02	422.695	78.18	151.21	235.50	2526.10	4680.70	182454.94	1.00	13.25

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 6 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
3F1	COL CL6	3.02	422.695	78.66	151.21	234.53	2526.10	4680.70	182454.94	1.00	13.23		
3F1	COL CL6	3.02	422.695	79.14	151.21	234.05	2526.10	4680.70	182454.94	1.00	13.21		
3F1	COL CL6	3.02	422.695	79.63	151.21	233.09	2526.10	4680.70	182454.94	1.00	13.19		
3F1	COL CL6	3.02	422.695	80.11	151.21	232.60	2526.10	4680.70	182454.94	1.00	13.16		
3F1	COL CL6	3.02	422.695	80.59	151.21	231.64	2526.10	4680.70	182454.94	1.00	13.15		
3F1	COL CL6	3.02	422.695	81.07	151.21	230.67	2526.10	4680.70	182454.94	1.00	13.14		
3F1	COL CL6	3.02	422.695	81.56	151.21	230.19	2526.10	4680.70	182454.94	1.00	13.11		
3F1	COL CL6	3.02	422.695	82.04	151.21	229.22	2526.10	4680.70	182454.94	1.00	13.09		
3F1	COL CL6	3.02	422.695	82.52	151.21	228.26	2526.10	4680.70	182454.94	1.00	13.08		
3F1	COL CL6	3.02	422.695	83.00	151.21	227.29	2526.10	4680.70	182454.94	1.00	13.07		
3F1	COL CL6	3.02	422.695	83.49	151.21	226.33	2526.10	4680.70	182454.94	1.00	13.05		
3F1	COL CL6	3.02	422.695	83.97	151.21	225.36	2526.10	4680.70	182454.94	1.00	13.04		
3F1	COL CL6	3.02	422.695	84.45	151.21	223.92	2526.10	4680.70	182454.94	1.00	13.04		
3F1	COL CL6	3.02	422.695	84.93	151.21	222.95	2526.10	4680.70	182454.94	1.00	13.03		
3F1	COL CL6	3.02	422.695	85.41	151.21	222.47	2526.10	4680.70	182454.94	1.00	13.02		
3F1	COL CL6	3.02	422.695	85.89	151.21	221.99	2526.10	4680.70	182454.94	1.00	13.01		
3F1	COL CL6	3.02	422.695	86.37	151.21	221.50	2526.10	4680.70	182454.94	1.00	13.00		
3F1	COL CL6	3.02	422.695	86.85	151.21	221.02	2526.10	4680.70	182454.94	1.00	12.99		
3F1	COL CL6	3.02	422.695	87.33	151.21	220.54	2526.10	4680.70	182454.94	1.00	12.98		
3F1	COL CL6	3.02	422.695	87.81	151.21	220.06	2526.10	4680.70	182454.94	1.00	12.97		
3F1	COL CL6	3.02	422.695	88.29	151.21	219.57	2526.10	4680.70	182454.94	1.00	12.96		
3F1	COL CL6	3.02	422.695	88.77	151.21	218.61	2526.10	4680.70	182454.94	1.00	12.95		
3F1	COL CL6	3.02	422.695	89.25	151.21	218.13	2526.10	4680.70	182454.94	1.00	12.94		
3F1	COL CL6	3.02	422.695	89.73	151.21	217.64	2526.10	4680.70	182454.94	1.00	12.93		
3F1	COL CL6	3.02	422.695	90.21	151.21	217.16	2526.10	4680.70	182454.94	1.00	12.92		
3F1	COL CL6	3.02	422.695	90.69	151.21	216.20	2526.10	4680.70	182454.94	1.00	12.91		
3F1	COL CL6	3.02	422.695	91.17	151.21	215.72	2526.10	4680.70	182454.94	1.00	12.90		
3F1	COL CL6	3.02	422.695	91.65	151.21	214.75	2526.10	4680.70	182454.94	1.00	12.89		
3F1	COL CL6	3.02	422.695	92.13	151.21	213.30	2526.10	4680.70	182454.94	1.00	12.88		
3F1	COL CL6	3.02	422.695	92.61	151.21	212.82	2526.10	4680.70	182454.94	1.00	12.87		
3F1	COL CL6	3.02	422.695	93.09	151.21	211.85	2526.10	4680.70	182454.94	1.00	12.86		
3F1	COL CL6	3.02	422.695	93.57	151.21	210.89	2526.10	4680.70	182454.94	1.00	12.85		
3F1	COL CL6	3.02	422.695	94.05	151.21	209.92	2526.10	4680.70	182454.94	1.00	12.84		
3F1	COL CL6	3.02	422.695	94.53	151.21	208.96	2526.10	4680.70	182454.94	1.00	12.83		
3F1	COL CL6	3.02	422.695	95.01	151.21	207.99	2526.10	4680.70	182454.94	1.00	12.82		
3F1	COL CL6	3.02	422.695	95.49	151.21	206.06	2526.10	4680.70	182454.94	1.00	12.81		
3F1	COL CL6	3.02	422.695	95.97	151.21	203.65	2526.10	4680.70	182454.94	1.00	12.80		
3F1	COL CL6	3.02	422.695	96.45	151.21	201.72	2526.10	4680.70	182454.94	1.00	12.79		
3F1	COL CL6	3.02	422.695	96.93	151.21	199.30	2526.10	4680.70	182454.94	1.00	12.78		
3F1	COL CL6	3.02	422.695	97.41	151.21	196.89	2526.10	4680.70	182454.94	1.00	12.77		
3F1	COL CL6	3.02	422.695	97.89	151.21	193.51	2526.10	4680.70	182454.94	1.00	12.76		
3F1	COL CL6	3.02	422.695	98.37	151.21	190.62	2526.10	4680.70	182454.94	1.00	12.75		
3F1	COL CL6	3.02	422.695	98.85	151.21	186.76	2526.10	4680.70	182454.94	1.00	12.74		
3F1	COL CL6	3.02	422.695	99.33	151.21	182.90	2526.10	4680.70	182454.94	1.00	12.73		
3F1	COL CL6	3.02	422.695	99.81	151.21	178.55	2526.10	4680.70	182454.94	1.00	12.72		
3F1	COL CL6	3.02	422.695	100.29	151.21	172.76	2526.10	4680.70	182454.94	1.00	12.71		
3F1	COL CL6	3.02	422.695	100.77	151.21	166.49	2526.10	4680.70	182454.94	1.00	12.70		
3F1	COL CL6	3.02	422.695	101.25	151.21	158.77	2526.10	4680.70	182454.94	1.00	12.69		
3F1	COL CL6	3.02	422.695	101.73	151.21	149.60	2526.10	4680.70	182454.94	1.00	12.68		
3F1	COL CL6	3.02	422.695	102.21	151.21	136.09	2526.10	4680.70	182454.94	1.00	12.67		
4F1	COL CL6	3.02	422.695	83.49	151.21	280.38	2526.10	4680.70	182454.94	1.00	11.74		
4F1	COL CL6	3.02	422.695	84.93	151.21	279.90	2526.10	4680.70	182454.94	1.00	11.65		
4F1	COL CL6	3.02	422.695	85.90	151.21	279.41	2526.10	4680.70	182454.94	1.00	11.60		
4F1	COL CL6	3.02	422.695	86.86	151.21	278.93	2526.10	4680.70	182454.94	1.00	11.55		
4F1	COL CL6	3.02	422.695	87.83	151.21	278.45	2526.10	4680.70	182454.94	1.00	11.49		
4F1	COL CL6	3.02	422.695	88.31	151.21	277.97	2526.10	4680.70	182454.94	1.00	11.47		
4F1	COL CL6	3.02	422.695	88.79	151.21	277.48	2526.10	4680.70	182454.94	1.00	11.45		
4F1	COL CL6	3.02	422.695	89.28	151.21	277.00	2526.10	4680.70	182454.94	1.00	11.43		
4F1	COL CL6	3.02	422.695	89.76	151.21	276.52	2526.10	4680.70	182454.94	1.00	11.41		
4F1	COL CL6	3.02	422.695	90.24	151.21	276.03	2526.10	4680.70	182454.94	1.00	11.39		
4F1	COL CL6	3.02	422.695	90.72	151.21	275.55	2526.10	4680.70	182454.94	1.00	11.37		
4F1	COL CL6	3.02	422.695	91.21	151.21	275.07	2526.10	4680.70	182454.94	1.00	11.35		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 6 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
4F1	COL CL6	3.02	422.695	91.69	151.21	274.59	2526.10	4680.70	182454.94	1.00	11.33		
4F1	COL CL6	3.02	422.695	92.17	151.21	274.10	2526.10	4680.70	182454.94	1.00	11.31		
4F1	COL CL6	3.02	422.695	92.66	151.21	273.14	2526.10	4680.70	182454.94	1.00	11.30		
4F1	COL CL6	3.02	422.695	93.14	151.21	272.66	2526.10	4680.70	182454.94	1.00	11.28		
4F1	COL CL6	3.02	422.695	93.62	151.21	271.69	2526.10	4680.70	182454.94	1.00	11.27		
4F1	COL CL6	3.02	422.695	94.10	151.21	271.21	2526.10	4680.70	182454.94	1.00	11.25		
4F1	COL CL6	3.02	422.695	94.59	151.21	270.24	2526.10	4680.70	182454.94	1.00	11.24		
4F1	COL CL6	3.02	422.695	95.07	151.21	269.76	2526.10	4680.70	182454.94	1.00	11.22		
4F1	COL CL6	3.02	422.695	95.55	151.21	268.80	2526.10	4680.70	182454.94	1.00	11.21		
4F1	COL CL6	3.02	422.695	96.03	151.21	267.83	2526.10	4680.70	182454.94	1.00	11.20		
4F1	COL CL6	3.02	422.695	96.52	151.21	267.35	2526.10	4680.70	182454.94	1.00	11.18		
4F1	COL CL6	3.02	422.695	97.00	151.21	265.90	2526.10	4680.70	182454.94	1.00	11.17		
4F1	COL CL6	3.02	422.695	97.48	151.21	264.94	2526.10	4680.70	182454.94	1.00	11.16		
4F1	COL CL6	3.02	422.695	97.96	151.21	263.97	2526.10	4680.70	182454.94	1.00	11.15		
4F1	COL CL6	3.02	422.695	98.45	151.21	263.49	2526.10	4680.70	182454.94	1.00	11.14		
4F1	COL CL6	3.02	422.695	98.93	151.21	262.52	2526.10	4680.70	182454.94	1.00	11.13		
4F1	COL CL6	3.02	422.695	99.41	151.21	261.07	2526.10	4680.70	182454.94	1.00	11.12		
4F1	COL CL6	3.02	422.695	110.99	151.21	259.63	2526.10	4680.70	182454.94	1.00	10.49		
4F1	COL CL6	3.02	422.695	112.92	151.21	259.14	2526.10	4680.70	182454.94	1.00	10.40		
4F1	COL CL6	3.02	422.695	113.89	151.21	258.66	2526.10	4680.70	182454.94	1.00	10.36		
4F1	COL CL6	3.02	422.695	114.37	151.21	258.18	2526.10	4680.70	182454.94	1.00	10.35		
4F1	COL CL6	3.02	422.695	115.34	151.21	257.70	2526.10	4680.70	182454.94	1.00	10.31		
4F1	COL CL6	3.02	422.695	115.82	151.21	257.21	2526.10	4680.70	182454.94	1.00	10.28		
4F1	COL CL6	3.02	422.695	116.78	151.21	256.73	2526.10	4680.70	182454.94	1.00	10.24		
4F1	COL CL6	3.02	422.695	117.27	151.21	255.77	2526.10	4680.70	182454.94	1.00	10.23		
4F1	COL CL6	3.02	422.695	117.75	151.21	255.28	2526.10	4680.70	182454.94	1.00	10.21		
4F1	COL CL6	3.02	422.695	118.23	151.21	254.32	2526.10	4680.70	182454.94	1.00	10.20		
4F1	COL CL6	3.02	422.695	118.71	151.21	253.35	2526.10	4680.70	182454.94	1.00	10.19		
4F1	COL CL6	3.02	422.695	119.20	151.21	252.87	2526.10	4680.70	182454.94	1.00	10.18		
4F1	COL CL6	3.02	422.695	119.68	151.21	251.91	2526.10	4680.70	182454.94	1.00	10.17		
4F1	COL CL6	3.02	422.695	120.16	151.21	250.94	2526.10	4680.70	182454.94	1.00	10.16		
4F1	COL CL6	3.02	422.695	120.64	151.21	249.98	2526.10	4680.70	182454.94	1.00	10.15		
4F1	COL CL6	3.02	422.695	121.13	151.21	249.01	2526.10	4680.70	182454.94	1.00	10.14		
4F1	COL CL6	3.02	422.695	121.61	151.21	247.08	2526.10	4680.70	182454.94	1.00	10.15		
4F1	COL CL6	3.02	422.695	122.09	151.21	245.63	2526.10	4680.70	182454.94	1.00	10.15		
4F1	COL CL6	3.02	422.695	122.57	151.21	243.70	2526.10	4680.70	182454.94	1.00	10.16		
4F1	COL CL6	3.02	422.695	123.06	151.21	242.25	2526.10	4680.70	182454.94	1.00	10.16		
4F1	COL CL6	3.02	422.695	123.54	151.21	240.81	2526.10	4680.70	182454.94	1.00	10.16		
4F1	COL CL6	3.02	422.695	124.02	151.21	239.36	2526.10	4680.70	182454.94	1.00	10.16		
4F1	COL CL6	3.02	422.695	124.51	151.21	237.91	2526.10	4680.70	182454.94	1.00	10.16		
4F1	COL CL6	3.02	422.695	124.99	151.21	235.50	2526.10	4680.70	182454.94	1.00	10.18		
4F1	COL CL6	3.02	422.695	125.47	151.21	233.09	2526.10	4680.70	182454.94	1.00	10.20		
4F1	COL CL6	3.02	422.695	125.95	151.21	230.19	2526.10	4680.70	182454.94	1.00	10.22		
4F1	COL CL6	3.02	422.695	126.44	151.21	227.29	2526.10	4680.70	182454.94	1.00	10.23		
4F1	COL CL6	3.02	422.695	126.92	151.21	223.92	2526.10	4680.70	182454.94	1.00	10.26		
4F1	COL CL6	3.02	422.695	127.40	151.21	220.54	2526.10	4680.70	182454.94	1.00	10.30		
4F1	COL CL6	3.02	422.695	127.88	151.21	216.20	2526.10	4680.70	182454.94	1.00	10.34		
4F1	COL CL6	3.02	422.695	128.37	151.21	212.33	2526.10	4680.70	182454.94	1.00	10.38		
4F1	COL CL6	3.02	422.695	128.85	151.21	207.03	2526.10	4680.70	182454.94	1.00	10.45		
4F1	COL CL6	3.02	422.695	129.33	151.21	201.72	2526.10	4680.70	182454.94	1.00	10.52		
4F1	COL CL6	3.02	422.695	129.81	151.21	195.93	2526.10	4680.70	182454.94	1.00	10.59		
4F1	COL CL6	3.02	422.695	130.30	151.21	188.21	2526.10	4680.70	182454.94	1.00	10.71		
4F1	COL CL6	3.02	422.695	130.78	151.21	179.52	2526.10	4680.70	182454.94	1.00	10.84		
4F1	COL CL6	3.02	422.695	131.26	151.21	168.90	2526.10	4680.70	182454.94	1.00	11.01		
4F1	COL CL6	3.02	422.695	131.74	151.21	154.91	2526.10	4680.70	182454.94	1.00	11.26		
5C1	COL CL6	3.02	422.695	119.68	151.21	326.71	2526.10	4680.70	182454.94	1.00	9.07		
5C1	COL CL6	3.02	422.695	120.16	151.21	326.22	2526.10	4680.70	182454.94	1.00	9.06		
5C1	COL CL6	3.02	422.695	120.64	151.21	325.74	2526.10	4680.70	182454.94	1.00	9.05		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 6 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
5C1	COL CL6	3.02	422.695	121.13	151.21	325.26	2526.10	4680.70	182454.94	1.00	9.04		
5C1	COL CL6	3.02	422.695	122.09	151.21	324.78	2526.10	4680.70	182454.94	1.00	9.00		
5C1	COL CL6	3.02	422.695	122.57	151.21	324.29	2526.10	4680.70	182454.94	1.00	8.99		
5C1	COL CL6	3.02	422.695	123.06	151.21	323.81	2526.10	4680.70	182454.94	1.00	8.98		
5C1	COL CL6	3.02	422.695	123.54	151.21	323.33	2526.10	4680.70	182454.94	1.00	8.96		
5C1	COL CL6	3.02	422.695	124.02	151.21	322.84	2526.10	4680.70	182454.94	1.00	8.95		
5C1	COL CL6	3.02	422.695	124.51	151.21	322.36	2526.10	4680.70	182454.94	1.00	8.94		
5C1	COL CL6	3.02	422.695	124.99	151.21	321.88	2526.10	4680.70	182454.94	1.00	8.93		
5C1	COL CL6	3.02	422.695	125.47	151.21	321.40	2526.10	4680.70	182454.94	1.00	8.91		
5C1	COL CL6	3.02	422.695	125.95	151.21	320.91	2526.10	4680.70	182454.94	1.00	8.90		
5C1	COL CL6	3.02	422.695	126.44	151.21	320.43	2526.10	4680.70	182454.94	1.00	8.89		
5C1	COL CL6	3.02	422.695	126.92	151.21	319.95	2526.10	4680.70	182454.94	1.00	8.88		
5C1	COL CL6	3.02	422.695	127.40	151.21	319.47	2526.10	4680.70	182454.94	1.00	8.86		
5C1	COL CL6	3.02	422.695	151.05	151.21	318.50	2526.10	4680.70	182454.94	1.00	8.05		
5C1	COL CL6	3.02	422.695	152.01	151.21	318.02	2526.10	4680.70	182454.94	1.00	8.03		
5C1	COL CL6	3.02	422.695	153.46	151.21	317.54	2526.10	4680.70	182454.94	1.00	7.99		
5C1	COL CL6	3.02	422.695	153.94	151.21	317.05	2526.10	4680.70	182454.94	1.00	7.98		
5C1	COL CL6	3.02	422.695	154.91	151.21	316.57	2526.10	4680.70	182454.94	1.00	7.95		
5C1	COL CL6	3.02	422.695	155.39	151.21	316.09	2526.10	4680.70	182454.94	1.00	7.94		
5C1	COL CL6	3.02	422.695	155.87	151.21	315.61	2526.10	4680.70	182454.94	1.00	7.93		
5C1	COL CL6	3.02	422.695	156.36	151.21	315.12	2526.10	4680.70	182454.94	1.00	7.92		
5C1	COL CL6	3.02	422.695	156.84	151.21	314.64	2526.10	4680.70	182454.94	1.00	7.91		
5C1	COL CL6	3.02	422.695	157.32	151.21	314.16	2526.10	4680.70	182454.94	1.00	7.90		
5C1	COL CL6	3.02	422.695	157.80	151.21	313.68	2526.10	4680.70	182454.94	1.00	7.89		
5C1	COL CL6	3.02	422.695	158.29	151.21	313.19	2526.10	4680.70	182454.94	1.00	7.88		
5C1	COL CL6	3.02	422.695	158.77	151.21	312.71	2526.10	4680.70	182454.94	1.00	7.87		
5C1	COL CL6	3.02	422.695	159.25	151.21	311.75	2526.10	4680.70	182454.94	1.00	7.87		
5C1	COL CL6	3.02	422.695	159.73	151.21	311.26	2526.10	4680.70	182454.94	1.00	7.86		
5C1	COL CL6	3.02	422.695	160.22	151.21	310.78	2526.10	4680.70	182454.94	1.00	7.85		
5C1	COL CL6	3.02	422.695	160.70	151.21	309.82	2526.10	4680.70	182454.94	1.00	7.85		
5C1	COL CL6	3.02	422.695	161.18	151.21	309.33	2526.10	4680.70	182454.94	1.00	7.84		
5C1	COL CL6	3.02	422.695	161.66	151.21	308.37	2526.10	4680.70	182454.94	1.00	7.83		
5C1	COL CL6	3.02	422.695	162.15	151.21	307.40	2526.10	4680.70	182454.94	1.00	7.82		
5C1	COL CL6	3.02	422.695	162.63	151.21	306.44	2526.10	4680.70	182454.94	1.00	7.82		
5C1	COL CL6	3.02	422.695	163.11	151.21	305.47	2526.10	4680.70	182454.94	1.00	7.81		
5C1	COL CL6	3.02	422.695	163.59	151.21	304.51	2526.10	4680.70	182454.94	1.00	7.81		
5C1	COL CL6	3.02	422.695	164.08	151.21	303.54	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	164.56	151.21	302.09	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	165.04	151.21	300.65	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	165.52	151.21	299.68	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	166.01	151.21	298.23	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	166.49	151.21	296.79	2526.10	4680.70	182454.94	1.00	7.79		
5C1	COL CL6	3.02	422.695	166.97	151.21	295.34	2526.10	4680.70	182454.94	1.00	7.79		
5C1	COL CL6	3.02	422.695	167.45	151.21	293.89	2526.10	4680.70	182454.94	1.00	7.79		
5C1	COL CL6	3.02	422.695	167.94	151.21	291.96	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	168.42	151.21	290.51	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	168.90	151.21	288.58	2526.10	4680.70	182454.94	1.00	7.80		
5C1	COL CL6	3.02	422.695	169.38	151.21	286.17	2526.10	4680.70	182454.94	1.00	7.81		
5C1	COL CL6	3.02	422.695	169.87	151.21	284.72	2526.10	4680.70	182454.94	1.00	7.81		
5C1	COL CL6	3.02	422.695	170.35	151.21	282.31	2526.10	4680.70	182454.94	1.00	7.82		
5C1	COL CL6	3.02	422.695	170.83	151.21	280.38	2526.10	4680.70	182454.94	1.00	7.82		
5C1	COL CL6	3.02	422.695	171.32	151.21	277.97	2526.10	4680.70	182454.94	1.00	7.83		
5C1	COL CL6	3.02	422.695	171.80	151.21	275.55	2526.10	4680.70	182454.94	1.00	7.84		
5C1	COL CL6	3.02	422.695	172.28	151.21	273.14	2526.10	4680.70	182454.94	1.00	7.85		
5C1	COL CL6	3.02	422.695	172.76	151.21	270.73	2526.10	4680.70	182454.94	1.00	7.86		
5C1	COL CL6	3.02	422.695	173.25	151.21	267.35	2526.10	4680.70	182454.94	1.00	7.88		
5C1	COL CL6	3.02	422.695	173.73	151.21	264.45	2526.10	4680.70	182454.94	1.00	7.89		
5C1	COL CL6	3.02	422.695	174.21	151.21	261.07	2526.10	4680.70	182454.94	1.00	7.91		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 6 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _{ex}		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
5C1	COL CL6	3.02	422.695	174.69	151.21	258.66	2526.10	4680.70	182454.94	1.00	7.92
5C1	COL CL6	3.02	422.695	152.49	151.21	258.18	2526.10	4680.70	182454.94	1.00	8.67
5C1	COL CL6	3.02	422.695	175.18	151.21	255.28	2526.10	4680.70	182454.94	1.00	7.94
5C1	COL CL6	3.02	422.695	175.66	151.21	251.42	2526.10	4680.70	182454.94	1.00	7.96
5C1	COL CL6	3.02	422.695	176.14	151.21	248.05	2526.10	4680.70	182454.94	1.00	7.98
5C1	COL CL6	3.02	422.695	176.62	151.21	244.67	2526.10	4680.70	182454.94	1.00	8.00
5C1	COL CL6	3.02	422.695	177.11	151.21	241.29	2526.10	4680.70	182454.94	1.00	8.02
5C1	COL CL6	3.02	422.695	177.59	151.21	236.95	2526.10	4680.70	182454.94	1.00	8.05
5C1	COL CL6	3.02	422.695	178.07	151.21	232.12	2526.10	4680.70	182454.94	1.00	8.09
5C1	COL CL6	3.02	422.695	178.55	151.21	228.26	2526.10	4680.70	182454.94	1.00	8.11
5C1	COL CL6	3.02	422.695	179.04	151.21	223.43	2526.10	4680.70	182454.94	1.00	8.15
5C1	COL CL6	3.02	422.695	179.52	151.21	218.61	2526.10	4680.70	182454.94	1.00	8.18
5C1	COL CL6	3.02	422.695	180.00	151.21	213.78	2526.10	4680.70	182454.94	1.00	8.22
5C1	COL CL6	3.02	422.695	180.48	151.21	208.47	2526.10	4680.70	182454.94	1.00	8.26
5C1	COL CL6	3.02	422.695	180.97	151.21	203.65	2526.10	4680.70	182454.94	1.00	8.30
5C1	COL CL6	3.02	422.695	181.45	151.21	197.37	2526.10	4680.70	182454.94	1.00	8.35
5C1	COL CL6	3.02	422.695	181.93	151.21	189.17	2526.10	4680.70	182454.94	1.00	8.42
5C1	COL CL6	3.02	422.695	182.41	151.21	180.00	2526.10	4680.70	182454.94	1.00	8.51
5C1	COL CL6	3.02	422.695	182.90	151.21	170.35	2526.10	4680.70	182454.94	1.00	8.61
5C1	COL CL6	3.02	422.695	183.38	151.21	161.18	2526.10	4680.70	182454.94	1.00	8.70
5C1	COL CL6	3.02	422.695	183.86	151.21	152.01	2526.10	4680.70	182454.94	1.00	8.79
5C1	COL CL6	3.02	422.695	184.34	151.21	138.98	2526.10	4680.70	182454.94	1.00	8.94
5C1	COL CL6	3.02	422.695	184.83	151.21	113.41	2526.10	4680.70	182454.94	1.00	9.25

Load Case	Controlling RF
HS20 INV	4.64
HS20 OPER	7.73
2F1	18.13
3F1	11.85
4F1	10.14
5C1	7.79

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _e			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
HS20 INV	COL L7	3.46	236.2932	177.52	75.73	367.73	935.20	583.00	17068.35	1.00	1.15				
HS20 INV	COL L7	3.46	236.2932	182.40	75.73	366.75	935.20	583.00	17068.35	1.00	1.15				
HS20 INV	COL L7	3.46	236.2932	186.30	75.73	365.78	935.20	583.00	17068.35	1.00	1.14				
HS20 INV	COL L7	3.46	236.2932	189.23	75.73	364.80	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	192.16	75.73	363.83	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	194.11	75.73	362.85	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	196.06	75.73	361.88	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	198.01	75.73	360.90	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	198.98	75.73	359.93	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	200.93	75.73	358.95	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	202.89	75.73	357.98	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	203.86	75.73	357.00	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	204.84	75.73	356.03	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	206.79	75.73	355.05	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	207.76	75.73	354.07	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	208.74	75.73	353.10	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	210.69	75.73	352.12	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	211.66	75.73	351.15	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	212.64	75.73	350.17	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	213.62	75.73	349.20	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	214.59	75.73	348.22	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	215.57	75.73	347.25	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	216.54	75.73	346.27	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	217.52	75.73	345.30	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	218.49	75.73	344.32	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	219.47	75.73	343.34	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	220.44	75.73	342.37	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	221.42	75.73	341.39	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	222.39	75.73	340.42	935.20	583.00	17068.35	1.00	1.11				
HS20 INV	COL L7	3.46	236.2932	223.37	75.73	339.44	935.20	583.00	17068.35	1.00	1.11				
HS20 INV	COL L7	3.46	236.2932	224.34	75.73	338.47	935.20	583.00	17068.35	1.00	1.11				
HS20 INV	COL L7	3.46	236.2932	225.32	75.73	337.49	935.20	583.00	17068.35	1.00	1.11				
HS20 INV	COL L7	3.46	236.2932	226.30	75.73	336.52	935.20	583.00	17068.35	1.00	1.11				
HS20 INV	COL L7	3.46	236.2932	227.27	75.73	334.57	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	228.25	75.73	333.59	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	229.22	75.73	332.62	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	230.20	75.73	330.66	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	231.17	75.73	329.69	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	232.15	75.73	328.71	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	233.12	75.73	327.74	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	234.10	75.73	325.79	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	235.07	75.73	324.81	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	236.05	75.73	322.86	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	237.03	75.73	321.89	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	238.00	75.73	319.94	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	238.98	75.73	318.96	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	239.95	75.73	317.98	935.20	583.00	17068.35	1.00	1.12				
HS20 INV	COL L7	3.46	236.2932	240.93	75.73	316.03	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	241.90	75.73	314.08	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	242.88	75.73	313.11	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	243.85	75.73	311.16	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	244.83	75.73	310.18	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	245.80	75.73	308.23	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	246.78	75.73	306.28	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	247.75	75.73	304.33	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	248.73	75.73	303.35	935.20	583.00	17068.35	1.00	1.13				
HS20 INV	COL L7	3.46	236.2932	249.71	75.73	301.40	935.20	583.00	17068.35	1.00	1.14				
HS20 INV	COL L7	3.46	236.2932	250.68	75.73	299.45	935.20	583.00	17068.35	1.00	1.14				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	Load Case	Member	LLDF	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
	DL Factor	1.30										
	LL Factor	2.17 INV	1.30 OPER									
				kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
HS20 INV	COL L7	3.46		236.2932	251.66	75.73	297.50	935.20	583.00	17068.35	1.00	1.14
HS20 INV	COL L7	3.46		236.2932	252.63	75.73	295.55	935.20	583.00	17068.35	1.00	1.14
HS20 INV	COL L7	3.46		236.2932	253.61	75.73	294.57	935.20	583.00	17068.35	1.00	1.14
HS20 INV	COL L7	3.46		236.2932	254.58	75.73	292.62	935.20	583.00	17068.35	1.00	1.14
HS20 INV	COL L7	3.46		236.2932	255.56	75.73	290.67	935.20	583.00	17068.35	1.00	1.15
HS20 INV	COL L7	3.46		236.2932	256.53	75.73	288.72	935.20	583.00	17068.35	1.00	1.15
HS20 INV	COL L7	3.46		236.2932	257.51	75.73	286.77	935.20	583.00	17068.35	1.00	1.15
HS20 INV	COL L7	3.46		236.2932	258.48	75.73	284.82	935.20	583.00	17068.35	1.00	1.15
HS20 INV	COL L7	3.46		236.2932	259.46	75.73	282.87	935.20	583.00	17068.35	1.00	1.15
HS20 INV	COL L7	3.46		236.2932	260.43	75.73	280.92	935.20	583.00	17068.35	1.00	1.16
HS20 INV	COL L7	3.46		236.2932	261.41	75.73	278.97	935.20	583.00	17068.35	1.00	1.16
HS20 INV	COL L7	3.46		236.2932	262.39	75.73	277.02	935.20	583.00	17068.35	1.00	1.16
HS20 INV	COL L7	3.46		236.2932	263.36	75.73	275.07	935.20	583.00	17068.35	1.00	1.16
HS20 INV	COL L7	3.46		236.2932	264.34	75.73	272.14	935.20	583.00	17068.35	1.00	1.17
HS20 INV	COL L7	3.46		236.2932	265.31	75.73	270.19	935.20	583.00	17068.35	1.00	1.17
HS20 INV	COL L7	3.46		236.2932	266.29	75.73	269.21	935.20	583.00	17068.35	1.00	1.17
HS20 INV	COL L7	3.46		236.2932	267.26	75.73	266.29	935.20	583.00	17068.35	1.00	1.17
HS20 INV	COL L7	3.46		236.2932	268.24	75.73	264.34	935.20	583.00	17068.35	1.00	1.17
HS20 INV	COL L7	3.46		236.2932	269.21	75.73	262.39	935.20	583.00	17068.35	1.00	1.18
HS20 INV	COL L7	3.46		236.2932	270.19	75.73	260.43	935.20	583.00	17068.35	1.00	1.18
HS20 INV	COL L7	3.46		236.2932	271.16	75.73	257.51	935.20	583.00	17068.35	1.00	1.18
HS20 INV	COL L7	3.46		236.2932	272.14	75.73	255.56	935.20	583.00	17068.35	1.00	1.18
HS20 INV	COL L7	3.46		236.2932	273.12	75.73	253.61	935.20	583.00	17068.35	1.00	1.19
HS20 INV	COL L7	3.46		236.2932	274.09	75.73	250.68	935.20	583.00	17068.35	1.00	1.19
HS20 INV	COL L7	3.46		236.2932	275.07	75.73	248.73	935.20	583.00	17068.35	1.00	1.19
HS20 INV	COL L7	3.46		236.2932	276.04	75.73	245.80	935.20	583.00	17068.35	1.00	1.20
HS20 INV	COL L7	3.46		236.2932	277.02	75.73	242.88	935.20	583.00	17068.35	1.00	1.20
HS20 INV	COL L7	3.46		236.2932	277.99	75.73	240.93	935.20	583.00	17068.35	1.00	1.20
HS20 INV	COL L7	3.46		236.2932	278.97	75.73	238.98	935.20	583.00	17068.35	1.00	1.21
HS20 INV	COL L7	3.46		236.2932	279.94	75.73	236.05	935.20	583.00	17068.35	1.00	1.21
HS20 INV	COL L7	3.46		236.2932	280.92	75.73	233.12	935.20	583.00	17068.35	1.00	1.22
HS20 INV	COL L7	3.46		236.2932	281.89	75.73	230.20	935.20	583.00	17068.35	1.00	1.22
HS20 INV	COL L7	3.46		236.2932	282.87	75.73	228.25	935.20	583.00	17068.35	1.00	1.22
HS20 INV	COL L7	3.46		236.2932	283.84	75.73	225.32	935.20	583.00	17068.35	1.00	1.23
HS20 INV	COL L7	3.46		236.2932	284.82	75.73	222.39	935.20	583.00	17068.35	1.00	1.23
HS20 INV	COL L7	3.46		236.2932	285.80	75.73	218.49	935.20	583.00	17068.35	1.00	1.24
HS20 INV	COL L7	3.46		236.2932	286.77	75.73	216.54	935.20	583.00	17068.35	1.00	1.24
HS20 INV	COL L7	3.46		236.2932	287.75	75.73	213.62	935.20	583.00	17068.35	1.00	1.24
HS20 INV	COL L7	3.46		236.2932	288.72	75.73	210.69	935.20	583.00	17068.35	1.00	1.25
HS20 INV	COL L7	3.46		236.2932	289.70	75.73	206.79	935.20	583.00	17068.35	1.00	1.26
HS20 INV	COL L7	3.46		236.2932	290.67	75.73	204.84	935.20	583.00	17068.35	1.00	1.26
HS20 INV	COL L7	3.46		236.2932	291.65	75.73	200.93	935.20	583.00	17068.35	1.00	1.27
HS20 INV	COL L7	3.46		236.2932	292.62	75.73	198.98	935.20	583.00	17068.35	1.00	1.27
HS20 INV	COL L7	3.46		236.2932	293.60	75.73	197.03	935.20	583.00	17068.35	1.00	1.27
HS20 INV	COL L7	3.46		236.2932	294.57	75.73	193.13	935.20	583.00	17068.35	1.00	1.28
HS20 INV	COL L7	3.46		236.2932	295.55	75.73	191.18	935.20	583.00	17068.35	1.00	1.28
HS20 INV	COL L7	3.46		236.2932	296.53	75.73	187.28	935.20	583.00	17068.35	1.00	1.29
HS20 INV	COL L7	3.46		236.2932	297.50	75.73	185.33	935.20	583.00	17068.35	1.00	1.29
HS20 INV	COL L7	3.46		236.2932	298.48	75.73	181.43	935.20	583.00	17068.35	1.00	1.30
HS20 INV	COL L7	3.46		236.2932	299.45	75.73	179.48	935.20	583.00	17068.35	1.00	1.30
HS20 INV	COL L7	3.46		236.2932	300.43	75.73	175.57	935.20	583.00	17068.35	1.00	1.31
HS20 INV	COL L7	3.46		236.2932	301.40	75.73	172.65	935.20	583.00	17068.35	1.00	1.31
HS20 INV	COL L7	3.46		236.2932	302.38	75.73	169.72	935.20	583.00	17068.35	1.00	1.32
HS20 INV	COL L7	3.46		236.2932	303.35	75.73	166.80	935.20	583.00	17068.35	1.00	1.33
HS20 INV	COL L7	3.46		236.2932	304.33	75.73	162.89	935.20	583.00	17068.35	1.00	1.33
HS20 INV	COL L7	3.46		236.2932	305.30	75.73	158.99	935.20	583.00	17068.35	1.00	1.34
HS20 INV	COL L7	3.46		236.2932	306.28	75.73	157.04	935.20	583.00	17068.35	1.00	1.34
HS20 INV	COL L7	3.46		236.2932	307.25	75.73	153.14	935.20	583.00	17068.35	1.00	1.35

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _e		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation			
HS20 INV	COL L7	3.46	236.2932	308.23	75.73	151.19	935.20	583.00	17068.35	1.00	1.36		
HS20 INV	COL L7	3.46	236.2932	309.21	75.73	147.29	935.20	583.00	17068.35	1.00	1.36		
HS20 INV	COL L7	3.46	236.2932	310.18	75.73	144.36	935.20	583.00	17068.35	1.00	1.37		
HS20 INV	COL L7	3.46	236.2932	311.16	75.73	140.46	935.20	583.00	17068.35	1.00	1.38		
HS20 INV	COL L7	3.46	236.2932	312.13	75.73	138.51	935.20	583.00	17068.35	1.00	1.38		
HS20 INV	COL L7	3.46	236.2932	313.11	75.73	134.61	935.20	583.00	17068.35	1.00	1.39		
HS20 INV	COL L7	3.46	236.2932	314.08	75.73	130.71	935.20	583.00	17068.35	1.00	1.40		
HS20 INV	COL L7	3.46	236.2932	315.06	75.73	127.78	935.20	583.00	17068.35	1.00	1.41		
HS20 INV	COL L7	3.46	236.2932	316.03	75.73	122.90	935.20	583.00	17068.35	1.00	1.42		
HS20 INV	COL L7	3.46	236.2932	317.01	75.73	115.10	935.20	583.00	17068.35	1.00	1.44		
HS20 INV	COL L7	3.46	236.2932	317.98	75.73	107.30	935.20	583.00	17068.35	1.00	1.46		
HS20 INV	COL L7	3.46	236.2932	318.96	75.73	100.47	935.20	583.00	17068.35	1.00	1.48		
HS20 INV	COL L7	3.46	236.2932	319.94	75.73	93.64	935.20	583.00	17068.35	1.00	1.50		
HS20 INV	COL L7	3.46	236.2932	320.91	75.73	89.74	935.20	583.00	17068.35	1.00	1.52		
HS20 INV	COL L7	3.46	236.2932	321.89	75.73	84.86	935.20	583.00	17068.35	1.00	1.53		
HS20 INV	COL L7	3.46	236.2932	322.86	75.73	80.96	935.20	583.00	17068.35	1.00	1.54		
HS20 INV	COL L7	3.46	236.2932	323.84	75.73	76.08	935.20	583.00	17068.35	1.00	1.56		
HS20 INV	COL L7	3.46	236.2932	324.81	75.73	50.72	935.20	583.00	17068.35	1.00	1.66		
HS20 INV	COL L7	3.46	236.2932	325.79	75.73	35.11	935.20	583.00	17068.35	1.00	1.72		
HS20 INV	COL L7	3.46	236.2932	326.76	75.73	32.19	935.20	583.00	17068.35	1.00	1.73		
HS20 INV	COL L7	3.46	236.2932	327.74	75.73	28.29	935.20	583.00	17068.35	1.00	1.75		
HS20 INV	COL L7	3.46	236.2932	328.71	75.73	25.36	935.20	583.00	17068.35	1.00	1.76		
HS20 OPER	COL L7	3.46	236.2932	106.51	75.73	220.64	935.20	583.00	17068.35	1.00	1.92		
HS20 OPER	COL L7	3.46	236.2932	109.44	75.73	220.05	935.20	583.00	17068.35	1.00	1.91		
HS20 OPER	COL L7	3.46	236.2932	111.78	75.73	219.47	935.20	583.00	17068.35	1.00	1.90		
HS20 OPER	COL L7	3.46	236.2932	113.54	75.73	218.88	935.20	583.00	17068.35	1.00	1.89		
HS20 OPER	COL L7	3.46	236.2932	115.29	75.73	218.30	935.20	583.00	17068.35	1.00	1.88		
HS20 OPER	COL L7	3.46	236.2932	116.46	75.73	217.71	935.20	583.00	17068.35	1.00	1.88		
HS20 OPER	COL L7	3.46	236.2932	117.63	75.73	217.13	935.20	583.00	17068.35	1.00	1.88		
HS20 OPER	COL L7	3.46	236.2932	118.81	75.73	216.54	935.20	583.00	17068.35	1.00	1.87		
HS20 OPER	COL L7	3.46	236.2932	119.39	75.73	215.96	935.20	583.00	17068.35	1.00	1.87		
HS20 OPER	COL L7	3.46	236.2932	120.56	75.73	215.37	935.20	583.00	17068.35	1.00	1.87		
HS20 OPER	COL L7	3.46	236.2932	121.73	75.73	214.79	935.20	583.00	17068.35	1.00	1.87		
HS20 OPER	COL L7	3.46	236.2932	122.32	75.73	214.20	935.20	583.00	17068.35	1.00	1.87		
HS20 OPER	COL L7	3.46	236.2932	122.90	75.73	213.62	935.20	583.00	17068.35	1.00	1.87		
HS20 OPER	COL L7	3.46	236.2932	124.07	75.73	213.03	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	124.66	75.73	212.44	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	125.24	75.73	211.86	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	126.41	75.73	211.27	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	127.00	75.73	210.69	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	127.58	75.73	210.10	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	128.17	75.73	209.52	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	128.75	75.73	208.93	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	129.34	75.73	208.35	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	129.92	75.73	207.76	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	130.51	75.73	207.18	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	131.10	75.73	206.59	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	131.68	75.73	206.01	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	132.27	75.73	205.42	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	132.85	75.73	204.84	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	133.44	75.73	204.25	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	134.02	75.73	203.67	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	134.61	75.73	203.08	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	135.19	75.73	202.50	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	135.78	75.73	201.91	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	136.36	75.73	201.32	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	136.95	75.73	200.74	935.20	583.00	17068.35	1.00	1.86		
HS20 OPER	COL L7	3.46	236.2932	137.53	75.73	199.57	935.20	583.00	17068.35	1.00	1.86		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	Load Case	Member	LLDF	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
	HS20 OPER	COL L7	3.46	236.2932	138.12	75.73	198.40	935.20	583.00	17068.35	1.00	1.86
	HS20 OPER	COL L7	3.46	236.2932	138.70	75.73	197.81	935.20	583.00	17068.35	1.00	1.86
	HS20 OPER	COL L7	3.46	236.2932	139.29	75.73	197.23	935.20	583.00	17068.35	1.00	1.86
	HS20 OPER	COL L7	3.46	236.2932	139.87	75.73	196.64	935.20	583.00	17068.35	1.00	1.86
	HS20 OPER	COL L7	3.46	236.2932	140.46	75.73	195.47	935.20	583.00	17068.35	1.00	1.87
	HS20 OPER	COL L7	3.46	236.2932	141.04	75.73	194.89	935.20	583.00	17068.35	1.00	1.87
	HS20 OPER	COL L7	3.46	236.2932	141.63	75.73	193.72	935.20	583.00	17068.35	1.00	1.87
	HS20 OPER	COL L7	3.46	236.2932	142.22	75.73	193.13	935.20	583.00	17068.35	1.00	1.87
	HS20 OPER	COL L7	3.46	236.2932	142.80	75.73	191.96	935.20	583.00	17068.35	1.00	1.87
	HS20 OPER	COL L7	3.46	236.2932	143.39	75.73	191.38	935.20	583.00	17068.35	1.00	1.87
	HS20 OPER	COL L7	3.46	236.2932	143.97	75.73	190.79	935.20	583.00	17068.35	1.00	1.87
	HS20 OPER	COL L7	3.46	236.2932	144.56	75.73	189.62	935.20	583.00	17068.35	1.00	1.88
	HS20 OPER	COL L7	3.46	236.2932	145.14	75.73	188.45	935.20	583.00	17068.35	1.00	1.88
	HS20 OPER	COL L7	3.46	236.2932	145.73	75.73	187.86	935.20	583.00	17068.35	1.00	1.88
	HS20 OPER	COL L7	3.46	236.2932	146.31	75.73	186.69	935.20	583.00	17068.35	1.00	1.88
	HS20 OPER	COL L7	3.46	236.2932	146.90	75.73	186.11	935.20	583.00	17068.35	1.00	1.88
	HS20 OPER	COL L7	3.46	236.2932	147.48	75.73	184.94	935.20	583.00	17068.35	1.00	1.88
	HS20 OPER	COL L7	3.46	236.2932	148.07	75.73	183.77	935.20	583.00	17068.35	1.00	1.89
	HS20 OPER	COL L7	3.46	236.2932	148.65	75.73	182.60	935.20	583.00	17068.35	1.00	1.89
	HS20 OPER	COL L7	3.46	236.2932	149.24	75.73	182.01	935.20	583.00	17068.35	1.00	1.89
	HS20 OPER	COL L7	3.46	236.2932	149.82	75.73	180.84	935.20	583.00	17068.35	1.00	1.89
	HS20 OPER	COL L7	3.46	236.2932	150.41	75.73	179.67	935.20	583.00	17068.35	1.00	1.90
	HS20 OPER	COL L7	3.46	236.2932	150.99	75.73	178.50	935.20	583.00	17068.35	1.00	1.90
	HS20 OPER	COL L7	3.46	236.2932	151.58	75.73	177.33	935.20	583.00	17068.35	1.00	1.90
	HS20 OPER	COL L7	3.46	236.2932	152.16	75.73	176.74	935.20	583.00	17068.35	1.00	1.90
	HS20 OPER	COL L7	3.46	236.2932	152.75	75.73	175.57	935.20	583.00	17068.35	1.00	1.91
	HS20 OPER	COL L7	3.46	236.2932	153.33	75.73	174.40	935.20	583.00	17068.35	1.00	1.91
	HS20 OPER	COL L7	3.46	236.2932	153.92	75.73	173.23	935.20	583.00	17068.35	1.00	1.91
	HS20 OPER	COL L7	3.46	236.2932	154.51	75.73	172.06	935.20	583.00	17068.35	1.00	1.92
	HS20 OPER	COL L7	3.46	236.2932	155.09	75.73	170.89	935.20	583.00	17068.35	1.00	1.92
	HS20 OPER	COL L7	3.46	236.2932	155.68	75.73	169.72	935.20	583.00	17068.35	1.00	1.92
	HS20 OPER	COL L7	3.46	236.2932	156.26	75.73	168.55	935.20	583.00	17068.35	1.00	1.93
	HS20 OPER	COL L7	3.46	236.2932	156.85	75.73	167.38	935.20	583.00	17068.35	1.00	1.93
	HS20 OPER	COL L7	3.46	236.2932	157.43	75.73	166.21	935.20	583.00	17068.35	1.00	1.93
	HS20 OPER	COL L7	3.46	236.2932	158.02	75.73	165.04	935.20	583.00	17068.35	1.00	1.94
	HS20 OPER	COL L7	3.46	236.2932	158.60	75.73	163.88	935.20	583.00	17068.35	1.00	1.94
	HS20 OPER	COL L7	3.46	236.2932	159.19	75.73	162.71	935.20	583.00	17068.35	1.00	1.95
	HS20 OPER	COL L7	3.46	236.2932	159.77	75.73	161.53	935.20	583.00	17068.35	1.00	1.95
	HS20 OPER	COL L7	3.46	236.2932	160.36	75.73	159.77	935.20	583.00	17068.35	1.00	1.95
	HS20 OPER	COL L7	3.46	236.2932	160.94	75.73	158.60	935.20	583.00	17068.35	1.00	1.96
	HS20 OPER	COL L7	3.46	236.2932	161.53	75.73	157.43	935.20	583.00	17068.35	1.00	1.96
	HS20 OPER	COL L7	3.46	236.2932	162.11	75.73	156.26	935.20	583.00	17068.35	1.00	1.96
	HS20 OPER	COL L7	3.46	236.2932	162.70	75.73	155.10	935.20	583.00	17068.35	1.00	1.97
	HS20 OPER	COL L7	3.46	236.2932	163.28	75.73	153.93	935.20	583.00	17068.35	1.00	1.97
	HS20 OPER	COL L7	3.46	236.2932	163.87	75.73	152.76	935.20	583.00	17068.35	1.00	1.98
	HS20 OPER	COL L7	3.46	236.2932	164.45	75.73	151.60	935.20	583.00	17068.35	1.00	1.98
	HS20 OPER	COL L7	3.46	236.2932	165.04	75.73	149.44	935.20	583.00	17068.35	1.00	1.99
	HS20 OPER	COL L7	3.46	236.2932	165.62	75.73	147.28	935.20	583.00	17068.35	1.00	2.00
	HS20 OPER	COL L7	3.46	236.2932	166.21	75.73	145.12	935.20	583.00	17068.35	1.00	2.00
	HS20 OPER	COL L7	3.46	236.2932	166.80	75.73	143.96	935.20	583.00	17068.35	1.00	2.01
	HS20 OPER	COL L7	3.46	236.2932	167.38	75.73	143.39	935.20	583.00	17068.35	1.00	2.01
	HS20 OPER	COL L7	3.46	236.2932	167.97	75.73	141.63	935.20	583.00	17068.35	1.00	2.02
	HS20 OPER	COL L7	3.46	236.2932	168.55	75.73	139.87	935.20	583.00	17068.35	1.00	2.03
	HS20 OPER	COL L7	3.46	236.2932	169.14	75.73	138.12	935.20	583.00	17068.35	1.00	2.03
	HS20 OPER	COL L7	3.46	236.2932	169.72	75.73	136.95	935.20	583.00	17068.35	1.00	2.04
	HS20 OPER	COL L7	3.46	236.2932	170.31	75.73	135.19	935.20	583.00	17068.35	1.00	2.04
	HS20 OPER	COL L7	3.46	236.2932	170.89	75.73	133.44	935.20	583.00	17068.35	1.00	2.05
	HS20 OPER	COL L7	3.46	236.2932	171.48	75.73	131.10	935.20	583.00	17068.35	1.00	2.06

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _e		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
HS20 OPER	COL L7	3.46	236.2932	172.06	75.73	129.92	935.20	583.00	17068.35	1.00	2.07	
HS20 OPER	COL L7	3.46	236.2932	172.65	75.73	128.17	935.20	583.00	17068.35	1.00	2.07	
HS20 OPER	COL L7	3.46	236.2932	173.23	75.73	126.41	935.20	583.00	17068.35	1.00	2.08	
HS20 OPER	COL L7	3.46	236.2932	173.82	75.73	124.07	935.20	583.00	17068.35	1.00	2.09	
HS20 OPER	COL L7	3.46	236.2932	174.40	75.73	122.90	935.20	583.00	17068.35	1.00	2.10	
HS20 OPER	COL L7	3.46	236.2932	174.99	75.73	120.56	935.20	583.00	17068.35	1.00	2.11	
HS20 OPER	COL L7	3.46	236.2932	175.57	75.73	119.39	935.20	583.00	17068.35	1.00	2.12	
HS20 OPER	COL L7	3.46	236.2932	176.16	75.73	118.22	935.20	583.00	17068.35	1.00	2.12	
HS20 OPER	COL L7	3.46	236.2932	176.74	75.73	115.88	935.20	583.00	17068.35	1.00	2.13	
HS20 OPER	COL L7	3.46	236.2932	177.33	75.73	114.71	935.20	583.00	17068.35	1.00	2.14	
HS20 OPER	COL L7	3.46	236.2932	177.92	75.73	112.37	935.20	583.00	17068.35	1.00	2.15	
HS20 OPER	COL L7	3.46	236.2932	178.50	75.73	111.20	935.20	583.00	17068.35	1.00	2.15	
HS20 OPER	COL L7	3.46	236.2932	179.09	75.73	108.86	935.20	583.00	17068.35	1.00	2.17	
HS20 OPER	COL L7	3.46	236.2932	179.67	75.73	107.69	935.20	583.00	17068.35	1.00	2.17	
HS20 OPER	COL L7	3.46	236.2932	180.26	75.73	105.34	935.20	583.00	17068.35	1.00	2.18	
HS20 OPER	COL L7	3.46	236.2932	180.84	75.73	103.59	935.20	583.00	17068.35	1.00	2.19	
HS20 OPER	COL L7	3.46	236.2932	181.43	75.73	101.83	935.20	583.00	17068.35	1.00	2.20	
HS20 OPER	COL L7	3.46	236.2932	182.01	75.73	100.08	935.20	583.00	17068.35	1.00	2.21	
HS20 OPER	COL L7	3.46	236.2932	182.60	75.73	97.74	935.20	583.00	17068.35	1.00	2.22	
HS20 OPER	COL L7	3.46	236.2932	183.18	75.73	95.40	935.20	583.00	17068.35	1.00	2.24	
HS20 OPER	COL L7	3.46	236.2932	183.77	75.73	94.22	935.20	583.00	17068.35	1.00	2.24	
HS20 OPER	COL L7	3.46	236.2932	184.35	75.73	91.88	935.20	583.00	17068.35	1.00	2.26	
HS20 OPER	COL L7	3.46	236.2932	184.94	75.73	90.71	935.20	583.00	17068.35	1.00	2.26	
HS20 OPER	COL L7	3.46	236.2932	185.52	75.73	88.37	935.20	583.00	17068.35	1.00	2.27	
HS20 OPER	COL L7	3.46	236.2932	186.11	75.73	86.62	935.20	583.00	17068.35	1.00	2.28	
HS20 OPER	COL L7	3.46	236.2932	186.69	75.73	84.28	935.20	583.00	17068.35	1.00	2.30	
HS20 OPER	COL L7	3.46	236.2932	187.28	75.73	83.11	935.20	583.00	17068.35	1.00	2.30	
HS20 OPER	COL L7	3.46	236.2932	187.86	75.73	80.76	935.20	583.00	17068.35	1.00	2.32	
HS20 OPER	COL L7	3.46	236.2932	188.45	75.73	78.42	935.20	583.00	17068.35	1.00	2.33	
HS20 OPER	COL L7	3.46	236.2932	189.03	75.73	76.67	935.20	583.00	17068.35	1.00	2.34	
HS20 OPER	COL L7	3.46	236.2932	189.62	75.73	73.74	935.20	583.00	17068.35	1.00	2.36	
HS20 OPER	COL L7	3.46	236.2932	190.21	75.73	69.06	935.20	583.00	17068.35	1.00	2.40	
HS20 OPER	COL L7	3.46	236.2932	190.79	75.73	64.38	935.20	583.00	17068.35	1.00	2.44	
HS20 OPER	COL L7	3.46	236.2932	191.38	75.73	60.28	935.20	583.00	17068.35	1.00	2.47	
HS20 OPER	COL L7	3.46	236.2932	191.96	75.73	56.18	935.20	583.00	17068.35	1.00	2.51	
HS20 OPER	COL L7	3.46	236.2932	192.55	75.73	53.84	935.20	583.00	17068.35	1.00	2.53	
HS20 OPER	COL L7	3.46	236.2932	193.13	75.73	50.92	935.20	583.00	17068.35	1.00	2.55	
HS20 OPER	COL L7	3.46	236.2932	193.72	75.73	48.58	935.20	583.00	17068.35	1.00	2.57	
HS20 OPER	COL L7	3.46	236.2932	194.30	75.73	45.65	935.20	583.00	17068.35	1.00	2.59	
HS20 OPER	COL L7	3.46	236.2932	194.89	75.73	30.43	935.20	583.00	17068.35	1.00	2.76	
HS20 OPER	COL L7	3.46	236.2932	195.47	75.73	21.07	935.20	583.00	17068.35	1.00	2.87	
HS20 OPER	COL L7	3.46	236.2932	196.06	75.73	19.31	935.20	583.00	17068.35	1.00	2.89	
HS20 OPER	COL L7	3.46	236.2932	196.64	75.73	16.97	935.20	583.00	17068.35	1.00	2.91	
HS20 OPER	COL L7	3.46	236.2932	197.23	75.73	15.22	935.20	583.00	17068.35	1.00	2.93	
2F1	COL L7	3.46	236.2932	45.06	75.73	95.98	935.20	583.00	17068.35	1.00	4.46	
2F1	COL L7	3.46	236.2932	47.41	75.73	95.40	935.20	583.00	17068.35	1.00	4.41	
2F1	COL L7	3.46	236.2932	49.16	75.73	94.81	935.20	583.00	17068.35	1.00	4.37	
2F1	COL L7	3.46	236.2932	50.33	75.73	94.22	935.20	583.00	17068.35	1.00	4.35	
2F1	COL L7	3.46	236.2932	50.92	75.73	93.64	935.20	583.00	17068.35	1.00	4.35	
2F1	COL L7	3.46	236.2932	51.50	75.73	93.05	935.20	583.00	17068.35	1.00	4.35	
2F1	COL L7	3.46	236.2932	52.67	75.73	92.47	935.20	583.00	17068.35	1.00	4.33	
2F1	COL L7	3.46	236.2932	53.26	75.73	91.88	935.20	583.00	17068.35	1.00	4.33	
2F1	COL L7	3.46	236.2932	53.84	75.73	91.30	935.20	583.00	17068.35	1.00	4.33	
2F1	COL L7	3.46	236.2932	54.43	75.73	90.71	935.20	583.00	17068.35	1.00	4.33	
2F1	COL L7	3.46	236.2932	55.01	75.73	90.13	935.20	583.00	17068.35	1.00	4.33	
2F1	COL L7	3.46	236.2932	55.60	75.73	89.54	935.20	583.00	17068.35	1.00	4.33	
2F1	COL L7	3.46	236.2932	56.18	75.73	88.96	935.20	583.00	17068.35	1.00	4.32	
2F1	COL L7	3.46	236.2932	56.77	75.73	88.37	935.20	583.00	17068.35	1.00	4.32	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
2F1	COL L7	3.46	236.2932	57.35	75.73	87.20	935.20	583.00	17068.35	1.00	4.34		
2F1	COL L7	3.46	236.2932	57.94	75.73	86.62	935.20	583.00	17068.35	1.00	4.34		
2F1	COL L7	3.46	236.2932	58.52	75.73	86.03	935.20	583.00	17068.35	1.00	4.34		
2F1	COL L7	3.46	236.2932	59.11	75.73	84.86	935.20	583.00	17068.35	1.00	4.36		
2F1	COL L7	3.46	236.2932	59.70	75.73	84.28	935.20	583.00	17068.35	1.00	4.36		
2F1	COL L7	3.46	236.2932	60.28	75.73	83.11	935.20	583.00	17068.35	1.00	4.37		
2F1	COL L7	3.46	236.2932	60.87	75.73	82.52	935.20	583.00	17068.35	1.00	4.37		
2F1	COL L7	3.46	236.2932	61.45	75.73	81.35	935.20	583.00	17068.35	1.00	4.39		
2F1	COL L7	3.46	236.2932	62.04	75.73	80.76	935.20	583.00	17068.35	1.00	4.39		
2F1	COL L7	3.46	236.2932	62.62	75.73	79.59	935.20	583.00	17068.35	1.00	4.41		
2F1	COL L7	3.46	236.2932	63.21	75.73	78.42	935.20	583.00	17068.35	1.00	4.42		
2F1	COL L7	3.46	236.2932	63.79	75.73	77.25	935.20	583.00	17068.35	1.00	4.44		
2F1	COL L7	3.46	236.2932	64.38	75.73	76.08	935.20	583.00	17068.35	1.00	4.46		
2F1	COL L7	3.46	236.2932	64.96	75.73	74.91	935.20	583.00	17068.35	1.00	4.48		
2F1	COL L7	3.46	236.2932	65.55	75.73	73.74	935.20	583.00	17068.35	1.00	4.49		
2F1	COL L7	3.46	236.2932	66.13	75.73	72.57	935.20	583.00	17068.35	1.00	4.51		
2F1	COL L7	3.46	236.2932	66.72	75.73	71.40	935.20	583.00	17068.35	1.00	4.53		
2F1	COL L7	3.46	236.2932	67.30	75.73	70.23	935.20	583.00	17068.35	1.00	4.55		
2F1	COL L7	3.46	236.2932	67.89	75.73	68.47	935.20	583.00	17068.35	1.00	4.59		
2F1	COL L7	3.46	236.2932	68.47	75.73	67.30	935.20	583.00	17068.35	1.00	4.61		
2F1	COL L7	3.46	236.2932	69.06	75.73	65.55	935.20	583.00	17068.35	1.00	4.64		
2F1	COL L7	3.46	236.2932	69.64	75.73	64.38	935.20	583.00	17068.35	1.00	4.66		
2F1	COL L7	3.46	236.2932	70.23	75.73	62.62	935.20	583.00	17068.35	1.00	4.70		
2F1	COL L7	3.46	236.2932	70.81	75.73	60.87	935.20	583.00	17068.35	1.00	4.74		
2F1	COL L7	3.46	236.2932	71.40	75.73	59.11	935.20	583.00	17068.35	1.00	4.79		
2F1	COL L7	3.46	236.2932	71.99	75.73	57.94	935.20	583.00	17068.35	1.00	4.81		
2F1	COL L7	3.46	236.2932	72.57	75.73	56.18	935.20	583.00	17068.35	1.00	4.85		
2F1	COL L7	3.46	236.2932	73.16	75.73	54.43	935.20	583.00	17068.35	1.00	4.89		
2F1	COL L7	3.46	236.2932	73.74	75.73	52.67	935.20	583.00	17068.35	1.00	4.94		
2F1	COL L7	3.46	236.2932	74.33	75.73	50.92	935.20	583.00	17068.35	1.00	4.98		
2F1	COL L7	3.46	236.2932	74.91	75.73	49.16	935.20	583.00	17068.35	1.00	5.03		
2F1	COL L7	3.46	236.2932	75.50	75.73	46.82	935.20	583.00	17068.35	1.00	5.10		
2F1	COL L7	3.46	236.2932	76.08	75.73	45.06	935.20	583.00	17068.35	1.00	5.15		
2F1	COL L7	3.46	236.2932	76.67	75.73	42.72	935.20	583.00	17068.35	1.00	5.22		
2F1	COL L7	3.46	236.2932	77.25	75.73	40.97	935.20	583.00	17068.35	1.00	5.27		
2F1	COL L7	3.46	236.2932	77.84	75.73	39.21	935.20	583.00	17068.35	1.00	5.32		
2F1	COL L7	3.46	236.2932	78.42	75.73	36.87	935.20	583.00	17068.35	1.00	5.40		
2F1	COL L7	3.46	236.2932	79.01	75.73	34.53	935.20	583.00	17068.35	1.00	5.48		
2F1	COL L7	3.46	236.2932	79.59	75.73	32.77	935.20	583.00	17068.35	1.00	5.54		
2F1	COL L7	3.46	236.2932	80.18	75.73	30.43	935.20	583.00	17068.35	1.00	5.63		
2F1	COL L7	3.46	236.2932	80.76	75.73	28.09	935.20	583.00	17068.35	1.00	5.72		
2F1	COL L7	3.46	236.2932	81.35	75.73	25.75	935.20	583.00	17068.35	1.00	5.81		
2F1	COL L7	3.46	236.2932	81.93	75.73	23.41	935.20	583.00	17068.35	1.00	5.91		
2F1	COL L7	3.46	236.2932	82.52	75.73	21.07	935.20	583.00	17068.35	1.00	6.01		
2F1	COL L7	3.46	236.2932	83.11	75.73	18.73	935.20	583.00	17068.35	1.00	6.11		
2F1	COL L7	3.46	236.2932	83.69	75.73	16.39	935.20	583.00	17068.35	1.00	6.21		
2F1	COL L7	3.46	236.2932	84.28	75.73	14.05	935.20	583.00	17068.35	1.00	6.33		
2F1	COL L7	3.46	236.2932	84.86	75.73	9.95	935.20	583.00	17068.35	1.00	6.56		
2F1	COL L7	3.46	236.2932	85.45	75.73	8.19	935.20	583.00	17068.35	1.00	6.64		
3F1	COL L7	3.46	236.2932	68.47	75.73	146.31	935.20	583.00	17068.35	1.00	2.93		
3F1	COL L7	3.46	236.2932	71.40	75.73	145.73	935.20	583.00	17068.35	1.00	2.90		
3F1	COL L7	3.46	236.2932	73.16	75.73	145.14	935.20	583.00	17068.35	1.00	2.88		
3F1	COL L7	3.46	236.2932	74.33	75.73	144.56	935.20	583.00	17068.35	1.00	2.87		
3F1	COL L7	3.46	236.2932	76.08	75.73	143.97	935.20	583.00	17068.35	1.00	2.86		
3F1	COL L7	3.46	236.2932	76.67	75.73	143.39	935.20	583.00	17068.35	1.00	2.86		
3F1	COL L7	3.46	236.2932	77.84	75.73	142.80	935.20	583.00	17068.35	1.00	2.85		
3F1	COL L7	3.46	236.2932	78.42	75.73	142.22	935.20	583.00	17068.35	1.00	2.85		
3F1	COL L7	3.46	236.2932	79.59	75.73	141.63	935.20	583.00	17068.35	1.00	2.84		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _c		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
3F1	COL L7	3.46	236.2932	80.18	75.73	141.04	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	80.76	75.73	140.46	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	81.35	75.73	139.87	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	82.52	75.73	139.29	935.20	583.00	17068.35	1.00	2.83	
3F1	COL L7	3.46	236.2932	83.11	75.73	138.12	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	83.69	75.73	137.53	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	84.86	75.73	136.95	935.20	583.00	17068.35	1.00	2.83	
3F1	COL L7	3.46	236.2932	85.45	75.73	136.36	935.20	583.00	17068.35	1.00	2.83	
3F1	COL L7	3.46	236.2932	86.03	75.73	135.19	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	86.62	75.73	134.61	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	87.20	75.73	134.02	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	87.79	75.73	133.44	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	88.37	75.73	132.27	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	88.96	75.73	131.68	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	89.54	75.73	131.10	935.20	583.00	17068.35	1.00	2.84	
3F1	COL L7	3.46	236.2932	90.13	75.73	129.92	935.20	583.00	17068.35	1.00	2.85	
3F1	COL L7	3.46	236.2932	90.71	75.73	129.34	935.20	583.00	17068.35	1.00	2.85	
3F1	COL L7	3.46	236.2932	91.30	75.73	128.75	935.20	583.00	17068.35	1.00	2.85	
3F1	COL L7	3.46	236.2932	91.88	75.73	127.58	935.20	583.00	17068.35	1.00	2.86	
3F1	COL L7	3.46	236.2932	92.47	75.73	126.41	935.20	583.00	17068.35	1.00	2.86	
3F1	COL L7	3.46	236.2932	93.05	75.73	125.83	935.20	583.00	17068.35	1.00	2.86	
3F1	COL L7	3.46	236.2932	93.64	75.73	124.66	935.20	583.00	17068.35	1.00	2.87	
3F1	COL L7	3.46	236.2932	94.22	75.73	124.07	935.20	583.00	17068.35	1.00	2.87	
3F1	COL L7	3.46	236.2932	94.81	75.73	122.90	935.20	583.00	17068.35	1.00	2.88	
3F1	COL L7	3.46	236.2932	95.40	75.73	121.73	935.20	583.00	17068.35	1.00	2.89	
3F1	COL L7	3.46	236.2932	95.98	75.73	120.56	935.20	583.00	17068.35	1.00	2.89	
3F1	COL L7	3.46	236.2932	96.57	75.73	119.98	935.20	583.00	17068.35	1.00	2.89	
3F1	COL L7	3.46	236.2932	97.15	75.73	118.81	935.20	583.00	17068.35	1.00	2.90	
3F1	COL L7	3.46	236.2932	97.74	75.73	117.63	935.20	583.00	17068.35	1.00	2.91	
3F1	COL L7	3.46	236.2932	98.32	75.73	116.46	935.20	583.00	17068.35	1.00	2.92	
3F1	COL L7	3.46	236.2932	98.91	75.73	115.29	935.20	583.00	17068.35	1.00	2.92	
3F1	COL L7	3.46	236.2932	99.49	75.73	114.12	935.20	583.00	17068.35	1.00	2.93	
3F1	COL L7	3.46	236.2932	100.08	75.73	112.95	935.20	583.00	17068.35	1.00	2.94	
3F1	COL L7	3.46	236.2932	100.66	75.73	111.20	935.20	583.00	17068.35	1.00	2.95	
3F1	COL L7	3.46	236.2932	101.25	75.73	110.61	935.20	583.00	17068.35	1.00	2.95	
3F1	COL L7	3.46	236.2932	101.83	75.73	108.86	935.20	583.00	17068.35	1.00	2.97	
3F1	COL L7	3.46	236.2932	102.42	75.73	107.69	935.20	583.00	17068.35	1.00	2.98	
3F1	COL L7	3.46	236.2932	103.00	75.73	106.51	935.20	583.00	17068.35	1.00	2.99	
3F1	COL L7	3.46	236.2932	103.59	75.73	105.34	935.20	583.00	17068.35	1.00	2.99	
3F1	COL L7	3.46	236.2932	104.17	75.73	103.59	935.20	583.00	17068.35	1.00	3.01	
3F1	COL L7	3.46	236.2932	104.76	75.73	101.83	935.20	583.00	17068.35	1.00	3.03	
3F1	COL L7	3.46	236.2932	105.34	75.73	100.66	935.20	583.00	17068.35	1.00	3.03	
3F1	COL L7	3.46	236.2932	105.93	75.73	99.49	935.20	583.00	17068.35	1.00	3.04	
3F1	COL L7	3.46	236.2932	106.51	75.73	98.32	935.20	583.00	17068.35	1.00	3.05	
3F1	COL L7	3.46	236.2932	107.10	75.73	96.57	935.20	583.00	17068.35	1.00	3.07	
3F1	COL L7	3.46	236.2932	107.69	75.73	94.81	935.20	583.00	17068.35	1.00	3.09	
3F1	COL L7	3.46	236.2932	108.27	75.73	93.05	935.20	583.00	17068.35	1.00	3.10	
3F1	COL L7	3.46	236.2932	108.86	75.73	91.88	935.20	583.00	17068.35	1.00	3.11	
3F1	COL L7	3.46	236.2932	109.44	75.73	90.13	935.20	583.00	17068.35	1.00	3.13	
3F1	COL L7	3.46	236.2932	110.03	75.73	88.37	935.20	583.00	17068.35	1.00	3.15	
3F1	COL L7	3.46	236.2932	110.61	75.73	86.62	935.20	583.00	17068.35	1.00	3.17	
3F1	COL L7	3.46	236.2932	111.20	75.73	85.45	935.20	583.00	17068.35	1.00	3.17	
3F1	COL L7	3.46	236.2932	111.78	75.73	83.69	935.20	583.00	17068.35	1.00	3.19	
3F1	COL L7	3.46	236.2932	112.37	75.73	81.93	935.20	583.00	17068.35	1.00	3.21	
3F1	COL L7	3.46	236.2932	112.95	75.73	79.59	935.20	583.00	17068.35	1.00	3.24	
3F1	COL L7	3.46	236.2932	113.54	75.73	77.84	935.20	583.00	17068.35	1.00	3.26	
3F1	COL L7	3.46	236.2932	114.12	75.73	76.08	935.20	583.00	17068.35	1.00	3.28	
3F1	COL L7	3.46	236.2932	114.71	75.73	74.33	935.20	583.00	17068.35	1.00	3.30	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _e		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
3F1	COL L7	3.46	236.2932	115.29	75.73	72.57	935.20	583.00	17068.35	1.00	3.32		
3F1	COL L7	3.46	236.2932	115.88	75.73	70.23	935.20	583.00	17068.35	1.00	3.35		
3F1	COL L7	3.46	236.2932	116.46	75.73	68.47	935.20	583.00	17068.35	1.00	3.37		
3F1	COL L7	3.46	236.2932	117.05	75.73	66.72	935.20	583.00	17068.35	1.00	3.39		
3F1	COL L7	3.46	236.2932	117.63	75.73	64.38	935.20	583.00	17068.35	1.00	3.42		
3F1	COL L7	3.46	236.2932	118.22	75.73	62.62	935.20	583.00	17068.35	1.00	3.45		
3F1	COL L7	3.46	236.2932	118.81	75.73	60.28	935.20	583.00	17068.35	1.00	3.48		
3F1	COL L7	3.46	236.2932	119.39	75.73	58.52	935.20	583.00	17068.35	1.00	3.50		
3F1	COL L7	3.46	236.2932	119.98	75.73	56.18	935.20	583.00	17068.35	1.00	3.54		
3F1	COL L7	3.46	236.2932	120.56	75.73	54.43	935.20	583.00	17068.35	1.00	3.56		
3F1	COL L7	3.46	236.2932	121.15	75.73	52.09	935.20	583.00	17068.35	1.00	3.59		
3F1	COL L7	3.46	236.2932	121.73	75.73	50.33	935.20	583.00	17068.35	1.00	3.62		
3F1	COL L7	3.46	236.2932	122.32	75.73	47.99	935.20	583.00	17068.35	1.00	3.66		
3F1	COL L7	3.46	236.2932	122.90	75.73	45.06	935.20	583.00	17068.35	1.00	3.71		
3F1	COL L7	3.46	236.2932	123.49	75.73	42.72	935.20	583.00	17068.35	1.00	3.74		
3F1	COL L7	3.46	236.2932	124.07	75.73	40.97	935.20	583.00	17068.35	1.00	3.77		
3F1	COL L7	3.46	236.2932	124.66	75.73	38.63	935.20	583.00	17068.35	1.00	3.81		
3F1	COL L7	3.46	236.2932	125.24	75.73	36.29	935.20	583.00	17068.35	1.00	3.85		
3F1	COL L7	3.46	236.2932	125.83	75.73	33.94	935.20	583.00	17068.35	1.00	3.89		
3F1	COL L7	3.46	236.2932	126.41	75.73	31.60	935.20	583.00	17068.35	1.00	3.94		
3F1	COL L7	3.46	236.2932	127.00	75.73	29.85	935.20	583.00	17068.35	1.00	3.97		
3F1	COL L7	3.46	236.2932	127.58	75.73	26.34	935.20	583.00	17068.35	1.00	4.04		
3F1	COL L7	3.46	236.2932	128.17	75.73	21.65	935.20	583.00	17068.35	1.00	4.15		
3F1	COL L7	3.46	236.2932	128.75	75.73	18.14	935.20	583.00	17068.35	1.00	4.23		
3F1	COL L7	3.46	236.2932	129.34	75.73	16.39	935.20	583.00	17068.35	1.00	4.27		
3F1	COL L7	3.46	236.2932	129.92	75.73	9.95	935.20	583.00	17068.35	1.00	4.45		
4F1	COL L7	3.46	236.2932	80.76	75.73	170.31	935.20	583.00	17068.35	1.00	2.51		
4F1	COL L7	3.46	236.2932	83.69	75.73	169.72	935.20	583.00	17068.35	1.00	2.48		
4F1	COL L7	3.46	236.2932	85.45	75.73	169.14	935.20	583.00	17068.35	1.00	2.47		
4F1	COL L7	3.46	236.2932	87.20	75.73	168.55	935.20	583.00	17068.35	1.00	2.46		
4F1	COL L7	3.46	236.2932	88.37	75.73	167.97	935.20	583.00	17068.35	1.00	2.45		
4F1	COL L7	3.46	236.2932	89.54	75.73	167.38	935.20	583.00	17068.35	1.00	2.45		
4F1	COL L7	3.46	236.2932	90.71	75.73	166.80	935.20	583.00	17068.35	1.00	2.44		
4F1	COL L7	3.46	236.2932	91.30	75.73	166.21	935.20	583.00	17068.35	1.00	2.44		
4F1	COL L7	3.46	236.2932	92.47	75.73	165.62	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	93.05	75.73	165.04	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	93.64	75.73	164.45	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	94.81	75.73	163.87	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	95.40	75.73	163.28	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	95.98	75.73	162.70	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	96.57	75.73	162.11	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	97.15	75.73	161.53	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	97.74	75.73	160.94	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	98.32	75.73	160.36	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	98.91	75.73	159.77	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	99.49	75.73	159.19	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	100.08	75.73	158.60	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	100.66	75.73	158.02	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	101.25	75.73	157.43	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	101.83	75.73	156.26	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	102.42	75.73	155.68	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	103.00	75.73	155.09	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	103.59	75.73	154.51	935.20	583.00	17068.35	1.00	2.43		
4F1	COL L7	3.46	236.2932	104.17	75.73	153.33	935.20	583.00	17068.35	1.00	2.44		
4F1	COL L7	3.46	236.2932	104.76	75.73	152.75	935.20	583.00	17068.35	1.00	2.44		
4F1	COL L7	3.46	236.2932	105.34	75.73	152.16	935.20	583.00	17068.35	1.00	2.44		
4F1	COL L7	3.46	236.2932	105.93	75.73	150.99	935.20	583.00	17068.35	1.00	2.44		
4F1	COL L7	3.46	236.2932	106.51	75.73	150.41	935.20	583.00	17068.35	1.00	2.44		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
					Axial Force		Moment		P _u	M _u	A _s F _c			Condition Equation
					Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips					
4F1	COL L7	3.46	236.2932	107.10	75.73	149.24	935.20	583.00	17068.35	1.00	2.45			
4F1	COL L7	3.46	236.2932	107.69	75.73	148.65	935.20	583.00	17068.35	1.00	2.45			
4F1	COL L7	3.46	236.2932	108.27	75.73	147.48	935.20	583.00	17068.35	1.00	2.45			
4F1	COL L7	3.46	236.2932	108.86	75.73	146.90	935.20	583.00	17068.35	1.00	2.45			
4F1	COL L7	3.46	236.2932	109.44	75.73	145.73	935.20	583.00	17068.35	1.00	2.46			
4F1	COL L7	3.46	236.2932	110.03	75.73	145.14	935.20	583.00	17068.35	1.00	2.46			
4F1	COL L7	3.46	236.2932	110.61	75.73	143.97	935.20	583.00	17068.35	1.00	2.46			
4F1	COL L7	3.46	236.2932	111.20	75.73	142.80	935.20	583.00	17068.35	1.00	2.47			
4F1	COL L7	3.46	236.2932	111.78	75.73	142.22	935.20	583.00	17068.35	1.00	2.47			
4F1	COL L7	3.46	236.2932	112.37	75.73	141.04	935.20	583.00	17068.35	1.00	2.47			
4F1	COL L7	3.46	236.2932	112.95	75.73	139.87	935.20	583.00	17068.35	1.00	2.48			
4F1	COL L7	3.46	236.2932	113.54	75.73	138.70	935.20	583.00	17068.35	1.00	2.48			
4F1	COL L7	3.46	236.2932	114.12	75.73	137.53	935.20	583.00	17068.35	1.00	2.49			
4F1	COL L7	3.46	236.2932	114.71	75.73	136.36	935.20	583.00	17068.35	1.00	2.49			
4F1	COL L7	3.46	236.2932	115.29	75.73	135.19	935.20	583.00	17068.35	1.00	2.50			
4F1	COL L7	3.46	236.2932	115.88	75.73	134.02	935.20	583.00	17068.35	1.00	2.51			
4F1	COL L7	3.46	236.2932	116.46	75.73	132.85	935.20	583.00	17068.35	1.00	2.51			
4F1	COL L7	3.46	236.2932	117.05	75.73	131.68	935.20	583.00	17068.35	1.00	2.52			
4F1	COL L7	3.46	236.2932	117.63	75.73	130.51	935.20	583.00	17068.35	1.00	2.52			
4F1	COL L7	3.46	236.2932	118.22	75.73	129.34	935.20	583.00	17068.35	1.00	2.53			
4F1	COL L7	3.46	236.2932	118.81	75.73	128.17	935.20	583.00	17068.35	1.00	2.53			
4F1	COL L7	3.46	236.2932	119.39	75.73	127.00	935.20	583.00	17068.35	1.00	2.54			
4F1	COL L7	3.46	236.2932	119.98	75.73	125.83	935.20	583.00	17068.35	1.00	2.55			
4F1	COL L7	3.46	236.2932	120.56	75.73	124.66	935.20	583.00	17068.35	1.00	2.55			
4F1	COL L7	3.46	236.2932	121.15	75.73	122.90	935.20	583.00	17068.35	1.00	2.56			
4F1	COL L7	3.46	236.2932	121.73	75.73	121.73	935.20	583.00	17068.35	1.00	2.57			
4F1	COL L7	3.46	236.2932	122.32	75.73	120.56	935.20	583.00	17068.35	1.00	2.57			
4F1	COL L7	3.46	236.2932	122.90	75.73	118.81	935.20	583.00	17068.35	1.00	2.59			
4F1	COL L7	3.46	236.2932	123.49	75.73	117.63	935.20	583.00	17068.35	1.00	2.59			
4F1	COL L7	3.46	236.2932	124.07	75.73	115.88	935.20	583.00	17068.35	1.00	2.61			
4F1	COL L7	3.46	236.2932	124.66	75.73	114.12	935.20	583.00	17068.35	1.00	2.62			
4F1	COL L7	3.46	236.2932	125.24	75.73	112.95	935.20	583.00	17068.35	1.00	2.62			
4F1	COL L7	3.46	236.2932	125.83	75.73	111.78	935.20	583.00	17068.35	1.00	2.63			
4F1	COL L7	3.46	236.2932	126.41	75.73	110.03	935.20	583.00	17068.35	1.00	2.64			
4F1	COL L7	3.46	236.2932	127.00	75.73	108.86	935.20	583.00	17068.35	1.00	2.65			
4F1	COL L7	3.46	236.2932	127.58	75.73	107.10	935.20	583.00	17068.35	1.00	2.66			
4F1	COL L7	3.46	236.2932	128.17	75.73	105.34	935.20	583.00	17068.35	1.00	2.67			
4F1	COL L7	3.46	236.2932	128.75	75.73	103.59	935.20	583.00	17068.35	1.00	2.69			
4F1	COL L7	3.46	236.2932	129.34	75.73	101.83	935.20	583.00	17068.35	1.00	2.70			
4F1	COL L7	3.46	236.2932	129.92	75.73	100.66	935.20	583.00	17068.35	1.00	2.71			
4F1	COL L7	3.46	236.2932	130.51	75.73	98.91	935.20	583.00	17068.35	1.00	2.72			
4F1	COL L7	3.46	236.2932	131.10	75.73	96.57	935.20	583.00	17068.35	1.00	2.74			
4F1	COL L7	3.46	236.2932	131.68	75.73	95.40	935.20	583.00	17068.35	1.00	2.75			
4F1	COL L7	3.46	236.2932	132.27	75.73	93.64	935.20	583.00	17068.35	1.00	2.76			
4F1	COL L7	3.46	236.2932	132.85	75.73	91.30	935.20	583.00	17068.35	1.00	2.78			
4F1	COL L7	3.46	236.2932	133.44	75.73	90.13	935.20	583.00	17068.35	1.00	2.79			
4F1	COL L7	3.46	236.2932	134.02	75.73	88.37	935.20	583.00	17068.35	1.00	2.80			
4F1	COL L7	3.46	236.2932	134.61	75.73	86.03	935.20	583.00	17068.35	1.00	2.83			
4F1	COL L7	3.46	236.2932	135.19	75.73	84.28	935.20	583.00	17068.35	1.00	2.84			
4F1	COL L7	3.46	236.2932	135.78	75.73	82.52	935.20	583.00	17068.35	1.00	2.86			
4F1	COL L7	3.46	236.2932	136.36	75.73	80.18	935.20	583.00	17068.35	1.00	2.88			
4F1	COL L7	3.46	236.2932	136.95	75.73	79.01	935.20	583.00	17068.35	1.00	2.89			
4F1	COL L7	3.46	236.2932	137.53	75.73	77.25	935.20	583.00	17068.35	1.00	2.90			
4F1	COL L7	3.46	236.2932	138.12	75.73	74.91	935.20	583.00	17068.35	1.00	2.93			
4F1	COL L7	3.46	236.2932	138.70	75.73	73.16	935.20	583.00	17068.35	1.00	2.94			
4F1	COL L7	3.46	236.2932	139.29	75.73	70.81	935.20	583.00	17068.35	1.00	2.97			
4F1	COL L7	3.46	236.2932	139.87	75.73	69.06	935.20	583.00	17068.35	1.00	2.98			
4F1	COL L7	3.46	236.2932	140.46	75.73	66.13	935.20	583.00	17068.35	1.00	3.02			

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _e		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
4F1	COL L7	3.46	236.2932	141.04	75.73	63.79	935.20	583.00	17068.35	1.00	3.04	
4F1	COL L7	3.46	236.2932	141.63	75.73	61.45	935.20	583.00	17068.35	1.00	3.07	
4F1	COL L7	3.46	236.2932	142.22	75.73	59.70	935.20	583.00	17068.35	1.00	3.08	
4F1	COL L7	3.46	236.2932	142.80	75.73	57.35	935.20	583.00	17068.35	1.00	3.11	
4F1	COL L7	3.46	236.2932	143.39	75.73	55.60	935.20	583.00	17068.35	1.00	3.13	
4F1	COL L7	3.46	236.2932	143.97	75.73	52.67	935.20	583.00	17068.35	1.00	3.17	
4F1	COL L7	3.46	236.2932	144.56	75.73	50.92	935.20	583.00	17068.35	1.00	3.18	
4F1	COL L7	3.46	236.2932	145.14	75.73	48.58	935.20	583.00	17068.35	1.00	3.21	
4F1	COL L7	3.46	236.2932	145.73	75.73	46.82	935.20	583.00	17068.35	1.00	3.23	
4F1	COL L7	3.46	236.2932	146.31	75.73	44.48	935.20	583.00	17068.35	1.00	3.26	
4F1	COL L7	3.46	236.2932	146.90	75.73	40.97	935.20	583.00	17068.35	1.00	3.31	
4F1	COL L7	3.46	236.2932	147.48	75.73	38.04	935.20	583.00	17068.35	1.00	3.35	
4F1	COL L7	3.46	236.2932	148.07	75.73	34.53	935.20	583.00	17068.35	1.00	3.41	
4F1	COL L7	3.46	236.2932	148.65	75.73	31.02	935.20	583.00	17068.35	1.00	3.46	
4F1	COL L7	3.46	236.2932	149.24	75.73	27.51	935.20	583.00	17068.35	1.00	3.52	
4F1	COL L7	3.46	236.2932	149.82	75.73	24.58	935.20	583.00	17068.35	1.00	3.57	
4F1	COL L7	3.46	236.2932	150.41	75.73	18.14	935.20	583.00	17068.35	1.00	3.69	
4F1	COL L7	3.46	236.2932	150.99	75.73	12.88	935.20	583.00	17068.35	1.00	3.80	
4F1	COL L7	3.46	236.2932	151.58	75.73	7.02	935.20	583.00	17068.35	1.00	3.92	
5C1	COL L7	3.46	236.2932	117.63	75.73	198.40	935.20	583.00	17068.35	1.00	1.99	
5C1	COL L7	3.46	236.2932	121.15	75.73	197.81	935.20	583.00	17068.35	1.00	1.97	
5C1	COL L7	3.46	236.2932	123.49	75.73	197.23	935.20	583.00	17068.35	1.00	1.96	
5C1	COL L7	3.46	236.2932	124.66	75.73	196.64	935.20	583.00	17068.35	1.00	1.95	
5C1	COL L7	3.46	236.2932	125.83	75.73	196.06	935.20	583.00	17068.35	1.00	1.95	
5C1	COL L7	3.46	236.2932	126.41	75.73	195.47	935.20	583.00	17068.35	1.00	1.95	
5C1	COL L7	3.46	236.2932	127.58	75.73	194.89	935.20	583.00	17068.35	1.00	1.95	
5C1	COL L7	3.46	236.2932	128.17	75.73	194.30	935.20	583.00	17068.35	1.00	1.95	
5C1	COL L7	3.46	236.2932	129.34	75.73	193.72	935.20	583.00	17068.35	1.00	1.94	
5C1	COL L7	3.46	236.2932	129.92	75.73	193.13	935.20	583.00	17068.35	1.00	1.94	
5C1	COL L7	3.46	236.2932	131.10	75.73	192.55	935.20	583.00	17068.35	1.00	1.94	
5C1	COL L7	3.46	236.2932	131.68	75.73	191.96	935.20	583.00	17068.35	1.00	1.94	
5C1	COL L7	3.46	236.2932	132.27	75.73	191.38	935.20	583.00	17068.35	1.00	1.94	
5C1	COL L7	3.46	236.2932	133.44	75.73	190.79	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	134.02	75.73	190.21	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	134.61	75.73	189.62	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	135.78	75.73	189.03	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	136.36	75.73	188.45	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	136.95	75.73	187.86	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	137.53	75.73	187.28	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	138.12	75.73	186.69	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	139.29	75.73	186.11	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	139.87	75.73	185.52	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	140.46	75.73	184.94	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	141.04	75.73	184.35	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	141.63	75.73	183.77	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	142.80	75.73	183.18	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	143.39	75.73	182.60	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	143.97	75.73	182.01	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	144.56	75.73	181.43	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	145.14	75.73	180.26	935.20	583.00	17068.35	1.00	1.93	
5C1	COL L7	3.46	236.2932	145.73	75.73	179.67	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	146.31	75.73	179.09	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	146.90	75.73	178.50	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	147.48	75.73	177.92	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	148.07	75.73	177.33	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	148.65	75.73	176.74	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	149.24	75.73	176.16	935.20	583.00	17068.35	1.00	1.92	
5C1	COL L7	3.46	236.2932	149.82	75.73	175.57	935.20	583.00	17068.35	1.00	1.92	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _c		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
5C1	COL L7	3.46	236.2932	150.41	75.73	174.99	935.20	583.00	17068.35	1.00	1.92		
5C1	COL L7	3.46	236.2932	150.99	75.73	174.40	935.20	583.00	17068.35	1.00	1.92		
5C1	COL L7	3.46	236.2932	151.58	75.73	173.82	935.20	583.00	17068.35	1.00	1.92		
5C1	COL L7	3.46	236.2932	152.16	75.73	172.65	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	152.75	75.73	172.06	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	153.33	75.73	171.48	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	153.92	75.73	170.89	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	154.51	75.73	169.72	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	155.09	75.73	169.14	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	155.68	75.73	168.55	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	156.26	75.73	167.97	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	156.85	75.73	167.38	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	157.43	75.73	166.21	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	158.02	75.73	165.62	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	158.60	75.73	165.04	935.20	583.00	17068.35	1.00	1.93		
5C1	COL L7	3.46	236.2932	159.19	75.73	163.87	935.20	583.00	17068.35	1.00	1.94		
5C1	COL L7	3.46	236.2932	159.77	75.73	162.70	935.20	583.00	17068.35	1.00	1.94		
5C1	COL L7	3.46	236.2932	160.36	75.73	162.11	935.20	583.00	17068.35	1.00	1.94		
5C1	COL L7	3.46	236.2932	160.94	75.73	161.53	935.20	583.00	17068.35	1.00	1.94		
5C1	COL L7	3.46	236.2932	161.53	75.73	160.36	935.20	583.00	17068.35	1.00	1.94		
5C1	COL L7	3.46	236.2932	162.11	75.73	159.77	935.20	583.00	17068.35	1.00	1.94		
5C1	COL L7	3.46	236.2932	162.70	75.73	158.60	935.20	583.00	17068.35	1.00	1.95		
5C1	COL L7	3.46	236.2932	163.28	75.73	158.02	935.20	583.00	17068.35	1.00	1.95		
5C1	COL L7	3.46	236.2932	163.87	75.73	157.43	935.20	583.00	17068.35	1.00	1.95		
5C1	COL L7	3.46	236.2932	164.45	75.73	156.26	935.20	583.00	17068.35	1.00	1.95		
5C1	COL L7	3.46	236.2932	165.04	75.73	155.68	935.20	583.00	17068.35	1.00	1.95		
5C1	COL L7	3.46	236.2932	165.62	75.73	154.51	935.20	583.00	17068.35	1.00	1.95		
5C1	COL L7	3.46	236.2932	166.21	75.73	153.92	935.20	583.00	17068.35	1.00	1.95		
5C1	COL L7	3.46	236.2932	166.80	75.73	152.75	935.20	583.00	17068.35	1.00	1.96		
5C1	COL L7	3.46	236.2932	167.38	75.73	151.58	935.20	583.00	17068.35	1.00	1.96		
5C1	COL L7	3.46	236.2932	167.97	75.73	150.41	935.20	583.00	17068.35	1.00	1.96		
5C1	COL L7	3.46	236.2932	168.55	75.73	149.24	935.20	583.00	17068.35	1.00	1.97		
5C1	COL L7	3.46	236.2932	169.14	75.73	148.65	935.20	583.00	17068.35	1.00	1.97		
5C1	COL L7	3.46	236.2932	169.72	75.73	147.48	935.20	583.00	17068.35	1.00	1.97		
5C1	COL L7	3.46	236.2932	170.31	75.73	146.31	935.20	583.00	17068.35	1.00	1.97		
5C1	COL L7	3.46	236.2932	170.89	75.73	145.14	935.20	583.00	17068.35	1.00	1.98		
5C1	COL L7	3.46	236.2932	171.48	75.73	143.97	935.20	583.00	17068.35	1.00	1.98		
5C1	COL L7	3.46	236.2932	172.06	75.73	142.80	935.20	583.00	17068.35	1.00	1.98		
5C1	COL L7	3.46	236.2932	172.65	75.73	141.63	935.20	583.00	17068.35	1.00	1.99		
5C1	COL L7	3.46	236.2932	173.23	75.73	140.46	935.20	583.00	17068.35	1.00	1.99		
5C1	COL L7	3.46	236.2932	173.82	75.73	139.29	935.20	583.00	17068.35	1.00	1.99		
5C1	COL L7	3.46	236.2932	174.40	75.73	138.12	935.20	583.00	17068.35	1.00	2.00		
5C1	COL L7	3.46	236.2932	174.99	75.73	136.36	935.20	583.00	17068.35	1.00	2.01		
5C1	COL L7	3.46	236.2932	175.57	75.73	134.61	935.20	583.00	17068.35	1.00	2.01		
5C1	COL L7	3.46	236.2932	176.16	75.73	132.85	935.20	583.00	17068.35	1.00	2.02		
5C1	COL L7	3.46	236.2932	176.74	75.73	131.68	935.20	583.00	17068.35	1.00	2.02		
5C1	COL L7	3.46	236.2932	177.33	75.73	129.34	935.20	583.00	17068.35	1.00	2.04		
5C1	COL L7	3.46	236.2932	177.92	75.73	127.58	935.20	583.00	17068.35	1.00	2.04		
5C1	COL L7	3.46	236.2932	178.50	75.73	125.83	935.20	583.00	17068.35	1.00	2.05		
5C1	COL L7	3.46	236.2932	179.09	75.73	123.49	935.20	583.00	17068.35	1.00	2.06		
5C1	COL L7	3.46	236.2932	179.67	75.73	122.32	935.20	583.00	17068.35	1.00	2.07		
5C1	COL L7	3.46	236.2932	180.26	75.73	120.56	935.20	583.00	17068.35	1.00	2.07		
5C1	COL L7	3.46	236.2932	180.84	75.73	118.81	935.20	583.00	17068.35	1.00	2.08		
5C1	COL L7	3.46	236.2932	181.43	75.73	118.22	935.20	583.00	17068.35	1.00	2.08		
5C1	COL L7	3.46	236.2932	182.01	75.73	116.46	935.20	583.00	17068.35	1.00	2.09		
5C1	COL L7	3.46	236.2932	182.60	75.73	114.71	935.20	583.00	17068.35	1.00	2.10		
5C1	COL L7	3.46	236.2932	183.18	75.73	112.95	935.20	583.00	17068.35	1.00	2.11		
5C1	COL L7	3.46	236.2932	183.77	75.73	111.78	935.20	583.00	17068.35	1.00	2.11		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - North Frame Column 7 Ratings



Calculated:

SFH

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _c	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
5C1	COL L7	3.46	236.2932	184.35	75.73	110.03	935.20	583.00	17068.35	1.00	2.12		
5C1	COL L7	3.46	236.2932	184.94	75.73	108.27	935.20	583.00	17068.35	1.00	2.13		
5C1	COL L7	3.46	236.2932	185.52	75.73	106.51	935.20	583.00	17068.35	1.00	2.13		
5C1	COL L7	3.46	236.2932	186.11	75.73	104.76	935.20	583.00	17068.35	1.00	2.14		
5C1	COL L7	3.46	236.2932	186.69	75.73	102.42	935.20	583.00	17068.35	1.00	2.16		
5C1	COL L7	3.46	236.2932	187.28	75.73	100.08	935.20	583.00	17068.35	1.00	2.17		
5C1	COL L7	3.46	236.2932	187.86	75.73	97.74	935.20	583.00	17068.35	1.00	2.18		
5C1	COL L7	3.46	236.2932	188.45	75.73	95.40	935.20	583.00	17068.35	1.00	2.20		
5C1	COL L7	3.46	236.2932	189.03	75.73	93.05	935.20	583.00	17068.35	1.00	2.21		
5C1	COL L7	3.46	236.2932	189.62	75.73	90.13	935.20	583.00	17068.35	1.00	2.23		
5C1	COL L7	3.46	236.2932	190.21	75.73	87.79	935.20	583.00	17068.35	1.00	2.24		
5C1	COL L7	3.46	236.2932	190.79	75.73	79.59	935.20	583.00	17068.35	1.00	2.30		
5C1	COL L7	3.46	236.2932	183.77	75.73	111.78	935.20	583.00	17068.35	1.00	2.11		

Load Case	Controlling RF
HS20 INV	1.11
HS20 OPER	1.86
2F1	4.32
3F1	2.83
4F1	2.43
5C1	1.92

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Columns CL1, CL1A & CL4 Ratings



Calculated: NRF 3/2/2012

Checked: CTG 3/5/2012

DL Factor 1.30

LL Factor 2.17 INV 1.30 OPER

Member	LLDF	Impact	Centrifugal %	Axial Forces From STAAD						Capacity	Rating Factors					
				Dead Load	HS20 LL	2F1 LL	3F1 LL	4F1 LL	5C1	P _u	HS20	HS20	2F1	3F1	4F1	5C1
				kip	kip	kip	kip	kip	kip	kip	RF _{INV}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}	RF _{OPER}
COL CL1	3.106	1.30	13.91	49.76	27.39	14.08	20.31	22.22	19.96	942.20	3.31	5.51	10.73	7.43	6.80	7.57
COL CL1A	3.804	1.30	-	128.10	32.98	14.75	22.42	25.99	25.93	942.20	2.20	3.66	8.18	5.38	4.64	4.65
COL CL4	3.043	1.26	14.28	69.59	29.47	13.98	20.64	23.20	22.96	956.10	3.18	5.29	11.15	7.56	6.72	6.79

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor LL Factor	1.30 2.17 INV 1.27	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation		
HS20 INV	COL CL2	4.22	283.92	226.34	142.22	414.38	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	228.66	142.22	413.22	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	230.99	142.22	412.06	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	233.31	142.22	410.90	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	234.47	142.22	409.74	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	235.63	142.22	408.58	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	237.95	142.22	407.42	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	239.11	142.22	406.26	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	241.43	142.22	405.10	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	242.59	142.22	403.94	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	243.75	142.22	402.78	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	246.08	142.22	401.61	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	247.24	142.22	400.45	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	248.40	142.22	399.29	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	250.72	142.22	398.13	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	253.04	142.22	396.97	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	255.36	142.22	395.81	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	256.52	142.22	394.65	948.80	583.00	24181.59	1.00	0.80	
HS20 INV	COL CL2	4.22	283.92	257.68	142.22	393.49	948.80	583.00	24181.59	1.00	0.80	
HS20 INV	COL CL2	4.22	283.92	258.84	142.22	392.33	948.80	583.00	24181.59	1.00	0.80	
HS20 INV	COL CL2	4.22	283.92	260.00	142.22	391.17	948.80	583.00	24181.59	1.00	0.80	
HS20 INV	COL CL2	4.22	283.92	261.17	142.22	388.85	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	262.33	142.22	387.69	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	263.49	142.22	386.52	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	264.65	142.22	385.36	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	265.81	142.22	384.20	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	266.97	142.22	383.04	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	268.13	142.22	381.88	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	269.29	142.22	379.56	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	270.45	142.22	378.40	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	271.61	142.22	377.24	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	272.77	142.22	376.08	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	273.93	142.22	374.92	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	275.09	142.22	372.60	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	276.26	142.22	371.44	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	277.42	142.22	370.27	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	278.58	142.22	369.11	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	279.74	142.22	366.79	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	280.90	142.22	365.63	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	282.06	142.22	364.47	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	283.22	142.22	362.15	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	284.38	142.22	360.99	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	285.54	142.22	358.67	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	286.70	142.22	357.51	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	287.86	142.22	356.35	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	289.02	142.22	354.02	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	290.18	142.22	352.86	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	291.34	142.22	351.70	948.80	583.00	24181.59	1.00	0.81	
HS20 INV	COL CL2	4.22	283.92	292.51	142.22	349.38	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	293.67	142.22	348.22	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	294.83	142.22	345.90	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	295.99	142.22	344.74	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	297.15	142.22	342.42	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	298.31	142.22	341.26	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	299.47	142.22	340.10	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	300.63	142.22	337.77	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	301.79	142.22	336.61	948.80	583.00	24181.59	1.00	0.82	
HS20 INV	COL CL2	4.22	283.92	302.95	142.22	334.29	948.80	583.00	24181.59	1.00	0.82	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
						Axial Force		Moment		P _u	M _u	A _s F _{ex}		
						Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF			
HS20 INV	COL CL2	4.22	283.92	304.11	142.22	331.97	948.80	583.00	24181.59	1.00	0.82			
HS20 INV	COL CL2	4.22	283.92	305.27	142.22	330.81	948.80	583.00	24181.59	1.00	0.82			
HS20 INV	COL CL2	4.22	283.92	306.43	142.22	328.49	948.80	583.00	24181.59	1.00	0.82			
HS20 INV	COL CL2	4.22	283.92	307.59	142.22	326.17	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	308.76	142.22	325.01	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	309.92	142.22	323.85	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	311.08	142.22	321.52	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	312.24	142.22	319.20	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	313.40	142.22	316.88	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	314.56	142.22	314.56	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	315.72	142.22	312.24	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	316.88	142.22	309.92	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	318.04	142.22	308.76	948.80	583.00	24181.59	1.00	0.83			
HS20 INV	COL CL2	4.22	283.92	319.20	142.22	306.43	948.80	583.00	24181.59	1.00	0.84			
HS20 INV	COL CL2	4.22	283.92	320.36	142.22	304.11	948.80	583.00	24181.59	1.00	0.84			
HS20 INV	COL CL2	4.22	283.92	321.52	142.22	301.79	948.80	583.00	24181.59	1.00	0.84			
HS20 INV	COL CL2	4.22	283.92	322.68	142.22	299.47	948.80	583.00	24181.59	1.00	0.84			
HS20 INV	COL CL2	4.22	283.92	323.85	142.22	297.15	948.80	583.00	24181.59	1.00	0.84			
HS20 INV	COL CL2	4.22	283.92	325.01	142.22	294.83	948.80	583.00	24181.59	1.00	0.84			
HS20 INV	COL CL2	4.22	283.92	326.17	142.22	292.51	948.80	583.00	24181.59	1.00	0.85			
HS20 INV	COL CL2	4.22	283.92	327.33	142.22	289.02	948.80	583.00	24181.59	1.00	0.85			
HS20 INV	COL CL2	4.22	283.92	328.49	142.22	286.70	948.80	583.00	24181.59	1.00	0.85			
HS20 INV	COL CL2	4.22	283.92	329.65	142.22	284.38	948.80	583.00	24181.59	1.00	0.85			
HS20 INV	COL CL2	4.22	283.92	330.81	142.22	282.06	948.80	583.00	24181.59	1.00	0.85			
HS20 INV	COL CL2	4.22	283.92	331.97	142.22	279.74	948.80	583.00	24181.59	1.00	0.85			
HS20 INV	COL CL2	4.22	283.92	333.13	142.22	277.42	948.80	583.00	24181.59	1.00	0.86			
HS20 INV	COL CL2	4.22	283.92	334.29	142.22	275.09	948.80	583.00	24181.59	1.00	0.86			
HS20 INV	COL CL2	4.22	283.92	335.45	142.22	272.77	948.80	583.00	24181.59	1.00	0.86			
HS20 INV	COL CL2	4.22	283.92	336.61	142.22	270.45	948.80	583.00	24181.59	1.00	0.86			
HS20 INV	COL CL2	4.22	283.92	337.77	142.22	266.97	948.80	583.00	24181.59	1.00	0.86			
HS20 INV	COL CL2	4.22	283.92	338.93	142.22	264.65	948.80	583.00	24181.59	1.00	0.86			
HS20 INV	COL CL2	4.22	283.92	340.10	142.22	262.33	948.80	583.00	24181.59	1.00	0.87			
HS20 INV	COL CL2	4.22	283.92	341.26	142.22	260.00	948.80	583.00	24181.59	1.00	0.87			
HS20 INV	COL CL2	4.22	283.92	342.42	142.22	257.68	948.80	583.00	24181.59	1.00	0.87			
HS20 INV	COL CL2	4.22	283.92	343.58	142.22	254.20	948.80	583.00	24181.59	1.00	0.87			
HS20 INV	COL CL2	4.22	283.92	344.74	142.22	250.72	948.80	583.00	24181.59	1.00	0.88			
HS20 INV	COL CL2	4.22	283.92	345.90	142.22	248.40	948.80	583.00	24181.59	1.00	0.88			
HS20 INV	COL CL2	4.22	283.92	347.06	142.22	246.08	948.80	583.00	24181.59	1.00	0.88			
HS20 INV	COL CL2	4.22	283.92	348.22	142.22	242.59	948.80	583.00	24181.59	1.00	0.88			
HS20 INV	COL CL2	4.22	283.92	349.38	142.22	240.27	948.80	583.00	24181.59	1.00	0.89			
HS20 INV	COL CL2	4.22	283.92	350.54	142.22	236.79	948.80	583.00	24181.59	1.00	0.89			
HS20 INV	COL CL2	4.22	283.92	351.70	142.22	233.31	948.80	583.00	24181.59	1.00	0.89			
HS20 INV	COL CL2	4.22	283.92	352.86	142.22	230.99	948.80	583.00	24181.59	1.00	0.89			
HS20 INV	COL CL2	4.22	283.92	354.02	142.22	228.66	948.80	583.00	24181.59	1.00	0.90			
HS20 INV	COL CL2	4.22	283.92	355.19	142.22	224.02	948.80	583.00	24181.59	1.00	0.90			
HS20 INV	COL CL2	4.22	283.92	356.35	142.22	221.70	948.80	583.00	24181.59	1.00	0.90			
HS20 INV	COL CL2	4.22	283.92	357.51	142.22	217.06	948.80	583.00	24181.59	1.00	0.91			
HS20 INV	COL CL2	4.22	283.92	358.67	142.22	214.74	948.80	583.00	24181.59	1.00	0.91			
HS20 INV	COL CL2	4.22	283.92	359.83	142.22	212.41	948.80	583.00	24181.59	1.00	0.91			
HS20 INV	COL CL2	4.22	283.92	360.99	142.22	207.77	948.80	583.00	24181.59	1.00	0.92			
HS20 INV	COL CL2	4.22	283.92	362.15	142.22	205.45	948.80	583.00	24181.59	1.00	0.92			
HS20 INV	COL CL2	4.22	283.92	363.31	142.22	200.81	948.80	583.00	24181.59	1.00	0.93			
HS20 INV	COL CL2	4.22	283.92	364.47	142.22	198.49	948.80	583.00	24181.59	1.00	0.93			
HS20 INV	COL CL2	4.22	283.92	365.63	142.22	193.84	948.80	583.00	24181.59	1.00	0.93			
HS20 INV	COL CL2	4.22	283.92	366.79	142.22	189.20	948.80	583.00	24181.59	1.00	0.94			
HS20 INV	COL CL2	4.22	283.92	367.95	142.22	186.88	948.80	583.00	24181.59	1.00	0.94			
HS20 INV	COL CL2	4.22	283.92	369.11	142.22	182.24	948.80	583.00	24181.59	1.00	0.94			
HS20 INV	COL CL2	4.22	283.92	370.27	142.22	178.75	948.80	583.00	24181.59	1.00	0.95			

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 INV	COL CL2	4.22	283.92	371.44	142.22	174.11	948.80	583.00	24181.59	1.00	0.96		
HS20 INV	COL CL2	4.22	283.92	372.60	142.22	169.47	948.80	583.00	24181.59	1.00	0.96		
HS20 INV	COL CL2	4.22	283.92	373.76	142.22	165.99	948.80	583.00	24181.59	1.00	0.97		
HS20 INV	COL CL2	4.22	283.92	374.92	142.22	161.34	948.80	583.00	24181.59	1.00	0.97		
HS20 INV	COL CL2	4.22	283.92	376.08	142.22	155.54	948.80	583.00	24181.59	1.00	0.98		
HS20 INV	COL CL2	4.22	283.92	377.24	142.22	152.06	948.80	583.00	24181.59	1.00	0.98		
HS20 INV	COL CL2	4.22	283.92	378.40	142.22	146.25	948.80	583.00	24181.59	1.00	0.99		
HS20 INV	COL CL2	4.22	283.92	379.56	142.22	140.45	948.80	583.00	24181.59	1.00	1.00		
HS20 INV	COL CL2	4.22	283.92	380.72	142.22	135.81	948.80	583.00	24181.59	1.00	1.01		
HS20 INV	COL CL2	4.22	283.92	381.88	142.22	128.84	948.80	583.00	24181.59	1.00	1.02		
HS20 INV	COL CL2	4.22	283.92	383.04	142.22	121.88	948.80	583.00	24181.59	1.00	1.03		
HS20 INV	COL CL2	4.22	283.92	384.20	142.22	113.75	948.80	583.00	24181.59	1.00	1.05		
HS20 INV	COL CL2	4.22	283.92	385.36	142.22	105.63	948.80	583.00	24181.59	1.00	1.06		
HS20 INV	COL CL2	4.22	283.92	386.52	142.22	95.18	948.80	583.00	24181.59	1.00	1.08		
HS20 INV	COL CL2	4.22	283.92	387.69	142.22	78.93	948.80	583.00	24181.59	1.00	1.12		
HS20 OPER	COL CL2	4.22	283.92	135.81	142.22	248.63	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	137.20	142.22	247.93	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	138.59	142.22	247.24	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	139.98	142.22	246.54	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	140.68	142.22	245.84	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	141.38	142.22	245.15	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	142.77	142.22	244.45	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	143.47	142.22	243.75	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	144.86	142.22	243.06	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	145.56	142.22	242.36	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	146.25	142.22	241.67	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	147.65	142.22	240.97	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	148.34	142.22	240.27	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	149.04	142.22	239.58	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	150.43	142.22	238.88	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	151.82	142.22	238.18	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	153.22	142.22	237.49	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	153.91	142.22	236.79	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	154.61	142.22	236.09	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	155.31	142.22	235.40	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	156.00	142.22	234.70	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	156.70	142.22	233.31	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	157.40	142.22	232.61	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	158.09	142.22	231.91	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	158.79	142.22	231.22	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	159.49	142.22	230.52	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	160.18	142.22	229.83	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	160.88	142.22	229.13	948.80	583.00	24181.59	1.00	1.34		
HS20 OPER	COL CL2	4.22	283.92	161.57	142.22	227.74	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	162.27	142.22	227.04	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	162.97	142.22	226.34	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	163.66	142.22	225.65	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	164.36	142.22	224.95	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	165.06	142.22	223.56	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	165.75	142.22	222.86	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	166.45	142.22	222.16	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	167.15	142.22	221.47	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	167.84	142.22	220.08	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	168.54	142.22	219.38	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	169.24	142.22	218.68	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	169.93	142.22	217.29	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	170.63	142.22	216.59	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	171.32	142.22	215.20	948.80	583.00	24181.59	1.00	1.35		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	1.30 2.17 INV 1.27	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL CL2	4.22	283.92	172.02	142.22	214.50	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	172.72	142.22	213.81	948.80	583.00	24181.59	1.00	1.35		
HS20 OPER	COL CL2	4.22	283.92	173.41	142.22	212.41	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	174.11	142.22	211.72	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	174.81	142.22	211.02	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	175.50	142.22	209.63	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	176.20	142.22	208.93	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	176.90	142.22	207.54	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	177.59	142.22	206.84	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	178.29	142.22	205.45	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	178.99	142.22	204.75	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	179.68	142.22	204.06	948.80	583.00	24181.59	1.00	1.36		
HS20 OPER	COL CL2	4.22	283.92	180.38	142.22	202.66	948.80	583.00	24181.59	1.00	1.37		
HS20 OPER	COL CL2	4.22	283.92	181.07	142.22	201.97	948.80	583.00	24181.59	1.00	1.37		
HS20 OPER	COL CL2	4.22	283.92	181.77	142.22	200.58	948.80	583.00	24181.59	1.00	1.37		
HS20 OPER	COL CL2	4.22	283.92	182.47	142.22	199.18	948.80	583.00	24181.59	1.00	1.37		
HS20 OPER	COL CL2	4.22	283.92	183.16	142.22	198.49	948.80	583.00	24181.59	1.00	1.37		
HS20 OPER	COL CL2	4.22	283.92	183.86	142.22	197.09	948.80	583.00	24181.59	1.00	1.37		
HS20 OPER	COL CL2	4.22	283.92	184.56	142.22	195.70	948.80	583.00	24181.59	1.00	1.38		
HS20 OPER	COL CL2	4.22	283.92	185.25	142.22	195.00	948.80	583.00	24181.59	1.00	1.38		
HS20 OPER	COL CL2	4.22	283.92	185.95	142.22	194.31	948.80	583.00	24181.59	1.00	1.38		
HS20 OPER	COL CL2	4.22	283.92	186.65	142.22	192.91	948.80	583.00	24181.59	1.00	1.38		
HS20 OPER	COL CL2	4.22	283.92	187.34	142.22	191.52	948.80	583.00	24181.59	1.00	1.38		
HS20 OPER	COL CL2	4.22	283.92	188.04	142.22	190.13	948.80	583.00	24181.59	1.00	1.38		
HS20 OPER	COL CL2	4.22	283.92	188.74	142.22	188.74	948.80	583.00	24181.59	1.00	1.39		
HS20 OPER	COL CL2	4.22	283.92	189.43	142.22	187.34	948.80	583.00	24181.59	1.00	1.39		
HS20 OPER	COL CL2	4.22	283.92	190.13	142.22	185.95	948.80	583.00	24181.59	1.00	1.39		
HS20 OPER	COL CL2	4.22	283.92	190.82	142.22	185.25	948.80	583.00	24181.59	1.00	1.39		
HS20 OPER	COL CL2	4.22	283.92	191.52	142.22	183.86	948.80	583.00	24181.59	1.00	1.39		
HS20 OPER	COL CL2	4.22	283.92	192.22	142.22	182.47	948.80	583.00	24181.59	1.00	1.40		
HS20 OPER	COL CL2	4.22	283.92	192.91	142.22	181.07	948.80	583.00	24181.59	1.00	1.40		
HS20 OPER	COL CL2	4.22	283.92	193.61	142.22	179.68	948.80	583.00	24181.59	1.00	1.40		
HS20 OPER	COL CL2	4.22	283.92	194.31	142.22	178.29	948.80	583.00	24181.59	1.00	1.40		
HS20 OPER	COL CL2	4.22	283.92	195.00	142.22	176.90	948.80	583.00	24181.59	1.00	1.41		
HS20 OPER	COL CL2	4.22	283.92	195.70	142.22	175.50	948.80	583.00	24181.59	1.00	1.41		
HS20 OPER	COL CL2	4.22	283.92	196.40	142.22	173.41	948.80	583.00	24181.59	1.00	1.41		
HS20 OPER	COL CL2	4.22	283.92	197.09	142.22	172.02	948.80	583.00	24181.59	1.00	1.42		
HS20 OPER	COL CL2	4.22	283.92	197.79	142.22	170.63	948.80	583.00	24181.59	1.00	1.42		
HS20 OPER	COL CL2	4.22	283.92	198.49	142.22	169.24	948.80	583.00	24181.59	1.00	1.42		
HS20 OPER	COL CL2	4.22	283.92	199.18	142.22	167.84	948.80	583.00	24181.59	1.00	1.42		
HS20 OPER	COL CL2	4.22	283.92	199.88	142.22	166.45	948.80	583.00	24181.59	1.00	1.43		
HS20 OPER	COL CL2	4.22	283.92	200.58	142.22	165.06	948.80	583.00	24181.59	1.00	1.43		
HS20 OPER	COL CL2	4.22	283.92	201.27	142.22	163.66	948.80	583.00	24181.59	1.00	1.43		
HS20 OPER	COL CL2	4.22	283.92	201.97	142.22	162.27	948.80	583.00	24181.59	1.00	1.43		
HS20 OPER	COL CL2	4.22	283.92	202.66	142.22	160.18	948.80	583.00	24181.59	1.00	1.44		
HS20 OPER	COL CL2	4.22	283.92	203.36	142.22	158.79	948.80	583.00	24181.59	1.00	1.44		
HS20 OPER	COL CL2	4.22	283.92	204.06	142.22	157.40	948.80	583.00	24181.59	1.00	1.45		
HS20 OPER	COL CL2	4.22	283.92	204.75	142.22	156.00	948.80	583.00	24181.59	1.00	1.45		
HS20 OPER	COL CL2	4.22	283.92	205.45	142.22	154.61	948.80	583.00	24181.59	1.00	1.45		
HS20 OPER	COL CL2	4.22	283.92	206.15	142.22	152.52	948.80	583.00	24181.59	1.00	1.46		
HS20 OPER	COL CL2	4.22	283.92	206.84	142.22	150.43	948.80	583.00	24181.59	1.00	1.46		
HS20 OPER	COL CL2	4.22	283.92	207.54	142.22	149.04	948.80	583.00	24181.59	1.00	1.46		
HS20 OPER	COL CL2	4.22	283.92	208.24	142.22	147.65	948.80	583.00	24181.59	1.00	1.47		
HS20 OPER	COL CL2	4.22	283.92	208.93	142.22	145.56	948.80	583.00	24181.59	1.00	1.47		
HS20 OPER	COL CL2	4.22	283.92	209.63	142.22	144.16	948.80	583.00	24181.59	1.00	1.48		
HS20 OPER	COL CL2	4.22	283.92	210.33	142.22	142.07	948.80	583.00	24181.59	1.00	1.48		
HS20 OPER	COL CL2	4.22	283.92	211.02	142.22	139.98	948.80	583.00	24181.59	1.00	1.49		
HS20 OPER	COL CL2	4.22	283.92	211.72	142.22	138.59	948.80	583.00	24181.59	1.00	1.49		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
						Axial Force		Moment		P _u	M _u	A _s F _c	
						Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL CL2	4.22	283.92	212.41	142.22	137.20	948.80	583.00	24181.59	1.00	1.49		
HS20 OPER	COL CL2	4.22	283.92	213.11	142.22	134.41	948.80	583.00	24181.59	1.00	1.50		
HS20 OPER	COL CL2	4.22	283.92	213.81	142.22	133.02	948.80	583.00	24181.59	1.00	1.51		
HS20 OPER	COL CL2	4.22	283.92	214.50	142.22	130.23	948.80	583.00	24181.59	1.00	1.51		
HS20 OPER	COL CL2	4.22	283.92	215.20	142.22	128.84	948.80	583.00	24181.59	1.00	1.52		
HS20 OPER	COL CL2	4.22	283.92	215.90	142.22	127.45	948.80	583.00	24181.59	1.00	1.52		
HS20 OPER	COL CL2	4.22	283.92	216.59	142.22	124.66	948.80	583.00	24181.59	1.00	1.53		
HS20 OPER	COL CL2	4.22	283.92	217.29	142.22	123.27	948.80	583.00	24181.59	1.00	1.53		
HS20 OPER	COL CL2	4.22	283.92	217.99	142.22	120.48	948.80	583.00	24181.59	1.00	1.54		
HS20 OPER	COL CL2	4.22	283.92	218.68	142.22	119.09	948.80	583.00	24181.59	1.00	1.55		
HS20 OPER	COL CL2	4.22	283.92	219.38	142.22	116.31	948.80	583.00	24181.59	1.00	1.55		
HS20 OPER	COL CL2	4.22	283.92	220.08	142.22	113.52	948.80	583.00	24181.59	1.00	1.56		
HS20 OPER	COL CL2	4.22	283.92	220.77	142.22	112.13	948.80	583.00	24181.59	1.00	1.57		
HS20 OPER	COL CL2	4.22	283.92	221.47	142.22	109.34	948.80	583.00	24181.59	1.00	1.58		
HS20 OPER	COL CL2	4.22	283.92	222.16	142.22	107.25	948.80	583.00	24181.59	1.00	1.58		
HS20 OPER	COL CL2	4.22	283.92	222.86	142.22	104.47	948.80	583.00	24181.59	1.00	1.59		
HS20 OPER	COL CL2	4.22	283.92	223.56	142.22	101.68	948.80	583.00	24181.59	1.00	1.60		
HS20 OPER	COL CL2	4.22	283.92	224.25	142.22	99.59	948.80	583.00	24181.59	1.00	1.61		
HS20 OPER	COL CL2	4.22	283.92	224.95	142.22	96.81	948.80	583.00	24181.59	1.00	1.62		
HS20 OPER	COL CL2	4.22	283.92	225.65	142.22	93.32	948.80	583.00	24181.59	1.00	1.64		
HS20 OPER	COL CL2	4.22	283.92	226.34	142.22	91.23	948.80	583.00	24181.59	1.00	1.64		
HS20 OPER	COL CL2	4.22	283.92	227.04	142.22	87.75	948.80	583.00	24181.59	1.00	1.66		
HS20 OPER	COL CL2	4.22	283.92	227.74	142.22	84.27	948.80	583.00	24181.59	1.00	1.67		
HS20 OPER	COL CL2	4.22	283.92	228.43	142.22	81.48	948.80	583.00	24181.59	1.00	1.68		
HS20 OPER	COL CL2	4.22	283.92	229.13	142.22	77.30	948.80	583.00	24181.59	1.00	1.70		
HS20 OPER	COL CL2	4.22	283.92	229.83	142.22	73.13	948.80	583.00	24181.59	1.00	1.72		
HS20 OPER	COL CL2	4.22	283.92	230.52	142.22	68.25	948.80	583.00	24181.59	1.00	1.74		
HS20 OPER	COL CL2	4.22	283.92	231.22	142.22	63.38	948.80	583.00	24181.59	1.00	1.77		
HS20 OPER	COL CL2	4.22	283.92	231.91	142.22	57.11	948.80	583.00	24181.59	1.00	1.80		
HS20 OPER	COL CL2	4.22	283.92	232.61	142.22	47.36	948.80	583.00	24181.59	1.00	1.86		
2F1	COL CL2	4.22	283.92	55.72	142.22	108.64	948.80	583.00	24181.59	1.00	3.19		
2F1	COL CL2	4.22	283.92	56.41	142.22	107.95	948.80	583.00	24181.59	1.00	3.19		
2F1	COL CL2	4.22	283.92	57.80	142.22	107.25	948.80	583.00	24181.59	1.00	3.18		
2F1	COL CL2	4.22	283.92	58.50	142.22	106.56	948.80	583.00	24181.59	1.00	3.18		
2F1	COL CL2	4.22	283.92	59.89	142.22	105.86	948.80	583.00	24181.59	1.00	3.16		
2F1	COL CL2	4.22	283.92	61.29	142.22	105.16	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	61.98	142.22	104.47	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	62.68	142.22	103.77	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	63.38	142.22	103.07	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	64.07	142.22	102.38	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	64.77	142.22	101.68	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	65.47	142.22	100.98	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	66.16	142.22	100.29	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	66.86	142.22	99.59	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	67.55	142.22	98.89	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	68.25	142.22	98.20	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	68.95	142.22	97.50	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	69.64	142.22	96.81	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	70.34	142.22	96.11	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	71.04	142.22	95.41	948.80	583.00	24181.59	1.00	3.15		
2F1	COL CL2	4.22	283.92	71.73	142.22	94.72	948.80	583.00	24181.59	1.00	3.16		
2F1	COL CL2	4.22	283.92	72.43	142.22	93.32	948.80	583.00	24181.59	1.00	3.16		
2F1	COL CL2	4.22	283.92	73.13	142.22	92.63	948.80	583.00	24181.59	1.00	3.16		
2F1	COL CL2	4.22	283.92	73.82	142.22	91.23	948.80	583.00	24181.59	1.00	3.17		
2F1	COL CL2	4.22	283.92	74.52	142.22	90.54	948.80	583.00	24181.59	1.00	3.17		
2F1	COL CL2	4.22	283.92	75.22	142.22	89.14	948.80	583.00	24181.59	1.00	3.18		
2F1	COL CL2	4.22	283.92	75.91	142.22	88.45	948.80	583.00	24181.59	1.00	3.18		
2F1	COL CL2	4.22	283.92	76.61	142.22	87.06	948.80	583.00	24181.59	1.00	3.20		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _e			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
2F1	COL CL2	4.22	283.92	77.30	142.22	86.36	948.80	583.00	24181.59	1.00	3.20				
2F1	COL CL2	4.22	283.92	78.00	142.22	84.97	948.80	583.00	24181.59	1.00	3.21				
2F1	COL CL2	4.22	283.92	78.70	142.22	83.57	948.80	583.00	24181.59	1.00	3.22				
2F1	COL CL2	4.22	283.92	79.39	142.22	82.18	948.80	583.00	24181.59	1.00	3.24				
2F1	COL CL2	4.22	283.92	80.09	142.22	81.48	948.80	583.00	24181.59	1.00	3.24				
2F1	COL CL2	4.22	283.92	80.79	142.22	80.09	948.80	583.00	24181.59	1.00	3.25				
2F1	COL CL2	4.22	283.92	81.48	142.22	78.70	948.80	583.00	24181.59	1.00	3.26				
2F1	COL CL2	4.22	283.92	82.18	142.22	77.30	948.80	583.00	24181.59	1.00	3.28				
2F1	COL CL2	4.22	283.92	82.88	142.22	75.91	948.80	583.00	24181.59	1.00	3.29				
2F1	COL CL2	4.22	283.92	83.57	142.22	74.52	948.80	583.00	24181.59	1.00	3.31				
2F1	COL CL2	4.22	283.92	84.27	142.22	73.13	948.80	583.00	24181.59	1.00	3.32				
2F1	COL CL2	4.22	283.92	84.97	142.22	71.73	948.80	583.00	24181.59	1.00	3.34				
2F1	COL CL2	4.22	283.92	85.66	142.22	69.64	948.80	583.00	24181.59	1.00	3.37				
2F1	COL CL2	4.22	283.92	86.36	142.22	68.25	948.80	583.00	24181.59	1.00	3.38				
2F1	COL CL2	4.22	283.92	87.06	142.22	66.86	948.80	583.00	24181.59	1.00	3.39				
2F1	COL CL2	4.22	283.92	87.75	142.22	65.47	948.80	583.00	24181.59	1.00	3.41				
2F1	COL CL2	4.22	283.92	88.45	142.22	64.07	948.80	583.00	24181.59	1.00	3.43				
2F1	COL CL2	4.22	283.92	89.14	142.22	61.98	948.80	583.00	24181.59	1.00	3.46				
2F1	COL CL2	4.22	283.92	89.84	142.22	59.89	948.80	583.00	24181.59	1.00	3.49				
2F1	COL CL2	4.22	283.92	90.54	142.22	58.50	948.80	583.00	24181.59	1.00	3.50				
2F1	COL CL2	4.22	283.92	91.23	142.22	56.41	948.80	583.00	24181.59	1.00	3.54				
2F1	COL CL2	4.22	283.92	91.93	142.22	54.32	948.80	583.00	24181.59	1.00	3.57				
2F1	COL CL2	4.22	283.92	92.63	142.22	52.93	948.80	583.00	24181.59	1.00	3.59				
2F1	COL CL2	4.22	283.92	93.32	142.22	50.84	948.80	583.00	24181.59	1.00	3.62				
2F1	COL CL2	4.22	283.92	94.02	142.22	48.75	948.80	583.00	24181.59	1.00	3.66				
2F1	COL CL2	4.22	283.92	94.72	142.22	46.66	948.80	583.00	24181.59	1.00	3.69				
2F1	COL CL2	4.22	283.92	95.41	142.22	44.57	948.80	583.00	24181.59	1.00	3.73				
2F1	COL CL2	4.22	283.92	96.11	142.22	42.48	948.80	583.00	24181.59	1.00	3.76				
2F1	COL CL2	4.22	283.92	96.81	142.22	39.70	948.80	583.00	24181.59	1.00	3.82				
2F1	COL CL2	4.22	283.92	97.50	142.22	37.61	948.80	583.00	24181.59	1.00	3.86				
2F1	COL CL2	4.22	283.92	98.20	142.22	34.82	948.80	583.00	24181.59	1.00	3.92				
2F1	COL CL2	4.22	283.92	98.89	142.22	32.04	948.80	583.00	24181.59	1.00	3.98				
2F1	COL CL2	4.22	283.92	99.59	142.22	29.25	948.80	583.00	24181.59	1.00	4.05				
2F1	COL CL2	4.22	283.92	100.29	142.22	25.77	948.80	583.00	24181.59	1.00	4.14				
2F1	COL CL2	4.22	283.92	100.98	142.22	22.29	948.80	583.00	24181.59	1.00	4.23				
2F1	COL CL2	4.22	283.92	101.68	142.22	17.41	948.80	583.00	24181.59	1.00	4.38				
3F1	COL CL2	4.22	283.92	82.88	142.22	165.06	948.80	583.00	24181.59	1.00	2.12				
3F1	COL CL2	4.22	283.92	86.36	142.22	164.36	948.80	583.00	24181.59	1.00	2.09				
3F1	COL CL2	4.22	283.92	88.45	142.22	163.66	948.80	583.00	24181.59	1.00	2.08				
3F1	COL CL2	4.22	283.92	89.84	142.22	162.97	948.80	583.00	24181.59	1.00	2.08				
3F1	COL CL2	4.22	283.92	90.54	142.22	162.27	948.80	583.00	24181.59	1.00	2.08				
3F1	COL CL2	4.22	283.92	91.23	142.22	161.57	948.80	583.00	24181.59	1.00	2.08				
3F1	COL CL2	4.22	283.92	92.63	142.22	160.88	948.80	583.00	24181.59	1.00	2.07				
3F1	COL CL2	4.22	283.92	93.32	142.22	160.18	948.80	583.00	24181.59	1.00	2.07				
3F1	COL CL2	4.22	283.92	94.02	142.22	159.49	948.80	583.00	24181.59	1.00	2.07				
3F1	COL CL2	4.22	283.92	95.41	142.22	158.79	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	96.81	142.22	158.09	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	97.50	142.22	157.40	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	98.20	142.22	156.70	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	98.89	142.22	156.00	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	99.59	142.22	155.31	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	100.29	142.22	154.61	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	100.98	142.22	153.91	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	101.68	142.22	153.22	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	102.38	142.22	152.52	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	103.07	142.22	151.82	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	103.77	142.22	151.13	948.80	583.00	24181.59	1.00	2.06				
3F1	COL CL2	4.22	283.92	104.47	142.22	150.43	948.80	583.00	24181.59	1.00	2.06				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
					Axial Force		Moment		P _u	M _u	A _s F _c			Condition Equation
					Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips					
3F1	COL CL2	4.22	283.92	105.16	142.22	149.73	948.80	583.00	24181.59	1.00	2.06			
3F1	COL CL2	4.22	283.92	105.86	142.22	149.04	948.80	583.00	24181.59	1.00	2.06			
3F1	COL CL2	4.22	283.92	106.56	142.22	148.34	948.80	583.00	24181.59	1.00	2.06			
3F1	COL CL2	4.22	283.92	107.25	142.22	146.95	948.80	583.00	24181.59	1.00	2.06			
3F1	COL CL2	4.22	283.92	107.95	142.22	146.25	948.80	583.00	24181.59	1.00	2.06			
3F1	COL CL2	4.22	283.92	108.64	142.22	145.56	948.80	583.00	24181.59	1.00	2.06			
3F1	COL CL2	4.22	283.92	109.34	142.22	144.86	948.80	583.00	24181.59	1.00	2.06			
3F1	COL CL2	4.22	283.92	110.04	142.22	143.47	948.80	583.00	24181.59	1.00	2.07			
3F1	COL CL2	4.22	283.92	110.73	142.22	142.77	948.80	583.00	24181.59	1.00	2.07			
3F1	COL CL2	4.22	283.92	111.43	142.22	142.07	948.80	583.00	24181.59	1.00	2.07			
3F1	COL CL2	4.22	283.92	112.13	142.22	140.68	948.80	583.00	24181.59	1.00	2.07			
3F1	COL CL2	4.22	283.92	112.82	142.22	139.98	948.80	583.00	24181.59	1.00	2.07			
3F1	COL CL2	4.22	283.92	113.52	142.22	138.59	948.80	583.00	24181.59	1.00	2.08			
3F1	COL CL2	4.22	283.92	114.22	142.22	137.90	948.80	583.00	24181.59	1.00	2.08			
3F1	COL CL2	4.22	283.92	114.91	142.22	136.50	948.80	583.00	24181.59	1.00	2.08			
3F1	COL CL2	4.22	283.92	115.61	142.22	135.81	948.80	583.00	24181.59	1.00	2.08			
3F1	COL CL2	4.22	283.92	116.31	142.22	134.41	948.80	583.00	24181.59	1.00	2.09			
3F1	COL CL2	4.22	283.92	117.00	142.22	133.02	948.80	583.00	24181.59	1.00	2.09			
3F1	COL CL2	4.22	283.92	117.70	142.22	132.32	948.80	583.00	24181.59	1.00	2.09			
3F1	COL CL2	4.22	283.92	118.40	142.22	130.93	948.80	583.00	24181.59	1.00	2.10			
3F1	COL CL2	4.22	283.92	119.09	142.22	130.23	948.80	583.00	24181.59	1.00	2.10			
3F1	COL CL2	4.22	283.92	119.79	142.22	128.84	948.80	583.00	24181.59	1.00	2.10			
3F1	COL CL2	4.22	283.92	120.48	142.22	127.45	948.80	583.00	24181.59	1.00	2.11			
3F1	COL CL2	4.22	283.92	121.18	142.22	126.06	948.80	583.00	24181.59	1.00	2.12			
3F1	COL CL2	4.22	283.92	121.88	142.22	124.66	948.80	583.00	24181.59	1.00	2.12			
3F1	COL CL2	4.22	283.92	122.57	142.22	123.27	948.80	583.00	24181.59	1.00	2.13			
3F1	COL CL2	4.22	283.92	123.27	142.22	121.88	948.80	583.00	24181.59	1.00	2.13			
3F1	COL CL2	4.22	283.92	123.97	142.22	121.18	948.80	583.00	24181.59	1.00	2.13			
3F1	COL CL2	4.22	283.92	124.66	142.22	119.79	948.80	583.00	24181.59	1.00	2.14			
3F1	COL CL2	4.22	283.92	125.36	142.22	118.40	948.80	583.00	24181.59	1.00	2.15			
3F1	COL CL2	4.22	283.92	126.06	142.22	117.00	948.80	583.00	24181.59	1.00	2.15			
3F1	COL CL2	4.22	283.92	126.75	142.22	115.61	948.80	583.00	24181.59	1.00	2.16			
3F1	COL CL2	4.22	283.92	127.45	142.22	114.22	948.80	583.00	24181.59	1.00	2.16			
3F1	COL CL2	4.22	283.92	128.15	142.22	112.82	948.80	583.00	24181.59	1.00	2.17			
3F1	COL CL2	4.22	283.92	128.84	142.22	111.43	948.80	583.00	24181.59	1.00	2.18			
3F1	COL CL2	4.22	283.92	129.54	142.22	110.04	948.80	583.00	24181.59	1.00	2.18			
3F1	COL CL2	4.22	283.92	130.23	142.22	107.95	948.80	583.00	24181.59	1.00	2.19			
3F1	COL CL2	4.22	283.92	130.93	142.22	106.56	948.80	583.00	24181.59	1.00	2.20			
3F1	COL CL2	4.22	283.92	131.63	142.22	105.16	948.80	583.00	24181.59	1.00	2.21			
3F1	COL CL2	4.22	283.92	132.32	142.22	103.07	948.80	583.00	24181.59	1.00	2.22			
3F1	COL CL2	4.22	283.92	133.02	142.22	102.38	948.80	583.00	24181.59	1.00	2.22			
3F1	COL CL2	4.22	283.92	133.72	142.22	100.98	948.80	583.00	24181.59	1.00	2.23			
3F1	COL CL2	4.22	283.92	134.41	142.22	98.89	948.80	583.00	24181.59	1.00	2.24			
3F1	COL CL2	4.22	283.92	135.11	142.22	97.50	948.80	583.00	24181.59	1.00	2.25			
3F1	COL CL2	4.22	283.92	135.81	142.22	95.41	948.80	583.00	24181.59	1.00	2.26			
3F1	COL CL2	4.22	283.92	136.50	142.22	94.02	948.80	583.00	24181.59	1.00	2.26			
3F1	COL CL2	4.22	283.92	137.20	142.22	91.93	948.80	583.00	24181.59	1.00	2.28			
3F1	COL CL2	4.22	283.92	137.90	142.22	90.54	948.80	583.00	24181.59	1.00	2.28			
3F1	COL CL2	4.22	283.92	138.59	142.22	88.45	948.80	583.00	24181.59	1.00	2.30			
3F1	COL CL2	4.22	283.92	139.29	142.22	87.06	948.80	583.00	24181.59	1.00	2.30			
3F1	COL CL2	4.22	283.92	139.98	142.22	84.27	948.80	583.00	24181.59	1.00	2.33			
3F1	COL CL2	4.22	283.92	140.68	142.22	82.88	948.80	583.00	24181.59	1.00	2.33			
3F1	COL CL2	4.22	283.92	141.38	142.22	80.79	948.80	583.00	24181.59	1.00	2.35			
3F1	COL CL2	4.22	283.92	142.07	142.22	79.39	948.80	583.00	24181.59	1.00	2.36			
3F1	COL CL2	4.22	283.92	142.77	142.22	76.61	948.80	583.00	24181.59	1.00	2.38			
3F1	COL CL2	4.22	283.92	143.47	142.22	75.22	948.80	583.00	24181.59	1.00	2.39			
3F1	COL CL2	4.22	283.92	144.16	142.22	73.13	948.80	583.00	24181.59	1.00	2.40			
3F1	COL CL2	4.22	283.92	144.86	142.22	70.34	948.80	583.00	24181.59	1.00	2.42			

CUY-2-1441 Load Rating Analysis - As-Built
 Main Ave Bridge
 Section L - South Frame Column 2 Ratings



Calculated: NRF 3/3/2012
 Checked: CTG 3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _e		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
3F1	COL CL2	4.22	283.92	145.56	142.22	68.25	948.80	583.00	24181.59	1.00	2.44		
3F1	COL CL2	4.22	283.92	146.25	142.22	66.16	948.80	583.00	24181.59	1.00	2.46		
3F1	COL CL2	4.22	283.92	146.95	142.22	64.07	948.80	583.00	24181.59	1.00	2.47		
3F1	COL CL2	4.22	283.92	147.65	142.22	61.29	948.80	583.00	24181.59	1.00	2.50		
3F1	COL CL2	4.22	283.92	148.34	142.22	59.20	948.80	583.00	24181.59	1.00	2.51		
3F1	COL CL2	4.22	283.92	149.04	142.22	56.41	948.80	583.00	24181.59	1.00	2.54		
3F1	COL CL2	4.22	283.92	149.73	142.22	54.32	948.80	583.00	24181.59	1.00	2.56		
3F1	COL CL2	4.22	283.92	150.43	142.22	50.84	948.80	583.00	24181.59	1.00	2.59		
3F1	COL CL2	4.22	283.92	151.13	142.22	48.05	948.80	583.00	24181.59	1.00	2.62		
3F1	COL CL2	4.22	283.92	151.82	142.22	44.57	948.80	583.00	24181.59	1.00	2.65		
3F1	COL CL2	4.22	283.92	152.52	142.22	41.09	948.80	583.00	24181.59	1.00	2.69		
3F1	COL CL2	4.22	283.92	153.22	142.22	37.61	948.80	583.00	24181.59	1.00	2.73		
3F1	COL CL2	4.22	283.92	153.91	142.22	33.43	948.80	583.00	24181.59	1.00	2.78		
3F1	COL CL2	4.22	283.92	154.61	142.22	28.55	948.80	583.00	24181.59	1.00	2.85		
3F1	COL CL2	4.22	283.92	155.31	142.22	20.89	948.80	583.00	24181.59	1.00	2.95		
4F1	COL CL2	4.22	283.92	98.20	142.22	192.22	948.80	583.00	24181.59	1.00	1.81		
4F1	COL CL2	4.22	283.92	100.29	142.22	191.52	948.80	583.00	24181.59	1.00	1.80		
4F1	COL CL2	4.22	283.92	101.68	142.22	190.82	948.80	583.00	24181.59	1.00	1.79		
4F1	COL CL2	4.22	283.92	103.77	142.22	190.13	948.80	583.00	24181.59	1.00	1.79		
4F1	COL CL2	4.22	283.92	105.16	142.22	189.43	948.80	583.00	24181.59	1.00	1.78		
4F1	COL CL2	4.22	283.92	106.56	142.22	188.74	948.80	583.00	24181.59	1.00	1.78		
4F1	COL CL2	4.22	283.92	107.95	142.22	188.04	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	109.34	142.22	187.34	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	110.04	142.22	186.65	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	110.73	142.22	185.95	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	111.43	142.22	185.25	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	112.82	142.22	184.56	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	113.52	142.22	183.86	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	114.22	142.22	183.16	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	114.91	142.22	182.47	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	116.31	142.22	181.77	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	117.00	142.22	181.07	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	117.70	142.22	180.38	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	118.40	142.22	179.68	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	119.09	142.22	178.99	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	119.79	142.22	178.29	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	120.48	142.22	177.59	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	121.18	142.22	176.90	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	121.88	142.22	176.20	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	122.57	142.22	175.50	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	123.27	142.22	174.81	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	123.97	142.22	173.41	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	124.66	142.22	172.72	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	125.36	142.22	172.02	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	126.06	142.22	171.32	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	126.75	142.22	170.63	948.80	583.00	24181.59	1.00	1.76		
4F1	COL CL2	4.22	283.92	127.45	142.22	169.24	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	128.15	142.22	168.54	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	128.84	142.22	167.15	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	129.54	142.22	166.45	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	130.23	142.22	165.75	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	130.93	142.22	165.06	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	131.63	142.22	163.66	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	132.32	142.22	162.97	948.80	583.00	24181.59	1.00	1.77		
4F1	COL CL2	4.22	283.92	133.02	142.22	161.57	948.80	583.00	24181.59	1.00	1.78		
4F1	COL CL2	4.22	283.92	133.72	142.22	160.88	948.80	583.00	24181.59	1.00	1.78		
4F1	COL CL2	4.22	283.92	134.41	142.22	159.49	948.80	583.00	24181.59	1.00	1.78		
4F1	COL CL2	4.22	283.92	135.11	142.22	158.79	948.80	583.00	24181.59	1.00	1.78		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _c			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
4F1	COL CL2	4.22	283.92	135.81	142.22	157.40	948.80	583.00	24181.59	1.00	1.79				
4F1	COL CL2	4.22	283.92	136.50	142.22	156.00	948.80	583.00	24181.59	1.00	1.79				
4F1	COL CL2	4.22	283.92	137.20	142.22	155.31	948.80	583.00	24181.59	1.00	1.79				
4F1	COL CL2	4.22	283.92	137.90	142.22	153.91	948.80	583.00	24181.59	1.00	1.79				
4F1	COL CL2	4.22	283.92	138.59	142.22	152.52	948.80	583.00	24181.59	1.00	1.80				
4F1	COL CL2	4.22	283.92	139.29	142.22	151.82	948.80	583.00	24181.59	1.00	1.80				
4F1	COL CL2	4.22	283.92	139.98	142.22	150.43	948.80	583.00	24181.59	1.00	1.80				
4F1	COL CL2	4.22	283.92	140.68	142.22	149.04	948.80	583.00	24181.59	1.00	1.81				
4F1	COL CL2	4.22	283.92	141.38	142.22	148.34	948.80	583.00	24181.59	1.00	1.81				
4F1	COL CL2	4.22	283.92	142.07	142.22	146.95	948.80	583.00	24181.59	1.00	1.81				
4F1	COL CL2	4.22	283.92	142.77	142.22	145.56	948.80	583.00	24181.59	1.00	1.81				
4F1	COL CL2	4.22	283.92	143.47	142.22	144.16	948.80	583.00	24181.59	1.00	1.82				
4F1	COL CL2	4.22	283.92	144.16	142.22	142.77	948.80	583.00	24181.59	1.00	1.82				
4F1	COL CL2	4.22	283.92	144.86	142.22	141.38	948.80	583.00	24181.59	1.00	1.83				
4F1	COL CL2	4.22	283.92	145.56	142.22	140.68	948.80	583.00	24181.59	1.00	1.83				
4F1	COL CL2	4.22	283.92	146.25	142.22	138.59	948.80	583.00	24181.59	1.00	1.84				
4F1	COL CL2	4.22	283.92	146.95	142.22	137.90	948.80	583.00	24181.59	1.00	1.84				
4F1	COL CL2	4.22	283.92	147.65	142.22	136.50	948.80	583.00	24181.59	1.00	1.84				
4F1	COL CL2	4.22	283.92	148.34	142.22	135.11	948.80	583.00	24181.59	1.00	1.84				
4F1	COL CL2	4.22	283.92	149.04	142.22	133.72	948.80	583.00	24181.59	1.00	1.85				
4F1	COL CL2	4.22	283.92	149.73	142.22	131.63	948.80	583.00	24181.59	1.00	1.86				
4F1	COL CL2	4.22	283.92	150.43	142.22	130.93	948.80	583.00	24181.59	1.00	1.86				
4F1	COL CL2	4.22	283.92	151.13	142.22	128.84	948.80	583.00	24181.59	1.00	1.87				
4F1	COL CL2	4.22	283.92	151.82	142.22	127.45	948.80	583.00	24181.59	1.00	1.87				
4F1	COL CL2	4.22	283.92	152.52	142.22	126.06	948.80	583.00	24181.59	1.00	1.88				
4F1	COL CL2	4.22	283.92	153.22	142.22	124.66	948.80	583.00	24181.59	1.00	1.88				
4F1	COL CL2	4.22	283.92	153.91	142.22	122.57	948.80	583.00	24181.59	1.00	1.89				
4F1	COL CL2	4.22	283.92	154.61	142.22	121.88	948.80	583.00	24181.59	1.00	1.89				
4F1	COL CL2	4.22	283.92	155.31	142.22	119.79	948.80	583.00	24181.59	1.00	1.90				
4F1	COL CL2	4.22	283.92	156.00	142.22	118.40	948.80	583.00	24181.59	1.00	1.90				
4F1	COL CL2	4.22	283.92	156.70	142.22	116.31	948.80	583.00	24181.59	1.00	1.91				
4F1	COL CL2	4.22	283.92	157.40	142.22	114.91	948.80	583.00	24181.59	1.00	1.92				
4F1	COL CL2	4.22	283.92	158.09	142.22	113.52	948.80	583.00	24181.59	1.00	1.92				
4F1	COL CL2	4.22	283.92	158.79	142.22	111.43	948.80	583.00	24181.59	1.00	1.93				
4F1	COL CL2	4.22	283.92	159.49	142.22	110.04	948.80	583.00	24181.59	1.00	1.94				
4F1	COL CL2	4.22	283.92	160.18	142.22	107.95	948.80	583.00	24181.59	1.00	1.95				
4F1	COL CL2	4.22	283.92	160.88	142.22	106.56	948.80	583.00	24181.59	1.00	1.95				
4F1	COL CL2	4.22	283.92	161.57	142.22	104.47	948.80	583.00	24181.59	1.00	1.96				
4F1	COL CL2	4.22	283.92	162.27	142.22	102.38	948.80	583.00	24181.59	1.00	1.97				
4F1	COL CL2	4.22	283.92	162.97	142.22	100.98	948.80	583.00	24181.59	1.00	1.98				
4F1	COL CL2	4.22	283.92	163.66	142.22	99.59	948.80	583.00	24181.59	1.00	1.98				
4F1	COL CL2	4.22	283.92	164.36	142.22	97.50	948.80	583.00	24181.59	1.00	1.99				
4F1	COL CL2	4.22	283.92	165.06	142.22	95.41	948.80	583.00	24181.59	1.00	2.00				
4F1	COL CL2	4.22	283.92	165.75	142.22	93.32	948.80	583.00	24181.59	1.00	2.01				
4F1	COL CL2	4.22	283.92	166.45	142.22	91.23	948.80	583.00	24181.59	1.00	2.03				
4F1	COL CL2	4.22	283.92	167.15	142.22	89.14	948.80	583.00	24181.59	1.00	2.04				
4F1	COL CL2	4.22	283.92	167.84	142.22	87.06	948.80	583.00	24181.59	1.00	2.05				
4F1	COL CL2	4.22	283.92	168.54	142.22	84.97	948.80	583.00	24181.59	1.00	2.06				
4F1	COL CL2	4.22	283.92	169.24	142.22	82.88	948.80	583.00	24181.59	1.00	2.07				
4F1	COL CL2	4.22	283.92	169.93	142.22	80.79	948.80	583.00	24181.59	1.00	2.08				
4F1	COL CL2	4.22	283.92	170.63	142.22	78.70	948.80	583.00	24181.59	1.00	2.09				
4F1	COL CL2	4.22	283.92	171.32	142.22	75.91	948.80	583.00	24181.59	1.00	2.11				
4F1	COL CL2	4.22	283.92	172.02	142.22	73.82	948.80	583.00	24181.59	1.00	2.12				
4F1	COL CL2	4.22	283.92	172.72	142.22	71.04	948.80	583.00	24181.59	1.00	2.14				
4F1	COL CL2	4.22	283.92	173.41	142.22	68.95	948.80	583.00	24181.59	1.00	2.15				
4F1	COL CL2	4.22	283.92	174.11	142.22	66.16	948.80	583.00	24181.59	1.00	2.17				
4F1	COL CL2	4.22	283.92	174.81	142.22	63.38	948.80	583.00	24181.59	1.00	2.19				
4F1	COL CL2	4.22	283.92	175.50	142.22	59.89	948.80	583.00	24181.59	1.00	2.22				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _{ex}			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips						
4F1	COL CL2	4.22	283.92	176.20	142.22	57.11	948.80	583.00	24181.59	1.00	2.23				
4F1	COL CL2	4.22	283.92	176.90	142.22	53.63	948.80	583.00	24181.59	1.00	2.26				
4F1	COL CL2	4.22	283.92	177.59	142.22	50.14	948.80	583.00	24181.59	1.00	2.29				
4F1	COL CL2	4.22	283.92	178.29	142.22	45.97	948.80	583.00	24181.59	1.00	2.32				
4F1	COL CL2	4.22	283.92	178.99	142.22	41.79	948.80	583.00	24181.59	1.00	2.36				
4F1	COL CL2	4.22	283.92	179.68	142.22	36.91	948.80	583.00	24181.59	1.00	2.41				
4F1	COL CL2	4.22	283.92	180.38	142.22	29.95	948.80	583.00	24181.59	1.00	2.48				
4F1	COL CL2	4.22	283.92	180.38	142.22	29.95	948.80	583.00	24181.59	1.00	2.48				
5C1	COL CL2	4.22	283.92	139.29	142.22	224.25	948.80	583.00	24181.59	1.00	1.44				
5C1	COL CL2	4.22	283.92	142.77	142.22	223.56	948.80	583.00	24181.59	1.00	1.43				
5C1	COL CL2	4.22	283.92	145.56	142.22	222.86	948.80	583.00	24181.59	1.00	1.42				
5C1	COL CL2	4.22	283.92	147.65	142.22	222.16	948.80	583.00	24181.59	1.00	1.42				
5C1	COL CL2	4.22	283.92	149.73	142.22	221.47	948.80	583.00	24181.59	1.00	1.41				
5C1	COL CL2	4.22	283.92	151.13	142.22	220.77	948.80	583.00	24181.59	1.00	1.41				
5C1	COL CL2	4.22	283.92	152.52	142.22	220.08	948.80	583.00	24181.59	1.00	1.41				
5C1	COL CL2	4.22	283.92	153.91	142.22	219.38	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	155.31	142.22	218.68	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	156.00	142.22	217.99	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	157.40	142.22	217.29	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	158.79	142.22	216.59	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	159.49	142.22	215.90	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	160.18	142.22	215.20	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	160.88	142.22	214.50	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	162.27	142.22	213.81	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	162.97	142.22	213.11	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	164.36	142.22	212.41	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	165.06	142.22	211.72	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	165.75	142.22	211.02	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	166.45	142.22	210.33	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	167.15	142.22	209.63	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	167.84	142.22	208.93	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	168.54	142.22	208.24	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	169.24	142.22	207.54	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	169.93	142.22	206.84	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	170.63	142.22	206.15	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	172.02	142.22	205.45	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	172.72	142.22	204.75	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	173.41	142.22	203.36	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	174.11	142.22	202.66	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	174.81	142.22	201.97	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	175.50	142.22	201.27	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	176.20	142.22	200.58	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	176.90	142.22	199.88	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	178.29	142.22	198.49	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	178.99	142.22	197.79	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	179.68	142.22	196.40	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	180.38	142.22	195.70	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	181.07	142.22	195.00	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	181.77	142.22	194.31	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	182.47	142.22	192.91	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	183.16	142.22	192.22	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	183.86	142.22	191.52	948.80	583.00	24181.59	1.00	1.39				
5C1	COL CL2	4.22	283.92	184.56	142.22	190.13	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	185.25	142.22	189.43	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	185.95	142.22	188.74	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	186.65	142.22	187.34	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	187.34	142.22	186.65	948.80	583.00	24181.59	1.00	1.40				
5C1	COL CL2	4.22	283.92	188.04	142.22	185.95	948.80	583.00	24181.59	1.00	1.40				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30	Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$
					Axial Force		Moment		P _u	M _u	A _s F _{ex}	
					Dead Load	Max. LL + I	Dead Load	Max LL + I				
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF	
5C1	COL CL2	4.22	283.92	188.74	142.22	184.56	948.80	583.00	24181.59	1.00	1.40	
5C1	COL CL2	4.22	283.92	189.43	142.22	183.86	948.80	583.00	24181.59	1.00	1.40	
5C1	COL CL2	4.22	283.92	190.13	142.22	183.16	948.80	583.00	24181.59	1.00	1.40	
5C1	COL CL2	4.22	283.92	190.82	142.22	181.77	948.80	583.00	24181.59	1.00	1.40	
5C1	COL CL2	4.22	283.92	191.52	142.22	181.07	948.80	583.00	24181.59	1.00	1.40	
5C1	COL CL2	4.22	283.92	192.22	142.22	179.68	948.80	583.00	24181.59	1.00	1.41	
5C1	COL CL2	4.22	283.92	192.91	142.22	178.29	948.80	583.00	24181.59	1.00	1.41	
5C1	COL CL2	4.22	283.92	193.61	142.22	177.59	948.80	583.00	24181.59	1.00	1.41	
5C1	COL CL2	4.22	283.92	194.31	142.22	176.20	948.80	583.00	24181.59	1.00	1.41	
5C1	COL CL2	4.22	283.92	195.00	142.22	175.50	948.80	583.00	24181.59	1.00	1.41	
5C1	COL CL2	4.22	283.92	195.70	142.22	174.11	948.80	583.00	24181.59	1.00	1.41	
5C1	COL CL2	4.22	283.92	196.40	142.22	173.41	948.80	583.00	24181.59	1.00	1.41	
5C1	COL CL2	4.22	283.92	197.09	142.22	172.02	948.80	583.00	24181.59	1.00	1.42	
5C1	COL CL2	4.22	283.92	197.79	142.22	170.63	948.80	583.00	24181.59	1.00	1.42	
5C1	COL CL2	4.22	283.92	198.49	142.22	169.93	948.80	583.00	24181.59	1.00	1.42	
5C1	COL CL2	4.22	283.92	199.18	142.22	168.54	948.80	583.00	24181.59	1.00	1.42	
5C1	COL CL2	4.22	283.92	199.88	142.22	167.15	948.80	583.00	24181.59	1.00	1.42	
5C1	COL CL2	4.22	283.92	200.58	142.22	166.45	948.80	583.00	24181.59	1.00	1.42	
5C1	COL CL2	4.22	283.92	201.27	142.22	165.06	948.80	583.00	24181.59	1.00	1.43	
5C1	COL CL2	4.22	283.92	201.97	142.22	163.66	948.80	583.00	24181.59	1.00	1.43	
5C1	COL CL2	4.22	283.92	202.66	142.22	162.27	948.80	583.00	24181.59	1.00	1.43	
5C1	COL CL2	4.22	283.92	203.36	142.22	161.57	948.80	583.00	24181.59	1.00	1.43	
5C1	COL CL2	4.22	283.92	204.06	142.22	160.18	948.80	583.00	24181.59	1.00	1.43	
5C1	COL CL2	4.22	283.92	204.75	142.22	158.09	948.80	583.00	24181.59	1.00	1.44	
5C1	COL CL2	4.22	283.92	205.45	142.22	156.70	948.80	583.00	24181.59	1.00	1.44	
5C1	COL CL2	4.22	283.92	206.15	142.22	156.00	948.80	583.00	24181.59	1.00	1.44	
5C1	COL CL2	4.22	283.92	206.84	142.22	154.61	948.80	583.00	24181.59	1.00	1.45	
5C1	COL CL2	4.22	283.92	207.54	142.22	152.52	948.80	583.00	24181.59	1.00	1.45	
5C1	COL CL2	4.22	283.92	208.24	142.22	150.43	948.80	583.00	24181.59	1.00	1.45	
5C1	COL CL2	4.22	283.92	208.93	142.22	149.04	948.80	583.00	24181.59	1.00	1.46	
5C1	COL CL2	4.22	283.92	209.63	142.22	146.95	948.80	583.00	24181.59	1.00	1.46	
5C1	COL CL2	4.22	283.92	210.33	142.22	144.86	948.80	583.00	24181.59	1.00	1.47	
5C1	COL CL2	4.22	283.92	211.02	142.22	143.47	948.80	583.00	24181.59	1.00	1.47	
5C1	COL CL2	4.22	283.92	211.72	142.22	141.38	948.80	583.00	24181.59	1.00	1.48	
5C1	COL CL2	4.22	283.92	212.41	142.22	139.29	948.80	583.00	24181.59	1.00	1.48	
5C1	COL CL2	4.22	283.92	213.11	142.22	137.20	948.80	583.00	24181.59	1.00	1.49	
5C1	COL CL2	4.22	283.92	213.81	142.22	134.41	948.80	583.00	24181.59	1.00	1.50	
5C1	COL CL2	4.22	283.92	214.50	142.22	131.63	948.80	583.00	24181.59	1.00	1.51	
5C1	COL CL2	4.22	283.92	215.20	142.22	128.84	948.80	583.00	24181.59	1.00	1.52	
5C1	COL CL2	4.22	283.92	215.90	142.22	125.36	948.80	583.00	24181.59	1.00	1.53	
5C1	COL CL2	4.22	283.92	216.59	142.22	121.18	948.80	583.00	24181.59	1.00	1.55	
5C1	COL CL2	4.22	283.92	217.29	142.22	116.31	948.80	583.00	24181.59	1.00	1.56	
5C1	COL CL2	4.22	283.92	217.99	142.22	105.86	948.80	583.00	24181.59	1.00	1.61	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section L - South Frame Column 2 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	1.30		Factored Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
LL Factor	2.17 INV	1.30 OPER	Axial Force		Moment		P _u	M _u	A _s F _e		
Impact	1.27		Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips		

Load Case	Controlling RF
HS20 INV	0.80
HS20 OPER	1.34
2F1	3.15
3F1	2.06
4F1	1.76
5C1	1.39

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _{ex}			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
			Axial Force		Moment		P _u	M _u	A _s F _{ex}			
			Dead Load	Max. LL + I	Dead Load	Max LL + I						
1.30	2.17 INV	1.25	1.30 OPER	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF
HS20 INV	COL CL3	4.12	475.28	364.70	272.35	597.80	2596.40	4680.70	269662.17	1.00	3.59	
HS20 INV	COL CL3	4.12	475.28	365.82	272.35	589.99	2596.40	4680.70	269662.17	1.00	3.60	
HS20 INV	COL CL3	4.12	475.28	366.93	272.35	583.30	2596.40	4680.70	269662.17	1.00	3.61	
HS20 INV	COL CL3	4.12	475.28	368.05	272.35	576.61	2596.40	4680.70	269662.17	1.00	3.62	
HS20 INV	COL CL3	4.12	475.28	369.16	272.35	569.91	2596.40	4680.70	269662.17	1.00	3.62	
HS20 INV	COL CL3	4.12	475.28	370.28	272.35	562.11	2596.40	4680.70	269662.17	1.00	3.63	
HS20 INV	COL CL3	4.12	475.28	371.39	272.35	555.42	2596.40	4680.70	269662.17	1.00	3.64	
HS20 INV	COL CL3	4.12	475.28	372.51	272.35	547.61	2596.40	4680.70	269662.17	1.00	3.65	
HS20 INV	COL CL3	4.12	475.28	373.62	272.35	539.80	2596.40	4680.70	269662.17	1.00	3.66	
HS20 INV	COL CL3	4.12	475.28	374.74	272.35	531.99	2596.40	4680.70	269662.17	1.00	3.67	
HS20 INV	COL CL3	4.12	475.28	375.85	272.35	520.84	2596.40	4680.70	269662.17	1.00	3.69	
HS20 INV	COL CL3	4.12	475.28	376.97	272.35	513.03	2596.40	4680.70	269662.17	1.00	3.70	
HS20 INV	COL CL3	4.12	475.28	378.08	272.35	504.11	2596.40	4680.70	269662.17	1.00	3.71	
HS20 INV	COL CL3	4.12	475.28	379.20	272.35	494.07	2596.40	4680.70	269662.17	1.00	3.73	
HS20 INV	COL CL3	4.12	475.28	380.31	272.35	482.92	2596.40	4680.70	269662.17	1.00	3.74	
HS20 INV	COL CL3	4.12	475.28	381.43	272.35	475.11	2596.40	4680.70	269662.17	1.00	3.75	
HS20 INV	COL CL3	4.12	475.28	297.78	272.35	469.54	2596.40	4680.70	269662.17	1.00	4.46	
HS20 INV	COL CL3	4.12	475.28	300.01	272.35	467.31	2596.40	4680.70	269662.17	1.00	4.45	
HS20 INV	COL CL3	4.12	475.28	301.13	272.35	465.08	2596.40	4680.70	269662.17	1.00	4.44	
HS20 INV	COL CL3	4.12	475.28	382.55	272.35	463.96	2596.40	4680.70	269662.17	1.00	3.77	
HS20 INV	COL CL3	4.12	475.28	383.66	272.35	450.58	2596.40	4680.70	269662.17	1.00	3.80	
HS20 INV	COL CL3	4.12	475.28	384.78	272.35	439.42	2596.40	4680.70	269662.17	1.00	3.81	
HS20 INV	COL CL3	4.12	475.28	385.89	272.35	424.93	2596.40	4680.70	269662.17	1.00	3.84	
HS20 INV	COL CL3	4.12	475.28	387.01	272.35	411.54	2596.40	4680.70	269662.17	1.00	3.87	
HS20 INV	COL CL3	4.12	475.28	388.12	272.35	397.04	2596.40	4680.70	269662.17	1.00	3.89	
HS20 INV	COL CL3	4.12	475.28	389.24	272.35	380.31	2596.40	4680.70	269662.17	1.00	3.93	
HS20 INV	COL CL3	4.12	475.28	390.35	272.35	360.24	2596.40	4680.70	269662.17	1.00	3.97	
HS20 INV	COL CL3	4.12	475.28	391.47	272.35	340.16	2596.40	4680.70	269662.17	1.00	4.02	
HS20 INV	COL CL3	4.12	475.28	392.58	272.35	314.51	2596.40	4680.70	269662.17	1.00	4.08	
HS20 INV	COL CL3	4.12	475.28	393.70	272.35	283.28	2596.40	4680.70	269662.17	1.00	4.15	
HS20 INV	COL CL3	4.12	475.28	394.81	272.35	243.13	2596.40	4680.70	269662.17	1.00	4.26	
HS20 OPER	COL CL3	4.12	475.28	165.96	272.35	457.72	2596.40	4680.70	269662.17	1.00	6.36	
HS20 OPER	COL CL3	4.12	475.28	175.32	272.35	457.05	2596.40	4680.70	269662.17	1.00	6.18	
HS20 OPER	COL CL3	4.12	475.28	179.34	272.35	456.38	2596.40	4680.70	269662.17	1.00	6.11	
HS20 OPER	COL CL3	4.12	475.28	182.02	272.35	455.71	2596.40	4680.70	269662.17	1.00	6.07	
HS20 OPER	COL CL3	4.12	475.28	182.68	272.35	455.04	2596.40	4680.70	269662.17	1.00	6.06	
HS20 OPER	COL CL3	4.12	475.28	183.35	272.35	454.37	2596.40	4680.70	269662.17	1.00	6.05	
HS20 OPER	COL CL3	4.12	475.28	184.02	272.35	453.70	2596.40	4680.70	269662.17	1.00	6.04	
HS20 OPER	COL CL3	4.12	475.28	184.69	272.35	453.03	2596.40	4680.70	269662.17	1.00	6.03	
HS20 OPER	COL CL3	4.12	475.28	185.36	272.35	451.69	2596.40	4680.70	269662.17	1.00	6.03	
HS20 OPER	COL CL3	4.12	475.28	186.03	272.35	450.35	2596.40	4680.70	269662.17	1.00	6.03	
HS20 OPER	COL CL3	4.12	475.28	186.70	272.35	449.69	2596.40	4680.70	269662.17	1.00	6.02	
HS20 OPER	COL CL3	4.12	475.28	187.37	272.35	449.02	2596.40	4680.70	269662.17	1.00	6.01	
HS20 OPER	COL CL3	4.12	475.28	188.04	272.35	448.35	2596.40	4680.70	269662.17	1.00	6.00	
HS20 OPER	COL CL3	4.12	475.28	188.71	272.35	447.01	2596.40	4680.70	269662.17	1.00	6.00	
HS20 OPER	COL CL3	4.12	475.28	189.38	272.35	445.67	2596.40	4680.70	269662.17	1.00	6.00	
HS20 OPER	COL CL3	4.12	475.28	190.05	272.35	445.00	2596.40	4680.70	269662.17	1.00	5.99	
HS20 OPER	COL CL3	4.12	475.28	190.71	272.35	443.66	2596.40	4680.70	269662.17	1.00	5.98	
HS20 OPER	COL CL3	4.12	475.28	191.38	272.35	442.32	2596.40	4680.70	269662.17	1.00	5.98	
HS20 OPER	COL CL3	4.12	475.28	192.05	272.35	441.66	2596.40	4680.70	269662.17	1.00	5.97	
HS20 OPER	COL CL3	4.12	475.28	192.72	272.35	440.32	2596.40	4680.70	269662.17	1.00	5.97	
HS20 OPER	COL CL3	4.12	475.28	193.39	272.35	439.65	2596.40	4680.70	269662.17	1.00	5.96	
HS20 OPER	COL CL3	4.12	475.28	194.06	272.35	438.98	2596.40	4680.70	269662.17	1.00	5.95	
HS20 OPER	COL CL3	4.12	475.28	194.73	272.35	438.31	2596.40	4680.70	269662.17	1.00	5.94	
HS20 OPER	COL CL3	4.12	475.28	195.40	272.35	436.97	2596.40	4680.70	269662.17	1.00	5.94	
HS20 OPER	COL CL3	4.12	475.28	196.07	272.35	436.30	2596.40	4680.70	269662.17	1.00	5.93	
HS20 OPER	COL CL3	4.12	475.28	196.74	272.35	435.63	2596.40	4680.70	269662.17	1.00	5.92	
HS20 OPER	COL CL3	4.12	475.28	197.41	272.35	433.63	2596.40	4680.70	269662.17	1.00	5.92	

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
HS20 OPER	COL CL3	4.12	475.28	198.08	272.35	432.29	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	198.74	272.35	430.28	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	199.41	272.35	428.94	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	200.08	272.35	426.93	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	200.75	272.35	424.26	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	201.42	272.35	422.92	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	202.09	272.35	420.91	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	202.76	272.35	418.90	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	203.43	272.35	417.57	2596.40	4680.70	269662.17	1.00	5.91		
HS20 OPER	COL CL3	4.12	475.28	204.10	272.35	414.89	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	204.77	272.35	412.88	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	205.44	272.35	410.87	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	206.11	272.35	408.87	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	206.78	272.35	406.19	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	207.44	272.35	404.85	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	208.11	272.35	402.17	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	208.78	272.35	400.17	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	209.45	272.35	397.49	2596.40	4680.70	269662.17	1.00	5.93		
HS20 OPER	COL CL3	4.12	475.28	210.12	272.35	396.15	2596.40	4680.70	269662.17	1.00	5.92		
HS20 OPER	COL CL3	4.12	475.28	210.79	272.35	393.47	2596.40	4680.70	269662.17	1.00	5.93		
HS20 OPER	COL CL3	4.12	475.28	211.46	272.35	390.80	2596.40	4680.70	269662.17	1.00	5.93		
HS20 OPER	COL CL3	4.12	475.28	212.13	272.35	388.12	2596.40	4680.70	269662.17	1.00	5.93		
HS20 OPER	COL CL3	4.12	475.28	212.80	272.35	385.44	2596.40	4680.70	269662.17	1.00	5.94		
HS20 OPER	COL CL3	4.12	475.28	213.47	272.35	382.77	2596.40	4680.70	269662.17	1.00	5.94		
HS20 OPER	COL CL3	4.12	475.28	214.14	272.35	380.09	2596.40	4680.70	269662.17	1.00	5.94		
HS20 OPER	COL CL3	4.12	475.28	214.81	272.35	377.41	2596.40	4680.70	269662.17	1.00	5.95		
HS20 OPER	COL CL3	4.12	475.28	215.47	272.35	374.07	2596.40	4680.70	269662.17	1.00	5.96		
HS20 OPER	COL CL3	4.12	475.28	216.14	272.35	371.39	2596.40	4680.70	269662.17	1.00	5.96		
HS20 OPER	COL CL3	4.12	475.28	216.81	272.35	367.38	2596.40	4680.70	269662.17	1.00	5.97		
HS20 OPER	COL CL3	4.12	475.28	217.48	272.35	364.70	2596.40	4680.70	269662.17	1.00	5.98		
HS20 OPER	COL CL3	4.12	475.28	218.15	272.35	361.35	2596.40	4680.70	269662.17	1.00	5.98		
HS20 OPER	COL CL3	4.12	475.28	218.82	272.35	358.68	2596.40	4680.70	269662.17	1.00	5.99		
HS20 OPER	COL CL3	4.12	475.28	219.49	272.35	353.99	2596.40	4680.70	269662.17	1.00	6.00		
HS20 OPER	COL CL3	4.12	475.28	220.16	272.35	349.98	2596.40	4680.70	269662.17	1.00	6.02		
HS20 OPER	COL CL3	4.12	475.28	220.83	272.35	345.96	2596.40	4680.70	269662.17	1.00	6.03		
HS20 OPER	COL CL3	4.12	475.28	221.50	272.35	341.95	2596.40	4680.70	269662.17	1.00	6.04		
HS20 OPER	COL CL3	4.12	475.28	222.17	272.35	337.26	2596.40	4680.70	269662.17	1.00	6.06		
HS20 OPER	COL CL3	4.12	475.28	222.84	272.35	333.25	2596.40	4680.70	269662.17	1.00	6.07		
HS20 OPER	COL CL3	4.12	475.28	223.50	272.35	328.56	2596.40	4680.70	269662.17	1.00	6.08		
HS20 OPER	COL CL3	4.12	475.28	224.17	272.35	323.88	2596.40	4680.70	269662.17	1.00	6.10		
HS20 OPER	COL CL3	4.12	475.28	224.84	272.35	319.20	2596.40	4680.70	269662.17	1.00	6.12		
HS20 OPER	COL CL3	4.12	475.28	225.51	272.35	312.50	2596.40	4680.70	269662.17	1.00	6.15		
HS20 OPER	COL CL3	4.12	475.28	226.18	272.35	307.82	2596.40	4680.70	269662.17	1.00	6.16		
HS20 OPER	COL CL3	4.12	475.28	226.85	272.35	302.47	2596.40	4680.70	269662.17	1.00	6.18		
HS20 OPER	COL CL3	4.12	475.28	227.52	272.35	296.44	2596.40	4680.70	269662.17	1.00	6.21		
HS20 OPER	COL CL3	4.12	475.28	228.19	272.35	289.75	2596.40	4680.70	269662.17	1.00	6.24		
HS20 OPER	COL CL3	4.12	475.28	228.86	272.35	285.07	2596.40	4680.70	269662.17	1.00	6.26		
HS20 OPER	COL CL3	4.12	475.28	178.67	272.35	281.72	2596.40	4680.70	269662.17	1.00	7.43		
HS20 OPER	COL CL3	4.12	475.28	180.01	272.35	280.38	2596.40	4680.70	269662.17	1.00	7.41		
HS20 OPER	COL CL3	4.12	475.28	180.68	272.35	279.05	2596.40	4680.70	269662.17	1.00	7.40		
HS20 OPER	COL CL3	4.12	475.28	229.53	272.35	278.38	2596.40	4680.70	269662.17	1.00	6.29		
HS20 OPER	COL CL3	4.12	475.28	230.20	272.35	270.35	2596.40	4680.70	269662.17	1.00	6.33		
HS20 OPER	COL CL3	4.12	475.28	230.87	272.35	263.65	2596.40	4680.70	269662.17	1.00	6.36		
HS20 OPER	COL CL3	4.12	475.28	231.53	272.35	254.96	2596.40	4680.70	269662.17	1.00	6.40		
HS20 OPER	COL CL3	4.12	475.28	232.20	272.35	246.93	2596.40	4680.70	269662.17	1.00	6.44		
HS20 OPER	COL CL3	4.12	475.28	232.87	272.35	238.23	2596.40	4680.70	269662.17	1.00	6.49		
HS20 OPER	COL CL3	4.12	475.28	233.54	272.35	228.19	2596.40	4680.70	269662.17	1.00	6.55		
HS20 OPER	COL CL3	4.12	475.28	234.21	272.35	216.14	2596.40	4680.70	269662.17	1.00	6.62		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	Load Case	Member	LLDF	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
				Axial Force		Moment		P _u	M _u	A _s F _{ex}		
				Dead Load	Max. LL + I	Dead Load	Max LL + I					
				kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	
	HS20 OPER	COL CL3	4.12	475.28	234.88	272.35	204.10	2596.40	4680.70	269662.17	1.00	6.69
	HS20 OPER	COL CL3	4.12	475.28	235.55	272.35	188.71	2596.40	4680.70	269662.17	1.00	6.79
	HS20 OPER	COL CL3	4.12	475.28	236.22	272.35	169.97	2596.40	4680.70	269662.17	1.00	6.92
	HS20 OPER	COL CL3	4.12	475.28	236.89	272.35	145.88	2596.40	4680.70	269662.17	1.00	7.10
	2F1	COL CL3	4.12	475.28	67.59	272.35	199.41	2596.40	4680.70	269662.17	1.00	15.11
	2F1	COL CL3	4.12	475.28	75.62	272.35	198.74	2596.40	4680.70	269662.17	1.00	14.28
	2F1	COL CL3	4.12	475.28	76.29	272.35	198.08	2596.40	4680.70	269662.17	1.00	14.24
	2F1	COL CL3	4.12	475.28	76.96	272.35	196.74	2596.40	4680.70	269662.17	1.00	14.21
	2F1	COL CL3	4.12	475.28	77.62	272.35	196.07	2596.40	4680.70	269662.17	1.00	14.17
	2F1	COL CL3	4.12	475.28	78.29	272.35	194.73	2596.40	4680.70	269662.17	1.00	14.15
	2F1	COL CL3	4.12	475.28	78.96	272.35	194.06	2596.40	4680.70	269662.17	1.00	14.10
	2F1	COL CL3	4.12	475.28	79.63	272.35	193.39	2596.40	4680.70	269662.17	1.00	14.06
	2F1	COL CL3	4.12	475.28	80.30	272.35	192.05	2596.40	4680.70	269662.17	1.00	14.04
	2F1	COL CL3	4.12	475.28	80.97	272.35	191.38	2596.40	4680.70	269662.17	1.00	13.99
	2F1	COL CL3	4.12	475.28	81.64	272.35	190.05	2596.40	4680.70	269662.17	1.00	13.97
	2F1	COL CL3	4.12	475.28	82.31	272.35	188.71	2596.40	4680.70	269662.17	1.00	13.95
	2F1	COL CL3	4.12	475.28	82.98	272.35	187.37	2596.40	4680.70	269662.17	1.00	13.93
	2F1	COL CL3	4.12	475.28	83.65	272.35	186.70	2596.40	4680.70	269662.17	1.00	13.89
	2F1	COL CL3	4.12	475.28	84.32	272.35	184.69	2596.40	4680.70	269662.17	1.00	13.89
	2F1	COL CL3	4.12	475.28	84.99	272.35	183.35	2596.40	4680.70	269662.17	1.00	13.87
	2F1	COL CL3	4.12	475.28	85.65	272.35	182.02	2596.40	4680.70	269662.17	1.00	13.85
	2F1	COL CL3	4.12	475.28	86.32	272.35	180.01	2596.40	4680.70	269662.17	1.00	13.85
	2F1	COL CL3	4.12	475.28	86.99	272.35	178.67	2596.40	4680.70	269662.17	1.00	13.82
	2F1	COL CL3	4.12	475.28	87.66	272.35	176.66	2596.40	4680.70	269662.17	1.00	13.82
	2F1	COL CL3	4.12	475.28	88.33	272.35	174.65	2596.40	4680.70	269662.17	1.00	13.83
	2F1	COL CL3	4.12	475.28	89.00	272.35	172.65	2596.40	4680.70	269662.17	1.00	13.83
	2F1	COL CL3	4.12	475.28	89.67	272.35	169.97	2596.40	4680.70	269662.17	1.00	13.85
	2F1	COL CL3	4.12	475.28	90.34	272.35	167.96	2596.40	4680.70	269662.17	1.00	13.85
	2F1	COL CL3	4.12	475.28	91.01	272.35	165.29	2596.40	4680.70	269662.17	1.00	13.87
	2F1	COL CL3	4.12	475.28	91.68	272.35	161.94	2596.40	4680.70	269662.17	1.00	13.91
	2F1	COL CL3	4.12	475.28	92.35	272.35	158.59	2596.40	4680.70	269662.17	1.00	13.95
	2F1	COL CL3	4.12	475.28	93.02	272.35	155.25	2596.40	4680.70	269662.17	1.00	14.00
	2F1	COL CL3	4.12	475.28	93.68	272.35	151.90	2596.40	4680.70	269662.17	1.00	14.04
	2F1	COL CL3	4.12	475.28	94.35	272.35	147.89	2596.40	4680.70	269662.17	1.00	14.11
	2F1	COL CL3	4.12	475.28	95.02	272.35	143.20	2596.40	4680.70	269662.17	1.00	14.19
	2F1	COL CL3	4.12	475.28	95.69	272.35	137.85	2596.40	4680.70	269662.17	1.00	14.31
	2F1	COL CL3	4.12	475.28	96.36	272.35	131.83	2596.40	4680.70	269662.17	1.00	14.44
	2F1	COL CL3	4.12	475.28	97.03	272.35	125.80	2596.40	4680.70	269662.17	1.00	14.58
	2F1	COL CL3	4.12	475.28	97.70	272.35	118.44	2596.40	4680.70	269662.17	1.00	14.77
	2F1	COL CL3	4.12	475.28	98.37	272.35	109.74	2596.40	4680.70	269662.17	1.00	15.02
	2F1	COL CL3	4.12	475.28	99.04	272.35	98.37	2596.40	4680.70	269662.17	1.00	15.37
	2F1	COL CL3	4.12	475.28	99.71	272.35	83.65	2596.40	4680.70	269662.17	1.00	15.89
	2F1	COL CL3	4.12	475.28	100.38	272.35	56.21	2596.40	4680.70	269662.17	1.00	17.02
	3F1	COL CL3	4.12	475.28	105.73	272.35	304.47	2596.40	4680.70	269662.17	1.00	9.78
	3F1	COL CL3	4.12	475.28	111.75	272.35	303.81	2596.40	4680.70	269662.17	1.00	9.51
	3F1	COL CL3	4.12	475.28	113.09	272.35	303.14	2596.40	4680.70	269662.17	1.00	9.46
	3F1	COL CL3	4.12	475.28	114.43	272.35	302.47	2596.40	4680.70	269662.17	1.00	9.41
	3F1	COL CL3	4.12	475.28	115.10	272.35	301.80	2596.40	4680.70	269662.17	1.00	9.39
	3F1	COL CL3	4.12	475.28	116.44	272.35	301.13	2596.40	4680.70	269662.17	1.00	9.34
	3F1	COL CL3	4.12	475.28	117.77	272.35	300.46	2596.40	4680.70	269662.17	1.00	9.30
	3F1	COL CL3	4.12	475.28	118.44	272.35	299.79	2596.40	4680.70	269662.17	1.00	9.28
	3F1	COL CL3	4.12	475.28	119.11	272.35	299.12	2596.40	4680.70	269662.17	1.00	9.26
	3F1	COL CL3	4.12	475.28	119.78	272.35	298.45	2596.40	4680.70	269662.17	1.00	9.24
	3F1	COL CL3	4.12	475.28	120.45	272.35	297.11	2596.40	4680.70	269662.17	1.00	9.23
	3F1	COL CL3	4.12	475.28	121.12	272.35	296.44	2596.40	4680.70	269662.17	1.00	9.21
	3F1	COL CL3	4.12	475.28	121.79	272.35	295.11	2596.40	4680.70	269662.17	1.00	9.20
	3F1	COL CL3	4.12	475.28	122.46	272.35	293.77	2596.40	4680.70	269662.17	1.00	9.19
	3F1	COL CL3	4.12	475.28	123.13	272.35	292.43	2596.40	4680.70	269662.17	1.00	9.18

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF	
						Axial Force		Moment		P _u	M _u	A _s F _{ex}			Condition Equation
						Dead Load	Max. LL + I	Dead Load	Max LL + I						
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF				
3F1	COL CL3	4.12	475.28	123.80	272.35	291.76	2596.40	4680.70	269662.17	1.00	9.17				
3F1	COL CL3	4.12	475.28	124.47	272.35	290.42	2596.40	4680.70	269662.17	1.00	9.16				
3F1	COL CL3	4.12	475.28	125.14	272.35	289.75	2596.40	4680.70	269662.17	1.00	9.14				
3F1	COL CL3	4.12	475.28	125.80	272.35	289.08	2596.40	4680.70	269662.17	1.00	9.12				
3F1	COL CL3	4.12	475.28	126.47	272.35	287.75	2596.40	4680.70	269662.17	1.00	9.11				
3F1	COL CL3	4.12	475.28	127.14	272.35	286.41	2596.40	4680.70	269662.17	1.00	9.10				
3F1	COL CL3	4.12	475.28	127.81	272.35	285.07	2596.40	4680.70	269662.17	1.00	9.09				
3F1	COL CL3	4.12	475.28	128.48	272.35	283.73	2596.40	4680.70	269662.17	1.00	9.08				
3F1	COL CL3	4.12	475.28	129.15	272.35	282.39	2596.40	4680.70	269662.17	1.00	9.07				
3F1	COL CL3	4.12	475.28	129.82	272.35	281.05	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	130.49	272.35	279.05	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	131.16	272.35	277.71	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	131.83	272.35	275.70	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	132.50	272.35	273.69	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	133.17	272.35	272.35	2596.40	4680.70	269662.17	1.00	9.05				
3F1	COL CL3	4.12	475.28	133.84	272.35	270.35	2596.40	4680.70	269662.17	1.00	9.05				
3F1	COL CL3	4.12	475.28	134.50	272.35	268.34	2596.40	4680.70	269662.17	1.00	9.05				
3F1	COL CL3	4.12	475.28	135.17	272.35	266.33	2596.40	4680.70	269662.17	1.00	9.05				
3F1	COL CL3	4.12	475.28	135.84	272.35	263.65	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	136.51	272.35	261.65	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	137.18	272.35	259.64	2596.40	4680.70	269662.17	1.00	9.06				
3F1	COL CL3	4.12	475.28	137.85	272.35	256.96	2596.40	4680.70	269662.17	1.00	9.07				
3F1	COL CL3	4.12	475.28	138.52	272.35	253.62	2596.40	4680.70	269662.17	1.00	9.08				
3F1	COL CL3	4.12	475.28	139.19	272.35	251.61	2596.40	4680.70	269662.17	1.00	9.08				
3F1	COL CL3	4.12	475.28	139.86	272.35	248.26	2596.40	4680.70	269662.17	1.00	9.10				
3F1	COL CL3	4.12	475.28	140.53	272.35	244.92	2596.40	4680.70	269662.17	1.00	9.12				
3F1	COL CL3	4.12	475.28	141.20	272.35	241.57	2596.40	4680.70	269662.17	1.00	9.14				
3F1	COL CL3	4.12	475.28	141.87	272.35	238.23	2596.40	4680.70	269662.17	1.00	9.16				
3F1	COL CL3	4.12	475.28	142.53	272.35	234.88	2596.40	4680.70	269662.17	1.00	9.18				
3F1	COL CL3	4.12	475.28	143.20	272.35	230.87	2596.40	4680.70	269662.17	1.00	9.20				
3F1	COL CL3	4.12	475.28	143.87	272.35	226.85	2596.40	4680.70	269662.17	1.00	9.23				
3F1	COL CL3	4.12	475.28	144.54	272.35	222.17	2596.40	4680.70	269662.17	1.00	9.27				
3F1	COL CL3	4.12	475.28	145.21	272.35	217.48	2596.40	4680.70	269662.17	1.00	9.31				
3F1	COL CL3	4.12	475.28	145.88	272.35	212.80	2596.40	4680.70	269662.17	1.00	9.35				
3F1	COL CL3	4.12	475.28	146.55	272.35	206.78	2596.40	4680.70	269662.17	1.00	9.40				
3F1	COL CL3	4.12	475.28	147.22	272.35	202.09	2596.40	4680.70	269662.17	1.00	9.44				
3F1	COL CL3	4.12	475.28	147.89	272.35	196.07	2596.40	4680.70	269662.17	1.00	9.50				
3F1	COL CL3	4.12	475.28	148.56	272.35	188.71	2596.40	4680.70	269662.17	1.00	9.58				
3F1	COL CL3	4.12	475.28	149.23	272.35	181.35	2596.40	4680.70	269662.17	1.00	9.67				
3F1	COL CL3	4.12	475.28	149.90	272.35	172.65	2596.40	4680.70	269662.17	1.00	9.77				
3F1	COL CL3	4.12	475.28	150.56	272.35	163.95	2596.40	4680.70	269662.17	1.00	9.88				
3F1	COL CL3	4.12	475.28	151.23	272.35	153.24	2596.40	4680.70	269662.17	1.00	10.02				
3F1	COL CL3	4.12	475.28	151.90	272.35	139.86	2596.40	4680.70	269662.17	1.00	10.21				
3F1	COL CL3	4.12	475.28	152.57	272.35	123.80	2596.40	4680.70	269662.17	1.00	10.46				
3F1	COL CL3	4.12	475.28	153.24	272.35	98.37	2596.40	4680.70	269662.17	1.00	10.90				
4F1	COL CL3	4.12	475.28	127.14	272.35	353.99	2596.40	4680.70	269662.17	1.00	8.26				
4F1	COL CL3	4.12	475.28	131.16	272.35	353.32	2596.40	4680.70	269662.17	1.00	8.14				
4F1	COL CL3	4.12	475.28	133.84	272.35	352.66	2596.40	4680.70	269662.17	1.00	8.06				
4F1	COL CL3	4.12	475.28	134.50	272.35	351.99	2596.40	4680.70	269662.17	1.00	8.04				
4F1	COL CL3	4.12	475.28	135.84	272.35	351.32	2596.40	4680.70	269662.17	1.00	8.01				
4F1	COL CL3	4.12	475.28	136.51	272.35	350.65	2596.40	4680.70	269662.17	1.00	8.00				
4F1	COL CL3	4.12	475.28	137.18	272.35	349.98	2596.40	4680.70	269662.17	1.00	7.98				
4F1	COL CL3	4.12	475.28	137.85	272.35	349.31	2596.40	4680.70	269662.17	1.00	7.97				
4F1	COL CL3	4.12	475.28	138.52	272.35	348.64	2596.40	4680.70	269662.17	1.00	7.95				
4F1	COL CL3	4.12	475.28	139.19	272.35	347.97	2596.40	4680.70	269662.17	1.00	7.94				
4F1	COL CL3	4.12	475.28	139.86	272.35	347.30	2596.40	4680.70	269662.17	1.00	7.93				
4F1	COL CL3	4.12	475.28	140.53	272.35	346.63	2596.40	4680.70	269662.17	1.00	7.91				
4F1	COL CL3	4.12	475.28	141.20	272.35	345.96	2596.40	4680.70	269662.17	1.00	7.90				

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	2.17 INV	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
						Axial Force		Moment		P _u	M _u	A _s F _{ex}		
						Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF			
4F1	COL CL3	4.12	475.28	141.87	272.35	345.29	2596.40	4680.70	269662.17	1.00	7.88			
4F1	COL CL3	4.12	475.28	142.53	272.35	344.63	2596.40	4680.70	269662.17	1.00	7.87			
4F1	COL CL3	4.12	475.28	143.20	272.35	343.29	2596.40	4680.70	269662.17	1.00	7.86			
4F1	COL CL3	4.12	475.28	143.87	272.35	342.62	2596.40	4680.70	269662.17	1.00	7.85			
4F1	COL CL3	4.12	475.28	144.54	272.35	341.28	2596.40	4680.70	269662.17	1.00	7.84			
4F1	COL CL3	4.12	475.28	145.21	272.35	339.94	2596.40	4680.70	269662.17	1.00	7.84			
4F1	COL CL3	4.12	475.28	145.88	272.35	339.27	2596.40	4680.70	269662.17	1.00	7.82			
4F1	COL CL3	4.12	475.28	146.55	272.35	337.93	2596.40	4680.70	269662.17	1.00	7.82			
4F1	COL CL3	4.12	475.28	147.22	272.35	336.60	2596.40	4680.70	269662.17	1.00	7.81			
4F1	COL CL3	4.12	475.28	147.89	272.35	335.26	2596.40	4680.70	269662.17	1.00	7.80			
4F1	COL CL3	4.12	475.28	148.56	272.35	333.92	2596.40	4680.70	269662.17	1.00	7.80			
4F1	COL CL3	4.12	475.28	149.23	272.35	333.25	2596.40	4680.70	269662.17	1.00	7.78			
4F1	COL CL3	4.12	475.28	149.90	272.35	331.91	2596.40	4680.70	269662.17	1.00	7.78			
4F1	COL CL3	4.12	475.28	150.56	272.35	330.57	2596.40	4680.70	269662.17	1.00	7.77			
4F1	COL CL3	4.12	475.28	151.23	272.35	329.90	2596.40	4680.70	269662.17	1.00	7.76			
4F1	COL CL3	4.12	475.28	151.90	272.35	328.56	2596.40	4680.70	269662.17	1.00	7.75			
4F1	COL CL3	4.12	475.28	152.57	272.35	327.23	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	153.24	272.35	325.22	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	153.91	272.35	323.21	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	154.58	272.35	321.87	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	155.25	272.35	319.87	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	155.92	272.35	317.86	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	156.59	272.35	315.85	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	157.26	272.35	313.17	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	157.93	272.35	311.84	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	158.59	272.35	309.16	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	159.26	272.35	306.48	2596.40	4680.70	269662.17	1.00	7.75			
4F1	COL CL3	4.12	475.28	159.93	272.35	305.14	2596.40	4680.70	269662.17	1.00	7.74			
4F1	COL CL3	4.12	475.28	160.60	272.35	302.47	2596.40	4680.70	269662.17	1.00	7.75			
4F1	COL CL3	4.12	475.28	161.27	272.35	299.79	2596.40	4680.70	269662.17	1.00	7.76			
4F1	COL CL3	4.12	475.28	161.94	272.35	297.11	2596.40	4680.70	269662.17	1.00	7.76			
4F1	COL CL3	4.12	475.28	162.61	272.35	293.77	2596.40	4680.70	269662.17	1.00	7.78			
4F1	COL CL3	4.12	475.28	163.28	272.35	291.09	2596.40	4680.70	269662.17	1.00	7.78			
4F1	COL CL3	4.12	475.28	163.95	272.35	287.75	2596.40	4680.70	269662.17	1.00	7.80			
4F1	COL CL3	4.12	475.28	164.62	272.35	285.07	2596.40	4680.70	269662.17	1.00	7.80			
4F1	COL CL3	4.12	475.28	165.29	272.35	281.05	2596.40	4680.70	269662.17	1.00	7.82			
4F1	COL CL3	4.12	475.28	165.96	272.35	277.71	2596.40	4680.70	269662.17	1.00	7.84			
4F1	COL CL3	4.12	475.28	166.62	272.35	273.69	2596.40	4680.70	269662.17	1.00	7.86			
4F1	COL CL3	4.12	475.28	167.29	272.35	270.35	2596.40	4680.70	269662.17	1.00	7.87			
4F1	COL CL3	4.12	475.28	167.96	272.35	266.33	2596.40	4680.70	269662.17	1.00	7.89			
4F1	COL CL3	4.12	475.28	168.63	272.35	261.65	2596.40	4680.70	269662.17	1.00	7.92			
4F1	COL CL3	4.12	475.28	169.30	272.35	256.96	2596.40	4680.70	269662.17	1.00	7.95			
4F1	COL CL3	4.12	475.28	169.97	272.35	252.28	2596.40	4680.70	269662.17	1.00	7.98			
4F1	COL CL3	4.12	475.28	170.64	272.35	247.59	2596.40	4680.70	269662.17	1.00	8.00			
4F1	COL CL3	4.12	475.28	171.31	272.35	242.91	2596.40	4680.70	269662.17	1.00	8.03			
4F1	COL CL3	4.12	475.28	171.98	272.35	236.89	2596.40	4680.70	269662.17	1.00	8.08			
4F1	COL CL3	4.12	475.28	172.65	272.35	230.87	2596.40	4680.70	269662.17	1.00	8.12			
4F1	COL CL3	4.12	475.28	173.32	272.35	224.84	2596.40	4680.70	269662.17	1.00	8.16			
4F1	COL CL3	4.12	475.28	173.99	272.35	217.48	2596.40	4680.70	269662.17	1.00	8.22			
4F1	COL CL3	4.12	475.28	174.65	272.35	210.12	2596.40	4680.70	269662.17	1.00	8.28			
4F1	COL CL3	4.12	475.28	175.32	272.35	202.76	2596.40	4680.70	269662.17	1.00	8.34			
4F1	COL CL3	4.12	475.28	175.99	272.35	193.39	2596.40	4680.70	269662.17	1.00	8.43			
4F1	COL CL3	4.12	475.28	176.66	272.35	183.35	2596.40	4680.70	269662.17	1.00	8.52			
4F1	COL CL3	4.12	475.28	177.33	272.35	172.65	2596.40	4680.70	269662.17	1.00	8.63			
4F1	COL CL3	4.12	475.28	178.00	272.35	157.93	2596.40	4680.70	269662.17	1.00	8.79			
4F1	COL CL3	4.12	475.28	178.67	272.35	142.53	2596.40	4680.70	269662.17	1.00	8.96			
4F1	COL CL3	4.12	475.28	179.34	272.35	118.44	2596.40	4680.70	269662.17	1.00	9.27			
5C1	COL CL3	4.12	475.28	179.34	272.35	412.21	2596.40	4680.70	269662.17	1.00	6.40			

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

Impact	DL Factor	LL Factor	1.30	1.30 OPER	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_e}\right)} \leq 1.0$	RF
					Axial Force		Moment		P _u	M _u	A _s F _{ex}		
					Dead Load	Max. LL + I	Dead Load	Max LL + I					
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF		
5C1	COL CL3	4.12	475.28	183.35	272.35	411.54	2596.40	4680.70	269662.17	1.00	6.32		
5C1	COL CL3	4.12	475.28	186.03	272.35	410.87	2596.40	4680.70	269662.17	1.00	6.27		
5C1	COL CL3	4.12	475.28	187.37	272.35	410.20	2596.40	4680.70	269662.17	1.00	6.25		
5C1	COL CL3	4.12	475.28	188.71	272.35	409.54	2596.40	4680.70	269662.17	1.00	6.23		
5C1	COL CL3	4.12	475.28	189.38	272.35	408.87	2596.40	4680.70	269662.17	1.00	6.22		
5C1	COL CL3	4.12	475.28	190.71	272.35	408.20	2596.40	4680.70	269662.17	1.00	6.20		
5C1	COL CL3	4.12	475.28	191.38	272.35	407.53	2596.40	4680.70	269662.17	1.00	6.19		
5C1	COL CL3	4.12	475.28	192.72	272.35	406.86	2596.40	4680.70	269662.17	1.00	6.17		
5C1	COL CL3	4.12	475.28	193.39	272.35	406.19	2596.40	4680.70	269662.17	1.00	6.16		
5C1	COL CL3	4.12	475.28	194.06	272.35	405.52	2596.40	4680.70	269662.17	1.00	6.15		
5C1	COL CL3	4.12	475.28	194.73	272.35	404.85	2596.40	4680.70	269662.17	1.00	6.15		
5C1	COL CL3	4.12	475.28	195.40	272.35	403.51	2596.40	4680.70	269662.17	1.00	6.14		
5C1	COL CL3	4.12	475.28	196.07	272.35	402.84	2596.40	4680.70	269662.17	1.00	6.13		
5C1	COL CL3	4.12	475.28	196.74	272.35	402.17	2596.40	4680.70	269662.17	1.00	6.12		
5C1	COL CL3	4.12	475.28	197.41	272.35	401.51	2596.40	4680.70	269662.17	1.00	6.12		
5C1	COL CL3	4.12	475.28	198.08	272.35	400.84	2596.40	4680.70	269662.17	1.00	6.11		
5C1	COL CL3	4.12	475.28	198.74	272.35	399.50	2596.40	4680.70	269662.17	1.00	6.10		
5C1	COL CL3	4.12	475.28	199.41	272.35	398.83	2596.40	4680.70	269662.17	1.00	6.10		
5C1	COL CL3	4.12	475.28	200.08	272.35	397.49	2596.40	4680.70	269662.17	1.00	6.09		
5C1	COL CL3	4.12	475.28	200.75	272.35	396.15	2596.40	4680.70	269662.17	1.00	6.09		
5C1	COL CL3	4.12	475.28	201.42	272.35	395.48	2596.40	4680.70	269662.17	1.00	6.08		
5C1	COL CL3	4.12	475.28	202.09	272.35	394.14	2596.40	4680.70	269662.17	1.00	6.08		
5C1	COL CL3	4.12	475.28	202.76	272.35	392.81	2596.40	4680.70	269662.17	1.00	6.07		
5C1	COL CL3	4.12	475.28	203.43	272.35	392.14	2596.40	4680.70	269662.17	1.00	6.06		
5C1	COL CL3	4.12	475.28	204.10	272.35	390.80	2596.40	4680.70	269662.17	1.00	6.06		
5C1	COL CL3	4.12	475.28	204.77	272.35	388.79	2596.40	4680.70	269662.17	1.00	6.06		
5C1	COL CL3	4.12	475.28	205.44	272.35	388.12	2596.40	4680.70	269662.17	1.00	6.05		
5C1	COL CL3	4.12	475.28	206.11	272.35	386.11	2596.40	4680.70	269662.17	1.00	6.05		
5C1	COL CL3	4.12	475.28	206.78	272.35	384.78	2596.40	4680.70	269662.17	1.00	6.05		
5C1	COL CL3	4.12	475.28	207.44	272.35	382.77	2596.40	4680.70	269662.17	1.00	6.05		
5C1	COL CL3	4.12	475.28	208.11	272.35	381.43	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	208.78	272.35	380.09	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	209.45	272.35	378.75	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	210.12	272.35	376.08	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	210.79	272.35	374.07	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	211.46	272.35	372.73	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	212.13	272.35	370.72	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	212.80	272.35	368.72	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	213.47	272.35	366.71	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	214.14	272.35	364.70	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	214.81	272.35	362.02	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	215.47	272.35	360.02	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	216.14	272.35	358.01	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	216.81	272.35	356.00	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	217.48	272.35	353.32	2596.40	4680.70	269662.17	1.00	6.04		
5C1	COL CL3	4.12	475.28	218.15	272.35	350.65	2596.40	4680.70	269662.17	1.00	6.05		
5C1	COL CL3	4.12	475.28	218.82	272.35	348.64	2596.40	4680.70	269662.17	1.00	6.05		
5C1	COL CL3	4.12	475.28	219.49	272.35	345.96	2596.40	4680.70	269662.17	1.00	6.05		
5C1	COL CL3	4.12	475.28	220.16	272.35	343.29	2596.40	4680.70	269662.17	1.00	6.06		
5C1	COL CL3	4.12	475.28	220.83	272.35	340.61	2596.40	4680.70	269662.17	1.00	6.06		
5C1	COL CL3	4.12	475.28	221.50	272.35	337.93	2596.40	4680.70	269662.17	1.00	6.06		
5C1	COL CL3	4.12	475.28	222.17	272.35	335.26	2596.40	4680.70	269662.17	1.00	6.07		
5C1	COL CL3	4.12	475.28	222.84	272.35	331.91	2596.40	4680.70	269662.17	1.00	6.08		
5C1	COL CL3	4.12	475.28	223.50	272.35	328.56	2596.40	4680.70	269662.17	1.00	6.08		
5C1	COL CL3	4.12	475.28	224.17	272.35	325.89	2596.40	4680.70	269662.17	1.00	6.09		
5C1	COL CL3	4.12	475.28	224.84	272.35	323.21	2596.40	4680.70	269662.17	1.00	6.09		
5C1	COL CL3	4.12	475.28	225.51	272.35	320.53	2596.40	4680.70	269662.17	1.00	6.10		
5C1	COL CL3	4.12	475.28	226.18	272.35	317.19	2596.40	4680.70	269662.17	1.00	6.11		

CUY-2-1441 Load Rating Analysis - As-Built

Main Ave Bridge

Section C - South Frame Column 3 Ratings



Calculated:

NRF

3/3/2012

Checked:

CTG

3/5/2012

DL Factor	LL Factor	Impact	Factored Inventory Loads				Capacities			$\frac{P}{P_u} + \frac{MC}{M_u \left(1 - \frac{P}{A_s F_c}\right)} \leq 1.0$	RF
			Axial Force		Moment		P _u	M _u	A _s F _c		
			Dead Load	Max. LL + I	Dead Load	Max LL + I					
1.30	2.17 INV	1.25									
				1.30 OPER							
Load Case	Member	LLDF	kips	kips	k-ft	k-ft	kips	k-ft	kips	Condition Equation	RF
5C1	COL CL3	4.12	475.28	226.85	272.35	313.84	2596.40	4680.70	269662.17	1.00	6.11
5C1	COL CL3	4.12	475.28	227.52	272.35	310.50	2596.40	4680.70	269662.17	1.00	6.12
5C1	COL CL3	4.12	475.28	228.19	272.35	307.15	2596.40	4680.70	269662.17	1.00	6.13
5C1	COL CL3	4.12	475.28	228.86	272.35	303.81	2596.40	4680.70	269662.17	1.00	6.14
5C1	COL CL3	4.12	475.28	229.53	272.35	300.46	2596.40	4680.70	269662.17	1.00	6.15
5C1	COL CL3	4.12	475.28	230.20	272.35	297.11	2596.40	4680.70	269662.17	1.00	6.16
5C1	COL CL3	4.12	475.28	230.87	272.35	292.43	2596.40	4680.70	269662.17	1.00	6.17
5C1	COL CL3	4.12	475.28	231.53	272.35	287.75	2596.40	4680.70	269662.17	1.00	6.19
5C1	COL CL3	4.12	475.28	232.20	272.35	283.73	2596.40	4680.70	269662.17	1.00	6.20
5C1	COL CL3	4.12	475.28	232.87	272.35	279.05	2596.40	4680.70	269662.17	1.00	6.22
5C1	COL CL3	4.12	475.28	233.54	272.35	273.69	2596.40	4680.70	269662.17	1.00	6.24
5C1	COL CL3	4.12	475.28	234.21	272.35	269.01	2596.40	4680.70	269662.17	1.00	6.26
5C1	COL CL3	4.12	475.28	234.88	272.35	264.32	2596.40	4680.70	269662.17	1.00	6.27
5C1	COL CL3	4.12	475.28	235.55	272.35	260.98	2596.40	4680.70	269662.17	1.00	6.28
5C1	COL CL3	4.12	475.28	236.22	272.35	256.29	2596.40	4680.70	269662.17	1.00	6.30
5C1	COL CL3	4.12	475.28	236.89	272.35	252.28	2596.40	4680.70	269662.17	1.00	6.31
5C1	COL CL3	4.12	475.28	237.56	272.35	247.59	2596.40	4680.70	269662.17	1.00	6.33
5C1	COL CL3	4.12	475.28	238.23	272.35	242.24	2596.40	4680.70	269662.17	1.00	6.35
5C1	COL CL3	4.12	475.28	238.90	272.35	237.56	2596.40	4680.70	269662.17	1.00	6.37
5C1	COL CL3	4.12	475.28	239.56	272.35	232.20	2596.40	4680.70	269662.17	1.00	6.39
5C1	COL CL3	4.12	475.28	240.23	272.35	225.51	2596.40	4680.70	269662.17	1.00	6.43
5C1	COL CL3	4.12	475.28	240.90	272.35	219.49	2596.40	4680.70	269662.17	1.00	6.45
5C1	COL CL3	4.12	475.28	180.01	272.35	214.14	2596.40	4680.70	269662.17	1.00	8.06
5C1	COL CL3	4.12	475.28	241.57	272.35	212.80	2596.40	4680.70	269662.17	1.00	6.49
5C1	COL CL3	4.12	475.28	182.02	272.35	212.13	2596.40	4680.70	269662.17	1.00	8.02
5C1	COL CL3	4.12	475.28	184.69	272.35	209.45	2596.40	4680.70	269662.17	1.00	7.96
5C1	COL CL3	4.12	475.28	242.24	272.35	205.44	2596.40	4680.70	269662.17	1.00	6.52
5C1	COL CL3	4.12	475.28	192.05	272.35	199.41	2596.40	4680.70	269662.17	1.00	7.84
5C1	COL CL3	4.12	475.28	242.91	272.35	197.41	2596.40	4680.70	269662.17	1.00	6.57
5C1	COL CL3	4.12	475.28	243.58	272.35	189.38	2596.40	4680.70	269662.17	1.00	6.61
5C1	COL CL3	4.12	475.28	244.25	272.35	180.01	2596.40	4680.70	269662.17	1.00	6.66
5C1	COL CL3	4.12	475.28	244.92	272.35	170.64	2596.40	4680.70	269662.17	1.00	6.72
5C1	COL CL3	4.12	475.28	245.59	272.35	159.26	2596.40	4680.70	269662.17	1.00	6.79
5C1	COL CL3	4.12	475.28	246.26	272.35	146.55	2596.40	4680.70	269662.17	1.00	6.87
5C1	COL CL3	4.12	475.28	246.93	272.35	132.50	2596.40	4680.70	269662.17	1.00	6.97
5C1	COL CL3	4.12	475.28	247.59	272.35	113.76	2596.40	4680.70	269662.17	1.00	7.10
5C1	COL CL3	4.12	475.28	248.26	272.35	90.34	2596.40	4680.70	269662.17	1.00	7.29

Load Case	Controlling RF
HS20 INV	3.55
HS20 OPER	5.91
2F1	13.82
3F1	9.05
4F1	7.74
5C1	6.04

FATIGUE RATINGS

SECTION L



Made By: DWC
 Checked By: CTG

Date: 3/4/2012
 Date: 3/4/2012

Job No.: P402110046
 Sheet No.: _____

Section L - Stringer Fatigue Summary

Redundant? Yes → $f = 2.0$ (Calculate MEAN Life per ODOT BDM 402.2.6)
 $R_s = 1.00$
 Present ADTT (T_p) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of 1%/year)
 Weight Ratios = 1.0 (W_p/W , W_N/W equal to unity per ODOT BDM 402.2.6)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_p = 18$ (Present age of the bridge in years) $Y_{f,MIN} = 82$ years

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

STRINGERS:	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	C (cycles per truck passage)	Y_1	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)				(years)	(years)	(years)
F1A-1	44.58	214.66	2.87	C	12	1.80	5446.30	2412.69	2404.72
F1B-1	56.71	214.66	3.65	C	12	1.50	3174.85	1406.45	1398.48
S1-1	61.80	117	7.29	C	12	1.50	397.23	175.97	168.00
	44.56	79.91	7.70	B	33	1.50	928.43	411.29	403.32
	39.53	75.08	7.27	B	33	1.50	1103.00	488.62	480.65
S2-1	77.15	117	9.10	C	12	1.50	204.17	90.45	82.47
S3-1	70.58	117	8.32	C	12	1.50	266.66	118.13	110.16
S4-1	71.06	117	8.38	C	12	1.50	261.30	115.75	107.78
S5-1	72.19	117	8.51	C	12	1.50	249.22	110.40	102.43
S6-1	57.78	117	6.82	C	12	1.50	486.04	215.32	207.34
F2A-1	54.52	404.17	1.86	C	12	1.80	19874.34	8804.28	8796.30
F2B-1	71.86	404.17	2.45	C	12	1.50	10415.50	4614.03	4606.06
F1A-2	45.97	214.66	2.96	C	12	1.50	5960.45	2640.46	2632.49
F1B-2	61.58	214.66	3.96	C	12	1.80	2066.34	915.38	907.41
S1-2	13.97	117	1.65	C	12	1.80	28657.38	12695.13	12687.16
S2-2	48.26	117	5.69	C	12	1.50	834.15	369.53	361.55
S3-2	49.91	117	5.89	C	12	1.50	754.13	334.08	326.10
S4-2	50.27	117	5.93	C	12	1.50	738.04	326.95	318.98
S5-2	49.49	117	5.84	C	12	1.50	773.49	342.65	334.68
S6-2	46.60	117	5.50	C	12	1.50	926.51	410.44	402.47
F2A-2	53.80	404.17	1.84	C	12	1.50	24819.60	10995.01	10987.03
F2B-2	62.29	404.17	2.13	C	12	1.80	13326.17	5903.45	5895.48

SECTION L



Made By: DWC
Checked By: CTG

Date: 3/4/2012
Date: 3/4/2012

Job No.: P402110046
Sheet No.: _____

Section L - Stringer Fatigue Summary

Redundant? Yes → $f = 2.0$ (Calculate MEAN Life per ODOT BDM 402.2.6)
 $R_s = 1.00$
 Present ADTT (T_p) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of 1%/year)
 Weight Ratios = 1.0 (W_p/W , W_N/W equal to unity per ODOT BDM 402.2.6)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_p = 18$ (Present age of the bridge in years) $Y_{f,MIN} = 82$ years

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

STRINGERS:	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	C (cycles per truck passage)	Y_1	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)				(years)	(years)	(years)
F1A-3	45.89	214.66	2.95	C	12	1.80	4993.07	2211.91	2203.94
F1B-3	45.66	214.66	2.94	C	12	1.50	6082.68	2694.61	2686.64
S1-3	16.97	117	2.00	C	12	1.80	15987.49	7082.41	7074.43
S2-3	47.23	117	5.57	C	12	1.50	889.92	394.23	386.26
S3-3	52.66	117	6.21	C	12	1.50	642.04	284.42	276.45
S4-3	52.02	117	6.14	C	12	1.50	666.03	295.05	287.08
S5-3	52.22	117	6.16	C	12	1.50	658.41	291.67	283.70
S6-3	46.11	117	5.44	C	12	1.50	956.36	423.66	415.69
F2A-3	62.76	404.17	2.14	C	12	1.80	13029.01	5771.81	5763.84
F2B-3	62.65	404.17	2.14	C	12	1.50	15717.32	6962.72	6954.75
F1-4	59.19	214.66	3.81	C	12	1.50	2792.27	1236.97	1228.99
S1-4	41.92	117	4.94	C	12	1.50	1272.75	563.82	555.85
	20.82	66.68	4.31	B	33	1.50	5288.43	2342.76	2334.78
S2-4	64.44	117	7.60	C	12	1.50	350.38	155.22	147.24
S3-4	58.50	117	6.90	C	12	1.50	468.32	207.46	199.49
S4-4	58.19	117	6.86	C	12	1.50	475.84	210.80	202.82
S5-4	54.45	117	6.42	C	12	1.50	580.78	257.28	249.31
S6-4	35.80	117	4.22	C	12	1.50	2043.42	905.23	897.26
F2-4	54.06	404.17	1.85	C	12	1.50	24463.21	10837.13	10829.16

SECTION L



Made By: NRF Date: 3/4/2012 Job No.: P402110046
 Checked By: DWC Date: 3/5/2012 Sheet No.: _____

Section L - Floorbeam Fatigue Summary

Redundant? No → $f = 1.0$ (Calculate SAFE Life per ODOT BDM 402.2.6)
 $R_s = 1.75$
 Present ADTT (T_P) = 104 → $T_N = 235$ (Future ADTT, assuming growth rate of 1%/year)
 Weight Ratios = 1.0 ($W_P/W, W_N/W$ equal to unity per ODOT BDM 402.2.6)
 Impact* = 1.15 (Per ODOT BDM 402.2.6)
 $Y_P = \text{Varies}$ (Present age of the bridge in years) $Y_{f,MIN} = -23$ years

* Impact is applied in calculation of stress range, S_r . Do not include in service moment range.

FLOORBEAM DETAIL:	Service M_r	S_x	S_r	Cat.	K (Detail Constant)	C (cycles per truck passage)	Y_P	Y_I	Y_N	Y_f
	(k-ft)	(in ³)	(ksi)				(years)	(years)	(years)	(years)
FB1 Flange to Web Fillet Weld	178.30	428.76	5.74	B	33	1.00	18	313.25	138.77	130.79
FB 2 Welded Stiffeners	184.63	440.41	5.79	C'	12	1.00	18	111.18	49.25	41.28
FB3 Riveted Stiffeners	175.52	441.64	5.48	D	6	1.00	74	65.26	28.91	-3.87
FB4 Riveted Stiffeners	171.70	379.87	6.24	D	6	1.00	74	44.36	19.65	-13.13
FB 5 Riveted Stiffeners	211.32	441.64	6.60	D	6	1.00	74	37.39	16.56	-16.22
FB 6 Riveted Built-Up Member	221.39	633.24	4.82	D	6	1.00	74	95.85	42.46	9.68
FB7 Riveted Stiffener	195.49	441.64	6.11	D	6	1.00	74	47.23	20.92	-11.86
FB8 Riveted Stiffener	218.09	379.87	7.92	D	6	1.00	74	21.65	9.59	-23.19
FB9 Riveted Built-Up Member	205.00	633.24	4.47	D	6	1.00	74	120.73	53.48	20.70
FB10 Riveted Stiffener	162.96	379.87	5.92	D	6	1.00	74	51.89	22.99	-9.80
FB11 Riveted Stiffener	183.99	481.25	5.28	D	6	1.00	74	73.30	32.47	-0.31
FB12 Flange to Web Fillet Weld	209.67	433.34	6.68	B	33	1.00	18	198.90	88.11	80.14
FB2 North Bracket Riveted Built-Up	83.06	455.92	2.51	D	6	1.00	74	677.34	300.06	267.28
FB2 South Bracket Riveted Built-Up	44.50	1125.34	0.55	D	6	1.00	74	66229.08	29339.29	29306.50
FB3 North Bracket Welded Stiffener	51.09	556.09	1.27	C'	12	1.00	18	10562.39	4679.11	4671.13
FB3 South Bracket Riveted Built-Up	72.41	1134.93	0.88	D	6	1.00	74	15773.18	6987.47	6954.69
FB4 North Bracket Riveted Built-Up	25.08	455.92	0.76	D	6	1.00	74	24611.30	10902.73	10869.95
FB4 South Bracket Riveted Built-Up	82.08	1125.34	1.01	D	6	1.00	74	10556.98	4676.71	4643.93
FB5 North Bracket Riveted Built-Up	28.95	435.73	0.92	D	6	1.00	74	13972.55	6189.80	6157.01
FB5 South Bracket Riveted Built-Up	113.21	1134.93	1.38	D	6	1.00	74	4126.70	1828.11	1795.33
FB6 North Bracket Riveted Built-Up	23.37	454.15	0.71	D	6	1.00	74	30052.39	13313.12	13280.34
FB6 South Bracket Riveted Built-Up	123.06	452.39	3.75	D	6	1.00	74	203.51	90.15	57.37
FB7 North Bracket Riveted Built-Up	19.49	454.15	0.59	D	6	1.00	74	51847.75	22968.40	22935.62
FB7 South Bracket Riveted Built-Up	109.37	452.39	3.34	D	6	1.00	74	289.89	128.42	95.64
FB8 North Bracket Riveted Built-Up	26.25	452.39	0.80	D	6	1.00	74	20970.24	9289.75	9256.97
FB8 South Bracket Riveted Built-Up	119.15	452.39	3.63	D	6	1.00	74	224.21	99.33	66.54
FB9 North Bracket Riveted Built-Up	35.59	450.63	1.09	D	6	1.00	74	8313.92	3683.04	3650.26
FB9 South Bracket Welded Stiffener	105.13	556.09	2.61	C'	12	1.00	18	1212.27	537.03	529.06
FB10 North Bracket Riveted Built-Up	38.60	1106.26	0.48	D	6	1.00	74	96450.22	42727.16	42694.38
FB10 South Bracket Riveted Built-Up	71.04	452.39	2.17	D	6	1.00	74	1057.93	468.66	435.88
FB11 North Bracket Riveted Built-Up	79.89	1139.74	0.97	D	6	1.00	74	11891.27	5267.80	5235.02
FB11 South Bracket Riveted Built-Up	50.22	452.39	1.53	D	6	1.00	74	2994.45	1326.53	1293.75

ID: SECTION L - UNIT 1 FATIGUE

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
IGNORE IMPACT
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BRINCD 1 8 2 9 4 11 6 13 8 15 9 16 11 18 13 20 15 22 16 23 18 25 20 27
22 29 23 30 25 32 27 34 29 36 30 37 32 39 34 41 36 43 37 44 39 46 41
48 43 50 44 51 46 53 48 55
FPC 4.5
GCD-1 8.6314 10.1577 20.3223 8.8711 30.6539 7.8474 40.6535 6.9575
50.6532 6.1667 60.6532 5.4746 70.6532 4.8812
GCD-2 8.8081 11.1495 20.5234 11.1495 30.6539 11.1495 40.6535 11.1495
50.6532 11.1495 60.6532 11.1495 70.6532 11.1495
GCD-3 9.8738 17.1313 21.0513 17.1313 30.6532 17.1313 40.6535 17.1313
50.6532 17.1313 60.6532 17.1313 70.6532 17.1313
GCD-4 11.0317 23.6313 21.6249 23.6313 30.6532 23.6313 40.6535 23.6313
50.6532 23.6313 60.6532 23.6313 70.6532 23.6313
GCD-5 12.1896 30.1313 22.1986 30.1313 30.6532 30.1313 40.6535 30.1313
50.6532 30.1313 60.6532 30.1313 70.6532 30.1313
GCD-6 13.3476 36.6313 22.7722 36.6313 30.6532 36.6313 40.6535 36.6313
50.6532 36.6313 60.6532 36.6313 70.6532 36.6313
GCD-7 14.5055 43.1313 23.3459 43.1313 30.6532 43.1313 40.6535 43.1313
50.6532 43.1313 60.6532 43.1313 70.6532 43.1313
GCD-8 15.655 49.4295 23.8366 48.6911 30.6532 48.0004 40.6535 47.0742
50.6532 46.2511 60.6532 45.5309 70.6532 44.9134
HNG-1 21.6
HNG-8 14.6
RAD-1 -1020.486
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5 7
SUP-2 1 3 5 7
SUP-3 1 3 5 7
SUP-4 1 3 5 7
SUP-5 1 3 5 7
SUP-6 1 3 5 7
SUP-7 1 3 5 7
SUP-8 1 3 5 7
WAC-1 0.125
WAC-2 0.137
WAC-3 0.142
WAC-4 0.142
WAC-5 0.142
WAC-6 0.142
WAC-7 0.137
WAC-8 0.13
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WDD-1 0.116 0.146 0.176 0.204 0.232 0.26 0.288 0.312 0.338
0.364 0.388 0.41 0.432 0.452 0.472 0.492 0.512 0.532 0.55
0.568 0.586 0.604 0.62 0.636 0.652 0.668 0.682 0.696 0.71
0.724 0.738
WDD-2 0.41 0.424 0.44 0.454 0.468 0.482 0.496 0.51 0.524 0.538 0.552 0.566 0.58 0.594 0.608 0.622 0.636 0.65 0.664 0.678 0.692 0.706 0.72 0.734 0.748 0.762 0.776 0.79 0.804 0.818 0.832 0.846 0.86 0.874 0.888 0.902 0.916 0.93 0.944 0.958 0.972 0.986 1.0 1.014 1.028 1.042 1.056 1.07 1.084 1.098 1.112 1.126 1.14 1.154 1.168 1.182 1.196 1.21 1.224 1.238 1.252 1.266 1.28 1.294 1.308 1.322 1.336 1.35 1.364 1.378 1.392 1.406 1.42 1.434 1.448 1.462 1.476 1.49 1.504 1.518 1.532 1.546 1.56 1.574 1.588 1.602 1.616 1.63 1.644 1.658 1.672 1.686 1.7 1.714 1.728 1.742 1.756 1.77 1.784 1.798 1.812 1.826 1.84 1.854 1.868 1.882 1.896 1.91 1.924 1.938 1.952 1.966 1.98 1.994 2.008 2.022 2.036 2.05 2.064 2.078 2.092 2.106 2.12 2.134 2.148 2.162 2.176 2.19 2.204 2.218 2.232 2.246 2.26 2.274 2.288 2.302 2.316 2.33 2.344 2.358 2.372 2.386 2.4 2.414 2.428 2.442 2.456 2.47 2.484 2.498 2.512 2.526 2.54 2.554 2.568 2.582 2.596 2.61 2.624 2.638 2.652 2.666 2.68 2.694 2.708 2.722 2.736 2.75 2.764 2.778 2.792 2.806 2.82 2.834 2.848 2.862 2.876 2.89 2.904 2.918 2.932 2.946 2.96 2.974 2.988 3.002 3.016 3.03 3.044 3.058 3.072 3.086 3.1 3.114 3.128 3.142 3.156 3.17 3.184 3.198 3.212 3.226 3.24 3.254 3.268 3.282 3.296 3.31 3.324 3.338 3.352 3.366 3.38 3.394 3.408 3.422 3.436 3.45 3.464 3.478 3.492 3.506 3.52 3.534 3.548 3.562 3.576 3.59 3.604 3.618 3.632 3.646 3.66 3.674 3.688 3.702 3.716 3.73 3.744 3.758 3.772 3.786 3.8 3.814 3.828 3.842 3.856 3.87 3.884 3.898 3.912 3.926 3.94 3.954 3.968 3.982 3.996 4.01 4.024 4.038 4.052 4.066 4.08 4.094 4.108 4.122 4.136 4.15 4.164 4.178 4.192 4.206 4.22 4.234 4.248 4.262 4.276 4.29 4.304 4.318 4.332 4.346 4.36 4.374 4.388 4.402 4.416 4.43 4.444 4.458 4.472 4.486 4.5 4.514 4.528 4.542 4.556 4.57 4.584 4.598 4.612 4.626 4.64 4.654 4.668 4.682 4.696 4.71 4.724 4.738 4.752 4.766 4.78 4.794 4.808 4.822 4.836 4.85 4.864 4.878 4.892 4.906 4.92 4.934 4.948 4.962 4.976 4.99 5.004 5.018 5.032 5.046 5.06 5.074 5.088 5.102 5.116 5.13 5.144 5.158 5.172 5.186 5.2 5.214 5.228 5.242 5.256 5.27 5.284 5.298 5.312 5.326 5.34 5.354 5.368 5.382 5.396 5.41 5.424 5.438 5.452 5.466 5.48 5.494 5.508 5.522 5.536 5.55 5.564 5.578 5.592 5.606 5.62 5.634 5.648 5.662 5.676 5.69 5.704 5.718 5.732 5.746 5.76 5.774 5.788 5.802 5.816 5.83 5.844 5.858 5.872 5.886 5.9 5.914 5.928 5.942 5.956 5.97 5.984 5.998 6.012 6.026 6.04 6.054 6.068 6.082 6.096 6.11 6.124 6.138 6.152 6.166 6.18 6.194 6.208 6.222 6.236 6.25 6.264 6.278 6.292 6.306 6.32 6.334 6.348 6.362 6.376 6.39 6.404 6.418 6.432 6.446 6.46 6.474 6.488 6.502 6.516 6.53 6.544 6.558 6.572 6.586 6.6 6.614 6.628 6.642 6.656 6.67 6.684 6.698 6.712 6.726 6.74 6.754 6.768 6.782 6.796 6.81 6.824 6.838 6.852 6.866 6.88 6.894 6.908 6.922 6.936 6.95 6.964 6.978 6.992 7.006 7.02 7.034 7.048 7.062 7.076 7.09 7.104 7.118 7.132 7.146 7.16 7.174 7.188 7.202 7.216 7.23 7.244 7.258 7.272 7.286 7.3 7.314 7.328 7.342 7.356 7.37 7.384 7.398 7.412 7.426 7.44 7.454 7.468 7.482 7.496 7.51 7.524 7.538 7.552 7.566 7.58 7.594 7.608 7.622 7.636 7.65 7.664 7.678 7.692 7.706 7.72 7.734 7.748 7.762 7.776 7.79 7.804 7.818 7.832 7.846 7.86 7.874 7.888 7.902 7.916 7.93 7.944 7.958 7.972 7.986 8.0 8.014 8.028 8.042 8.056 8.07 8.084 8.098 8.112 8.126 8.14 8.154 8.168 8.182 8.196 8.21 8.224 8.238 8.252 8.266 8.28 8.294 8.308 8.322 8.336 8.35 8.364 8.378 8.392 8.406 8.42 8.434 8.448 8.462 8.476 8.49 8.504 8.518 8.532 8.546 8.56 8.574 8.588 8.602 8.616 8.63 8.644 8.658 8.672 8.686 8.7 8.714 8.728 8.742 8.756 8.77 8.784 8.798 8.812 8.826 8.84 8.854 8.868 8.882 8.896 8.91 8.924 8.938 8.952 8.966 8.98 8.994 9.008 9.022 9.036 9.05 9.064 9.078 9.092 9.106 9.12 9.134 9.148 9.162 9.176 9.19 9.204 9.218 9.232 9.246 9.26 9.274 9.288 9.302 9.316 9.33 9.344 9.358 9.372 9.386 9.4 9.414 9.428 9.442 9.456 9.47 9.484 9.498 9.512 9.526 9.54 9.554 9.568 9.582 9.596 9.61 9.624 9.638 9.652 9.666 9.68 9.694 9.708 9.722 9.736 9.75 9.764 9.778 9.792 9.806 9.82 9.834 9.848 9.862 9.876 9.89 9.904 9.918 9.932 9.946 9.96 9.974 9.988 10.002 10.016 10.03 10.044 10.058 10.072 10.086 10.1 10.114 10.128 10.142 10.156 10.17 10.184 10.198 10.212 10.226 10.24 10.254 10.268 10.282 10.296 10.31 10.324 10.338 10.352 10.366 10.38 10.394 10.408 10.422 10.436 10.45 10.464 10.478 10.492 10.506 10.52 10.534 10.548 10.562 10.576 10.59 10.604 10.618 10.632 10.646 10.66 10.674 10.688 10.702 10.716 10.73 10.744 10.758 10.772 10.786 10.8 10.814 10.828 10.842 10.856 10.87 10.884 10.898 10.912 10.926 10.94 10.954 10.968 10.982 10.996 11.01 11.024 11.038 11.052 11.066 11.08 11.094 11.108 11.122 11.136 11.15 11.164 11.178 11.192 11.206 11.22 11.234 11.248 11.262 11.276 11.29 11.304 11.318 11.332 11.346 11.36 11.374 11.388 11.402 11.416 11.43 11.444 11.458 11.472 11.486 11.5 11.514 11.528 11.542 11.556 11.57 11.584 11.598 11.612 11.626 11.64 11.654 11.668 11.682 11.696 11.71 11.724 11.738 11.752 11.766 11.78 11.794 11.808 11.822 11.836 11.85 11.864 11.878 11.892 11.906 11.92 11.934 11.948 11.962 11.976 11.99 12.004 12.018 12.032 12.046 12.06 12.074 12.088 12.102 12.116 12.13 12.144 12.158 12.172 12.186 12.2 12.214 12.228 12.242 12.256 12.27 12.284 12.298 12.312 12.326 12.34 12.354 12.368 12.382 12.396 12.41 12.424 12.438 12.452 12.466 12.48 12.494 12.508 12.522 12.536 12.55 12.564 12.578 12.592 12.606 12.62 12.634 12.648 12.662 12.676 12.69 12.704 12.718 12.732 12.746 12.76 12.774 12.788 12.802 12.816 12.83 12.844 12.858 12.872 12.886 12.9 12.914 12.928 12.942 12.956 12.97 12.984 12.998 13.012 13.026 13.04 13.054 13.068 13.082 13.096 13.11 13.124 13.138 13.152 13.166 13.18 13.194 13.208 13.222 13.236 13.25 13.264 13.278 13.292 13.306 13.32 13.334 13.348 13.362 13.376 13.39 13.404 13.418 13.432 13.446 13.46 13.474 13.488 13.502 13.516 13.53 13.544 13.558 13.572 13.586 13.6 13.614 13.628 13.642 13.656 13.67 13.684 13.698 13.712 13.726 13.74 13.754 13.768 13.782 13.796 13.81 13.824 13.838 13.852 13.866 13.88 13.894 13.908 13.922 13.936 13.95 13.964 13.978 13.992 14.006 14.02 14.034 14.048 14.062 14.076 14.09 14.104 14.118 14.132 14.146 14.16 14.174 14.188 14.202 14.216 14.23 14.244 14.258 14.272 14.286 14.3 14.314 14.328 14.342 14.356 14.37 14.384 14.398 14.412 14.426 14.44 14.454 14.468 14.482 14.496 14.51 14.524 14.538 14.552 14.566 14.58 14.594 14.608 14.622 14.636 14.65 14.664 14.678 14.692 14.706 14.72 14.734 14.748 14.762 14.776 14.79 14.804 14.818 14.832 14.846 14.86 14.874 14.888 14.902 14.916 14.93 14.944 14.958 14.972 14.986 15.0 15.014 15.028 15.042 15.056 15.07 15.084 15.098 15.112 15.126 15.14 15.154 15.168 15.182 15.196 15.21 15.224 15.238 15.252 15.266 15.28 15.294 15.308 15.322 15.336 15.35 15.364 15.378 15.392 15.406 15.42 15.434 15.448 15.462 15.476 15.49 15.504 15.518 15.532 15.546 15.56 15.574 15.588 15.602 15.616 15.63 15.644 15.658 15.672 15.686 15.7 15.714 15.728 15.742 15.756 15.77 15.784 15.798 15.812 15.826 15.84 15.854 15.868 15.882 15.896 15.91 15.924 15.938 15.952 15.966 15.98 15.994 16.008 16.022 16.036 16.05 16.064 16.078 16.092 16.106 16.12 16.134 16.148 16.162 16.176 16.19 16.204 16.218 16.232 16.246 16.26 16.274 16.288 16.302 16.316 16.33 16.344 16.358 16.372 16.386 16.4 16.414 16.428 16.442 16.456 16.47 16.484 16.498 16.512 16.526 16.54 16.554 16.568 16.582 16.596 16.61 16.624 16.638 16.652 16.666 16.68 16.694 16.708 16.722 16.736 16.75 16.764 16.778 16.792 16.806 16.82 16.834 16.848 16.862 16.876 16.89 16.904 16.918 16.932 16.946 16.96 16.974 16.988 17.002 17.016 17.03 17.044 17.058 17.072 17.086 17.1 17.114 17.128 17.142 17.156 17.17 17.184 17.198 17.212 17.226 17.24 17.254 17.268 17.282 17.296 17.31 17.324 17.338 17.352 17.366 17.38 17.394 17.408 17.422 17.436 17.45 17.464 17.478 17.492 17.506 17.52 17.534 17.548 17.562 17.576 17.59 17.604 17.618 17.632 17.646 17.66 17.674 17.688 17.702 17.716 17.73 17.744 17.758 17.772 17.786 17.8 17.814 17.828 17.842 17.856 17.87 17.884 17.898 17.912 17.926 17.94 17.954 17.968 17.982 17.996 18.01 18.024 18.038 18.052 18.066 18.08 18.094 18.108 18.122 18.136 18.15 18.164 18.178 18.192 18.206 18.22 18.234 18.248 18.262 18.276 18.29 18.304 18.318 18.332 18.346 18.36 18.374 18.388 18.402 18.416 18.43 18.444 18.458 18.472 18.486 18.5 18.514 18.528 18.542 18.556 18.57 18.584 18.598 18.612 18.626 18.64 18.654 18.668 18.682 18.696 18.71 18.724 18.738 18.752 18.766 18.78 18.794 18.808 18.822 18.836 18.85 18.864 18.878 18.892 18.906 18.92 18.934 18.948 18.962 18.976 18.99 19.004 19.018 19.032 19.046 19.06 19.074 19.088 19.102 19.116 19.13 19.144 19.158 19.172 19.186 19.2 19.214 19.228 19.242 19.256 19.27 19.284 19.298 19.312 19.326 19.34 19.354 19.368 19.382 19.396 19.41 19.424 19.438 19.452 19.466 19.48 19.494 19.508 19.522 19.536 19.55 19.564 19.578 19.592 19.606 19.62 19.634 19.648 19.662 19.676 19.69 19.704 19.718 19.732 19.746 19.76 19.774 19.788 19.802 19.816 19.83 19.844 19.858 19.872 19.886 19.9 19.914 19.928 19.942 19.956 19.97 19.984 19.998 20.012 20.026 20.04 20.054 20.068 20.082 20.096 20.11 20.124 20.138 20.152 20.166 20.18 20.194 20.208 20.222 20.236 20.25 20.264 20.278 20.292 20.306 20.32 20.334 20.348 20.362 20.376 20.39 20.404 20.418 20.432 20.446 20.46 20.474 20.488 20.502 20.516 20.53 20.544 20.558 20.572 20.586 20.6 20.614 20.628 20.642 20.656 20.67 20.684 20.698 20.712 20.726 20.74 20.754 20.768 20.782 20.796 20.81 20.824 20.838 20.852 20.866 20.88 20.894 20.908 20.922 20.936 20.95 20.964 20.978 20.992 21.006 21.02 21.034 21.048 21.062 21.076 21.09 21.104 21.118 21.132 21.146 21.16 21.174 21.188 21.202 21.216 21.23 21.244 21.258 21.272 21.286 21.3 21.314 21.328 21.342 21.356 21.37 21.384 21.398 21.412 21.426 21.44 21.454 21.468 21.482 21.496 21.51 21.524 21.538 21.552 21.566 21.58 21.594 21.608 21.622 21.636 21.65 21.664 21.678 21.692 21.706 21.72 21.734 21.748 21.762 21.776 21.79 21.804 21.818 21.832 21.846 21.86 21.874 21.888 21.902 21.916 21.93 21.944 21.958 21.972 21.986 22.0 22.014 22.028 22.042 22.056 22.07 22.084 22.098 22.112 22.126 22.14 22.154 22.168 22.182 22.196 22.21 22.224 22.238 22.252 22.266 22.28 22.294 22.308 22.322 22.336 22.35 22.364 22.378 22.392 22.406 22.42 22.434 22.448 22.462 22.476 22.49 22.504 22.518 22.532 22.546 22.56 22.574 22.588 22.602 22.616 22.63 22.644 22.658 22.672 22.686 22.7 22.714 22.728 22.742 22.756 22.77 22.784 22.798 22.812 22.826 22.84 22.854 22.868 22.882 22.896 22.91 22.924 22.938 22.952 22.966 22.98 22.994 23.008 23.022 23.036 23.05 23.064 23.078 23.092 23.106

0.534	0.546	0.558	0.568	0.578	0.588	0.598	0.608	0.618	0.628
0.636	0.644	0.654	0.662	0.67	0.678	0.686	0.692	0.7	0.708
0.714	0.722								
WDD-3	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734								
WDD-4	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDD-5	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDD-6	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDD-7	0.762	0.752	0.742	0.732	0.724	0.714	0.704	0.696	0.688
0.678	0.67	0.658	0.648	0.636	0.624	0.614	0.604	0.594	0.584
0.576	0.566	0.558	0.548	0.54	0.532	0.524	0.516	0.508	0.502
0.494	0.488								
WDD-8	0.758	0.738	0.72	0.7	0.682	0.662	0.644	0.626	0.608
0.59	0.572	0.55	0.528	0.506	0.484	0.464	0.444	0.424	0.404
0.386	0.368	0.35	0.332	0.316	0.298	0.282	0.268	0.252	0.238
0.224	0.21								
WDF-1	0.116	0.146	0.176	0.204	0.232	0.26	0.288	0.312	0.338
0.364	0.388	0.41	0.432	0.452	0.472	0.492	0.512	0.532	0.55
0.568	0.586	0.604	0.62	0.636	0.652	0.668	0.682	0.696	0.71
0.724	0.738								
WDF-2	0.41	0.424	0.44	0.454	0.468	0.482	0.496	0.508	0.522
0.534	0.546	0.558	0.568	0.578	0.588	0.598	0.608	0.618	0.628
0.636	0.644	0.654	0.662	0.67	0.678	0.686	0.692	0.7	0.708
0.714	0.722								
WDF-3	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734								
WDF-4	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDF-5	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDF-6	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDF-7	0.762	0.752	0.742	0.732	0.724	0.714	0.704	0.696	0.688
0.678	0.67	0.658	0.648	0.636	0.624	0.614	0.604	0.594	0.584
0.576	0.566	0.558	0.548	0.54	0.532	0.524	0.516	0.508	0.502
0.494	0.488								
WDF-8	0.758	0.738	0.72	0.7	0.682	0.662	0.644	0.626	0.608
0.59	0.572	0.55	0.528	0.506	0.484	0.464	0.444	0.424	0.404
0.386	0.368	0.35	0.332	0.316	0.298	0.282	0.268	0.252	0.238
0.224	0.21								
WDR-1	0.116	0.388	0.586	0.738					
WDR-2	0.41	0.546	0.644	0.722					
WDR-3	0.734	0.734	0.734	0.734					
WDR-4	0.764	0.764	0.764	0.764					
WDR-5	0.764	0.764	0.764	0.764					
WDR-6	0.764	0.764	0.764	0.764					
WDR-7	0.762	0.67	0.566	0.488					
WDR-8	0.758	0.572	0.368	0.21					
WDS-1	0.116	0.146	0.176	0.204	0.232	0.26	0.288	0.312	0.338
0.364	0.388	0.41	0.432	0.452	0.472	0.492	0.512	0.532	0.55
0.568	0.586	0.604	0.62	0.636	0.652	0.668	0.682	0.696	0.71
0.724	0.738								
WDS-2	0.41	0.424	0.44	0.454	0.468	0.482	0.496	0.508	0.522
0.534	0.546	0.558	0.568	0.578	0.588	0.598	0.608	0.618	0.628
0.636	0.644	0.654	0.662	0.67	0.678	0.686	0.692	0.7	0.708
0.714	0.722								
WDS-3	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734	0.734
0.734	0.734								
WDS-4	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764

0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDS-5	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDS-6	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDS-7	0.762	0.752	0.742	0.732	0.724	0.714	0.704	0.696	0.688
0.678	0.67	0.658	0.648	0.636	0.624	0.614	0.604	0.594	0.584
0.576	0.566	0.558	0.548	0.54	0.532	0.524	0.516	0.508	0.502
0.494	0.488								
WDS-8	0.758	0.738	0.72	0.7	0.682	0.662	0.644	0.626	0.608
0.59	0.572	0.55	0.528	0.506	0.484	0.464	0.444	0.424	0.404
0.386	0.368	0.35	0.332	0.316	0.298	0.282	0.268	0.252	0.238
0.224	0.21								
WHLSPC	6.								
WS-1	0.0001								
WS-2	0.0001								
WS-3	0.0001								
WS-4	0.0001								
WS-5	0.0001								
WS-6	0.0001								
WS-7	0.0001								
WS-8	0.0001								

GO

ID: SECTION L - UNIT 2 FATIGUE

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
IGNORE IMPACT
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BRINCD 2 9 4 11 6 13 9 16 11 18 13 20 16 23 18 25 20 27 23 30 25 32 27
34 30 37 32 39 34 41 37 44 39 49 41 51 44 47
FPC 4.5
GCD-1 70.6532 4.8812 80.6532 4.3862 90.6532 3.9894 100.6532 3.6909
110.6532 3.4904 121.2625 3.3849 131.8719 3.3896
GCD-2 70.6532 10.6313 80.6532 10.6313 90.6532 10.6313 100.6532 10.6313
110.6532 10.6313 121.2625 10.6313 131.8719 10.6313
GCD-3 70.6532 17.1313 80.6532 17.1313 90.6532 17.1313 100.6532 17.1313
110.6532 17.1313 121.2625 17.1313 131.8719 17.1313
GCD-4 70.6532 23.6313 80.6532 23.6313 90.6532 23.6313 100.6532 23.6313
110.6532 23.6313 121.2625 23.6313 131.8719 23.6313
GCD-5 70.6532 30.1313 80.6532 30.1313 90.6532 30.1313 100.6532 30.1313
110.6532 30.1313 121.2625 30.1313 131.8719 30.1313
GCD-6 70.6532 36.6313 80.6532 36.6313 90.6532 36.6313 100.6532 36.6313
110.6532 36.6313 121.2625 36.6313 131.8719 36.6313
GCD-7 70.6532 43.1313 80.6532 43.1313 90.6532 43.1313
GCD-8 70.6532 44.9134 80.6532 44.3983 90.6532 43.9856 100.6532 43.6751
110.6532 43.4667 121.2625 43.3571 131.8719 43.3623
HNG-1 39.5
HNG-8 39.5
RAD-1 -1020.484
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5 7
SUP-2 1 3 5 7
SUP-3 1 3 5 7
SUP-4 1 3 5 7
SUP-5 1 3 5 7
SUP-6 1 3 5 7
SUP-7 1 3
SUP-8 1 3 5 7
WAC-1 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135 0.135
0.135 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
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0.153 0.153
WAC-2 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
0.142 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
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WAC-3 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
0.142 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
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WAC-4 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
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WAC-5 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
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WAC-6 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
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WAC-7 0.131 0.131 0.131 0.131 0.131 0.131 0.131 0.131 0.131 0.131
0.131 0.131
WAC-8 0.125 0.125 0.125 0.125 0.125 0.125 0.125 0.125 0.125 0.125
0.125 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153
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0.153 0.153
 WAS-1 0.01
 WAS-2 0.01
 WAS-3 0.01
 WAS-4 0.01
 WAS-5 0.01
 WAS-6 0.01
 WAS-7 0.01
 WAS-8 0.01
 WCONC 113.
 WDD-1 0.676 0.69 0.702 0.712 0.724 0.736 0.744 0.756 0.764
 0.772 0.782 0.79 0.796 0.804 0.81 0.816 0.822 0.828 0.832
 0.836 0.84 0.844 0.848 0.85 0.85 0.852 0.852 0.854 0.854
 0.852 0.852
 WDD-2 0.72 0.728 0.732 0.738 0.744 0.75 0.754 0.76 0.764
 0.768 0.772 0.778 0.78 0.784 0.788 0.79 0.794 0.796 0.798
 0.8 0.802 0.804 0.806 0.808 0.808 0.808 0.808 0.81 0.81
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 WDD-3 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
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 WDD-4 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
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 WDD-5 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
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 WDD-6 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
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 WDD-7 0.488 0.48 0.474 0.468 0.462 0.458 0.452 0.446 0.442
 0.438 0.434
 WDD-8 0.21 0.196 0.184 0.172 0.16 0.15 0.138 0.128 0.118
 0.11 0.864 0.856 0.85 0.842 0.836 0.828 0.822 0.818 0.812
 0.808 0.804 0.8 0.798 0.796 0.792 0.792 0.79 0.79 0.79 0.79
 0.792
 WDF-1 0.676 0.69 0.702 0.712 0.724 0.736 0.744 0.756 0.764
 0.772 0.782 0.79 0.796 0.804 0.81 0.816 0.822 0.828 0.832
 0.836 0.84 0.844 0.848 0.85 0.85 0.852 0.852 0.854 0.854
 0.852 0.852
 WDF-2 0.72 0.728 0.732 0.738 0.744 0.75 0.754 0.76 0.764
 0.768 0.772 0.778 0.78 0.784 0.788 0.79 0.794 0.796 0.798
 0.8 0.802 0.804 0.806 0.808 0.808 0.808 0.808 0.81 0.81
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 WDF-3 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
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 WDF-4 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
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 WDF-6 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.814 0.81 0.808 0.804 0.8 0.796 0.794 0.792 0.788
 0.786 0.784 0.782 0.782 0.78 0.778 0.778 0.778 0.778 0.778
 0.778 0.778
 WDF-7 0.488 0.48 0.474 0.468 0.462 0.458 0.452 0.446 0.442
 0.438 0.434
 WDF-8 0.21 0.196 0.184 0.172 0.16 0.15 0.138 0.128 0.118
 0.11 0.864 0.856 0.85 0.842 0.836 0.828 0.822 0.818 0.812
 0.808 0.804 0.8 0.798 0.796 0.792 0.792 0.79 0.79 0.79 0.79
 0.792
 WDR-1 0.676 0.782 0.84 0.852
 WDR-2 0.72 0.772 0.802 0.808
 WDR-3 0.764 0.764 0.764 0.764
 WDR-4 0.764 0.764 0.764 0.764
 WDR-5 0.764 0.764 0.764 0.764
 WDR-6 0.764 0.814 0.784 0.778
 WDR-7 0.488 0.434
 WDR-8 0.21 0.864 0.804 0.792
 WDS-1 0.676 0.69 0.702 0.712 0.724 0.736 0.744 0.756 0.764
 0.772 0.782 0.79 0.796 0.804 0.81 0.816 0.822 0.828 0.832
 0.836 0.84 0.844 0.848 0.85 0.85 0.852 0.852 0.854 0.854

0.852 0.852
 WDS-2 0.72 0.728 0.732 0.738 0.744 0.75 0.754 0.76 0.764
 0.768 0.772 0.778 0.78 0.784 0.788 0.79 0.794 0.796 0.798
 0.8 0.802 0.804 0.806 0.808 0.808 0.808 0.808 0.81 0.81
 0.808 0.808
 WDS-3 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
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 0.764 0.764
 WDS-4 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDS-5 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDS-6 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.814 0.81 0.808 0.804 0.8 0.796 0.794 0.792 0.788
 0.786 0.784 0.782 0.782 0.78 0.778 0.778 0.778 0.778 0.778
 0.778 0.778
 WDS-7 0.488 0.48 0.474 0.468 0.462 0.458 0.452 0.446 0.442
 0.438 0.434
 WDS-8 0.21 0.196 0.184 0.172 0.16 0.15 0.138 0.128 0.118
 0.11 0.864 0.856 0.85 0.842 0.836 0.828 0.822 0.818 0.812
 0.808 0.804 0.8 0.798 0.796 0.792 0.792 0.79 0.79 0.79 0.79
 0.792
 WHLSPC 6.
 WS-1 0.0001
 WS-2 0.0001
 WS-3 0.0001
 WS-4 0.0001
 WS-5 0.0001
 WS-6 0.0001
 WS-7 0.0001
 WS-8 0.0001
 GO

ID: SECTION L - UNIT 3 FATIGUE

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
IGNORE IMPACT
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BRINCD 2 9 4 11 6 13 9 16 11 18 13 20 16 23 18 25 20 27 23 30 25 32 27
34 30 37 32 39 34 41 41 44 37 47 39 49 44 51
FPC 4.5
GCD-1 131.8719 3.3896 142.4813 3.5047 153.0907 3.7302 163.6948 4.0658
174.299 4.5119 184.9032 5.0686 195.5073 5.7359
GCD-2 131.8719 10.6313 142.4813 10.6313 153.0907 10.6313 163.6948
10.6313 174.299 23.6313 184.9032 10.6313 195.5073 10.6313
GCD-3 131.8719 17.1313 142.4813 17.1313 153.0907 17.1313 163.6948
17.1313 174.299 17.1313 184.9032 17.1313 195.5073 17.1313
GCD-4 131.8719 23.6313 142.4813 23.6313 153.0907 23.6313 163.6948
23.6313 174.299 23.6313 184.9032 23.6313 195.5073 23.6313
GCD-5 131.8719 30.1313 142.4813 30.1313 153.0907 30.1313 163.6948
30.1313 174.299 30.1313 184.9032 30.1313 195.5073 30.1313
GCD-6 131.8719 36.6313 142.4813 36.6313 153.0907 36.6313 163.6948
36.6313 174.299 36.6313 184.9032 36.6313 195.5073 36.6313
GCD-7 174.299 43.1313 184.9032 43.1313 195.5073 43.1313
GCD-8 131.8719 43.3623 142.4813 43.4823 153.0907 43.7171 163.6948
44.0667 174.299 44.5313 184.9032 45.1109 195.5073 45.8058
HNG-1 20.7
HNG-8 20.7
RAD-1 -1020.486
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5 7
SUP-2 1 3 5 7
SUP-3 1 3 5 7
SUP-4 1 3 5 7
SUP-5 1 3 5 7
SUP-6 1 3 5 7
SUP-7 1 3
SUP-8 1 3 5 7
WAC-1 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154
0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154 0.154
0.154 0.154 0.133 0.133 0.133 0.133 0.133 0.133 0.133 0.133
0.133 0.133
WAC-2 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161
0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161
0.161 0.161 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14
0.14
WAC-3 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
WAC-4 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
WAC-5 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16 0.16
0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142 0.142
WAC-6 1. 1. 0.161 0.161 0.161 0.161 0.16 0.161 0.161 0.16
0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161 0.161
0.161 0.161 0.143 0.143 0.143 0.143 0.143 0.143 0.143 0.143
0.143
WAC-7 0.132 0.132 0.132 0.132 0.132 0.132 0.132 0.132 0.132 0.132
0.132 0.132
WAC-8 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153 0.153

0.153	0.153	0.153	0.153	0.153	0.153	0.153	0.153	0.153	0.153
0.153	0.153	0.132	0.132	0.132	0.132	0.132	0.132	0.132	0.132
0.132	0.132								
WAS-1	0.01								
WAS-2	0.01								
WAS-3	0.01								
WAS-4	0.01								
WAS-5	0.01								
WAS-6	0.01								
WAS-7	0.01								
WAS-8	0.01								
WCONC	113.								
WDD-1	0.852	0.85	0.848	0.846	0.842	0.838	0.834	0.83	0.824
	0.818	0.812	0.804	0.798	0.79	0.782	0.772	0.764	0.752
	0.732	0.72	0.708	0.696	0.682	0.668	0.654	0.64	0.624
	0.592	0.576							0.61
WDD-2	0.808	0.808	0.806	0.804	0.804	0.802	0.8	0.798	0.794
	0.792	0.788	0.784	0.782	0.778	0.772	0.768	0.764	0.758
	0.748	0.742	0.736	0.73	0.724	0.716	0.71	0.702	0.694
	0.678	0.67							0.688
WDD-3	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764							0.764
WDD-4	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764							0.764
WDD-5	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764							0.764
WDD-6	0.778	0.778	0.78	0.782	0.784	0.786	0.788	0.79	0.792
	0.796	0.798	0.802	0.808	0.81	0.816	0.82	0.824	0.83
	0.842	0.848	0.764	0.764	0.764	0.764	0.764	0.764	0.836
	0.764	0.764							0.764
WDD-7	0.464	0.47	0.478	0.484	0.492	0.498	0.506	0.514	0.522
	0.53	0.54							
WDD-8	0.582	0.584	0.584	0.586	0.588	0.59	0.592	0.594	0.596
	0.6	0.604	0.608	0.61	0.614	0.618	0.624	0.628	0.634
	0.644	0.65	0.276	0.282	0.288	0.296	0.302	0.31	0.318
	0.336	0.344							0.326
WDF-1	0.852	0.85	0.848	0.846	0.842	0.838	0.834	0.83	0.824
	0.818	0.812	0.804	0.798	0.79	0.782	0.772	0.764	0.752
	0.732	0.72	0.708	0.696	0.682	0.668	0.654	0.64	0.624
	0.592	0.576							0.61
WDF-2	0.808	0.808	0.806	0.804	0.804	0.802	0.8	0.798	0.794
	0.792	0.788	0.784	0.782	0.778	0.772	0.768	0.764	0.758
	0.748	0.742	0.736	0.73	0.724	0.716	0.71	0.702	0.694
	0.678	0.67							0.688
WDF-3	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764							0.764
WDF-4	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764							0.764
WDF-5	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
	0.764	0.764							0.764
WDF-6	0.778	0.778	0.78	0.782	0.784	0.786	0.788	0.79	0.792
	0.796	0.798	0.802	0.808	0.81	0.816	0.82	0.824	0.83
	0.842	0.848	0.764	0.764	0.764	0.764	0.764	0.764	0.836
	0.764	0.764							0.764
WDF-7	0.464	0.47	0.478	0.484	0.492	0.498	0.506	0.514	0.522
	0.53	0.54							
WDF-8	0.582	0.584	0.584	0.586	0.588	0.59	0.592	0.594	0.596
	0.6	0.604	0.608	0.61	0.614	0.618	0.624	0.628	0.634
	0.644	0.65	0.276	0.282	0.288	0.296	0.302	0.31	0.318
	0.336	0.344							0.326
WDR-1	0.852	0.812	0.72	0.576					
WDR-2	0.808	0.788	0.742	0.67					
WDR-3	0.764	0.764	0.764	0.764					
WDR-4	0.764	0.764	0.764	0.764					
WDR-5	0.764	0.764	0.764	0.764					
WDR-6	0.778	0.798	0.848	0.764					
WDR-7	0.464	0.54							
WDR-8	0.582	0.604	0.65	0.344					
WDS-1	0.852	0.85	0.848	0.846	0.842	0.838	0.834	0.83	0.824

0.818	0.812	0.804	0.798	0.79	0.782	0.772	0.764	0.752	0.742
0.732	0.72	0.708	0.696	0.682	0.668	0.654	0.64	0.624	0.61
0.592	0.576								
WDS-2	0.808	0.808	0.806	0.804	0.804	0.802	0.8	0.798	0.794
0.792	0.788	0.784	0.782	0.778	0.772	0.768	0.764	0.758	0.754
0.748	0.742	0.736	0.73	0.724	0.716	0.71	0.702	0.694	0.688
0.678	0.67								
WDS-3	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDS-4	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDS-5	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDS-6	0.778	0.778	0.78	0.782	0.784	0.786	0.788	0.79	0.792
0.796	0.798	0.802	0.808	0.81	0.816	0.82	0.824	0.83	0.836
0.842	0.848	0.764	0.764	0.764	0.764	0.764	0.764	0.764	0.764
0.764	0.764								
WDS-7	0.464	0.47	0.478	0.484	0.492	0.498	0.506	0.514	0.522
0.53	0.54								
WDS-8	0.582	0.584	0.584	0.586	0.588	0.59	0.592	0.594	0.596
0.6	0.604	0.608	0.61	0.614	0.618	0.624	0.628	0.634	0.638
0.644	0.65	0.276	0.282	0.288	0.296	0.302	0.31	0.318	0.326
0.336	0.344								
WHLSPC 6.									
WS-1	0.0001								
WS-2	0.0001								
WS-3	0.0001								
WS-4	0.0001								
WS-5	0.0001								
WS-6	0.0001								
WS-7	0.0001								
WS-8	0.0001								

GO

ID: SECTION L - UNIT 4 FATIGUE

CONDITIONS

APPLY IMPACT AT AXLE LOCATION
ENGLISH INPUT
ENGLISH OUTPUT
IGNORE IMPACT
LFD METHOD
RATE MODE
RATING PROJECT
SELF WEIGHT FOR DEAD LOAD 1

DATA

AXLEP 6. 24. 24.
AXLESP 14. 30.
BRINCD 2 7 4 9 5 10 7 12 9 14 10 15 12 17 14 19 15 20 17 22 19 24 20
25 22 27 24 29 25 30 27 32 29 34 30 35 32 37 34 39 35 40
FPC 4.5
GCD-1 195.5073 5.7359 207.1011 6.5926 218.6948 7.5822 230.2886 8.7052
241.8823 9.962
GCD-2 195.5073 11.1495 207.1011 11.1495 218.6948 11.1495 230.2886
11.1495 241.8823 11.1495
GCD-3 195.5073 17.1313 207.1011 17.1313 218.6948 17.1313 230.2886
17.1313 241.8823 17.1313
GCD-4 195.5073 23.6313 207.1011 23.6313 218.6948 23.6313 230.2886
23.6313 241.8823 23.6313
GCD-5 195.5073 30.1313 207.1011 30.1313 218.6948 30.1313 230.2886
30.1313 241.8823 30.1313
GCD-6 195.5073 36.6313 207.1011 36.6313 218.6948 36.6313 230.2886
36.6313 241.8823 36.6313
GCD-7 195.5073 43.1313 207.1011 43.1313 218.6948 43.1313 230.2886
43.1313 241.8823 43.1313
GCD-8 195.5073 45.8058 207.1011 46.6979 218.6948 47.7284 230.2886
48.8979 241.8823 50.2068
RAD-1 -1020.486
RAD-2 0.
RAD-3 0.
RAD-4 0.
RAD-5 0.
RAD-6 0.
RAD-7 0.
RAD-8 -980.516
SLABEXT 1.5833 1.5833
SLABT 8.
SLABWEAR 1.25
SUP-1 1 3 5
SUP-2 1 3 5
SUP-3 1 3 5
SUP-4 1 3 5
SUP-5 1 3 5
SUP-6 1 3 5
SUP-7 1 3 5
SUP-8 1 3 5
WAC-1 0.128
WAC-2 0.135
WAC-3 0.142
WAC-4 0.142
WAC-5 0.142
WAC-6 0.142
WAC-7 0.139
WAC-8 0.132
WAS-1 0.01
WAS-2 0.01
WAS-3 0.01
WAS-4 0.01
WAS-5 0.01
WAS-6 0.01
WAS-7 0.01
WAS-8 0.01
WCONC 113.
WDD-1 0.636 0.618 0.598 0.578 0.558 0.536 0.514 0.492 0.468
0.444 0.42 0.394 0.68 0.342 0.316 0.288 0.26 0.23 0.202
0.17 0.14
WDD-2 0.67 0.662 0.652 0.641 0.63 0.62 0.61 0.598 0.586
0.574 0.562 0.55 0.536 0.524 0.51 0.496 0.482 0.468 0.452
0.438 0.422
WDD-3 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734
0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734

0.734 0.734
 WDD-4 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDD-5 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDD-6 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDD-7 0.54 0.55 0.56 0.57 0.582 0.592 0.604 0.616 0.628 0.64
 0.652 0.666 0.68 0.692 0.708 0.822 0.736 0.752 0.768 0.782
 0.798
 WDD-8 0.314 0.334 0.356 0.376 0.398 0.42 0.442 0.466 0.49
 0.516 0.542 0.568 0.594 0.622 0.65 0.678 0.708 0.738 0.77
 0.8 0.832
 WDF-1 0.636 0.618 0.598 0.578 0.558 0.536 0.514 0.492 0.468
 0.444 0.42 0.394 0.68 0.342 0.316 0.288 0.26 0.23 0.202
 0.17 0.14
 WDF-2 0.67 0.662 0.652 0.641 0.63 0.62 0.61 0.598 0.586
 0.574 0.562 0.55 0.536 0.524 0.51 0.496 0.482 0.468 0.452
 0.438 0.422
 WDF-3 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734
 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734
 0.734 0.734
 WDF-4 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDF-5 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDF-6 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDF-7 0.54 0.55 0.56 0.57 0.582 0.592 0.604 0.616 0.628 0.64
 0.652 0.666 0.68 0.692 0.708 0.822 0.736 0.752 0.768 0.782
 0.798
 WDF-8 0.314 0.334 0.356 0.376 0.398 0.42 0.442 0.466 0.49
 0.516 0.542 0.568 0.594 0.622 0.65 0.678 0.708 0.738 0.77
 0.8 0.832
 WDR-1 0.636 0.42 0.14
 WDR-2 0.67 0.562 0.422
 WDR-3 0.734 0.734 0.734
 WDR-4 0.764 0.764 0.764
 WDR-5 0.764 0.764 0.764
 WDR-6 0.764 0.764 0.764
 WDR-7 0.54 0.652 0.798
 WDR-8 0.314 0.542 0.832
 WDS-1 0.636 0.618 0.598 0.578 0.558 0.536 0.514 0.492 0.468
 0.444 0.42 0.394 0.68 0.342 0.316 0.288 0.26 0.23 0.202
 0.17 0.14
 WDS-2 0.67 0.662 0.652 0.641 0.63 0.62 0.61 0.598 0.586
 0.574 0.562 0.55 0.536 0.524 0.51 0.496 0.482 0.468 0.452
 0.438 0.422
 WDS-3 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734
 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734 0.734
 0.734 0.734
 WDS-4 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDS-5 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDS-6 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764 0.764
 0.764 0.764
 WDS-7 0.54 0.55 0.56 0.57 0.582 0.592 0.604 0.616 0.628 0.64
 0.652 0.666 0.68 0.692 0.708 0.822 0.736 0.752 0.768 0.782
 0.798
 WDS-8 0.314 0.334 0.356 0.376 0.398 0.42 0.442 0.466 0.49
 0.516 0.542 0.568 0.594 0.622 0.65 0.678 0.708 0.738 0.77
 0.8 0.832
 WHLSPC 6.
 WS-1 0.0001
 WS-2 0.0001
 WS-3 0.0001
 WS-4 0.0001
 WS-5 0.0001
 WS-6 0.0001
 WS-7 0.0001
 WS-8 0.0001

GO

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 1 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0 ;
2 6.554 0 0 ;
3 8.6569 0 0 ;
4 13.1563 0 0 ;
5 19.7586 0 0 ;
6 26.3609 0 0 ;
7 32.9632 0 0 ;
8 37.4626 0 0 ;
9 39.0391 0 0 ;
10 40.0466 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 6.554 10 0 ;
104 13.1563 10 0 ;
105 19.7586 10 0 ;
106 26.3609 10 0 ;
107 32.9632 10 0 ;
109 39.0391 10 0 ;
110 40.0466 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 104 ;
103 104 105 ;
104 105 106 ;
105 106 107 ;
106 107 109 ;
107 109 110 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03

END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
1 TAPERED 1.8646 0.0625 2.0964 0.8333 0.0833
2 TAPERED 2.0964 0.0625 2.1708 0.8333 0.0833
3 TAPERED 2.1708 0.0625 2.3300 0.8333 0.0833
4 TAPERED 2.3300 0.0625 2.5636 0.8333 0.0833
5 TAPERED 2.5636 0.0625 2.7971 0.8333 0.0833
6 TAPERED 2.7971 0.0625 3.0307 0.8333 0.0833
7 TAPERED 3.0307 0.0625 3.1898 0.8333 0.0833
8 TAPERED 3.1898 0.0625 3.2456 0.8333 0.0833
9 TAPERED 3.2456 0.0625 3.4479 0.8333 0.0833
101 102 103 104 105 106 107 TABLE ST W33x130
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
3 8 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 104 JOINT 4
SLAVE FY MASTER 105 JOINT 5
SLAVE FY MASTER 106 JOINT 6
SLAVE FY MASTER 107 JOINT 7
SLAVE FY MASTER 109 JOINT 9
SLAVE FY MASTER 110 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 TO 107 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

*** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3032
TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 2 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.8691 0 0 ;
3 6.9394 0 0 ;
4 11.3691 0 0 ;
5 17.8691 0 0 ;
6 24.3691 0 0 ;
7 30.8691 0 0 ;
8 35.2988 0 0 ;
9 36.8509 0 0 ;
10 40.1530 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.8691 10 0 ;
103 11.3691 10 0 ;
104 17.8691 10 0 ;
105 24.3691 10 0 ;
106 30.8691 10 0 ;
107 36.8509 10 0 ;
108 40.1530 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN

3 4 5 6 7 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.0625 0.03125 2.9044 1.03125 0.03125 1.03125 0.03125
2 TAPERED 2.9044 0.03125 3.6875 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.3108 0.0683 2.6585 1.3033 0.1094
9 TAPERED 2.6585 0.0683 1.2708 1.3033 0.1094
101 102 103 104 105 106 107 TABLE ST W33x130

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 1 1

DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***

LOAD GENERATION 3032

TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 3 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 3.1198 0 0 ;
3 5.1901 0 0 ;
4 9.6198 0 0 ;
5 16.1198 0 0 ;
6 22.6198 0 0 ;
7 29.1198 0 0 ;
8 33.5495 0 0 ;
9 35.1016 0 0 ;
10 40.0844 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 3.1198 10 0 ;
103 9.6198 10 0 ;
104 16.1198 10 0 ;
105 22.6198 10 0 ;
106 29.1198 10 0 ;
107 35.1016 10 0 ;
108 40.0844 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TABLE ST W33x141
1 TAPERED 0.9896 0.03125 2.5894 1.03125 0.0417 1.03125 0.0417
2 TAPERED 2.5894 0.03125 3.6510 1.03125 0.0417 1.03125 0.0417
8 TAPERED 3.3287 0.0683 2.8399 1.3033 0.1094
9 TAPERED 2.8399 0.0683 1.2708 1.3033 0.1094
101 102 103 104 105 106 107 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 1 1

DIST 6

*** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***

LOAD GENERATION 3026

TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF

*Section L
*Floorbeam 4 Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES

1 0.0000 0 0 ;
2 1.7821 0 0 ;
3 3.8524 0 0 ;
4 8.2821 0 0 ;
5 14.7821 0 0 ;
6 21.2821 0 0 ;
7 27.7821 0 0 ;
8 32.2118 0 0 ;
9 33.7639 0 0 ;
10 40.0322 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 1.7821 10 0 ;
103 8.2821 10 0 ;
104 14.7821 10 0 ;
105 21.2821 10 0 ;
106 27.7821 10 0 ;
107 33.7639 10 0 ;
108 40.0322 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.0625 0.03125 2.2672 1.03125 0.03125 1.03125 0.03125
2 TAPERED 2.2672 0.03125 3.6667 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.3108 0.0683 2.9059 1.3033 0.1094
9 TAPERED 2.9059 0.0683 1.2708 1.3033 0.1094
101 102 103 104 105 106 107 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 1 1

DIST 6

*** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3020

TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

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STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 5 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
***USING FRAMING CONFIGURATION WITH 7 TOTAL STRINGERS
1 0.0000 0 0 ;
2 2.9246 0 0 ;
3 7.3543 0 0 ;
4 13.8543 0 0 ;
5 20.3543 0 0 ;
6 26.8543 0 0 ;
7 31.2840 0 0 ;
8 33.3543 0 0 ;
9 39.9962 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.3543 10 0 ;
103 13.8543 10 0 ;
104 20.3543 10 0 ;
105 26.8543 10 0 ;
106 33.3543 10 0 ;
107 39.9962 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TO 6 TABLE ST W33x141
1 TAPERED 1.0625 0.03125 3.8177 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.3287 0.6833 2.8399 1.3033 0.1094 1.3033 0.1094
8 TAPERED 2.8399 0.6833 1.2708 1.3033 0.1094 1.3033 0.1094

```

101 102 103 104 105 106 TABLE ST W33x118
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

**** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1****
LOAD GENERATION 3017
TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 6 Fatigue Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 2.4057 0 0 ;
3 6.8354 0 0 ;
4 13.3354 0 0 ;
5 19.8354 0 0 ;
6 26.3354 0 0 ;
7 30.7651 0 0 ;
8 32.8354 0 0 ;
9 39.9763 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 6.8354 10 0 ;
103 13.3354 10 0 ;
104 19.8354 10 0 ;
105 26.3354 10 0 ;
106 32.8354 10 0 ;
107 39.9763 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN
2 TO 6 TAPERED 4.0417 0.03125 4.0417 1.03125 0.0417 1.03125 0.0417
1 TAPERED 1.0625 0.03125 3.6771 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.25 0.03125 2.7513 1.03125 0.03125 1.03125 0.03125
8 TAPERED 2.7513 0.03125 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 TABLE ST W33x118

CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH WHEEL LOAD OF 1 ***
LOAD GENERATION 3015
TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 7 Fatigue Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 2.3013 0 0 ;
3 6.7310 0 0 ;
4 13.2310 0 0 ;
5 19.7310 0 0 ;
6 26.2310 0 0 ;
7 30.6607 0 0 ;
8 32.7310 0 0 ;
9 39.9727 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 6.7310 10 0 ;
103 13.2310 10 0 ;
104 19.7310 10 0 ;
105 26.2310 10 0 ;
106 32.7310 10 0 ;
107 39.9727 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN
2 TO 6 TABLE ST W33x141
1 TAPERED 1.0625 0.03125 3.6771 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.6667 0.03125 3.0807 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.0738 0.03125 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 TABLE ST W33x118

CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

* 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3014
TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 8 Fatigue Forces
END JOB INFORMATION

INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 2.6561 0 0 ;
3 7.0858 0 0 ;
4 13.5858 0 0 ;
5 20.0858 0 0 ;
6 26.5858 0 0 ;
7 31.0155 0 0 ;
8 33.0858 0 0 ;
9 39.9869 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.0858 10 0 ;
103 13.5858 10 0 ;
104 20.0858 10 0 ;
105 26.5858 10 0 ;
106 33.0858 10 0 ;
107 39.9869 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL

MEMBER PROPERTY AMERICAN
2 TO 6 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.0625 0.03125 3.6667 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.6667 0.03125 3.0585 1.03125 0.03125 1.03125 0.03125
8 TAPERED 3.0585 0.03125 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 TABLE ST W33x118

CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3016
TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 9 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
***USING FRAMING CONFIGURATION WITH 7 TOTAL STRINGERS
1 0.0000 0 0 ;
2 3.4703 0 0 ;
3 7.9000 0 0 ;
4 14.4000 0 0 ;
5 20.9000 0 0 ;
6 27.4000 0 0 ;
7 31.8297 0 0 ;
8 33.9000 0 0 ;
9 40.0194 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.9000 10 0 ;
103 14.4000 10 0 ;
104 20.9000 10 0 ;
105 27.4000 10 0 ;
106 33.9000 10 0 ;
107 40.0194 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
2 TO 6 TAPERED 4.0417 0.03125 4.0417 1.03125 0.0417 1.03215 0.0417
1 TAPERED 1.0625 0.03125 3.6563 1.03125 0.03125 1.03125 0.03125
7 TAPERED 3.6667 0.03125 3.0005 1.03125 0.0417 1.03125 0.0417
8 TAPERED 3.0005 0.03125 1.0313 1.03125 0.0417 1.03125 0.0417

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101 102 103 104 105 106 TABLE ST W33x118
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
2 7 PINNED

****MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 3
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 8
SLAVE FY MASTER 107 JOINT 9

*MEMBER RELEASES
MEMBER RELEASE
101 TO 106 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3019
TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 10 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 2.6745 0 0 ;
3 4.7448 0 0 ;
4 9.1745 0 0 ;
5 15.6745 0 0 ;
6 22.1745 0 0 ;
7 28.6745 0 0 ;
8 33.1042 0 0 ;
9 34.6563 0 0 ;
10 40.0699 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 2.6745 10 0 ;
103 9.1745 10 0 ;
104 15.6745 10 0 ;
105 22.1745 10 0 ;
106 28.6745 10 0 ;
107 34.6563 10 0 ;
108 40.0699 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TAPERED 2.75 0.0475 2.75 0.9583 0.0671
1 TAPERED 1.2708 0.0683 2.4005 1.3033 0.1094
2 TAPERED 2.4005 0.0683 3.2750 1.3033 0.1094
8 TAPERED 3.6667 0.0692 3.0794 1.03125 0.03125 1.03125 0.03125
9 TAPERED 3.0794 0.0692 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 107 TABLE ST W33x130

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 1 1

DIST 6

** 1 TRUCK SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3024

TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 11 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 4.5971 0 0 ;
3 6.6674 0 0 ;
4 11.0971 0 0 ;
5 17.5971 0 0 ;
6 24.0971 0 0 ;
7 30.5971 0 0 ;
8 35.0268 0 0 ;
9 36.5789 0 0 ;
10 40.1462 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 4.5971 10 0 ;
103 11.0971 10 0 ;
104 17.5971 10 0 ;
105 24.0971 10 0 ;
106 30.5971 10 0 ;
107 36.5789 10 0 ;
108 40.1462 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

3 4 5 6 7 TABLE ST W33x152
1 TAPERED 1.2708 0.0683 2.6959 1.3033 0.1094
2 TAPERED 2.6959 0.0683 3.3377 1.3033 0.1094
8 TAPERED 3.6667 0.0692 2.8677 1.03125 0.03125 1.03125 0.03125
9 TAPERED 2.8677 0.0692 1.0313 1.03125 0.03125 1.03125 0.03125
101 102 103 104 105 106 107 TABLE ST W33x118

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

3 8 PINNED

***MASTER SLAVE RELATIONSHIP

SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES

MEMBER RELEASE

101 TO 107 BOTH MZ

DEFINE MOVING LOAD

TYPE 1 LOAD 1 1

DIST 6

** 1 TRUCK1 SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3032

TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL

FINISH

PERFORM ANALYSIS

PRINT MAXFORCE ENVELOPE

FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
ENGINEER NAME NRF
*Section L
*Floorbeam 12 Fatigue Forces
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0.0000 0 0 ;
2 7.0755 0 0 ;
3 9.1458 0 0 ;
4 13.5755 0 0 ;
5 20.0755 0 0 ;
6 26.5755 0 0 ;
7 33.0755 0 0 ;
8 37.5052 0 0 ;
9 39.0573 0 0 ;
10 40.2448 0 0 ;

***FICTITIOUS DECK
101 0 10 0 ;
102 7.0755 10 0 ;
103 13.5755 10 0 ;
104 20.0755 10 0 ;
105 26.5755 10 0 ;
106 33.0755 10 0 ;
107 39.0573 10 0 ;
108 40.2448 10 0 ;

MEMBER INCIDENCES
1 1 2 ;
2 2 3 ;
3 3 4 ;
4 4 5 ;
5 5 6 ;
6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;

***FICTITIOUS DECK
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN

1 TAPERED 1.8802 0.0625 2.1586 0.8333 0.0833
2 TAPERED 2.1586 0.0625 2.2400 0.8333 0.0833
3 TAPERED 2.2400 0.0625 2.4143 0.8333 0.0833
4 TAPERED 2.4143 0.0625 2.6700 0.8333 0.0833
5 TAPERED 2.6700 0.0625 2.9258 0.8333 0.0833
6 TAPERED 2.9258 0.0625 3.1815 0.8333 0.0833
7 TAPERED 3.1815 0.0625 3.3558 0.8333 0.0833
8 TAPERED 3.3558 0.0625 3.4168 0.8333 0.0833
9 TAPERED 3.4168 0.0625 3.4635 0.8333 0.0833

101 102 103 104 105 106 107 TABLE ST W33x118
CONSTANTS
MATERIAL STEEL ALL

SUPPORTS
3 8 PINNED

***MASTER SLAVE RELATIONSHIP
SLAVE FY MASTER 101 JOINT 1
SLAVE FY MASTER 102 JOINT 2
SLAVE FY MASTER 103 JOINT 4
SLAVE FY MASTER 104 JOINT 5
SLAVE FY MASTER 105 JOINT 6
SLAVE FY MASTER 106 JOINT 7
SLAVE FY MASTER 107 JOINT 9
SLAVE FY MASTER 108 JOINT 10

*MEMBER RELEASES
MEMBER RELEASE
101 TO 107 BOTH MZ

DEFINE MOVING LOAD
TYPE 1 LOAD 1 1
DIST 6

*
** 2 TRUCKS SHIFTING TRANSVERSELY WITH UNIT WHEEL LOAD OF 1 ***
LOAD GENERATION 3022
TYPE 1 1.9167 10 0 XINC 0.01

PERFORM ANALYSIS PRINT ALL
FINISH
PERFORM ANALYSIS
PRINT MAXFORCE ENVELOPE
FINISH

```

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
JOB NAME Section L North Frame Fatigue
JOB NO P402110046
ENGINEER NAME SFH
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 1.375 15.8 0; 2 96.4948 0 0; 3 181.349 11.8 0; 4 227.734 11.8 0;
5 0 27.8682 0; 6 0.5208 27.8641 0; 7 1.375 27.8573 0; 8 16.4948 27.7372
0;
9 36.4948 27.5783 0; 10 48.9349 27.4795 0; 11 56.4948 27.4194 0;
12 76.4948 27.2605 0; 13 80.5156 27.2286 0; 14 90.7448 27.1473 0;
15 94.974 27.1137 0; 16 96.4948 27.1016 0; 17 98.0156 27.0706 0;
18 102.245 26.9845 0; 19 112.474 26.7761 0; 20 117.714 26.6693 0;
21 138.932 26.237 0; 22 160.141 25.805 0; 23 181.349 25.3729 0;
24 204.542 25.1646 0; 25 227.193 24.9612 0; 26 227.734 24.9563 0; 100 0
50 0;
101 16.4948 50 0; 102 36.4948 50 0; 103 56.4948 50 0; 104 76.4948 50 0;
105 96.4948 50 0; 106 117.714 50 0; 107 138.932 50 0; 108 160.141 50 0;
109 181.349 50 0; 110 204.542 50 0; 111 227.734 50 0;
MEMBER INCIDENCES
1 1 7; 2 2 16; 3 3 23; 4 4 26; 5 5 6; 6 6 7; 7 7 8; 8 8 9; 9 9 10; 10 10
11;
11 11 12; 12 12 13; 13 13 14; 14 14 15; 15 15 16; 16 16 17; 17 17 18; 18
18 19;
19 19 20; 20 20 21; 21 21 22; 22 22 23; 23 23 24; 24 24 25; 25 25 26;
100 100 101; 101 101 102; 102 102 103; 103 103 104; 104 104 105; 105 105
106;
106 106 107; 107 107 108; 108 108 109; 109 109 110; 110 110 111;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6.5e-006
DAMP 0.03
END DEFINE MATERIAL
UNIT INCHES KIP
MEMBER PROPERTY AMERICAN
1 TABLE ST W14X120
2 TAPERED 36.5 0.625 36.5 18 2.083
3 TABLE ST W14X120
4 TABLE ST W14X120
5 TAPERED 48.875 0.625 48.875 12.625 0.75 18 2.9
6 TAPERED 78.3 0.625 78.3 18 2.9
7 TAPERED 78.3 0.625 68.675 18 2.9
8 TAPERED 68.675 0.625 61.55 18 2.9
9 TAPERED 61.55 0.625 60.3 18 2.9
10 TAPERED 60.3 0.625 60.8 18 2.9
11 TAPERED 60.8 0.625 66.3625 18 2.9
12 TAPERED 66.3625 0.625 68.175 18 2.9
13 TAPERED 68.175 0.625 74.3 18 2.9
14 TAPERED 74.3 2.125 113.275 18 2.9
15 TAPERED 113.275 2.125 113.275 18 2.9
16 TAPERED 113.275 2.125 113.275 18 2.9
17 TAPERED 113.275 2.125 73.8625 18 2.9
18 TAPERED 73.8625 0.625 67.2375 18 2.9
19 TAPERED 67.2375 0.625 64.8 18 2.9

```

20 TAPERED 64.8 0.625 60.3 18 2.9
21 TAPERED 60.3 0.625 64.8 18 2.9
22 TAPERED 64.8 0.625 78.3 18 2.9
23 TABLE ST W36X260
24 TABLE ST W36X260
25 TAPERED 21.125 0.845 21.125 12.845 0.75 16.555 1.44
100 TO 110 TABLE ST W18X60
CONSTANTS
MATERIAL STEEL ALL
SUPPORTS
1 2 3 4 PINNED

MEMBER RELEASE
102 105 108 END MX MY MZ
103 106 109 START MX MY MZ
1 4 END MX MY MZ
SLAVE FY MASTER 100 JOINT 5
SLAVE FY MASTER 101 JOINT 8
SLAVE FY MASTER 102 JOINT 9
SLAVE FY MASTER 103 JOINT 11
SLAVE FY MASTER 104 JOINT 12
SLAVE FY MASTER 105 JOINT 16
SLAVE FY MASTER 106 JOINT 20
SLAVE FY MASTER 107 JOINT 21
SLAVE FY MASTER 108 JOINT 22
SLAVE FY MASTER 109 JOINT 23
SLAVE FY MASTER 110 JOINT 24
SLAVE FY MASTER 111 JOINT 26
UNIT FEET KIP

DEFINE MOVING LOAD
*HS15 Fatigue Truck
TYPE 1 LOAD 12 12 3
DIST 30 14
TYPE 2 LOAD 3 12 12
DIST 14 30

*HS15 FATIGUE LOADING 1 TRUCK - FORWARD
LOAD GENERATION 3000
TYPE 1 -28 50 0 XINC 0.1
*HS15 FATIGUE LOADING 1 TRUCK - BACKWARD
LOAD GENERATION 3000
TYPE 2 -28 50 0 XINC 0.1

PERFORM ANALYSIS
FINISH

STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 27-Feb-12
JOB NAME Section L South Frame Fatigue Loading
JOB NO P402110046
ENGINEER NAME SFH
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP

JOINT COORDINATES

1 1.3958 13.4 0 ;
2 41.5677 13.4 0 ;
3 81.5677 13.4 0 ;
4 165.2137 0 0 ;
5 232.6304 9.4 0 ;

6 0.0000 26.2091 0 ;
7 0.4895 26.2064 0 ;
8 1.3958 26.2013 0 ;
9 21.5677 26.0888 0 ;
10 39.2969 25.9900 0 ;
11 41.5677 25.9773 0 ;
12 61.5677 25.8427 0 ;
13 81.5677 25.7081 0 ;
14 101.5677 25.1951 0 ;
15 122.7865 24.6508 0 ;
16 144.0053 24.1065 0 ;
17 149.2345 23.9724 0 ;
18 159.4637 23.7100 0 ;
19 163.6929 23.6015 0 ;
20 165.2137 23.5625 0 ;
21 166.7345 23.5251 0 ;
22 170.9637 23.4211 0 ;
23 181.1929 23.1697 0 ;
24 186.4221 23.0411 0 ;
25 198.9221 22.7338 0 ;
26 209.6096 22.4711 0 ;
27 232.0471 21.9195 0 ;
28 232.6304 21.9052 0 ;

100 0.0000 50.0 0.0 ;
101 21.5677 50.0 0.0 ;
102 41.5677 50.0 0.0 ;
103 61.5677 50.0 0.0 ;
104 81.5677 50.0 0.0 ;
105 101.5677 50.0 0.0 ;
106 122.7865 50.0 0.0 ;
107 144.0053 50.0 0.0 ;
108 165.2137 50.0 0.0 ;
109 186.4221 50.0 0.0 ;
110 209.6096 50.0 0.0 ;
111 232.6304 50.0 0.0 ;

MEMBER INCIDENCES

1 1 8 ;
2 2 11 ;
3 3 13 ;
4 4 20 ;
5 5 28 ;

6 6 7 ;
7 7 8 ;
8 8 9 ;
9 9 10 ;
10 10 11 ;
11 11 12 ;
12 12 13 ;
13 13 14 ;
14 14 15 ;
15 15 16 ;
16 16 17 ;
17 17 18 ;
18 18 19 ;
19 19 20 ;
20 20 21 ;
21 21 22 ;
22 22 23 ;
23 23 24 ;
24 24 25 ;
25 25 26 ;
26 26 27 ;
27 27 28 ;

100 100 101 ;
101 101 102 ;
102 102 103 ;
103 103 104 ;
104 104 105 ;
105 105 106 ;
106 106 107 ;
107 107 108 ;
108 108 109 ;
109 109 110 ;
110 110 111 ;

DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6.5e-006
DAMP 0.03
END DEFINE MATERIAL

UNIT KIP INCH
MEMBER PROPERTY AMERICAN

1 TABLE ST W14X120
2 TABLE ST W14X120
3 TABLE ST W14X120
4 TAPERED 36.5 0.625 36.5 18 2.083
5 TABLE ST W14X120

6 TAPERED 20.5 0.77 20.5 12.77 0.75 12.117 1.26
7 TABLE ST W36X194
8 TABLE ST W36X194
9 TABLE ST W36X194
10 TABLE ST W36X194
11 TABLE ST W36X194
12 TABLE ST W36X194
13 TAPERED 77.675 0.625 65.2063 18 2.9
14 TAPERED 65.2063 0.625 60.3 18 2.9

15 TAPERED 60.3 0.625 64.675 18 2.9
16 TAPERED 64.675 0.625 67.1125 18 2.9
17 TAPERED 67.1125 0.625 73.8 18 2.9
18 TAPERED 73.8 2.125 113.9 18 2.9
19 TAPERED 113.9 2.125 113.9 18 2.9
20 TAPERED 113.9 2.125 113.9 18 2.9
21 TAPERED 113.9 2.125 72.8 18 2.9
22 TAPERED 72.8 0.625 65.175 18 2.9
23 TAPERED 65.175 0.625 62.8 18 2.9
24 TAPERED 62.8 0.625 60.3 18 2.9
25 TAPERED 60.3 0.625 62.1125 18 2.9
26 TAPERED 62.1125 0.625 78.675 18 2.9
27 TAPERED 48 0.625 48 12.625 0.75 18 2.9

100 TO 110 TABLE ST W18x60

CONSTANTS

MATERIAL STEEL ALL

SUPPORTS

1 TO 5 PINNED

MEMBER RELEASE

102 105 108 END MX MY MZ

103 106 109 START MX MY MZ

1 2 5 END MX MY MZ

SLAVE FY MASTER 100 JOINT 6

SLAVE FY MASTER 101 JOINT 9

SLAVE FY MASTER 102 JOINT 11

SLAVE FY MASTER 103 JOINT 12

SLAVE FY MASTER 104 JOINT 13

SLAVE FY MASTER 105 JOINT 14

SLAVE FY MASTER 106 JOINT 15

SLAVE FY MASTER 107 JOINT 16

SLAVE FY MASTER 108 JOINT 20

SLAVE FY MASTER 109 JOINT 24

SLAVE FY MASTER 110 JOINT 26

SLAVE FY MASTER 111 JOINT 28

UNIT KIP FEET

DEFINE MOVING LOAD

***HS20 Truck

TYPE 1 LOAD 12 12 3

DIST 30 14

TYPE 2 LOAD 3 12 12

DIST 14 30

***HS15 FATIGUE LOADING 1 TRUCK - FORWARD

LOAD GENERATION 3000

TYPE 1 -28 50 0 XINC 0.1

***HS15 FATIGUE LOADING 1 TRUCK - BACKWARD

LOAD GENERATION 3000

TYPE 2 -28 50 0 XINC 0.1

PERFORM ANALYSIS

FINISH