APPENDIX E

Load Rating & Structural Analysis

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

APPENDIX E

<u>LOAD RATING & STRUCTURAL ANALYSIS</u>

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

Title

MIDAS CIVIL 2.1 ANALYSIS INPUT DATA

SWING SPAN – EXISTING STRUCTURE ANALYSIS

FIXED SPAN – EXISTING STRUCTURE ANALYSIS

SUBSTRUCTURE ANALYSIS

PROPOSED WIDENING ANALYSIS

EXISTING PLANS

VESSEL COLLISION ANALYSIS

APPENDIX E
PROJECT NO.158-212, BRIDGE NO 01349
ROUTE 136 OVER SAUGATUCK RIVER, WESTPORT

Bridge No. 01349 carries route 136 (Bridge Street) over the Saugatuck River in Westport, CT. This four span continuous multi-girder swing span bridge has a length of 287 feet and a curb-to-curb width of 19.5 feet. The bridge was constructed in 1870 and rehabilitated in 1993. The LFR rating for HS20 truck loading is 59 tons on record. The original Pratt Trusses were retained for aesthetic reasons and carry no live load. The swing span structure consists of two continuous 70-foot multi-girder, with steel plate deck spans with original Pratt truss supported by the original center pier 2 and west abutment. The fixed span structure consists of two continuous 70-foot multi-girder with exodermic deck spans with decorative façade Pratt truss supported by the new pier 3, original pier 2 and the east abutment.

Existing Structure Analysis

The existing superstructure and substructure for all spans were analyzed utilizing MIDAS CIVIL 2016 V2.1 and L-pile V2015 software's.

Superstructure Load Rating Analysis

The structure was modeled, analyzed, and rated in MIDAS CIVIL 2016 V2.1 Software utilizing LRFD methodology. The LRFR factors are in accordance with 2015 AASHTO LRFD specifications and AASHTO manual for bridge evaluation 2nd edition with 2016 interims. The superstructure was rated based on the HL-93 and HS-20 design loadings. The structure was also modeled and rated for legal loads H-20, CT-L3S2 and CT-L73.0 loadings. The original ornamental Pratt Truss was added as a uniform dead load to the structure for analysis. The governing LRFR rating factor for the swing span under HS-20 loading is 4.48 and under HL-93 loading is 3.31. The governing LRFR rating factor for fixed span under HS-20 loading is 1.86 and under HL-93 loading is 1.32. See tables 1 and 2 below.

Table 1: Swing Span Rating Factors

	Midas Civil 2016 V2.1	
	Rating Factor	Limit State
HL-93 Inv.		
Girder 1	3.3112	Strength I
Girder 2	4.3051	Strength I
Girder 3	4.5897	Strength I
Girder 4	4.4292	Strength I
Girder 5	4.5873	Strength I
Girder 6	4.3015	Strength I
Girder 7	3.3024	Strength I
HL-93 Oper.		
Girder 1	4.2923	Strength I
Girder 2	5.5807	Strength I
Girder 3	5.9496	Strength I
Girder 4	5.7416	Strength I
Girder 5	5.9465	Strength I
Girder 6	5.5760	Strength I
Girder 7	4.2809	Strength I
HS-20		
Girder 1	4.4782	Strength I
Girder 2	5.9657	Strength I
Girder 3	6.3059	Strength I

Girder 4	5.8383	Strength I
Girder 5	6.3024	Strength I
Girder 6	5.9609	Strength I
Girder 7	4.4676	Strength I
H-20		
Girder 1	6.9963	Strength I
Girder 2	9.0006	Strength I
Girder 3	9.3572	Strength I
Girder 4	7.6886	Strength I
Girder 5	9.3526	Strength I
Girder 6	8.9943	Strength I
Girder 7	6.9837	Strength I
CT-L3S2		
Girder 1	7.7236	Strength I
Girder 2	10.0684	Strength I
Girder 3	10.7420	Strength I
Girder 4	9.6244	Strength I
Girder 5	10.7358	Strength I
Girder 6	10.0534	Strength I
Girder 7	7.7012	Strength I
CT-L73.0		
Girder 1	5.7658	Strength I
Girder 2	7.3077	Strength I
Girder 3	7.7884	Strength I
Girder 4	7.0496	Strength I
Girder 5	7.7842	Strength I
Girder 6	7.3023	Strength I
Girder 7	5.7538	Strength I
CT-L3S2		
Girder 1	7.7236	Strength I
Girder 2	10.0684	Strength I
Girder 3	10.7420	Strength I
Girder 4	9.6244	Strength I
Girder 5	10.7358	Strength I
Girder 6	10.0534	Strength I
Girder 7	7.7012	Strength I

Table 2: Fixed Span Rating Factors

	Midas Civil 2016 V2.1	
	Rating Factor	Limit State
HL-93 Inv.		
Girder 1	1.32776	Strength I
Girder 2	1.41137	Strength I
Girder 3	1.41699	Strength I
Girder 4	1.36748	Strength I
HL-93 Oper.		
Girder 1	1.72122	Strength I
Girder 2	1.82939	Strength I
Girder 3	1.83667	Strength I
Girder 4	1.77257	Strength I
HS-20		
Girder 1	1.86047	Strength I
Girder 2	1.93039	Strength I
Girder 3	1.93807	Strength I
Girder 4	1.88140	Strength I
H-20		
Girder 1	2.77778	Strength I
Girder 2	2.82970	Strength I
Girder 3	2.84096	Strength I
Girder 4	2.80972	Strength I
CT-L3S2		
Girder 1	3.18421	Strength I
Girder 2	3.31162	Strength I
Girder 3	3.32481	Strength I
Girder 4	3.22010	Strength I
CT-L73.0		
Girder 1	2.29203	Strength I
Girder 2	2.39631	Strength I
Girder 3	2.40584	Strength I
Girder 4	2.31805	Strength I
CT-L3S2 + Lane Load		
Girder 1	3.18421	Strength I
Girder 2	3.31162	Strength I
Girder 3	3.32481	Strength I
Girder 4	3.22010	Strength I

Existing Truss Analysis

Swing Spans 1-2: The existing superstructure and substructure were modeled as a two span continuous with the existing truss as an ornamental Pratt Truss supported on swing span ends. The truss members were also analyzed under factored dead load and wind loads for stability and strength. See tables 3, 4, 5, and 6 below.

Table 3: Swing Span Truss Analysis (25.5 ksi Steel)

Swing Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)	Displacement (Strength III)	Allowable Wind Speed
Cross Bracing	13.53 ksi	12.36 ksi	12.05 ksi	11.77 ksi	0.36 in	125 mph
Main Members	13.53 ksi	10.34 ksi	-	-	0.36 in	125 mph

***Combined**: Combined stress (Combined stress: Sax ± Sby ± Sbz).

Fixed Spans 3-4: Similar to the swing span the existing fixed span superstructure and substructure were modeled as a two span continuous with the existing truss as a ornamental Pratt Truss supported on the existing Pier 2 and east abutment. The existing Pratt Truss was also analyzed for its stability under factored dead load and wind loads. The substructure was modeled in MIDAS CIVIL 2016 V2.1 to determine the loads that would be transferred to the existing piles. The piles were then analyzed utilizing L-pile V2015. See tables 7, 8, 9, and 10 below.

Table 4: Fixed Span Truss Analysis (25.5 ksi Steel)

Fixed Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (70 mph) (Strength III, Combine)	Displacement (Strength III)	Allowable Wind Speed
Cross Bracing	35.17 ksi	24.56 ksi	20.97 ksi	18.36 ksi	17.58 ksi	1.85 in	90 mph
Main Members	30.83 ksi	20.80 ksi	17.41 ksi	14.39 ksi	11.67 ksi	2.05 in	100 mph

Substructure Analysis

Table 5: Pier 2 Carrying Beam Analysis (33 ksi Steel – Allowable .95*33ksi = 31.35ksi)

	Midas Civil 2016 V2.1				
	Displacement (in)	Stress (ksi)	Rating Factor	Rating Tons	Limit State
No Section Loss					
HL-93 Inventory	0.37	28.48	1.2609	N/A	Strength I
HL-93 Operating	0.34	26.04	1.6336	N/A	Strength I
HS-20	0.33	25.85	1.6772	60.38	Strength I
H20	0.29	23.01	2.6628	53.26	Strength I
CT-L3S2	0.28	22.58	2.8973	114.92	Strength I
CT-L73.0	0.31	24.11	2.1628	78.94	Strength I
CT-L3S2 + Lane Load	0.28	22.58	2.8973	N/A	Strength I
10% Section Loss					
HL-93 Inventory	0.42	32.90	**0.8713**	N/A	Strength I
HL-93 Operating	0.38	30.12	1.1285	N/A	Strength I
HS-20	0.37	29.90	1.1575	41.67	Strength I
H20	0.32	26.62	1.8336	36.67	Strength I
CT-L3S2	0.31	26.13	2.0078	80.31	Strength I
CT-L73.0	0.34	27.90	1.4928	54.49	Strength I
CT-L3S2 + Lane Load	0.31	26.13	2.0078	N/A	Strength I

*Main Carrying Beams WF14x219 (33 ksi steel)

Table 6: Pier 2 Pile Analysis (36 ksi Steel)

	Midas Civil 2016 V2.1		L-pile V2015		A-Pile	Pile Type	Allowable Compressive Resistance		C/D Ratio Axial	C_{Ma}=Combined Compressive and Flexural Resistance Factor* < 1	Rating Tons
Live load	Shear (kip)	Axial (kip)	Max Moment in Pile (in-kip)	Max Deflection (in)	Bearing Capacity (kips)		Axial (kips)	Moment (kip-in)			
HL-93 Inv.	10.5	379.8	1471.52	1.5026	520.0	HP14X89	567.3	2371	**0.896**	**1.508**	N/A
HL-93 Oper.	8.4	350.8	1144.859	1.1369	520.0	HP14X89	567.3	2371	0.970	1.313	N/A
HS-20	8.4	350.4	1131.133	1.1231	520.0	HP14X89	567.3	2371	0.971	1.306	27.72
H20	6.0	314.2	804.911	0.7968	520.0	HP14X89	567.3	2371	1.083	1.093	18.20
CT-L3S2	5.6	309.2	833.655	0.8256	520.0	HP14X89	567.3	2371	1.101	1.091	36.80
CT-L73.0	7.1	328.3	1085.494	1.0771	520.0	HP14X89	567.3	2371	1.037	1.234	29.57
CT-L3S2 + Lane Load	5.9	314.4	889.204	0.8810	520.0	HP14X89	567.3	2371	1.083	1.125	N/A

*Original HP14x89 Design Capacity 83.5 kips
*$C_{Ma}=P_U/P_R+\gamma((M_{ux}/M_{rx}))+(M_{uy}/M_{ry})) < 1.0$ (AASHTO 6.9.2.2-2)
*$C/D=P_R/P_U$ (AASHTO 6.9.4)

Table 7: Pier 3 Analysis (50 ksi steel)

	Midas Civil 2016 V2.1		
	Displacement (in)	Stress (ksi)	Limit State
HL-93 Inv.	0.035	6.26	Strength I
HS-20	0.030	5.26	Strength I

Table 8: Pier 3 Pile Analysis (50 ksi Steel)

	Midas Civil 2016 V2.1/Hand Calcs.			A-Pile	Pile Type	Allowable Compressive Resistance		C/D Ratio Axial	C_{Ma}=Combined Compressive and Flexural Resistance Factor* < 1
Live load	Shear (kip)	Axial (kip)	Moment (in-kip)	Bearing Capacity (kips)		Axial (kips)	Moment (kip-in)		
HL-93 Inv.	42.8	226.0	913.3	520.0	HP14X89	470.3	1677.6	1.249	**1.170**
HL-93 Inv.	97.9	190	1402	520.0	HP14X90	470.3	1677.6	1.485	**1.320**

*Original HP12x74 maximum design pile load capacity 196 kips (Group I, Working Stress)
*$C_{Ma}=P_U/P_R+\gamma((M_{ux}/M_{rx}))+(M_{uy}/M_{ry})) < 1.0$ (AASHTO 6.9.2.2-2)
*$C/D=P_R/P_U$ (AASHTO 6.9.4)

Proposed Widening Analysis

The proposed widening rehabilitation alternate was analyzed by MIDAS CIVIL 2016 V2.1 and L-pile V2015. The widening rehabilitation will consist of widening the existing truss 2-feet on each side of the structure for all spans and increasing the pier cap width (Pier 2) to encompass the three carrying beams. The existing floor beams will be extended from the truss to the fascia girders but will be allowed to move in the vertical direction.

Swing Spans 1-2: The widened Pratt Truss was analyzed to determine the allowable wind speed that it could withstand without being overstressed. The Pratt Truss was analyzed for both the cross bracing members and the main members. The cross bracing members and the main members can withstand a wind speed of 125 mph. See table 11 below.

Table 9: Swing Span Proposed Widening Truss Analysis (25.5-50 ksi Steel)

Swing Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)
Cross Bracing	16.42 ksi	15.58 ksi	15.29 ksi	15.04 ksi
Main Members	15.34 ksi	12.11 ksi	-	-

Displacement (Strength III)	Allowable Wind Speed
1.24 in	125 mph
1.24 in	125 mph

Fixed Spans 3-4: Similar to the swing span, the fixed span Pratt Truss was analyzed for the allowable wind speed and the cross bracing members were determined to be overstressed under unfactored dead load. The main members of the Pratt Truss can withstand a wind speed of 125 mph before they become overstressed. Pier 2 was analyzed under Strength I for both HS-20 loading and HL-93 loading. The piles were then analyzed utilizing L-pile V2015. See tables 12, 13, and 14.

Table 10: Fixed Proposed Widening Truss Analysis (25.5-50 ksi Steel)

Fixed Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (70 mph) (Strength III, Combine)	Displacement (Strength III)	Allowable Wind Speed
Cross Bracing	20.66 ksi	19.93 ksi	19.68 ksi	19.46 ksi	19.26 ksi	1.69 in	125 mph
Main Members	16.83 ksi	14.30 ksi	13.45 ksi	12.69 ksi	10.97 ksi	1.12 in	125 mph

Table 11: Pier 2 Proposed Widening Carrying Beam Analysis (50 ksi Steel)

	Midas Civil 2016 V2.1		
	Displacement (in)	Stress (ksi)	Limit State
HL-93 Inv.	0.07	0.96	Strength I
HS-20	0.07	0.96	Strength I

Table 12: Pier 2 Proposed Widening Pile Analysis (50 ksi Steel)

	Midas Civil 2016 V2.1			L-pile V2015	A-Pile	Pile Type	Allowable Compressive Resistance		C/D Ratio Axial	C_{Ma}=Combined Compressive and Flexural Resistance Factor* < 1
Live load	Shear (kip)	Axial (kip)	Moment (in-kip)	Max Moment in Pile (in-kip)	Bearing Capacity (kips)		Axial (kips)	Moment (kip-in)		
HL-93 Inv.	14.1	225.0	1188.2	4337.1	520.0	HP14X117	1074.4	4570	**2.865**	**0.530**

*$C_{Ma}=P_U/P_R+\gamma((M_{ux}/M_{rx}))+(M_{uy}/M_{ry})) < 1.0$ (AASHTO 6.9.2.2-2)

*$C/D=P_R/P_U$ (AASHTO 6.9.4)

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>MIDAS CIVIL 2.1 ANALYSIS INPUT DATA</u>

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

FIXED SPAN
YEAR BUILT: 1870, REHAB 1993
ADT: 13100
% TRUCK: 5

LENGTH: 140'
SPANS: 2
SKEW: 0

SIDEWEALK HANDRAIL WEIGHT

4X3X5/16" POST, 5'-8" HIGH

P = 4 + 3 + 4 + 3
= 14 in

V = P x t x H
= 14 x 0.3125 x 68
V = 297.5 in^3
= 0.1722 ft^3

N_{posts} = 10 ea

V_{posts} = 10 x 0.1722 = 1.7216 ft^3

HANDRAIL, 5X3X1/2" TUBE

P = 5 + 3 + 5 + 3
= 16 in

V = P x t x L
= 16 x 0.5 x 1680
V = 13440 in^3
= 7.7778 ft^3

TOTAL =(1.7216 + 7.7778)x 0.49 kcf
= 4.6547 k

$w_{handrail}$ = 4.6547 / 140
= 0.0332 k/ft/side

GUIDERAIL

W10X15 POSTS, 3'-9.25" HGIH

W/post = 15 x 3.7708 = 56.563 lb/post

N_{posts} = 10 ea

W_{posts} = 56.563 x 10 / 1000
= 0.5656 k

RAIL = 7.7778 x 0.49
= 3.8111 k

TOTAL =(0.5656 + 3.8111)/ 140
= 0.0313 k/ft/side

CURB
C10X20

A_{C10X20} = 5.87 in^2
b_{C10X20} = 2.74 in
Create equivalent rectangular section
h = 5.87 / 2.75 = 2.13 in

w = 490 pcf

BAY	SPACING
1	5
2	5
3	5

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

DIAPHRAGM WEIGHTS

DIAPH.	TYPE	WEIGHT	LENGTH	TOTAL	
Left of B1	W10X26	0.26	7.938	2.064	k
BAY 1	W10X26	0.26	5.000	1.300	k
BAY 2	C12X25	0.25	5.000	1.250	k
BAY 3	W10X26	0.26	5.000	1.300	k
Right of B4	W10X26	0.26	3.724	0.968	k

Outside Diaphragms

$N_{dia/side}$ = 10 ea

W = 10 x(2.064 + 0.9682)
= 30.32 k

W = 30.32 / 280
= 0.1083 k/ft/side
Program directly calculates this weight

LOADS TO ADD TO CURB LOADS

Outside Diaphragms and Railing

P = 0.0313 + 0.1083
= 0.1395 k/ft/side
Program directly calculates this weight

ADDITIONAL MEMBER LOADS

Timber Sidewalk

Timber = 50 pcf *pg 54 of design calculations

$W_{stringers}$ = b x h x wt. x $N_{stringers}$ / 144
= 4 x 16 x 50 x 2 / 144
= 44.444 lb/ft

W_{plank} = b x h x wt. x N_{plank} / 144
= 58.25 x 2 x 50 x 1 / 144
= 40.451 lb/ft

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

4 - C9X13.4

$W_{C9x13.4}$ = 13.4 x $N_{C9x13.4}$
= 13.4 x 4
= 53.6 lb/ft

$W_{sidewalk}$ = 44.444 + 40.451 + 53.6 + 33.248
= 171.74 lb/ft

$W_{sidewalk}$ = 0.1717 k/ft
Applied to exterior girder only

Curb and Rail Load

w_{curb} = 5.87 x 0.49 + 0.1395
= 0.160 k/ft/side

W_{curb} = w_{curb} x N_{sides} / $N_{girders}$
= 0.160 x 2 / 4
W_{curb} = 0.0798 k/ft

W_{curb} = 0.08 k/ft

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

EXODERMIC DECK THICKNESS

8.25" DECK - 4" Concrete over Steel Studs

A_{stud1} = 1.5 in^2
$N_{stud/ft}$ = 2 ea

A_{steel} = 3 in^2/ft

n = 8 *ratio steel to concrete

$A_{conc.equ.}$ = A_{steel} x n
= 3 x 8
$A_{conc.equ.}$ = 24 in^2/ft

$t_{conc.equ.}$ = $A_{conc.equ.}$ / 12 in/ft
= 24 / 12
$t_{conc.equ.}$ = 2 in

t_{deck} = 4 + $t_{conc.equ.}$
= 4 + 2
t_{deck} = 6 in

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

<u>SWING SPAN</u>
YEAR BUILT: 1870, REHAB 1993
ADT: 13100
% TRUCK: 5

LENGTH: 142'
SPANS: 2
SKEW: 0

<u>SIDEWEALK HANDRAIL WEIGHT</u>
$w_{handrail}$ = 0.0332 k/ft/side

<u>GUIDERAIL</u>
$w_{guiderail}$ = 0.0313 k/ft/side

<u>CURB</u>

2.75 x 2.13 Curb, 490 pcf

BAY	SPACING
1	3
2	3
3	3
4	3
5	3
6	3

<u>DIAPHRAGM WEIGHTS</u>
5/8" PLATE DIAPHRAGM, FULL HEIGHT AND WIDTH

d_{web} = 36 in
= 3 ft

$wid._{dia}$ = 3 ft
t_{dia} = 0.625 in
= 0.0521 ft

V_{dia} = 3 x 3 x 0.0521
V_{dia} = 0.4688 ft^3
Program directly calculates this weight

W_{dia} = V_{dia} x 0.49 kcf
= 0.4688 x 0.49 kcf
W_{dia} = 0.2297 k

W_{dia} = 0.3 k
Program directly calculates this weight

ADDITIONAL MEMBER LOADS

Curb and Rail Load

w_{curb} = 5.87 x 0.49 + 0.1395
= 0.160 k/ft/side

W_{curb} = w_{curb} x N_{sides} / $N_{girders}$
= 0.160 x 2 / 7
W_{curb} = 0.0456 k/ft

Truss Load

W_{truss} = 0.05 k/ft/girder
Program directly calculates this weight

Close, Jensen and Miller, P.C.

BY BA DATE 1/11/16 SUBJECT BR. 1349 SHEET NO. ...... OF ......
CHKD. BY ...... DATE ...... EXISTING STRUCTURE ANALYSIS JOB NO. ......
EXISTING SUPERSTRUCTURE LOADS

SWING SPAN:

TRUSS:

A1 P1 P2

ROLLER FIXED ROLLER

All TRUSS MEMBER CONNECTIONS FIXED

FIXED SPAN

USE TRUSS AS DEAD WEIGHT ON CONVENTIONAL SUPERSTRUCTURE

ALL 4 POINT DEAD LOAD ON PIER AND ABUTMENT FOR PIER ANALYSIS

SWING SPAN:

SUPERIMPOSED DL RAILING .04 k/'
SIDEWALK .11 k/'

W10X26 8' SIDEWALK
4' CURB SIDE

26 lb/FT x 10 x 8' = 2k / 140 = .015 k/'

.015 k/' / 2 = .008 k/'

FIXED SPAN;
SWING SPAN

CURB .02 k/' SIDEWALK

.02 + .015 = .035 k/' + .11 k/' = .145 k/' + .04 (RAILING) = .185 k/'

CURB SIDE: .02 k/' + .008 k/' + .04 k/' = .07 k/'

DESIGN WIND PRESSURE, P_D

$$P_D = P_B \frac{V_{DZ}^2}{10{,}000}$$ (AASHTO 3.8.1.2.1-1)

P_B VALUES FOR $V_B = 100$ MPH (AASHTO TABLE 3.8.1.2.2-1)

SKEW = 0° FOR TRUSSES, LATERAL $P_B = 0.075$ ksf
LONGIT. $P_B = 0$ ksf

$$V_{DZ} = 2.5 V_0 \left(\frac{V_{30}}{V_B}\right) \ln\left(\frac{Z}{Z_0}\right)$$ (AASHTO 3.8.1.1-1)

$V_B = 100$ mph
$V_0 = 12$ mph
$Z_0 = 8.2$ ft
} AASHTO Table 3.8.1.1-1 (for City)

Per AASHTO 3.8.1.1, in the absense of better criterion, $V_{30} = V_B = 100$ mph

FOR Z: top of ground = EL. -17
Pier cap elevation = EL. 9.482'
truss height = 17'-7¼" = EL. 27.086'

$Z = 27.086' - (-17') = 44.086$

$$V_{DZ} = 2.5(12)\left(\frac{100}{100}\right)\ln\left(\frac{44.086}{8.2}\right) = 50.5 \text{ mph}$$

$$P_D = P_B \frac{V_{DZ}^2}{10{,}000} = 0.075\left(\frac{50.5^2}{10{,}000}\right)$$

$P_D = 0.019$ ksf $=$ 20 psf

Wind Pressure on structure

$P_D = P_B \left(V_{DZ} / V_B \right)^2$ (AASHTO 3.8.1.2.1-1)

$P_B = .05$ Ksf (AASHTO Table 3.8.1.2.2-1)

$V_B = 100$ mph
$V_{DZ} = 50.5$ mph

$P_D = (.05 \text{ ksf})\left(50.5 \text{ mph} / 100 \text{ mph} \right)^2 = .01275 \text{ ksf}$

Swing Span

Girder height $= (1 \text{ in} + 36 \text{ in} + 1.125 \text{ in} + 2.5 \text{ in})(1\text{ft}/12\text{ in}) = 3.385 \text{ ft}$

$W_{SS} = P_D H_S = (.01275 \text{ ksf})(3.385 \text{ ft}) = .04316$ Kif < .3 Kif (AASHTO 3.8.1.2.1)
$W_{SS} = .3$ Kif

Fixed Span

Girder height $= (.975 \text{ in} + 25.45 \text{ in} + .975 \text{ in} + 8.25 \text{ in})(1\text{ft}/12\text{ in}) = 2.97 \text{ ft}$

$W_{FS} = P_D H_F = (.01275 \text{ ksf})(2.97 \text{ ft}) = .03787$ kif < .3 kif (AASHTO 3.8.1.2.1)
$W_{FS} = .3$ kif

Wind Pressure on live load

$W_L = .1$ kif (AASHTO Table 3.8.1.3.1)
- acts at 6ft above the roadway and shall be transmited to the structure

$W_L = .1$ Kif transverse
$W_L = .04$ Kif longitudinal

Vertical wind Pressure

Length to width ratio

$L = 280\,ft$
$w = 20\,ft$

$L/w = 280/20 = 14 < 30$ not wind-sensitive (AASHTO 3.8.3.1)

$w_v = .02\,ksf\ w$ (AASHTO 3.8.2)

$w_v = (.02\,ksf)(20ft) = .4\,klf$

Wind on Substructure

$P_B = .04\,ksf$ (AASHTO 3.8.1.2.3)

Pier 1
$D = 24ft$

$w_{p1} = P_B D = (.04\,ksf)(24ft) = .96\,klf$

Pier 2/3 piles
$D = 2ft$

$w_{p2/3} = P_B D = (.04\,ksf)(2ft) = .08\,klf$

Close, Jensen and Miller, P.C.

BY: DC DATE: 1/19/16 SUBJECT: Bridge 01349 SHEET NO. ... OF ...
CHKD. BY ... DATE ... Existing Structure Analysis JOB NO. ...
Existing superstructure loads

Temperature Gradient

$T_1 = 41^{\circ F}$ (AASHTO Table 3.8.1.3 - 1)
$T_2 = 11^{\circ F}$

$T_1 - T_2 = 41^\circ - 11^\circ = 30^\circ$

Temperature range

Procedure A (AASHTO 3.12.2.1)

$T_{max} = 80^{\circ F}$ (AASHTO Table 3.12.2.1-1)
$T_{min} = 0^{\circ F}$

Design Thermal movements

$\Delta_T = \alpha L (T_{max} - T_{min})$ (AASHTO 3.12.2.3-1)

$\alpha = 6 \times 10^{-6}$ in/in/°F
$L = 140$ ft

$\Delta_T = (6 \times 10^{-6} \text{ in/in/°F})(140 \text{ ft})(12 \text{ in/ft})(80^{\circ F} - 0^{\circ F}) = .806$ in

Close, Jensen and Miller P.C.				Project No. 158-212
Subject TRUSS SECTION PROPERTIES		Bridge No. 1349		Sheet No.
xxx	Date 5-Jan	Town Westport		Computed By: BA
Double Angle Top Horiz. Member				Checked By: BA

SECTION PROPERTIES

GIRDER DESCRIPTION

Top Flange Angles (V x H x t)	2	x	3	x	0.25	Enter zeros for all Fl angle data to analyze as a Pl girder
Bot Flange Angles (V x H x t)	2	x	3	x	0.25	
Web Plate (H x t)	12.875	x	0.25			
Top Cover Plate (t x W)	0	x	13.375			
Bot Cover Plate (t x W)	0	x	13.375			
Overall Depth of Beam	13.38	in				

Are there any Section Losses (Y or N)?	N		
	0.016	13.38	T
	0.016	13.38	T
	0.016	2.00	2.0

No. of Rivets or Bolts accross Flange : 0

0.875

Beam Weight ' Wt ' : 27.1 lb/ft

As-Built Moment Of Inertia ' I ' x axis : 228 inches^4

Bot. FL. Hole Area is Less Than 15% of Gross FL Area Therefore no Reduction was taken (AASHTO Table 10.32.1A, note i)

AS-BUILT SECTION

		Area	Y	A x Y	A x Y²	I
Top Cover Pl		0	13.375	0.00	0.0	0.0
Top Fl Angles		2.375	12.882	30.59	394.1	0.8
Web Pl		3.22	6.688	21.53	144.0	44.5
Bot Fl Angles		2.375	0.493	1.17	0.6	0.8
Bot Cover Pl		0	0.000	0.00	0.0	0.0
		7.97		53.29	538.6	46.0
Y' =	6.69					
Ibot =	584.7					
Ic.g. =	**228.3**		**Stop =**	**34.13**	**Sbot =**	**34.13**

SECTION INCLUDING LOSSES

		Area	Y	A x Y	A x Y²	I
Losses to top Fl		0.20898	0.000	0.000	0.00	0.000
1st Losses to Web Plate		0.03125	2	0.063	0.13	0.010
2ndLosses to Web Plate		0	0	0.000	0.00	0.000
Losses to Bot Fl		0.20898	0.231	0.048	0.01	0.000
		0.44922		0.110776	0.14	0.010
Revised Section Totals		7.52		53.18	538.5	46.0
Y'loss =	7.07					
Ibotloss =	584.5					
Ic.g.loss =	**208.4**		**Stop =**	**34.13**	**Sbot =**	**29.47**

Close, Jensen and Miller P.C.				Project No.	158-212
Subject	TRUSS SECTION PROPERTIES	Bridge No.	1349	Sheet No.	
xxx	Date 5-Jan	Town	Westport	Computed By:	BA

TRANSFORMED SECTION TO PLATE GIRDER

Note:
The BDS software cannot accept Built-up Girders Sections for input, Therefore an Equivalent Transformed Section must be created. The new section will have the same depth and flange width as the orig. beam. The only change will be in the flange thickness and a correction for the tension flange holes if applicable.

As Built Beam Weight ' Wt ' :	27.1	lb/ft	Stop =	34.1
As-Built Moment Of Inertia ' I ' x axis :	228	inches^4	Sbot =	29.5

New Top Flange Plate :	0.348	x	13.38	New Stop =	65.5
New Bot. Flange Plate :	0.348	x	13.38	New Sbot =	65.5
New Web Plate :	12.679	x	0.25		
New Beam Depth :	13.38 in.				

Trans. Beam ' Wt '	42.5	lbs.
Trans. Beam Moment of Inertia	438	in.^4

Bot. FL. Hole Area is Less Than 15% of Gross FL Area Therefore no Reduction was taken
(AASHTO Table 10.32.1A, note i)

TRANSFORMED SECTION PROPERTIES

		Area	Y	A x Y	A x Y²	I
Top Fl Plate		4.65784	13.20088	61.48761	811.6903	0.0
Web Plate		3.16963	6.6875	21.19687	141.754	42.5
Bot Fl Plate		4.65784	0.174125	0.811047	0.141224	0.0
		12.4853		83.49553	953.5856	42.55243
Y'	6.6875					
Ibot	996.1					
Ic.g.	**437.761657**		**Stop =**	**65.5 ,**	**Sbot =**	**65.5**

W12x53

There is Change in Beam Wt. From Orig. to Trans. Which Must be Added into BDS as Self weight of the Beam = ***-15.4*** *lb/ft or* ***-1.3*** *lb/in*

Close, Jensen and Miller, P.C.

BY .... DATE .... SUBJECT Bridge 01349 .... SHEET NO. .... OF ....

CHKD. BY .... DATE .... Existing structure analysis .... JOB NO. ....

Existing substructure loads

Pier 3 L-Pile Analysis

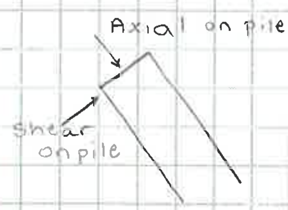
Maximum Loading

Midas Loads

Axial Load = 223 Kips

Shear = 42.2 Kips

Pile batter



$\alpha = \tan^{-1}(1/6) = 9.46^\circ$

Axial load on pile = (223 kips) / cos (9.46) = 226 Kips

Shear load on pile = (42.2 kips) / cos (9.46) = 42.8 Kips

- A wall located such that its collapse would endanger buildings or the lives of people.
- A wall supporting a multi-span structure (such as an abutment).

4.5 REHABILITATION OF EXISTING BRIDGES

4.5.1 General Requirements

In general, retrofit work on piers and abutments will not be required. Most retrofit work shall consist of providing lateral restraint at bridge bearings and providing adequate seat width.

The Department may require more extensive analysis and retrofit for major bridges, or if a unique situation exists such as a multi-level structure. The decision to include seismic retrofit of piers and abutments for these structures will be made on a case-by-case basis by the Department. For these cases, the designer shall use the load factor method for the analysis and design.

Actual implementation of corrective measures on bridge rehabilitations will be dependent on the cost, practicality of the modification, seriousness of the shortcoming, and the importance of the bridge.

4.5.2 Bridge Deck Patching Projects

All bridge rehabilitation projects that only include patching of the bridge deck need not be analyzed for seismic forces.

4.5.3 Bridge Widening Projects

4.5.3.1 *Widenings ≤ 25%*

$\frac{4\text{ ft widening}}{22\text{ ft}} = 18\% < 25\%$

All bridge rehabilitation projects where the widened portion of the cross section is less than 25% of the total width of the completed bridge will generally not require analysis for seismic forces.

4.5.3.2 *Widenings > 25%*

All bridge rehabilitation projects where the widened portion of the cross section is greater than or equal to 25% of the total width of the completed bridge shall be designed for seismic forces.

The preliminary design of the new portions of the substructure shall be based on all AASHTO loading conditions with the exception of seismic forces. Once the preliminary design is complete, the entire structure shall be analyzed for seismic forces. If deficiencies are found in the existing structure, the designer shall investigate the following alternatives:

The load factor for settlement, γ_{SE}, should be considered on a project-specific basis. In lieu of project-specific information to the contrary, γ_{SE}, may be taken as 1.0. Load combinations which include settlement shall also be applied without settlement.

For segmentally constructed bridges, the following combination shall be investigated at the service limit state:

$$DC + DW + EH + EV + ES + WA + CR + SH + TG + EL + PS \quad (3.4.1\text{-}2)$$

Table 3.4.1-1—Load Combinations and Load Factors

Load Combination Limit State	*DC DD DW EH EV ES EL PS CR SH*	*LL IM CE BR PL LS*	*WA*	*WS*	*WL*	*FR*	*TU*	*TG*	*SE*	Use One of These at a Time *EQ*	*IC*	*CT*	*CV*
Strength I (unless noted)	γ_p	1.75	1.00	—	—	1.00	0.50/1.20	γ_{TG}	γ_{SE}	—	—	—	—
Strength II	γ_p	1.35	1.00	—	—	1.00	0.50/1.20	γ_{TG}	γ_{SE}	—	—	—	—
Strength III	γ_p	—	1.00	1.40	—	1.00	0.50/1.20	γ_{TG}	γ_{SE}	—	—	—	—
Strength IV	γ_p	—	1.00	—	—	1.00	0.50/1.20	—	—	—	—	—	—
Strength V	γ_p	1.35	1.00	0.40	1.0	1.00	0.50/1.20	γ_{TG}	γ_{SE}	—	—	—	—
Extreme Event I	γ_p	γEQ	1.00	—	—	1.00	—	—	—	1.00	—	—	—
Extreme Event II	γ_p	0.50	1.00	—	—	1.00	—	—	—	—	1.00	1.00	1.00
Service I	1.00	1.00	1.00	0.30	1.0	1.00	1.00/1.20	γ_{TG}	γ_{SE}	—	—	—	—
Service II	1.00	1.30	1.00	—	—	1.00	1.00/1.20	—	—	—	—	—	—
Service III	1.00	0.80	1.00	—	—	1.00	1.00/1.20	γ_{TG}	γ_{SE}	—	—	—	—
Service IV	1.00	—	1.00	0.70	—	1.00	1.00/1.20	—	1.0	—	—	—	—
Fatigue I—*LL*, *IM* & *CE* only	—	1.50	—	—	—	—	—	—	—	—	—	—	—
Fatigue I II—*LL*, *IM* & *CE* only	—	0.75	—	—	—	—	—	—	—	—	—	—	—

φ_c = Condition factor

φ_s = System factor

φ = LRFD resistance factor

The load rating shall be carried out at each applicable limit state and load effect with the lowest value determining the controlling rating factor. Limit states and load factors for load rating shall be selected from Table 6A.4.2.2-1.

Components subjected to combined load effects shall be load rated considering the interaction of load effects (i.e., axial-bending interaction or shear-bending interaction), as provided in this Manual under the sections on resistance of structures.

Secondary effects from prestressing of continuous spans and locked-in force effects from the construction process should be included as permanent loads other than dead loads, P (see Articles 6A.2.2.2. and 6A.2.2.3).

6A.4.2.2—Limit States

Strength is the primary limit state for load rating; service and fatigue limit states are selectively applied in accordance with the provisions of this Manual. Applicable limit states are summarized in Table 6A.4.2.2-1.

C6A.4.2.2

Service limit states that are relevant to load rating are discussed under the articles on resistance of structures (see Articles 6A.5, 6A.6, and 6A.7).

Table 6A.4.2.2-1—Limit States and Load Factors for Load Rating

Bridge Type	Limit State*	Dead Load γ_{DC}	Dead Load γ_{DW}	Design Load: Inventory γ_{LL}	Design Load: Operating γ_{LL}	Legal Load γ_{LL}	Permit Load γ_{LL}
Steel	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	—	Table 6A.4.5.4.2a-1
	Service II	1.00	1.00	1.30	1.00	1.30	1.00
	Fatigue	0.00	0.00	0.75	—	—	—
Reinforced Concrete	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	—	Table 6A.4.5.4.2a-1
	Service I	1.00	1.00	—	—	—	1.00
Prestressed Concrete	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	—	Table 6A.4.5.4.2a-1
	Service III	1.00	1.00	0.80	—	1.00	—
	Service I	1.00	1.00	—	—	—	1.00
Wood	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	—	Table 6A.4.5.4.2a-1

* Defined in the *AASHTO LRFD Bridge Design Specifications*.

Notes:

- Shaded cells of the table indicate optional checks.
- Service I is used to check the 0.9 F_y stress limit in reinforcing steel.
- Load factor for DW at the strength limit state may be taken as 1.25 where thickness has been field measured.
- Fatigue limit state is checked using the LRFD fatigue truck (see Article 6A.6.4.1).

Table 6A.4.2.4-1—System Factor: φ_s for Flexural and Axial Effects

Superstructure Type	φ_s
Welded Members in Two-Girder/Truss/Arch Bridges	0.85
Riveted Members in Two-Girder/Truss/Arch Bridges	0.90
Multiple Eyebar Members in Truss Bridges	0.90
Three-Girder Bridges with Girder Spacing 6 ft	0.85
Four-Girder Bridges with Girder Spacing ≤4 ft	0.95
All Other Girder Bridges and Slab Bridges	1.00
Floorbeams with Spacing >12 ft and Noncontinuous Stringers	0.85
Redundant Stringer Subsystems between Floorbeams	1.00

If the simplified system factors presented in Table 6A.4.2.4-1 are used, they should be applied only when checking flexural and axial effects at the strength limit state of typical spans and geometries.

A constant value of $\varphi_s = 1.0$ is to be applied when checking shear at the strength limit state.

For evaluating timber bridges, a constant value of $\varphi_s = 1.0$ is assigned for flexure and shear.

If Table 6A.4.2.4-1 is used, the system factors are used to maintain an adequate level of system safety. Nonredundant bridges are penalized by requiring their members to provide higher safety levels than those of similar bridges with redundant configurations. The aim of φ_s is to add a reserve capacity such that the overall system reliability is increased from approximately an operating level (for redundant systems) to a more realistic target for nonredundant systems corresponding to Inventory levels.

If the Engineer can demonstrate the presence of adequate redundancy in a superstructure system (Reference: NCHRP Report 406), then φ_s may be taken as 1.0. In some instances, the level of redundancy may be sufficient to utilize a value of φ_s greater than 1.0, but in no instance should φ_s be taken as greater than 1.2.

A more liberal system factor for nonredundant riveted sections and truss members with multiple eyebars has been provided. The internal redundancy in these members makes a sudden failure far less likely. An increased system factor of 0.90 is appropriate for such members.

Some agencies may consider all three-girder systems, irrespective of girder spacing, to be nonredundant. In such cases, φ_s may be taken as 0.85 for welded construction and 0.90 for riveted construction.

Subsystems that have redundant members should not be penalized if the overall system is nonredundant. Thus, closely spaced parallel stringers would be redundant even in a two-girder-floorbeam main system.

For narrow bridges (such as one-lane bridges) with closely spaced three-and four-girder systems, all the girders are almost equally loaded and there is no reserve strength available. Therefore, φ_s is decreased to 0.85.

For the purposes of determining system factors, each web of a box girder may be considered as an I-girder.

System factors are generally not appropriate for shear, as shear failures tend to be brittle, so system reserve is not possible. The design resistance, factored for shear, should be calibrated to reflect the brittle characteristics. Thus, in the evaluation, all the φ_s should be equal. A constant value of $\varphi_s = 1.0$ is assigned for evaluation.

More accurate quantification of redundancy is provided in NCHRP Report 406, *Redundancy in Highway Bridge Superstructures*. Tables of system factors are given in the referenced report for common simple-span and continuous bridges with varying number of beams and beam spacings. For bridges with configurations that are not covered by the tables, a direct redundancy analysis approach may be used, as described in NCHRP Report 406.

$$P_D = P_B\left(\frac{V_{DZ}}{V_B}\right)^2 = P_B\frac{V_{DZ}^{\ 2}}{10,000} \qquad (3.8.1.2.1\text{-}1)$$

$P_B =$ base wind pressure specified in Table 3.8.1.2.1-1 (ksf)

Wind tunnel tests may be used to provide more precise estimates of wind pressures. Such testing should be considered where wind is a major design load.

The wind force on the structure shall be calculated by multiplying the design wind pressure, P_D, calculated using Eq. 3.8.1.2.1-1, by the exposed area, including the area of sound barriers, if existing, regardless of the design wind pressure used in designing the sound barriers themselves.

Due to the lack of information on the wind force on sound barriers, the wind pressure specified in Article 15.8.2 for the design of sound barriers is based on producing similar wind pressures to those used for the design of sound barriers (AASHTO, 1989). Such values of wind pressures proved to produce safe designs in the past.

The term "columns" in Table 3.8.1.2.1-1 refers to columns in superstructures such as spandrel columns in arches.

Table 3.8.1.2.1-1—Base Pressures, P_B, Corresponding to V_B = 100 mph

Superstructure Component	Windward Load, ksf	Leeward Load, ksf
Trusses, Columns, and Arches	0.050	0.025
Beams	0.050	NA
Large Flat Surfaces	0.040	NA

WIND LOAD
Application

The total wind loading shall not be taken less than 0.30 klf in the plane of a windward chord and 0.15 klf in the plane of a leeward chord on truss and arch components, and not less than 0.30 klf on beam or girder spans.

3.8.1.2.2—Loads from Superstructures

C3.8.1.2.2

Except where specified herein, where the wind is not taken as normal to the structure, the base wind pressures, P_B, for various angles of wind direction may be taken as specified in Table 3.8.1.2.2-1 and shall be applied to the centroid of a single plane of exposed area. The skew angle shall be taken as measured from a perpendicular to the longitudinal axis. The wind direction for design shall be that which produces the extreme force effect on the component under investigation. The transverse and longitudinal pressures shall be applied simultaneously.

For trusses, columns, and arches, the base wind pressures specified in Table 3.8.1.2.2-1 are the sum of the pressures applied to both the windward and leeward areas.

Table 3.8.1.2.2-1—Base Wind Pressures, P_B, for Various Angles of Attack and V_B = 100 mph

Skew Angle of Wind (degrees)	Trusses, Columns and Arches: Lateral Load (ksf)	Trusses, Columns and Arches: Longitudinal Load (ksf)	Girders: Lateral Load (ksf)	Girders: Longitudinal Load (ksf)
0	0.075	0.000	0.050	0.000
15	0.070	0.012	0.044	0.006
30	0.065	0.028	0.041	0.012
45	0.047	0.041	0.033	0.016
60	0.024	0.050	0.017	0.019

For the usual girder and slab bridges having an individual span length of not more than 125 ft and a maximum height of 30.0 ft above low ground or water level the following wind loading may be used:

- 0.05 ksf, transverse
- 0.012 ksf, longitudinal

Both forces shall be applied simultaneously. These forces shall not be used in determining the forces on sound barriers.

Wind pressure on sound barriers should be determined using the provisions of Article 15.8.2.

3.8.1.2.3—Forces Applied Directly to the Substructure

The transverse and longitudinal forces to be applied directly to the substructure shall be calculated from an assumed base wind pressure of 0.040 ksf. For wind directions taken skewed to the substructure, this force shall be resolved into components perpendicular to the end and front elevations of the substructure. The component perpendicular to the end elevation shall act on the exposed substructure area as seen in end elevation, and the component perpendicular to the front elevation shall act on the exposed areas and shall be applied simultaneously with the wind loads from the superstructure.

3.8.1.3—Wind Pressure on Vehicles: *WL*

When vehicles are present, the design wind pressure shall be applied to both structure and vehicles. Wind pressure on vehicles shall be represented by an interruptible, moving force of 0.10 klf acting normal to, and 6.0 ft above, the roadway and shall be transmitted to the structure.

Except where specified herein, when wind on vehicles is not taken as normal to the structure, the components of normal and parallel force applied to the live load may be taken as specified in Table 3.8.1.3-1 with the skew angle taken as referenced normal to the surface.

Table 3.8.1.3-1—Wind Components on Live Load

Skew Angle (degrees)	Normal Component (klf)	Parallel Component (klf)
0	0.100	0.000
15	0.088	0.012
30	0.082	0.024
45	0.066	0.032
60	0.034	0.038

C3.8.1.3

Based on practical experience, maximum live loads are not expected to be present on the bridge when the wind velocity exceeds 55 mph. The load factor corresponding to the treatment of wind on structure only in Load Combination Strength III would be $(55/100)^2$ $(1.4) = 0.42$, which has been rounded to 0.40 in the Strength V Load Combination. This load factor corresponds to 0.3 in Service I.

The 0.10 klf wind load is based on a long row of randomly sequenced passenger cars, commercial vans, and trucks exposed to the 55 mph design wind. This horizontal live load, similar to the design lane load, should be applied only to the tributary areas producing a force effect of the same kind.

3.11 Wind Loads

3.11.1 Wind Load to Superstructure

For the usual girder and slab bridges with less than 30′ height above ground, the following simplified wind pressure on structure (*WS*), could be used in lieu of the general method described in AASHTO LRFD Article 3.8.1.2:

- 0.05 kip per square foot, transverse
- 0.012 kip per square foot, longitudinal

Both forces shall be applied simultaneously.

For the usual girder and slab bridges with less than 30′ height above ground, the following simplified wind pressure on vehicle (*WL*), could be used in lieu of the general method described in AASHTO LRFD Article 3.8.1.3:

- 0.10 kip per linear foot, transverse
- 0.04 kip per linear foot, longitudinal

Both forces shall be applied simultaneously.

3.11.2 Wind Load to Substructure

Wind forces shall be applied to the substructure units in accordance with the loadings specified in AASHTO. Transverse stiffness of the superstructure may be considered, as necessary, to properly distribute loads to the substructure provided that the superstructure is capable of sustaining such loads. Vertical wind pressure, per AASHTO LRFD 3.8.2, shall be included in the design where appropriate, for example, on single column piers. Wind loads shall be applied through shear keys or other positive means from the superstructure to the substructure. Wind loads shall be distributed to the piers and abutments in accordance with the laws of statics. Transverse wind loads can be applied directly to the piers assuming the superstructure to act as a rigid beam. For large structures a more appropriate result might be obtained by considering the superstructure to act as a flexible beam on elastic supports.

Table 3–12. Heat capacity of solid wood at selected temperatures and moisture contents

Temperature			Specific heat (kJ/kg·K (Btu/lb·°F))			
(K)	(°C	(°F))	Ovendry	5% MC	12% MC	20% MC
280	7	(45)	1.2 (0.28)	1.3 (0.32)	1.5 (0.37)	1.7 (0.41)
290	17	(75)	1.2 (0.29)	1.4 (0.33)	1.6 (0.38)	1.8 (0.43)
300	27	(80)	1.3 (0.30)	1.4 (0.34)	1.7 (0.40)	1.9 (0.45)
320	47	(116)	1.3 (0.32)	1.5 (0.37)	1.8 (0.43)	2.0 (0.49)
340	67	(152)	1.4 (0.34)	1.6 (0.39)	1.9 (0.46)	2.2 (0.52)
360	87	(188)	1.5 (0.36)	1.7 (0.41)	2.0 (0.49)	2.3 (0.56)

Thermal Expansion Coefficient

The coefficient of thermal expansion is a measure of the change of dimension caused by temperature change. The thermal expansion coefficients of completely dry wood are positive in all directions; that is, wood expands on heating and contracts on cooling. Limited research has been carried out to explore the influence of wood property variability on thermal expansion. The thermal expansion coefficient of ovendry wood parallel to the grain appears to be independent of specific gravity and species. In tests of both hardwoods and softwoods, the parallel-to-grain values have ranged from about 0.000031 to 0.0000045 per K (0.0000017 to 0.0000025 per °F).

The thermal expansion coefficients across the grain (radial and tangential) are proportional to wood specific gravity. These coefficients range from about 5 to more than 10 times greater than the parallel-to-grain coefficients and are of more practical interest. The radial and tangential thermal expansion coefficients for ovendry wood, α_r and α_t, can be approximated by the following equations, over an ovendry specific gravity range of about 0.1 to 0.8:

$$\alpha_r = (32.4G + 9.9)10^{-6} \text{ per K} \quad (3\text{–}11a)$$

$$\alpha_r = (18G + 5.5)10^{-6} \text{ per °F} \quad (3\text{–}11b)$$

$$\alpha_t = (32.4G + 18.4)10^{-6} \text{ per K} \quad (3\text{–}12a)$$

$$\alpha_t = (18G + 10.2)10^{-6} \text{ per °F} \quad (3\text{–}12b)$$

Thermal expansion coefficients can be considered independent of temperature over the temperature range of–51.1°C to 54.4°C (–60°F to 130°F).

Wood that contains moisture reacts differently to varying temperature than does dry wood. When moist wood is heated, it tends to expand because of normal thermal expansion and to shrink because of loss in moisture content. Unless the wood is very dry initially (perhaps 3% or 4% moisture content or less), shrinkage caused by moisture loss on heating will be greater than thermal expansion, so the net dimensional change on heating will be negative. Wood at intermediate moisture levels (about 8% to 20%) will expand when first heated, then gradually shrink to a volume smaller than the initial volume as the wood gradually loses water while in the heated condition.

Even in the longitudinal (grain) direction, where dimensional change caused by moisture change is very small, such changes will still predominate over corresponding dimensional changes as a result of thermal expansion unless the wood is very dry initially. For wood at usual moisture levels, net dimensional changes will generally be negative after prolonged heating.

Electrical Properties

The most important electrical properties of wood are conductivity, dielectric constant, and dielectric power factor. The conductivity of a material determines the electric current that will flow when the material is placed under a given voltage gradient. The dielectric constant of a nonconducting material determines the amount of potential electric energy, in the form of induced polarization, that is stored in a given volume of the material when that material is placed in an electric field. The power factor of a nonconducting material determines the fraction of stored energy that is dissipated as heat when the material experiences a complete polarize–depolarize cycle.

Examples of industrial wood processes and applications in which electrical properties of wood are important include crossarms and poles for high voltage powerlines, utility worker's tools, and the heat-curing of adhesives in wood products by high frequency electric fields. Moisture meters for wood utilize the relationship between electrical properties and moisture content to estimate the moisture content.

Conductivity

The electrical conductivity of wood varies slightly with applied voltage and approximately doubles for each temperature increase of 10°C (18°F). The electrical conductivity of wood (or its reciprocal, resistivity) varies greatly with moisture content, especially below the fiber saturation point. As the moisture content of wood increases from near zero to fiber saturation, electrical conductivity increases (resistivity decreases) by 10^{10} to 10^{13} times. Resistivity is about 10^{14} to 10^{16} Ω·m for ovendry wood and 10^{3} to 10^{4} Ω·m for wood at fiber saturation. As the moisture content increases from fiber saturation to complete saturation of the wood structure, the

Mechanical properties of eyebars, high-strength eyebars, forged eyebars, and cables vary depending on manufacturer and year of construction. When information from records is not available, microstructural and chemical analyses and hardness testing are helpful in classifying the material. In the absence of material tests, the Engineer should carefully investigate the material properties using manufacturer's data and compilation of older steel properties before establishing the yield point and tensile strength to be used in load rating the bridge.

6A.6.2.2—Pins

If the material designation for pins is unknown, the yield strength may be selected from Table 6A.6.2.2-1, based on the year of construction.

Table 6A.6.2.2-1—Minimum Yield Point of Pins by Year of Construction

Year of Construction	Minimum Yield Point, F_y, ksi
Prior to 1905	25.5
1905 through 1935	30
1936 through 1963	33
After 1963	36

6A.6.2.3—Wrought Iron

When the material designation is unknown for wrought iron, the minimum tensile strength, F_u, should be taken as 48 ksi and the minimum yield point, F_y, should be taken as 26 ksi.

Where practical, coupon tests should be performed to confirm the minimum mechanical properties used in the evaluation.

6A.6.3—Resistance Factors

Resistance factors, φ, for steel members, for the strength limit state, shall be taken as specified in LRFD Design Article 6.5.4.2.

C6A.6.3

For service limit states, $\varphi = 1.0$.

6A.6.4—Limit States

The applicable limit states and their load combinations for the evaluation of structural steel and wrought iron members are specified for the various rating procedures. The load combinations, and the load factors which comprise them, are specified in Table 6A.4.2.2-1 and in these Articles.

6A.6.4.1—Design-Load Rating

Strength I and Service II load combinations shall be checked for the design loading. Live load factors shall be taken as tabulated in Table 6A.4.2.2-1.

In situations where fatigue-prone details are present (category C or lower) a rating factor for infinite fatigue life should be computed. Members that do not satisfy the infinite fatigue life check may be evaluated for remaining fatigue life using procedures given in Section 7. This is an optional requirement.

C6A.6.4.1

Rating factors for applicable strength, service, and fatigue limit states computed during the design load rating will aid in identifying vulnerable limit states for further evaluation and future inspections.

Table 6B.5.2.1-1—Inventory Rating Allowable Stresses, psi

		DATE BUILT-STEEL UNKNOWN								
		Prior to 1905	1905 to 1936	1936 to 1963	After 1963	Carbon Steel	Silicon Steel Over 2 in. to 4 in. incl.	Nickel Steel	$1^1/_8$ in. and under	Over $1^1/_8$ in. to 2 in. incl.
AASHTO Designation[a]						M 94 (1961)	M 95 (1961)	M 96 (1961)		
ASTM Designation[a]						A7 (1967)	A94 (1966)	A8 (1961)	A94	A94
Minimum Tensile Strength	F_u	52,000	60,000			60,000	70,000	90,000	75,000	72,000
Minimum Yield Point	F_y	26,000	30,000	33,000	36,000	33,000	45,000	55,000	50,000	47,000
Axial tension in members with no holes for high-strength bolts or rivets. Use net section when member has any open holes larger than $1^1/_4$-in. diameter, such as perforations.	$0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000
	$0.46F_y$					NOT APPLICABLE				
Axial tension in members with holes for high-strength bolts or rivets and tension in extreme fiber of rolled shapes, girders, and built-up sections subject to bending. (use whichever is smaller)	Gross* Section $0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000
• When the area of holes deducted for high-strength bolts or rivets is more than 15 percent of the gross area, that area in excess of 15 percent shall be deducted from the gross area in determining stress on the gross section. In determining gross section, any open holes larger than $1^1/_4$-in. diameter, such as perforations, shall be deducted.	Net Section $0.50F_u$	26,000	30,000	30,000	30,000	30,000	35,000	45,000	37,000	36,000
	Net Section $0.46F_u$					NOT APPLICABLE				
Axial tension in members without holes. Axial compression, gross section: stiffeners of plate girders. Compression in splice material, gross section.	$0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000
Compression in extreme fibers of rolled shapes, girders, and built-up sections, subject to bending, gross section, when compression flange is: (A) Supported laterally its full length by embedment in concrete	$0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000
(B) Partially supported or unsupported[b]										

$$F_b = \frac{91\times10^6 C_{\ell s}}{(F.S.)\,S_{xc}}\left(\frac{\ell_{yc}}{\ell}\right)\sqrt{0.772\frac{J}{\ell_{yc}}+9.87\left(\frac{d}{\ell}\right)^2} \le 0.55F_y$$

C_b = 1.75 + 1.05 (M_1/M_2) + 0.3 (M_1/M_2)2 ≤ 2.3 where M_1 is the smaller and M_2 is the larger end moment in the unbraced segment of the beams: M_1/M_2 is positive when the moments cause reverse curvature and negative when bent in single curvature.

= 1.0 for unbraced cantilevers and for members where the moment within a significant portion of the unbraced segment is greater than or equal to the larger of the segment end moments.

$F.S.$ = Factor of Safety at Inventory Level = 1.82

Table 1. *Tensile strengths of steel and factors of safety for tension fracture at net section.*

Source	Year	Grade of Steel	Yield stress, minimum, ksi (MPA)	Ultimate stress, minimum, ksi (MPA)	Allowable stress on net section, ksi (MPA)	Factor of safety for fracture
Pottsville Iron & Steel Co.[7]	1887				15.6 (108)	
Carnegie Phipps & Co.[7]	1889-1893	for bridges			12.5 (86)	
IATM[10]	1900	medium	35 (241)	60 (414)		
Waddell[16]	1901	medium	35 (241)	60 (414)	16 (110) 18 (124)	3.8 3.3
Burr and Falk[4]	1901					3.5 to 6.0@
Copper[12]	1909	medium			10 to 25 (69 to 720)#	2.4 to 6.0#
Michigan[13]	1910	medium	30 (207)	60 (414)	15 (103)	4.0
Bethlehem Steel Co.[7]	1907-11	moving loads			12.5 (86)	
Waddell[17]	1916	medium	35 (241)	60 (414)	16 (110)	3.8
Ketchum[12]	1920	medium			16 (110)	
AASHTO[3]	pre 1905 1905-36		26 (179) 30 (207)	52 (358) 60 (414)	26 (179)* 30 (207)*	2.0* 2.0*
AASHTO[1]	current	ASTM A36	36 (248)	58 (400)	29 (200)*	2.0*

* for inventory rating, less than 100,000 load cycles
@ depending on span # depending on type of load, including impact factor

Table 2. *Tensile strengths of wrought iron and factors of safety for tension fracture.*

Source	Year	Grade of Steel	Yield stress, minimum, ksi (MPA)	Ultimate stress, minimum, ksi (MPA)	Allowable stress ksi (MPA)	Factor of safety for fracture
Carnegie Kloman & Co.[7]	1873	wrought iron			14 (97)	3
Waddell[15]	1883	iron	26 (179)	50 (345)	8 to 12.5 (55 to 86)#	4.0 to 6.2#
Phoenix Iron Co.[7]	1885				12 (83)	
IATM[11]	1900	refined iron	25 (172)	48 (331)		
		test iron class A	25 (172)	48 (331)		
		test iron class B	25 (172)	50 (345)		
		stay-bolt iron	25 (172)	46 (317)		
Waddell[16]	1901	wrought iron	26 (179)	50 (345)	13 (90)	3.8
AASHTO[3]		wrought iron			14.6 (101)*	

* for inventory rating # depending on service class and influence area

increased those values to 320 and 180 lb/ft.[17] (4.67 and 2.63 kN/m). The Illinois Highway Department designed for the larger of 25 lb/ft.^{2} (1.2 kN/m^2) on the vertical projection of each truss and of the deck, or 300 and 150 lb/ft. (4.38 and 2.19 kN/m) on the loaded and unloaded chords, respectively[12]. Modern specifications[1,2] are much more demanding, requiring design for wind loads of 75 lb/ft.^{2} (3.6 kN/m^2) on the vertical projection of each truss and of the deck, plus 300 and 150 lb/ft. (4.38 and 2.19 kN/m) on the loaded and unloaded chords, respectively (this lineal load is not required for pedestrian bridges), plus 20 lb/ft.^{2} (0.96 kN/m^2) upward on the deck. Clearly, historic bridges are unlikely to have been designed for the wind loads currently mandated.

Structural Analysis and Design

The components of each of the rehabilitated project bridges were analyzed to estimate design stresses associated with internal forces caused by specified combinations of loads[1] and acting on the original uncorroded member cross-sections. Allowable stresses were computed from assumed material properties[3] and specified factors of

Modulus of Subgrade Reaction, K

Sandy Soils:

Loose Sand	30-100 kcf
Medium Sand	60-500 kcf
Dense Sand	400-800 kcf
Sand w/Clay (mix)	200-50 kcf
Sand w/Silt (mix)	150-300 kcf

Clayey Soils:

qu < 4 ksf	75-150 kcf
4 ksf < qu < 8 ksf	150-300 kcf
qu > 8 ksf	> 300 kcf

where: qu = unconfined compression strength

Note: if 'K' is known/given in units of kcf, multiply by 1000/1728 = 0.5787 to convert kcf to pci for input.
This program takes 'K' input in pci and multiplies it by 1728/1000 = 1.728 to convert to kcf for use throughout.

Max. Shears and L

+V(max) = 6.27

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>SWING SPAN – EXISTING STRUCTURE ANALYSIS</u>

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

SWING SPAN – RATING RESULTS

Bridge 01349 - Midas load Rating

Swing Span - Minimum Rating Fator

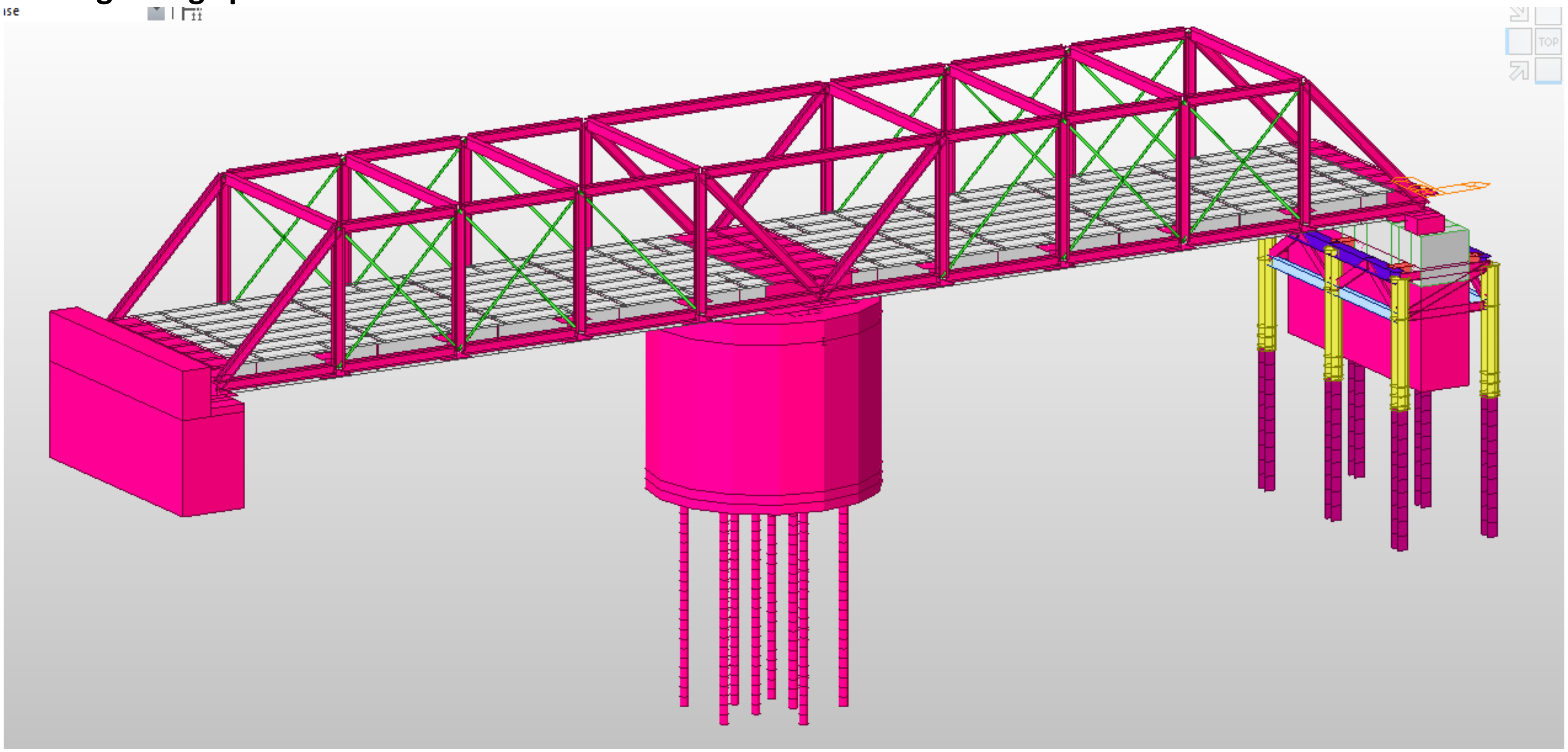
Loading	Minimum Rating Factor	Limit State
HL-93 Inventory	3.302	Strength I
HL-93 Operating	4.281	Strength I
HS-20	4.468	Strength I
H-20	6.984	Strength I
CT-L3S2	7.701	Strength I
CT-L73.0	5.754	Strength I
CT-L3S2 + 0.2 klf Lane Load	7.701	Strength I

Swing Span - Rating Factor Results

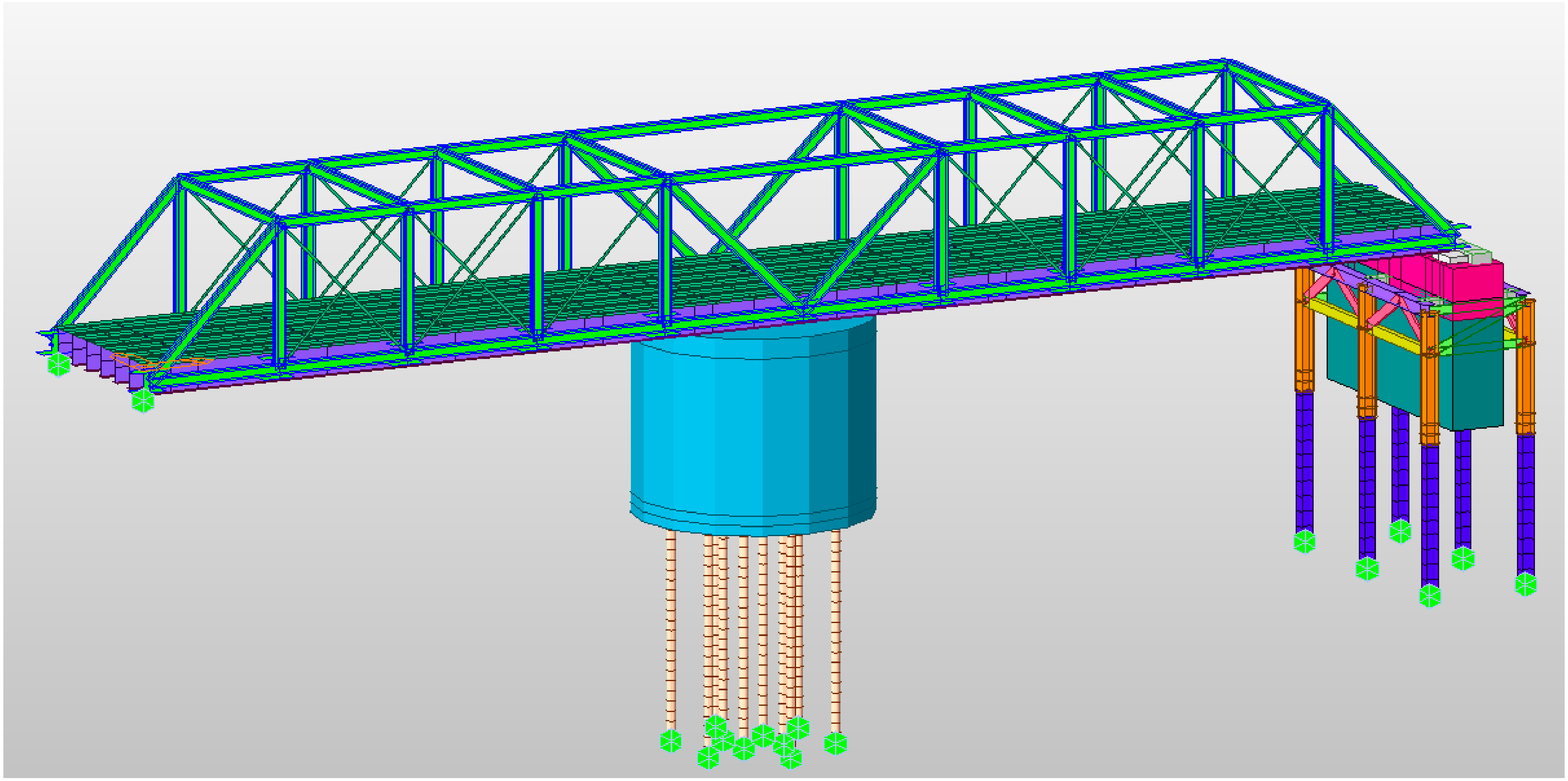
	Midas Civil 2016 V2.1	
	Rating Factor	Limit State
HL-93 Inv.		
Girder 1	3.3112	Strength I
Girder 2	4.3051	Strength I
Girder 3	4.5897	Strength I
Girder 4	4.4292	Strength I
Girder 5	4.5873	Strength I
Girder 6	4.3015	Strength I
Girder 7	3.3024	Strength I
HL-93 Oper.		
Girder 1	4.2923	Strength I
Girder 2	5.5807	Strength I
Girder 3	5.9496	Strength I
Girder 4	5.7416	Strength I
Girder 5	5.9465	Strength I
Girder 6	5.5760	Strength I
Girder 7	4.2809	Strength I
HS-20		
Girder 1	4.4782	Strength I
Girder 2	5.9657	Strength I
Girder 3	6.3059	Strength I
Girder 4	5.8383	Strength I
Girder 5	6.3024	Strength I
Girder 6	5.9609	Strength I
Girder 7	4.4676	Strength I
H-20		
Girder 1	6.9963	Strength I
Girder 2	9.0006	Strength I
Girder 3	9.3572	Strength I
Girder 4	7.6886	Strength I
Girder 5	9.3526	Strength I
Girder 6	8.9943	Strength I
Girder 7	6.9837	Strength I

CT-L3S2		
Girder 1	7.7236	Strength I
Girder 2	10.0684	Strength I
Girder 3	10.7420	Strength I
Girder 4	9.6244	Strength I
Girder 5	10.7358	Strength I
Girder 6	10.0534	Strength I
Girder 7	7.7012	Strength I
CT-L73.0		
Girder 1	5.7658	Strength I
Girder 2	7.3077	Strength I
Girder 3	7.7884	Strength I
Girder 4	7.0496	Strength I
Girder 5	7.7842	Strength I
Girder 6	7.3023	Strength I
Girder 7	5.7538	Strength I
CT-L3S2		
Girder 1	7.7236	Strength I
Girder 2	10.0684	Strength I
Girder 3	10.7420	Strength I
Girder 4	9.6244	Strength I
Girder 5	10.7358	Strength I
Girder 6	10.0534	Strength I
Girder 7	7.7012	Strength I

Existing Swing Span



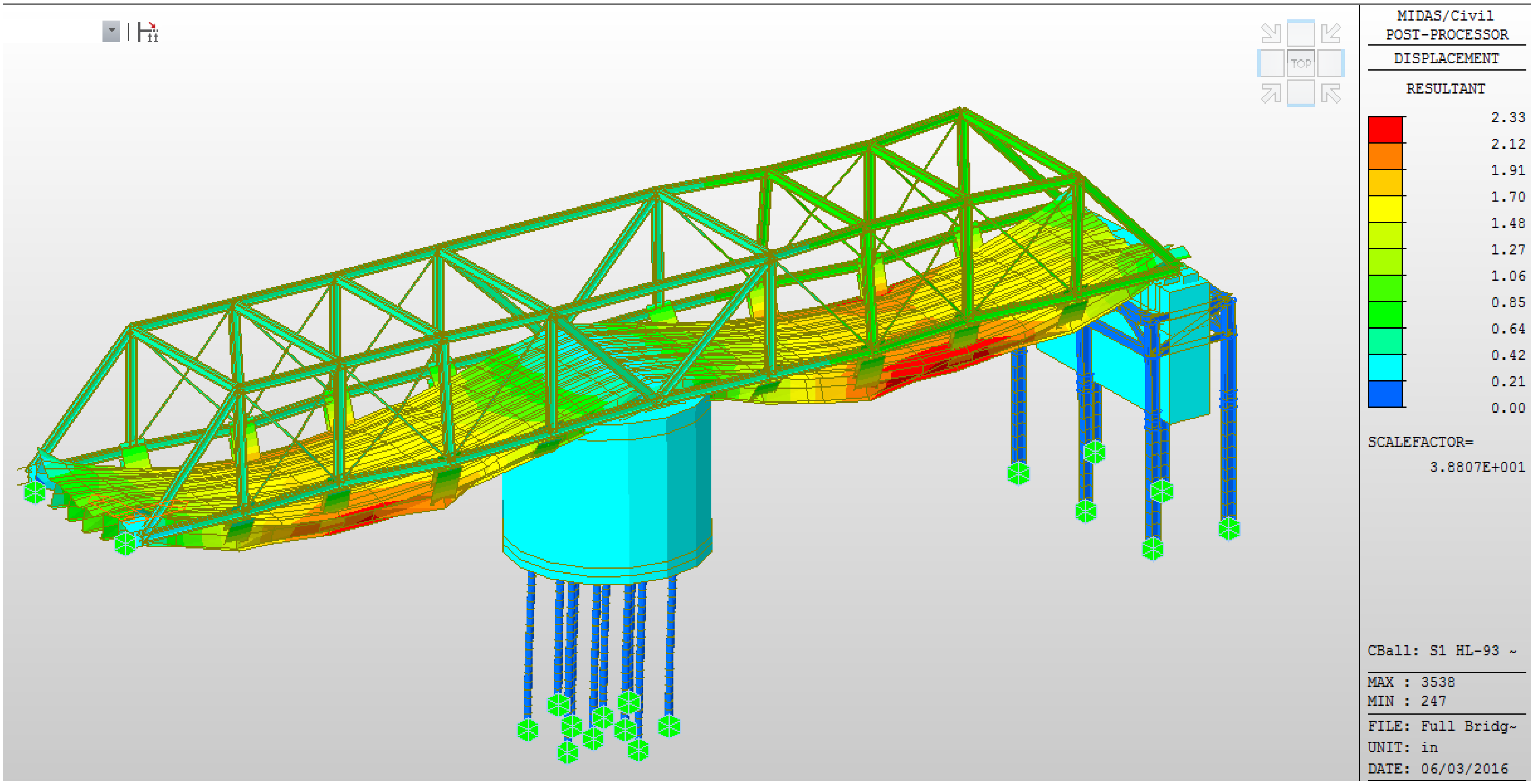
Existing Swing Span



LRFD ANALYSIS

Swing Span

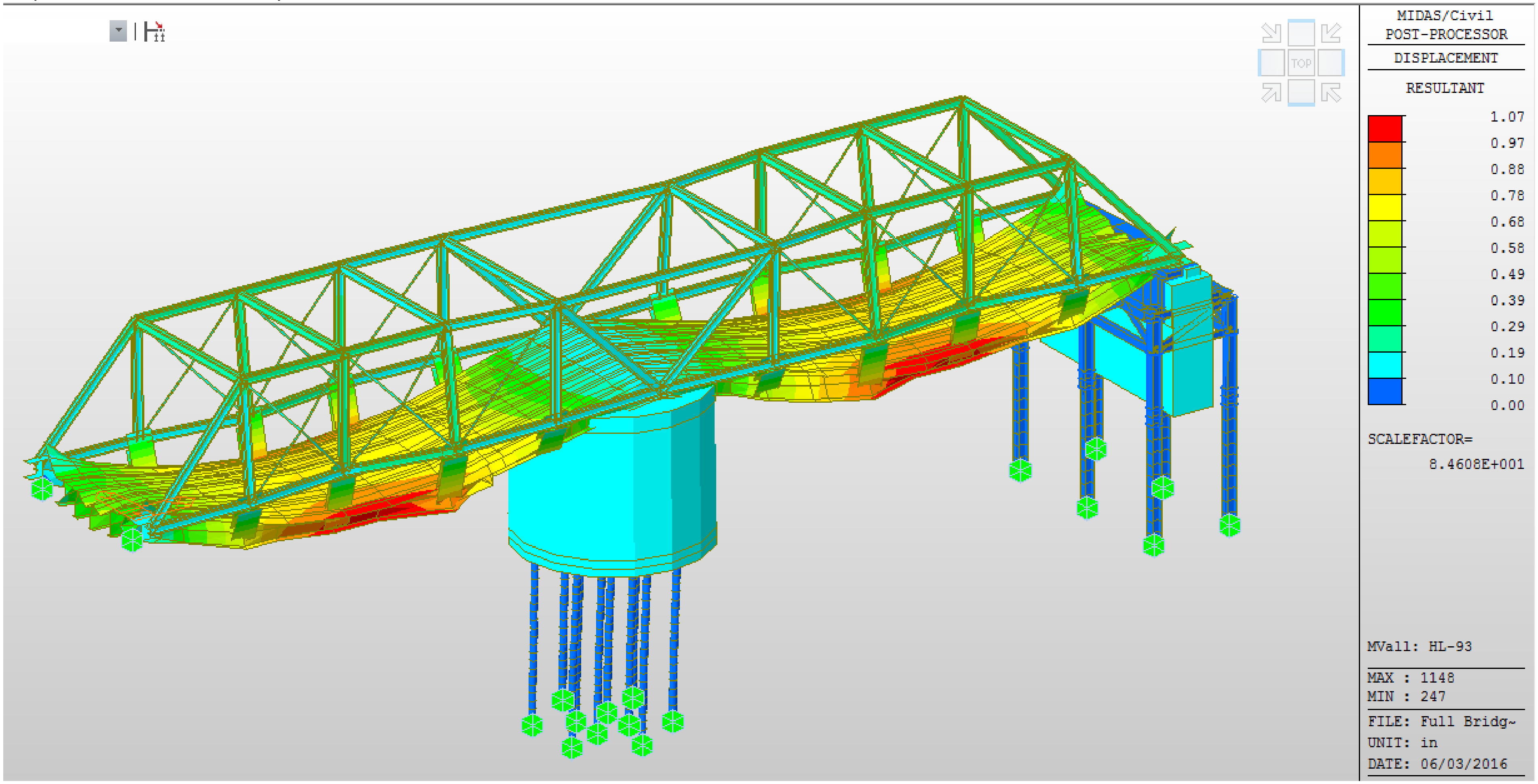
Displacement: Strength I (Factored DL and LL)



LRFD ANALYSIS

Swing Span

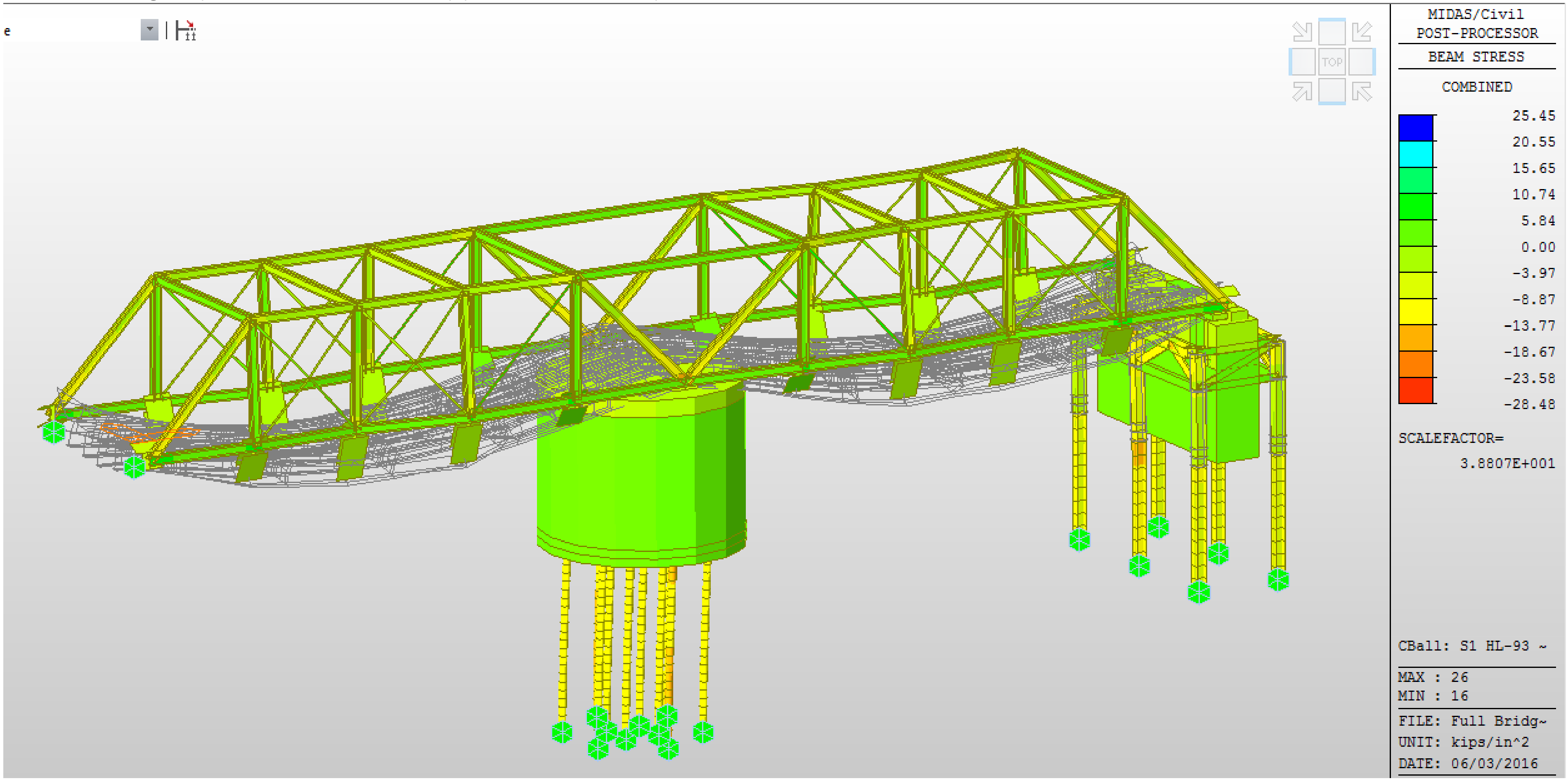
Displacement: Live Load Only



LRFD ANALYSIS

Swing Span

Stresses: Strength I (Stresses on Truss Chords) (Factored DL and LL)



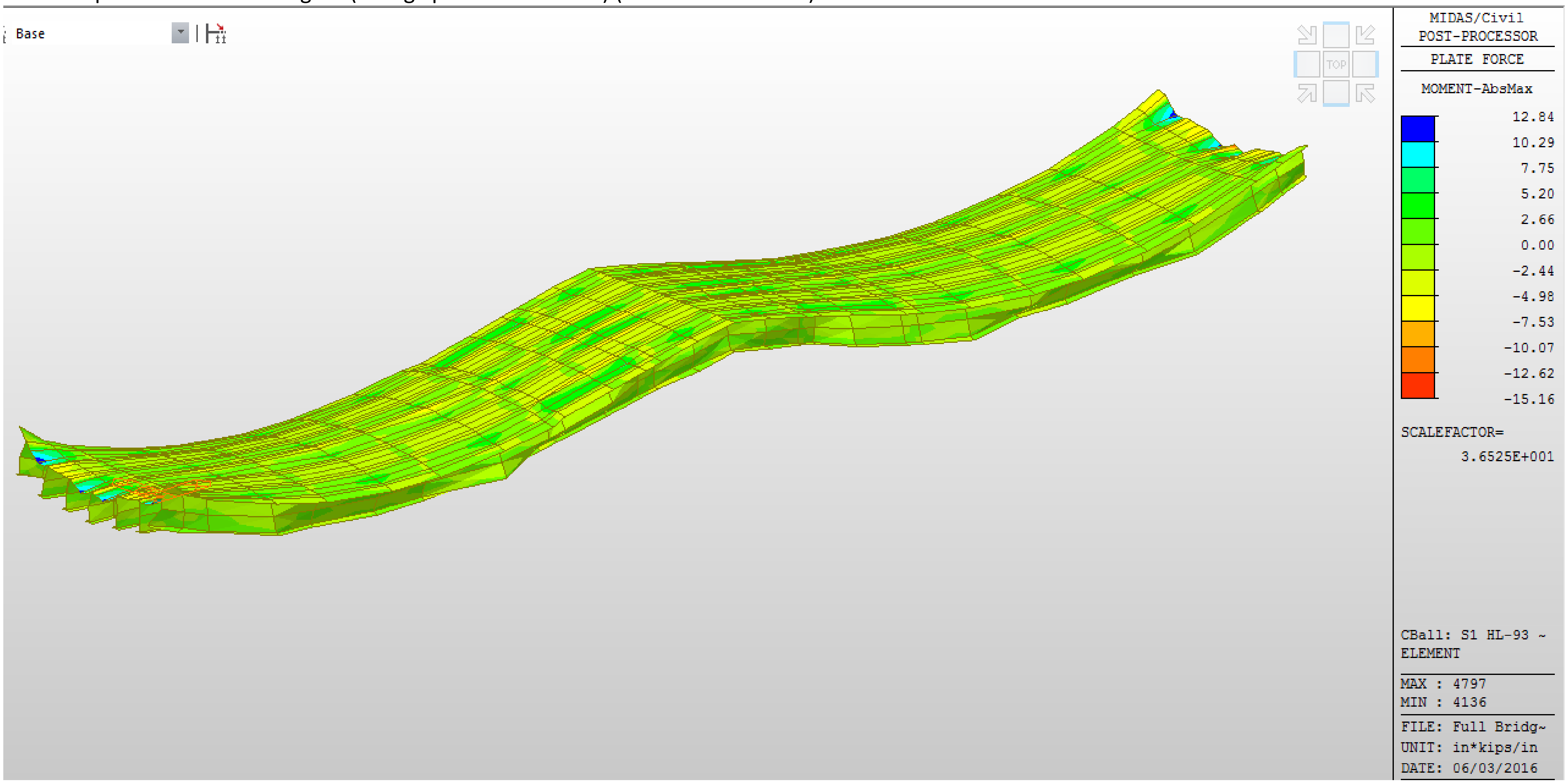
25.5 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Span

Moment per linear foot: Strength I (Swing Span Main Girders) (Factored DL and LL)

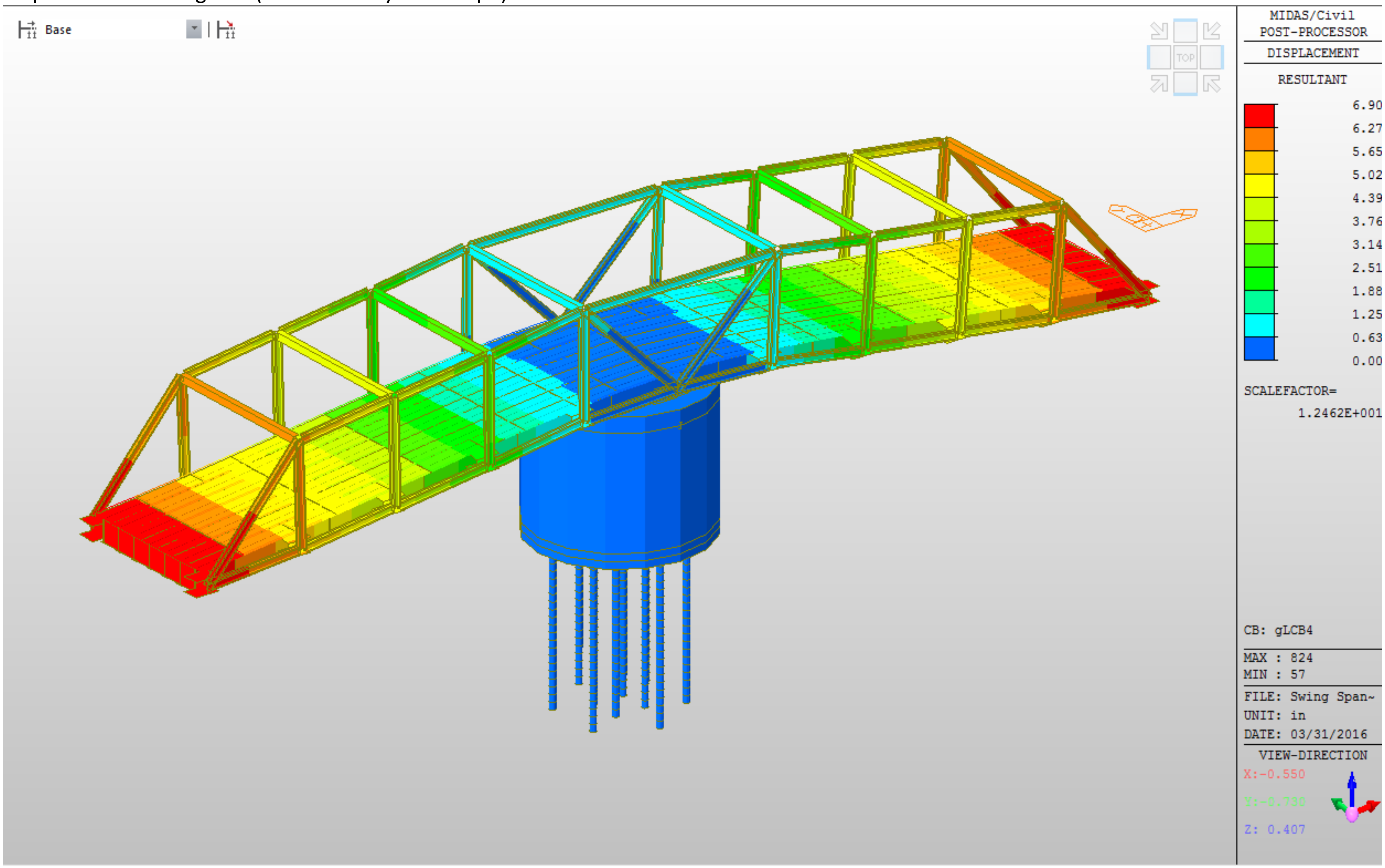


50 ksi Steel

LRFD ANALYSIS

Swing Span Analysis (open)

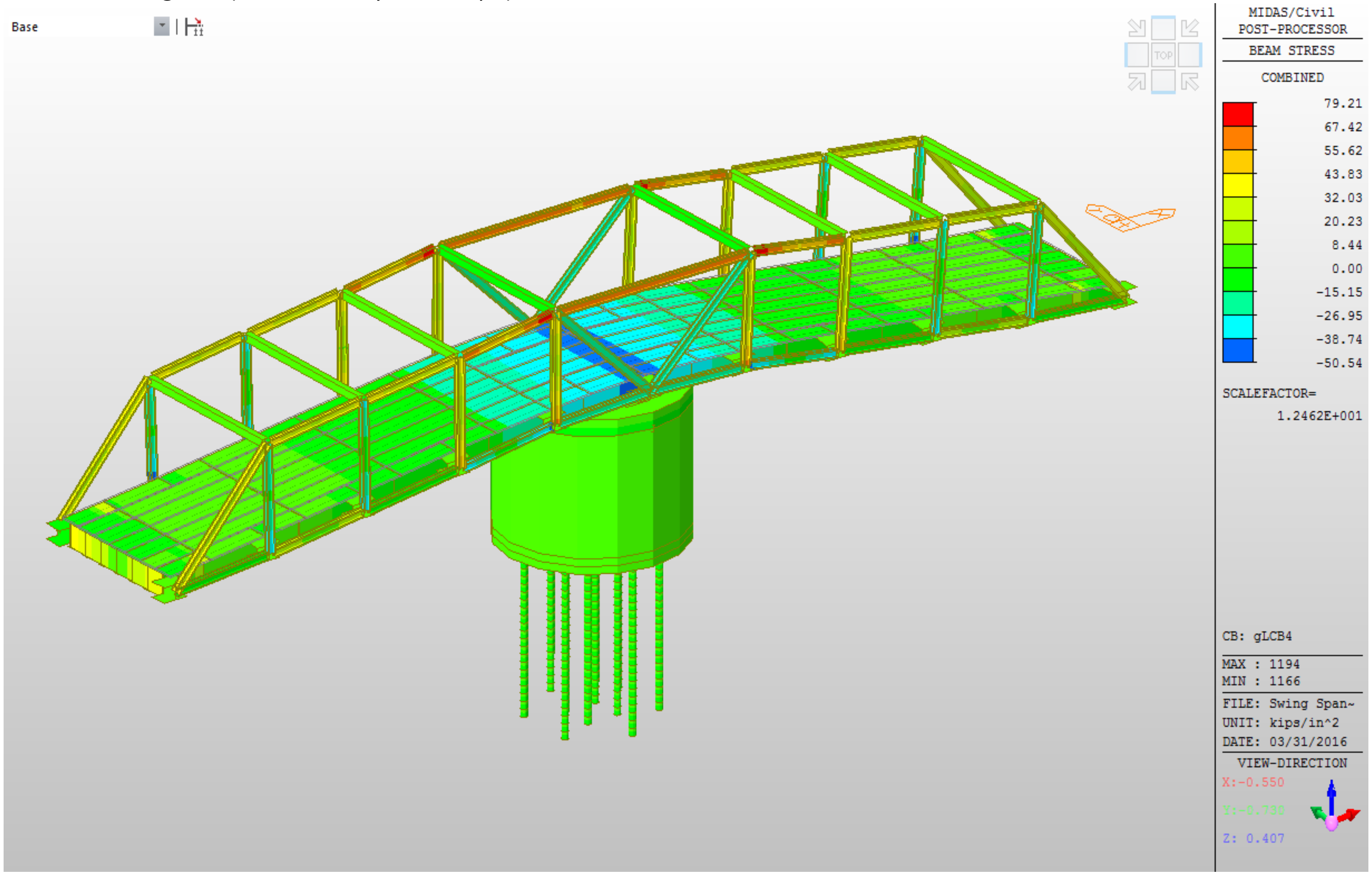
Displacement: Strength III (Wind Velocity = 125 mph)



LRFD ANALYSIS

Swing Span Analysis (open)

Stresses: Strength III (Wind Velocity = 125 mph)



25.5 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>SWING SPAN – RATING OUTPUT</u>

LOAD RATING SWING SPAN

RF= RATING FACTOR

$RF = (C - f_{DL+SDL}) / (f_{LL+I})$

$f_{DL+SDL}=1.25*DL+1.5*DW$

$f_{LL+I}=\Upsilon_{LL}*LL$

$C=\varphi_C\varphi_S\varphi R_nS_x = (1.0)(1.0)(.95)(50)(930.83)$

Virtual Beam	LOADING	R_n (ksi)	S_x (in^3)	$C=\varphi_C\varphi_S\varphi R_nS_x$	M_{DL+SDL} (kip-in)	M_{LL+I} (kip-in)	RF
1	HL-93 Inventory	50	930.83	44214.425	-35.32	-350.87	125.9130
1	HL-93 Inventory	50	930.83	44214.425	2757.58	12519.8	3.3113
2	HL-93 Inventory	50	930.83	44214.425	1340.69	6161.96	6.9578
2	HL-93 Inventory	50	930.83	44214.425	2353.36	11038.4	3.7923
3	HL-93 Inventory	50	930.83	44214.425	2514.92	11391.8	3.6605
3	HL-93 Inventory	50	930.83	44214.425	1916.1	10204	4.1453
4	HL-93 Inventory	50	930.83	44214.425	2228.89	10452.7	4.0167
4	HL-93 Inventory	50	930.83	44214.425	1840.96	11001.6	3.8516
5	HL-93 Inventory	50	930.83	44214.425	2113.66	10617	3.9654
5	HL-93 Inventory	50	930.83	44214.425	1840.96	11001.6	3.8516
6	HL-93 Inventory	50	930.83	44214.425	2113.66	10617	3.9654
6	HL-93 Inventory	50	930.83	44214.425	1590.57	10682.2	3.9902
7	HL-93 Inventory	50	930.83	44214.425	1996.24	11234.8	3.7578
7	HL-93 Inventory	50	930.83	44214.425	1032.56	9471.1	4.5593
8	HL-93 Inventory	50	930.83	44214.425	1679.31	10848.7	3.9208
8	HL-93 Inventory	50	930.83	44214.425	1032.56	9471.1	4.5593
9	HL-93 Inventory	50	930.83	44214.425	1679.31	10848.7	3.9208
9	HL-93 Inventory	50	930.83	44214.425	429.08	7778.11	5.6293
10	HL-93 Inventory	50	930.83	44214.425	1114.22	9627.41	4.4768
10	HL-93 Inventory	50	930.83	44214.425	-704.69	-5608.73	7.7575
11	HL-93 Inventory	50	930.83	44214.425	231.25	7137.62	6.1622
11	HL-93 Inventory	50	930.83	44214.425	-704.69	-5608.73	7.7575
12	HL-93 Inventory	50	930.83	44214.425	231.25	7137.62	6.1622
12	HL-93 Inventory	50	930.83	44214.425	-1716.52	-6614.5	6.4250
13	HL-93 Inventory	50	930.83	44214.425	-1321.91	-6194.19	6.9246
13	HL-93 Inventory	50	930.83	44214.425	-2624.03	-7732.51	5.3786
14	HL-93 Inventory	50	930.83	44214.425	-1669.96	-6574.15	6.4715
14	HL-93 Inventory	50	930.83	44214.425	-3676.48	-9237.54	4.3884
15	HL-93 Inventory	50	930.83	44214.425	-3675.62	-9279.51	4.3686
15	HL-93 Inventory	50	930.83	44214.425	-1668.81	-6531.66	6.5138
16	HL-93 Inventory	50	930.83	44214.425	-2623.08	-7689.76	5.4087
16	HL-93 Inventory	50	930.83	44214.425	-1320.73	-6151.18	6.9732
17	HL-93 Inventory	50	930.83	44214.425	-1715.44	-6572.29	6.4664
17	HL-93 Inventory	50	930.83	44214.425	232.73	7097.73	6.1966
18	HL-93 Inventory	50	930.83	44214.425	-703.49	-5563.54	7.8207
18	HL-93 Inventory	50	930.83	44214.425	232.73	7097.73	6.1966
19	HL-93 Inventory	50	930.83	44214.425	-703.49	-5563.54	7.8207
19	HL-93 Inventory	50	930.83	44214.425	1116.11	9589.44	4.4944
20	HL-93 Inventory	50	930.83	44214.425	430.7	7738.46	5.6579
20	HL-93 Inventory	50	930.83	44214.425	1681.38	10816.6	3.9322
21	HL-93 Inventory	50	930.83	44214.425	1034.3	9433.79	4.5772
21	HL-93 Inventory	50	930.83	44214.425	1681.38	10816.6	3.9322
22	HL-93 Inventory	50	930.83	44214.425	1034.3	9433.79	4.5772
22	HL-93 Inventory	50	930.83	44214.425	1998.88	11212	3.7652
23	HL-93 Inventory	50	930.83	44214.425	1592.45	10650	4.0021
23	HL-93 Inventory	50	930.83	44214.425	2116.96	10602.4	3.9706
24	HL-93 Inventory	50	930.83	44214.425	1843.23	10979.5	3.8591
24	HL-93 Inventory	50	930.83	44214.425	2116.96	10602.4	3.9706
25	HL-93 Inventory	50	930.83	44214.425	1843.23	10979.5	3.8591
25	HL-93 Inventory	50	930.83	44214.425	2233.75	10444.6	4.0194
26	HL-93 Inventory	50	930.83	44214.425	1918.69	10190	4.1507
26	HL-93 Inventory	50	930.83	44214.425	2521.94	11394.1	3.6591
27	HL-93 Inventory	50	930.83	44214.425	2357.47	11027.2	3.7958
27	HL-93 Inventory	50	930.83	44214.425	1347.65	6177.27	6.9394
28	HL-93 Inventory	50	930.83	44214.425	2764.16	12518.2	3.3112
28	HL-93 Inventory	50	930.83	44214.425	-28.01	-320.57	137.8370
29	HL-93 Inventory	50	930.83	44214.425	58.91	353.29	124.9838
29	HL-93 Inventory	50	930.83	44214.425	109.1	-2514.61	17.5396
30	HL-93 Inventory	50	930.83	44214.425	155.04	-976.53	45.1183
30	HL-93 Inventory	50	930.83	44214.425	1368.35	6626.52	6.4658
31	HL-93 Inventory	50	930.83	44214.425	152.67	-2419.25	18.2130
31	HL-93 Inventory	50	930.83	44214.425	1941.22	9476.97	4.4606
32	HL-93 Inventory	50	930.83	44214.425	1277.19	6336.27	6.7764
32	HL-93 Inventory	50	930.83	44214.425	1899.93	9818.57	4.3096

Minimum Rating factor	3.3112	**Girder 1**
Minimum Rating factor	4.3051	**Girder 2**
Minimum Rating factor	4.5897	**Girder 3**
Minimum Rating factor	4.4292	**Girder 4**
Minimum Rating factor	4.5873	**Girder 5**
Minimum Rating factor	4.3015	**Girder 6**
Minimum Rating factor	3.3024	**Girder 7**

33	HL-93 Inventory	50	930.83	44214.425	1830.74	9118.82	4.6479
33	HL-93 Inventory	50	930.83	44214.425	1899.93	9818.57	4.3096
34	HL-93 Inventory	50	930.83	44214.425	1830.74	9118.82	4.6479
34	HL-93 Inventory	50	930.83	44214.425	1704.64	9854.83	4.3136
35	HL-93 Inventory	50	930.83	44214.425	1884.42	9786.73	4.3252
35	HL-93 Inventory	50	930.83	44214.425	1167.89	8543.67	5.0384
36	HL-93 Inventory	50	930.83	44214.425	1711.84	9872.58	4.3051
36	HL-93 Inventory	50	930.83	44214.425	1167.89	8543.67	5.0384
37	HL-93 Inventory	50	930.83	44214.425	1711.84	9872.58	4.3051
37	HL-93 Inventory	50	930.83	44214.425	521.46	7106.86	6.1480
38	HL-93 Inventory	50	930.83	44214.425	1162.86	8517.53	5.0545
38	HL-93 Inventory	50	930.83	44214.425	-667.57	-5389.93	8.0793
39	HL-93 Inventory	50	930.83	44214.425	246.03	6329.33	6.9468
39	HL-93 Inventory	50	930.83	44214.425	-667.57	-5389.93	8.0793
40	HL-93 Inventory	50	930.83	44214.425	246.03	6329.33	6.9468
40	HL-93 Inventory	50	930.83	44214.425	-1801.2	-6297.19	6.7353
41	HL-93 Inventory	50	930.83	44214.425	-1408.94	-5940.7	7.2055
41	HL-93 Inventory	50	930.83	44214.425	-2818.11	-7416.48	5.5817
42	HL-93 Inventory	50	930.83	44214.425	-1821.05	-6328.21	6.6991
42	HL-93 Inventory	50	930.83	44214.425	-3943.48	-8819.76	4.5660
43	HL-93 Inventory	50	930.83	44214.425	-3942.53	-8820.38	4.5658
43	HL-93 Inventory	50	930.83	44214.425	-1819.86	-6277.23	6.7537
44	HL-93 Inventory	50	930.83	44214.425	-2817.07	-7364.37	5.6213
44	HL-93 Inventory	50	930.83	44214.425	-1407.74	-5889.56	7.2682
45	HL-93 Inventory	50	930.83	44214.425	-1800.05	-6246.31	6.7903
45	HL-93 Inventory	50	930.83	44214.425	247.41	6283.1	6.9977
46	HL-93 Inventory	50	930.83	44214.425	-666.35	-5334.17	8.1640
46	HL-93 Inventory	50	930.83	44214.425	247.41	6283.1	6.9977
47	HL-93 Inventory	50	930.83	44214.425	-666.35	-5334.17	8.1640
47	HL-93 Inventory	50	930.83	44214.425	1164.6	8473.36	5.0806
48	HL-93 Inventory	50	930.83	44214.425	522.97	7061.89	6.1869
48	HL-93 Inventory	50	930.83	44214.425	1713.82	9834.43	4.3216
49	HL-93 Inventory	50	930.83	44214.425	1169.54	8499.29	5.0645
49	HL-93 Inventory	50	930.83	44214.425	1713.82	9834.43	4.3216
50	HL-93 Inventory	50	930.83	44214.425	1169.54	8499.29	5.0645
50	HL-93 Inventory	50	930.83	44214.425	1886.49	9758.14	4.3377
51	HL-93 Inventory	50	930.83	44214.425	1706.51	9816.5	4.3303
51	HL-93 Inventory	50	930.83	44214.425	1833.06	9101.02	4.6568
52	HL-93 Inventory	50	930.83	44214.425	1902	9789.95	4.3220
52	HL-93 Inventory	50	930.83	44214.425	1833.06	9101.02	4.6568
53	HL-93 Inventory	50	930.83	44214.425	1902	9789.95	4.3220
53	HL-93 Inventory	50	930.83	44214.425	1278.31	6323.11	6.7903
54	HL-93 Inventory	50	930.83	44214.425	1943.83	9459.43	4.4686
54	HL-93 Inventory	50	930.83	44214.425	152.35	-2419.5	18.2112
55	HL-93 Inventory	50	930.83	44214.425	1369.91	6614.8	6.4771
55	HL-93 Inventory	50	930.83	44214.425	155.05	-976.66	45.1123
56	HL-93 Inventory	50	930.83	44214.425	109.01	-2514.88	17.5378
56	HL-93 Inventory	50	930.83	44214.425	58.94	352.9	125.1218
57	HL-93 Inventory	50	930.83	44214.425	-0.66	-180.22	245.3322
57	HL-93 Inventory	50	930.83	44214.425	-116.89	-2206.06	19.9893
58	HL-93 Inventory	50	930.83	44214.425	-33.87	-1036.58	42.6215
58	HL-93 Inventory	50	930.83	44214.425	952.79	5210	8.3036
59	HL-93 Inventory	50	930.83	44214.425	-0.84	-1944.36	22.7394
59	HL-93 Inventory	50	930.83	44214.425	1561.71	7755.58	5.4996
60	HL-93 Inventory	50	930.83	44214.425	1068.85	5616.59	7.6818
60	HL-93 Inventory	50	930.83	44214.425	1801.31	9217	4.6016
61	HL-93 Inventory	50	930.83	44214.425	1505.76	7608.87	5.6130
61	HL-93 Inventory	50	930.83	44214.425	1801.31	9217	4.6016
62	HL-93 Inventory	50	930.83	44214.425	1505.76	7608.87	5.6130
62	HL-93 Inventory	50	930.83	44214.425	1714.06	9259.97	4.5897
63	HL-93 Inventory	50	930.83	44214.425	1722.11	9006.24	4.7181
63	HL-93 Inventory	50	930.83	44214.425	1186.06	8370.09	5.1407
64	HL-93 Inventory	50	930.83	44214.425	1662.53	9122.19	4.6647
64	HL-93 Inventory	50	930.83	44214.425	1186.06	8370.09	5.1407
65	HL-93 Inventory	50	930.83	44214.425	1662.53	9122.19	4.6647
65	HL-93 Inventory	50	930.83	44214.425	561.77	6760.29	6.4572
66	HL-93 Inventory	50	930.83	44214.425	1147.95	8282.21	5.1999
66	HL-93 Inventory	50	930.83	44214.425	-617.7	-4929.19	8.8446
67	HL-93 Inventory	50	930.83	44214.425	271.79	6144.98	7.1510
67	HL-93 Inventory	50	930.83	44214.425	-617.7	-4929.19	8.8446
68	HL-93 Inventory	50	930.83	44214.425	271.79	6144.98	7.1510
68	HL-93 Inventory	50	930.83	44214.425	-1809.51	-5917.85	7.1656
69	HL-93 Inventory	50	930.83	44214.425	-1403.25	-5545.07	7.7206
69	HL-93 Inventory	50	930.83	44214.425	-2826.84	-6981.95	5.9278
70	HL-93 Inventory	50	930.83	44214.425	-1825.34	-5928.54	7.1500

70	HL-93 Inventory	50	930.83	44214.425	-3948.95	-8307.59	4.8468
71	HL-93 Inventory	50	930.83	44214.425	-3947.97	-8269.48	4.8693
71	HL-93 Inventory	50	930.83	44214.425	-1824.24	-5879.79	7.2095
72	HL-93 Inventory	50	930.83	44214.425	-2825.82	-6932.03	5.9706
72	HL-93 Inventory	50	930.83	44214.425	-1402.14	-5495.83	7.7900
73	HL-93 Inventory	50	930.83	44214.425	-1808.43	-5868.98	7.2254
73	HL-93 Inventory	50	930.83	44214.425	273	6099.29	7.2044
74	HL-93 Inventory	50	930.83	44214.425	-616.59	-4875.07	8.9430
74	HL-93 Inventory	50	930.83	44214.425	273	6099.29	7.2044
75	HL-93 Inventory	50	930.83	44214.425	-616.59	-4875.07	8.9430
75	HL-93 Inventory	50	930.83	44214.425	1149.39	8238.75	5.2271
76	HL-93 Inventory	50	930.83	44214.425	563.1	6714	6.5015
76	HL-93 Inventory	50	930.83	44214.425	1664.1	9083.97	4.6841
77	HL-93 Inventory	50	930.83	44214.425	1187.49	8325.91	5.1678
77	HL-93 Inventory	50	930.83	44214.425	1664.1	9083.97	4.6841
78	HL-93 Inventory	50	930.83	44214.425	1187.49	8325.91	5.1678
78	HL-93 Inventory	50	930.83	44214.425	1723.47	8977.43	4.7331
79	HL-93 Inventory	50	930.83	44214.425	1715.65	9221.55	4.6086
79	HL-93 Inventory	50	930.83	44214.425	1506.98	7591.15	5.6260
80	HL-93 Inventory	50	930.83	44214.425	1802.83	9187.77	4.6161
80	HL-93 Inventory	50	930.83	44214.425	1506.98	7591.15	5.6260
81	HL-93 Inventory	50	930.83	44214.425	1802.83	9187.77	4.6161
81	HL-93 Inventory	50	930.83	44214.425	1069.54	5603.99	7.6990
82	HL-93 Inventory	50	930.83	44214.425	1563.11	7738.16	5.5118
82	HL-93 Inventory	50	930.83	44214.425	-1.01	-1944.35	22.7394
83	HL-93 Inventory	50	930.83	44214.425	953.57	5199.04	8.3209
83	HL-93 Inventory	50	930.83	44214.425	-33.98	-1036.59	42.6209
84	HL-93 Inventory	50	930.83	44214.425	-116.98	-2205.97	19.9900
84	HL-93 Inventory	50	930.83	44214.425	-0.69	-180.22	245.3320
85	HL-93 Inventory	50	930.83	44214.425	-12.09	201.01	219.9012
85	HL-93 Inventory	50	930.83	44214.425	-135.14	-5001.41	8.8134
86	HL-93 Inventory	50	930.83	44214.425	-66.51	-2317.9	19.0465
86	HL-93 Inventory	50	930.83	44214.425	845.4	5824.36	7.4461
87	HL-93 Inventory	50	930.83	44214.425	-12.15	-4513.37	9.7936
87	HL-93 Inventory	50	930.83	44214.425	1421.63	6857.02	6.2407
88	HL-93 Inventory	50	930.83	44214.425	1009.87	6386.15	6.7654
88	HL-93 Inventory	50	930.83	44214.425	1757.56	9585.59	4.4292
89	HL-93 Inventory	50	930.83	44214.425	1395.06	6822.95	6.2758
89	HL-93 Inventory	50	930.83	44214.425	1757.56	9585.59	4.4292
90	HL-93 Inventory	50	930.83	44214.425	1395.06	6822.95	6.2758
90	HL-93 Inventory	50	930.83	44214.425	1713.65	8556.49	4.9671
91	HL-93 Inventory	50	930.83	44214.425	1671.56	9360.56	4.5449
91	HL-93 Inventory	50	930.83	44214.425	1193.39	9007.54	4.7761
92	HL-93 Inventory	50	930.83	44214.425	1640.55	8371.28	5.0857
92	HL-93 Inventory	50	930.83	44214.425	1193.39	9007.54	4.7761
93	HL-93 Inventory	50	930.83	44214.425	1640.55	8371.28	5.0857
93	HL-93 Inventory	50	930.83	44214.425	575.99	6435.42	6.7810
94	HL-93 Inventory	50	930.83	44214.425	1141.5	8925.63	4.8258
94	HL-93 Inventory	50	930.83	44214.425	-603.15	-4551.69	9.5813
95	HL-93 Inventory	50	930.83	44214.425	281.17	6392.03	6.8731
95	HL-93 Inventory	50	930.83	44214.425	-603.15	-4551.69	9.5813
96	HL-93 Inventory	50	930.83	44214.425	281.17	6392.03	6.8731
96	HL-93 Inventory	50	930.83	44214.425	-1808.23	-5517.58	7.6857
97	HL-93 Inventory	50	930.83	44214.425	-1399.55	-5157.98	8.3007
97	HL-93 Inventory	50	930.83	44214.425	-2828.65	-6529.78	6.3380
98	HL-93 Inventory	50	930.83	44214.425	-1822.65	-5526.59	7.6705
98	HL-93 Inventory	50	930.83	44214.425	-3954.07	-8135.73	4.9486
99	HL-93 Inventory	50	930.83	44214.425	-3953.09	-8166.61	4.9300
99	HL-93 Inventory	50	930.83	44214.425	-1821.66	-5481.45	7.7339
100	HL-93 Inventory	50	930.83	44214.425	-2827.66	-6483.08	6.3838
100	HL-93 Inventory	50	930.83	44214.425	-1398.55	-5112.33	8.3750
101	HL-93 Inventory	50	930.83	44214.425	-1807.23	-5472.24	7.7495
101	HL-93 Inventory	50	930.83	44214.425	282.18	6347.9	6.9208
102	HL-93 Inventory	50	930.83	44214.425	-602.15	-4499.66	9.6923
102	HL-93 Inventory	50	930.83	44214.425	282.18	6347.9	6.9208
103	HL-93 Inventory	50	930.83	44214.425	-602.15	-4499.66	9.6923
103	HL-93 Inventory	50	930.83	44214.425	1142.6	8882.44	4.8491
104	HL-93 Inventory	50	930.83	44214.425	577.13	6389.98	6.8290
104	HL-93 Inventory	50	930.83	44214.425	1641.66	8333.02	5.1089
105	HL-93 Inventory	50	930.83	44214.425	1194.55	8963.57	4.7994
105	HL-93 Inventory	50	930.83	44214.425	1641.66	8333.02	5.1089
106	HL-93 Inventory	50	930.83	44214.425	1194.55	8963.57	4.7994
106	HL-93 Inventory	50	930.83	44214.425	1672.43	9331.87	4.5588
107	HL-93 Inventory	50	930.83	44214.425	1714.84	8516.66	4.9902
107	HL-93 Inventory	50	930.83	44214.425	1395.64	6804.25	6.2929

108	HL-93 Inventory	50	930.83	44214.425	1758.58	9556.54	4.4426
108	HL-93 Inventory	50	930.83	44214.425	1395.64	6804.25	6.2929
109	HL-93 Inventory	50	930.83	44214.425	1758.58	9556.54	4.4426
109	HL-93 Inventory	50	930.83	44214.425	1010.22	6373.05	6.7792
110	HL-93 Inventory	50	930.83	44214.425	1422.34	6838.34	6.2577
110	HL-93 Inventory	50	930.83	44214.425	-12.25	-4513.72	9.7928
111	HL-93 Inventory	50	930.83	44214.425	845.77	5813.06	7.4606
111	HL-93 Inventory	50	930.83	44214.425	-66.58	-2317.53	19.0495
112	HL-93 Inventory	50	930.83	44214.425	-135.21	-5001.14	8.8138
112	HL-93 Inventory	50	930.83	44214.425	-12.11	201.03	219.8792
113	HL-93 Inventory	50	930.83	44214.425	-0.68	-180.24	245.3048
113	HL-93 Inventory	50	930.83	44214.425	-116.97	-2206.15	19.9884
114	HL-93 Inventory	50	930.83	44214.425	-33.95	-1036.76	42.6140
114	HL-93 Inventory	50	930.83	44214.425	953.53	5213.56	8.2978
115	HL-93 Inventory	50	930.83	44214.425	-1.02	-1944.37	22.7392
115	HL-93 Inventory	50	930.83	44214.425	1563.01	7761.98	5.4949
116	HL-93 Inventory	50	930.83	44214.425	1069.45	5619.41	7.6778
116	HL-93 Inventory	50	930.83	44214.425	1802.46	9222.19	4.5989
117	HL-93 Inventory	50	930.83	44214.425	1506.9	7614.3	5.6089
117	HL-93 Inventory	50	930.83	44214.425	1802.46	9222.19	4.5989
118	HL-93 Inventory	50	930.83	44214.425	1506.9	7614.3	5.6089
118	HL-93 Inventory	50	930.83	44214.425	1715.13	9264.49	4.5873
119	HL-93 Inventory	50	930.83	44214.425	1723.17	9010.79	4.7156
119	HL-93 Inventory	50	930.83	44214.425	1186.94	8372.87	5.1389
120	HL-93 Inventory	50	930.83	44214.425	1663.62	9126.73	4.6622
120	HL-93 Inventory	50	930.83	44214.425	1186.94	8372.87	5.1389
121	HL-93 Inventory	50	930.83	44214.425	1663.62	9126.73	4.6622
121	HL-93 Inventory	50	930.83	44214.425	562.52	6761.9	6.4556
122	HL-93 Inventory	50	930.83	44214.425	1148.86	8285.15	5.1979
122	HL-93 Inventory	50	930.83	44214.425	-617.18	-4929.17	8.8447
123	HL-93 Inventory	50	930.83	44214.425	272.43	6145.83	7.1499
123	HL-93 Inventory	50	930.83	44214.425	-617.18	-4929.17	8.8447
124	HL-93 Inventory	50	930.83	44214.425	272.43	6145.83	7.1499
124	HL-93 Inventory	50	930.83	44214.425	-1809.06	-5917.64	7.1659
125	HL-93 Inventory	50	930.83	44214.425	-1402.75	-5544.91	7.7209
125	HL-93 Inventory	50	930.83	44214.425	-2826.46	-6981.66	5.9281
126	HL-93 Inventory	50	930.83	44214.425	-1824.86	-5928.35	7.1503
126	HL-93 Inventory	50	930.83	44214.425	-3948.63	-8307.23	4.8471
127	HL-93 Inventory	50	930.83	44214.425	-3947.65	-8272.65	4.8675
127	HL-93 Inventory	50	930.83	44214.425	-1823.98	-5882.56	7.2061
128	HL-93 Inventory	50	930.83	44214.425	-2825.51	-6934.85	5.9682
128	HL-93 Inventory	50	930.83	44214.425	-1401.87	-5498.52	7.7862
129	HL-93 Inventory	50	930.83	44214.425	-1808.15	-5871.68	7.2222
129	HL-93 Inventory	50	930.83	44214.425	273.22	6100.24	7.2032
130	HL-93 Inventory	50	930.83	44214.425	-616.31	-4877.54	8.9385
130	HL-93 Inventory	50	930.83	44214.425	273.22	6100.24	7.2032
131	HL-93 Inventory	50	930.83	44214.425	-616.31	-4877.54	8.9385
131	HL-93 Inventory	50	930.83	44214.425	1149.64	8239.44	5.2267
132	HL-93 Inventory	50	930.83	44214.425	563.42	6714.69	6.5008
132	HL-93 Inventory	50	930.83	44214.425	1664.29	9084.51	4.6838
133	HL-93 Inventory	50	930.83	44214.425	1187.78	8326.5	5.1674
133	HL-93 Inventory	50	930.83	44214.425	1664.29	9084.51	4.6838
134	HL-93 Inventory	50	930.83	44214.425	1187.78	8326.5	5.1674
134	HL-93 Inventory	50	930.83	44214.425	1723.65	8977.84	4.7329
135	HL-93 Inventory	50	930.83	44214.425	1715.88	9222.01	4.6084
135	HL-93 Inventory	50	930.83	44214.425	1507.13	7591.36	5.6258
136	HL-93 Inventory	50	930.83	44214.425	1803.05	9188.09	4.6159
136	HL-93 Inventory	50	930.83	44214.425	1507.13	7591.36	5.6258
137	HL-93 Inventory	50	930.83	44214.425	1803.05	9188.09	4.6159
137	HL-93 Inventory	50	930.83	44214.425	1069.61	5604.14	7.6987
138	HL-93 Inventory	50	930.83	44214.425	1563.33	7738.25	5.5117
138	HL-93 Inventory	50	930.83	44214.425	-1.05	-1944.4	22.7388
139	HL-93 Inventory	50	930.83	44214.425	953.7	5199.06	8.3209
139	HL-93 Inventory	50	930.83	44214.425	-33.98	-1036.59	42.6209
140	HL-93 Inventory	50	930.83	44214.425	-117	-2205.98	19.9899
140	HL-93 Inventory	50	930.83	44214.425	-0.68	-180.22	245.3321
141	HL-93 Inventory	50	930.83	44214.425	58.93	353.35	124.9625
141	HL-93 Inventory	50	930.83	44214.425	109.06	-2514.61	17.5396
142	HL-93 Inventory	50	930.83	44214.425	155.03	-976.53	45.1183
142	HL-93 Inventory	50	930.83	44214.425	1370.13	6634.95	6.4574
143	HL-93 Inventory	50	930.83	44214.425	152.32	-2419.29	18.2128
143	HL-93 Inventory	50	930.83	44214.425	1944.11	9490.71	4.4539
144	HL-93 Inventory	50	930.83	44214.425	1278.47	6341.96	6.7701
144	HL-93 Inventory	50	930.83	44214.425	1902.22	9827.91	4.3053
145	HL-93 Inventory	50	930.83	44214.425	1833.31	9130.81	4.6416

145	HL-93 Inventory	50	930.83	44214.425	1902.22	9827.91	4.3053
146	HL-93 Inventory	50	930.83	44214.425	1833.31	9130.81	4.6416
146	HL-93 Inventory	50	930.83	44214.425	1706.67	9862.11	4.3102
147	HL-93 Inventory	50	930.83	44214.425	1886.67	9795.84	4.3210
147	HL-93 Inventory	50	930.83	44214.425	1169.6	8548.19	5.0355
148	HL-93 Inventory	50	930.83	44214.425	1713.96	9880.35	4.3015
148	HL-93 Inventory	50	930.83	44214.425	1169.6	8548.19	5.0355
149	HL-93 Inventory	50	930.83	44214.425	1713.96	9880.35	4.3015
149	HL-93 Inventory	50	930.83	44214.425	522.96	7109.46	6.1455
150	HL-93 Inventory	50	930.83	44214.425	1164.64	8522.42	5.0514
150	HL-93 Inventory	50	930.83	44214.425	-666.53	-5389.84	8.0796
151	HL-93 Inventory	50	930.83	44214.425	247.3	6330.56	6.9452
151	HL-93 Inventory	50	930.83	44214.425	-666.53	-5389.84	8.0796
152	HL-93 Inventory	50	930.83	44214.425	247.3	6330.56	6.9452
152	HL-93 Inventory	50	930.83	44214.425	-1800.28	-6296.78	6.7358
153	HL-93 Inventory	50	930.83	44214.425	-1407.95	-5940.4	7.2060
153	HL-93 Inventory	50	930.83	44214.425	-2817.36	-7415.85	5.5822
154	HL-93 Inventory	50	930.83	44214.425	-1820.09	-6327.83	6.6997
154	HL-93 Inventory	50	930.83	44214.425	-3942.87	-8818.94	4.5665
155	HL-93 Inventory	50	930.83	44214.425	-3941.88	-8819.8	4.5662
155	HL-93 Inventory	50	930.83	44214.425	-1819.32	-6281.91	6.7488
156	HL-93 Inventory	50	930.83	44214.425	-2816.45	-7369	5.6179
156	HL-93 Inventory	50	930.83	44214.425	-1407.2	-5894.07	7.2628
157	HL-93 Inventory	50	930.83	44214.425	-1799.47	-6250.81	6.7855
157	HL-93 Inventory	50	930.83	44214.425	247.85	6284.86	6.9956
158	HL-93 Inventory	50	930.83	44214.425	-665.8	-5338.31	8.1578
158	HL-93 Inventory	50	930.83	44214.425	247.85	6284.86	6.9956
159	HL-93 Inventory	50	930.83	44214.425	-665.8	-5338.31	8.1578
159	HL-93 Inventory	50	930.83	44214.425	1165.09	8474.59	5.0798
160	HL-93 Inventory	50	930.83	44214.425	523.6	7063.13	6.1858
160	HL-93 Inventory	50	930.83	44214.425	1714.21	9835.41	4.3211
161	HL-93 Inventory	50	930.83	44214.425	1170.12	8500.33	5.0638
161	HL-93 Inventory	50	930.83	44214.425	1714.21	9835.41	4.3211
162	HL-93 Inventory	50	930.83	44214.425	1170.12	8500.33	5.0638
162	HL-93 Inventory	50	930.83	44214.425	1886.84	9758.92	4.3373
163	HL-93 Inventory	50	930.83	44214.425	1706.98	9817.3	4.3299
163	HL-93 Inventory	50	930.83	44214.425	1833.32	9101.52	4.6565
164	HL-93 Inventory	50	930.83	44214.425	1902.42	9790.58	4.3217
164	HL-93 Inventory	50	930.83	44214.425	1833.32	9101.52	4.6565
165	HL-93 Inventory	50	930.83	44214.425	1902.42	9790.58	4.3217
165	HL-93 Inventory	50	930.83	44214.425	1278.54	6323.24	6.7902
166	HL-93 Inventory	50	930.83	44214.425	1944.18	9459.76	4.4684
166	HL-93 Inventory	50	930.83	44214.425	152.41	-2419.48	18.2114
167	HL-93 Inventory	50	930.83	44214.425	1370.27	6614.71	6.4771
167	HL-93 Inventory	50	930.83	44214.425	155.1	-976.64	45.1132
168	HL-93 Inventory	50	930.83	44214.425	109.15	-2514.79	17.5384
168	HL-93 Inventory	50	930.83	44214.425	58.95	352.9	125.1218
169	HL-93 Inventory	50	930.83	44214.425	-27.98	-318.77	138.6154
169	HL-93 Inventory	50	930.83	44214.425	2763.91	12551.7	3.3024
170	HL-93 Inventory	50	930.83	44214.425	1347.53	6195.28	6.9193
170	HL-93 Inventory	50	930.83	44214.425	2357.71	11059.7	3.7846
171	HL-93 Inventory	50	930.83	44214.425	2521.66	11425.9	3.6490
171	HL-93 Inventory	50	930.83	44214.425	1919.32	10215	4.1405
172	HL-93 Inventory	50	930.83	44214.425	2233.93	10477.5	4.0067
172	HL-93 Inventory	50	930.83	44214.425	1843.96	11010.7	3.8481
173	HL-93 Inventory	50	930.83	44214.425	2117.39	10630.9	3.9599
173	HL-93 Inventory	50	930.83	44214.425	1843.96	11010.7	3.8481
174	HL-93 Inventory	50	930.83	44214.425	2117.39	10630.9	3.9599
174	HL-93 Inventory	50	930.83	44214.425	1593.26	10689.4	3.9872
175	HL-93 Inventory	50	930.83	44214.425	1999.48	11245.4	3.7540
175	HL-93 Inventory	50	930.83	44214.425	1034.92	9475.99	4.5567
176	HL-93 Inventory	50	930.83	44214.425	1682.13	10856.4	3.9177
176	HL-93 Inventory	50	930.83	44214.425	1034.92	9475.99	4.5567
177	HL-93 Inventory	50	930.83	44214.425	1682.13	10856.4	3.9177
177	HL-93 Inventory	50	930.83	44214.425	431.21	7781.28	5.6267
178	HL-93 Inventory	50	930.83	44214.425	1116.72	9632.79	4.4741
178	HL-93 Inventory	50	930.83	44214.425	-703.26	-5608.68	7.7578
179	HL-93 Inventory	50	930.83	44214.425	233.07	7139.36	6.1604
179	HL-93 Inventory	50	930.83	44214.425	-703.26	-5608.68	7.7578
180	HL-93 Inventory	50	930.83	44214.425	233.07	7139.36	6.1604
180	HL-93 Inventory	50	930.83	44214.425	-1715.31	-6614.15	6.4255
181	HL-93 Inventory	50	930.83	44214.425	-1320.56	-6193.96	6.9251
181	HL-93 Inventory	50	930.83	44214.425	-2623.01	-7732.04	5.3791
182	HL-93 Inventory	50	930.83	44214.425	-1668.68	-6573.86	6.4720
182	HL-93 Inventory	50	930.83	44214.425	-3675.61	-9240.55	4.3871

183	HL-93 Inventory	50	930.83	44214.425	-3674.64	-9279.22	4.3689
183	HL-93 Inventory	50	930.83	44214.425	-1668.05	-6537.15	6.5084
184	HL-93 Inventory	50	930.83	44214.425	-2622.16	-7695.23	5.4049
184	HL-93 Inventory	50	930.83	44214.425	-1319.96	-6156.53	6.9673
185	HL-93 Inventory	50	930.83	44214.425	-1714.61	-6577.59	6.4613
185	HL-93 Inventory	50	930.83	44214.425	233.34	7099.55	6.1949
186	HL-93 Inventory	50	930.83	44214.425	-702.69	-5568.51	7.8139
186	HL-93 Inventory	50	930.83	44214.425	233.34	7099.55	6.1949
187	HL-93 Inventory	50	930.83	44214.425	-702.69	-5568.51	7.8139
187	HL-93 Inventory	50	930.83	44214.425	1116.83	9590.76	4.4937
188	HL-93 Inventory	50	930.83	44214.425	431.57	7739.86	5.6568
188	HL-93 Inventory	50	930.83	44214.425	1681.98	10817.5	3.9318
189	HL-93 Inventory	50	930.83	44214.425	1035.1	9434.91	4.5765
189	HL-93 Inventory	50	930.83	44214.425	1681.98	10817.5	3.9318
190	HL-93 Inventory	50	930.83	44214.425	1035.1	9434.91	4.5765
190	HL-93 Inventory	50	930.83	44214.425	1999.37	11212.9	3.7649
191	HL-93 Inventory	50	930.83	44214.425	1593.16	10650.7	4.0017
191	HL-93 Inventory	50	930.83	44214.425	2117.21	10603.2	3.9702
192	HL-93 Inventory	50	930.83	44214.425	1843.78	10980.2	3.8588
192	HL-93 Inventory	50	930.83	44214.425	2117.21	10603.2	3.9702
193	HL-93 Inventory	50	930.83	44214.425	1843.78	10980.2	3.8588
193	HL-93 Inventory	50	930.83	44214.425	2234.09	10445	4.0192
194	HL-93 Inventory	50	930.83	44214.425	1919.04	10190.6	4.1504
194	HL-93 Inventory	50	930.83	44214.425	2522.53	11393.7	3.6592
195	HL-93 Inventory	50	930.83	44214.425	2357.96	11027.3	3.7957
195	HL-93 Inventory	50	930.83	44214.425	1348.01	6177.01	6.9397
196	HL-93 Inventory	50	930.83	44214.425	2764.84	12517.6	3.3113
196	HL-93 Inventory	50	930.83	44214.425	-27.99	-320.52	137.8586

LOAD RATING SWING SPAN

RF= RATING FACTOR

$RF = (C - f_{DL+SDL}) / (f_{LL+I})$

$f_{DL+SDL}=1.25*DL+1.5*DW$

$f_{LL+I}=\Upsilon_{LL}*LL$

$C=\varphi_C\varphi_S\varphi R_n S_x = (1.0)(1.0)(.95)(50)(930.83)$

Virtual Beam	LOADING	R_n (ksi)	S_x (in^3)	$C=\varphi_C\varphi_S\varphi R_n S_x$	M_{DL+SDL} (kip-in)	M_{LL+I} (kip-in)	RF
1	HL-93 Operating	50	930.83	44214.425	-35.32	-270.67	163.2213
1	HL-93 Operating	50	930.83	44214.425	2757.58	9658.17	4.2924
2	HL-93 Operating	50	930.83	44214.425	1340.69	4753.51	9.0194
2	HL-93 Operating	50	930.83	44214.425	2353.36	8515.36	4.9159
3	HL-93 Operating	50	930.83	44214.425	2514.92	8787.94	4.7451
3	HL-93 Operating	50	930.83	44214.425	1916.1	7871.63	5.3735
4	HL-93 Operating	50	930.83	44214.425	2228.89	8063.55	5.2068
4	HL-93 Operating	50	930.83	44214.425	1840.96	8486.94	4.9928
5	HL-93 Operating	50	930.83	44214.425	2113.66	8190.29	5.1403
5	HL-93 Operating	50	930.83	44214.425	1840.96	8486.94	4.9928
6	HL-93 Operating	50	930.83	44214.425	2113.66	8190.29	5.1403
6	HL-93 Operating	50	930.83	44214.425	1590.57	8240.57	5.1724
7	HL-93 Operating	50	930.83	44214.425	1996.24	8666.84	4.8712
7	HL-93 Operating	50	930.83	44214.425	1032.56	7306.27	5.9102
8	HL-93 Operating	50	930.83	44214.425	1679.31	8368.97	5.0825
8	HL-93 Operating	50	930.83	44214.425	1032.56	7306.27	5.9102
9	HL-93 Operating	50	930.83	44214.425	1679.31	8368.97	5.0825
9	HL-93 Operating	50	930.83	44214.425	429.08	6000.26	7.2972
10	HL-93 Operating	50	930.83	44214.425	1114.22	7426.86	5.8033
10	HL-93 Operating	50	930.83	44214.425	-704.69	-4326.73	10.0560
11	HL-93 Operating	50	930.83	44214.425	231.25	5506.17	7.9880
11	HL-93 Operating	50	930.83	44214.425	-704.69	-4326.73	10.0560
12	HL-93 Operating	50	930.83	44214.425	231.25	5506.17	7.9880
12	HL-93 Operating	50	930.83	44214.425	-1716.52	-5102.62	8.3286
13	HL-93 Operating	50	930.83	44214.425	-1321.91	-4778.38	8.9764
13	HL-93 Operating	50	930.83	44214.425	-2624.03	-5965.08	6.9723
14	HL-93 Operating	50	930.83	44214.425	-1669.96	-5071.49	8.3889
14	HL-93 Operating	50	930.83	44214.425	-3676.48	-7126.11	5.6886
15	HL-93 Operating	50	930.83	44214.425	-3675.62	-7158.48	5.6630
15	HL-93 Operating	50	930.83	44214.425	-1668.81	-5038.71	8.4438
16	HL-93 Operating	50	930.83	44214.425	-2623.08	-5932.1	7.0112
16	HL-93 Operating	50	930.83	44214.425	-1320.73	-4745.2	9.0394
17	HL-93 Operating	50	930.83	44214.425	-1715.44	-5070.05	8.3824
17	HL-93 Operating	50	930.83	44214.425	232.73	5475.39	8.0326
18	HL-93 Operating	50	930.83	44214.425	-703.49	-4291.88	10.1380
18	HL-93 Operating	50	930.83	44214.425	232.73	5475.39	8.0326
19	HL-93 Operating	50	930.83	44214.425	-703.49	-4291.88	10.1380
19	HL-93 Operating	50	930.83	44214.425	1116.11	7397.57	5.8260
20	HL-93 Operating	50	930.83	44214.425	430.7	5969.67	7.3344
20	HL-93 Operating	50	930.83	44214.425	1681.38	8344.21	5.0973
21	HL-93 Operating	50	930.83	44214.425	1034.3	7277.49	5.9334
21	HL-93 Operating	50	930.83	44214.425	1681.38	8344.21	5.0973
22	HL-93 Operating	50	930.83	44214.425	1034.3	7277.49	5.9334
22	HL-93 Operating	50	930.83	44214.425	1998.88	8649.27	4.8808
23	HL-93 Operating	50	930.83	44214.425	1592.45	8215.7	5.1879
23	HL-93 Operating	50	930.83	44214.425	2116.96	8179.03	5.1470
24	HL-93 Operating	50	930.83	44214.425	1843.23	8469.93	5.0025
24	HL-93 Operating	50	930.83	44214.425	2116.96	8179.03	5.1470
25	HL-93 Operating	50	930.83	44214.425	1843.23	8469.93	5.0025
25	HL-93 Operating	50	930.83	44214.425	2233.75	8057.28	5.2103
26	HL-93 Operating	50	930.83	44214.425	1918.69	7860.85	5.3806
26	HL-93 Operating	50	930.83	44214.425	2521.94	8789.73	4.7433
27	HL-93 Operating	50	930.83	44214.425	2357.47	8506.71	4.9205
27	HL-93 Operating	50	930.83	44214.425	1347.65	4765.32	8.9956
28	HL-93 Operating	50	930.83	44214.425	2764.16	9656.87	4.2923
28	HL-93 Operating	50	930.83	44214.425	-28.01	-247.3	178.6754
29	HL-93 Operating	50	930.83	44214.425	58.91	272.54	162.0148
29	HL-93 Operating	50	930.83	44214.425	109.1	-1939.84	22.7366
30	HL-93 Operating	50	930.83	44214.425	155.04	-753.32	58.4869
30	HL-93 Operating	50	930.83	44214.425	1368.35	5111.89	8.3817
31	HL-93 Operating	50	930.83	44214.425	152.67	-1866.28	23.6094
31	HL-93 Operating	50	930.83	44214.425	1941.22	7310.81	5.7823
32	HL-93 Operating	50	930.83	44214.425	1277.19	4887.98	8.7842
32	HL-93 Operating	50	930.83	44214.425	1899.93	7574.32	5.5866

Minimum Rating factor	4.2923	**Girder 1**
Minimum Rating factor	5.5807	**Girder 2**
Minimum Rating factor	5.9496	**Girder 3**
Minimum Rating factor	5.7416	**Girder 4**
Minimum Rating factor	5.9465	**Girder 5**
Minimum Rating factor	5.5760	**Girder 6**
Minimum Rating factor	4.2809	**Girder 7**

33	HL-93 Operating	50	930.83	44214.425	1830.74	7034.52	6.0251
33	HL-93 Operating	50	930.83	44214.425	1899.93	7574.32	5.5866
34	HL-93 Operating	50	930.83	44214.425	1830.74	7034.52	6.0251
34	HL-93 Operating	50	930.83	44214.425	1704.64	7602.3	5.5917
35	HL-93 Operating	50	930.83	44214.425	1884.42	7549.76	5.6068
35	HL-93 Operating	50	930.83	44214.425	1167.89	6590.83	6.5313
36	HL-93 Operating	50	930.83	44214.425	1711.84	7615.99	5.5807
36	HL-93 Operating	50	930.83	44214.425	1167.89	6590.83	6.5313
37	HL-93 Operating	50	930.83	44214.425	1711.84	7615.99	5.5807
37	HL-93 Operating	50	930.83	44214.425	521.46	5482.44	7.9696
38	HL-93 Operating	50	930.83	44214.425	1162.86	6570.67	6.5521
38	HL-93 Operating	50	930.83	44214.425	-667.57	-4157.94	10.4732
39	HL-93 Operating	50	930.83	44214.425	246.03	4882.63	9.0051
39	HL-93 Operating	50	930.83	44214.425	-667.57	-4157.94	10.4732
40	HL-93 Operating	50	930.83	44214.425	246.03	4882.63	9.0051
40	HL-93 Operating	50	930.83	44214.425	-1801.2	-4857.83	8.7309
41	HL-93 Operating	50	930.83	44214.425	-1408.94	-4582.82	9.3404
41	HL-93 Operating	50	930.83	44214.425	-2818.11	-5721.28	7.2355
42	HL-93 Operating	50	930.83	44214.425	-1821.05	-4881.76	8.6840
42	HL-93 Operating	50	930.83	44214.425	-3943.48	-6803.81	5.9189
43	HL-93 Operating	50	930.83	44214.425	-3942.53	-6804.29	5.9186
43	HL-93 Operating	50	930.83	44214.425	-1819.86	-4842.44	8.7548
44	HL-93 Operating	50	930.83	44214.425	-2817.07	-5681.09	7.2869
44	HL-93 Operating	50	930.83	44214.425	-1407.74	-4543.37	9.4218
45	HL-93 Operating	50	930.83	44214.425	-1800.05	-4818.58	8.8023
45	HL-93 Operating	50	930.83	44214.425	247.41	4846.96	9.0710
46	HL-93 Operating	50	930.83	44214.425	-666.35	-4114.93	10.5829
46	HL-93 Operating	50	930.83	44214.425	247.41	4846.96	9.0710
47	HL-93 Operating	50	930.83	44214.425	-666.35	-4114.93	10.5829
47	HL-93 Operating	50	930.83	44214.425	1164.6	6536.59	6.5860
48	HL-93 Operating	50	930.83	44214.425	522.97	5447.74	8.0201
48	HL-93 Operating	50	930.83	44214.425	1713.82	7586.56	5.6021
49	HL-93 Operating	50	930.83	44214.425	1169.54	6556.6	6.5651
49	HL-93 Operating	50	930.83	44214.425	1713.82	7586.56	5.6021
50	HL-93 Operating	50	930.83	44214.425	1169.54	6556.6	6.5651
50	HL-93 Operating	50	930.83	44214.425	1886.49	7527.7	5.6230
51	HL-93 Operating	50	930.83	44214.425	1706.51	7572.73	5.6133
51	HL-93 Operating	50	930.83	44214.425	1833.06	7020.79	6.0366
52	HL-93 Operating	50	930.83	44214.425	1902	7552.25	5.6026
52	HL-93 Operating	50	930.83	44214.425	1833.06	7020.79	6.0366
53	HL-93 Operating	50	930.83	44214.425	1902	7552.25	5.6026
53	HL-93 Operating	50	930.83	44214.425	1278.31	4877.82	8.8023
54	HL-93 Operating	50	930.83	44214.425	1943.83	7297.27	5.7927
54	HL-93 Operating	50	930.83	44214.425	152.35	-1866.47	23.6072
55	HL-93 Operating	50	930.83	44214.425	1369.91	5102.84	8.3962
55	HL-93 Operating	50	930.83	44214.425	155.05	-753.43	58.4784
56	HL-93 Operating	50	930.83	44214.425	109.01	-1940.05	22.7342
56	HL-93 Operating	50	930.83	44214.425	58.94	272.24	162.1932
57	HL-93 Operating	50	930.83	44214.425	-0.66	-139.03	318.0160
57	HL-93 Operating	50	930.83	44214.425	-116.89	-1701.82	25.9120
58	HL-93 Operating	50	930.83	44214.425	-33.87	-799.64	55.2506
58	HL-93 Operating	50	930.83	44214.425	952.79	4019.14	10.7639
59	HL-93 Operating	50	930.83	44214.425	-0.84	-1499.94	29.4769
59	HL-93 Operating	50	930.83	44214.425	1561.71	5982.88	7.1291
60	HL-93 Operating	50	930.83	44214.425	1068.85	4332.8	9.9579
60	HL-93 Operating	50	930.83	44214.425	1801.31	7110.25	5.9651
61	HL-93 Operating	50	930.83	44214.425	1505.76	5869.7	7.2761
61	HL-93 Operating	50	930.83	44214.425	1801.31	7110.25	5.9651
62	HL-93 Operating	50	930.83	44214.425	1505.76	5869.7	7.2761
62	HL-93 Operating	50	930.83	44214.425	1714.06	7143.41	5.9496
63	HL-93 Operating	50	930.83	44214.425	1722.11	6947.67	6.1161
63	HL-93 Operating	50	930.83	44214.425	1186.06	6456.93	6.6639
64	HL-93 Operating	50	930.83	44214.425	1662.53	7037.12	6.0468
64	HL-93 Operating	50	930.83	44214.425	1186.06	6456.93	6.6639
65	HL-93 Operating	50	930.83	44214.425	1662.53	7037.12	6.0468
65	HL-93 Operating	50	930.83	44214.425	561.77	5215.08	8.3705
66	HL-93 Operating	50	930.83	44214.425	1147.95	6389.14	6.7406
66	HL-93 Operating	50	930.83	44214.425	-617.7	-3802.52	11.4652
67	HL-93 Operating	50	930.83	44214.425	271.79	4740.42	9.2698
67	HL-93 Operating	50	930.83	44214.425	-617.7	-3802.52	11.4652
68	HL-93 Operating	50	930.83	44214.425	271.79	4740.42	9.2698
68	HL-93 Operating	50	930.83	44214.425	-1809.51	-4565.2	9.2887
69	HL-93 Operating	50	930.83	44214.425	-1403.25	-4277.63	10.0082
69	HL-93 Operating	50	930.83	44214.425	-2826.84	-5386.07	7.6842

70	HL-93 Operating	50	930.83	44214.425	-1825.34	-4573.45	9.2685
70	HL-93 Operating	50	930.83	44214.425	-3948.95	-6408.71	6.2829
71	HL-93 Operating	50	930.83	44214.425	-3947.97	-6379.32	6.3120
71	HL-93 Operating	50	930.83	44214.425	-1824.24	-4535.84	9.3456
72	HL-93 Operating	50	930.83	44214.425	-2825.82	-5347.56	7.7397
72	HL-93 Operating	50	930.83	44214.425	-1402.14	-4239.64	10.0981
73	HL-93 Operating	50	930.83	44214.425	-1808.43	-4527.5	9.3663
73	HL-93 Operating	50	930.83	44214.425	273	4705.17	9.3390
74	HL-93 Operating	50	930.83	44214.425	-616.59	-3760.77	11.5928
74	HL-93 Operating	50	930.83	44214.425	273	4705.17	9.3390
75	HL-93 Operating	50	930.83	44214.425	-616.59	-3760.77	11.5928
75	HL-93 Operating	50	930.83	44214.425	1149.39	6355.61	6.7759
76	HL-93 Operating	50	930.83	44214.425	563.1	5179.37	8.4279
76	HL-93 Operating	50	930.83	44214.425	1664.1	7007.63	6.0720
77	HL-93 Operating	50	930.83	44214.425	1187.49	6422.85	6.6990
77	HL-93 Operating	50	930.83	44214.425	1664.1	7007.63	6.0720
78	HL-93 Operating	50	930.83	44214.425	1187.49	6422.85	6.6990
78	HL-93 Operating	50	930.83	44214.425	1723.47	6925.45	6.1355
79	HL-93 Operating	50	930.83	44214.425	1715.65	7113.77	5.9742
79	HL-93 Operating	50	930.83	44214.425	1506.98	5856.03	7.2929
80	HL-93 Operating	50	930.83	44214.425	1802.83	7087.71	5.9838
80	HL-93 Operating	50	930.83	44214.425	1506.98	5856.03	7.2929
81	HL-93 Operating	50	930.83	44214.425	1802.83	7087.71	5.9838
81	HL-93 Operating	50	930.83	44214.425	1069.54	4323.07	9.9801
82	HL-93 Operating	50	930.83	44214.425	1563.11	5969.44	7.1449
82	HL-93 Operating	50	930.83	44214.425	-1.01	-1499.93	29.4770
83	HL-93 Operating	50	930.83	44214.425	953.57	4010.69	10.7864
83	HL-93 Operating	50	930.83	44214.425	-33.98	-799.66	55.2490
84	HL-93 Operating	50	930.83	44214.425	-116.98	-1701.75	25.9130
84	HL-93 Operating	50	930.83	44214.425	-0.69	-139.03	318.0158
85	HL-93 Operating	50	930.83	44214.425	-12.09	155.07	285.0476
85	HL-93 Operating	50	930.83	44214.425	-135.14	-3858.23	11.4247
86	HL-93 Operating	50	930.83	44214.425	-66.51	-1788.09	24.6900
86	HL-93 Operating	50	930.83	44214.425	845.4	4493.08	9.6524
87	HL-93 Operating	50	930.83	44214.425	-12.15	-3481.74	12.6955
87	HL-93 Operating	50	930.83	44214.425	1421.63	5289.7	8.0898
88	HL-93 Operating	50	930.83	44214.425	1009.87	4926.46	8.7699
88	HL-93 Operating	50	930.83	44214.425	1757.56	7394.6	5.7416
89	HL-93 Operating	50	930.83	44214.425	1395.06	5263.41	8.1353
89	HL-93 Operating	50	930.83	44214.425	1757.56	7394.6	5.7416
90	HL-93 Operating	50	930.83	44214.425	1395.06	5263.41	8.1353
90	HL-93 Operating	50	930.83	44214.425	1713.65	6600.72	6.4388
91	HL-93 Operating	50	930.83	44214.425	1671.56	7221	5.8915
91	HL-93 Operating	50	930.83	44214.425	1193.39	6948.67	6.1913
92	HL-93 Operating	50	930.83	44214.425	1640.55	6457.84	6.5926
92	HL-93 Operating	50	930.83	44214.425	1193.39	6948.67	6.1913
93	HL-93 Operating	50	930.83	44214.425	1640.55	6457.84	6.5926
93	HL-93 Operating	50	930.83	44214.425	575.99	4964.47	8.7901
94	HL-93 Operating	50	930.83	44214.425	1141.5	6885.49	6.2556
94	HL-93 Operating	50	930.83	44214.425	-603.15	-3511.3	12.4203
95	HL-93 Operating	50	930.83	44214.425	281.17	4930.99	8.9096
95	HL-93 Operating	50	930.83	44214.425	-603.15	-3511.3	12.4203
96	HL-93 Operating	50	930.83	44214.425	281.17	4930.99	8.9096
96	HL-93 Operating	50	930.83	44214.425	-1808.23	-4256.42	9.9629
97	HL-93 Operating	50	930.83	44214.425	-1399.55	-3979.01	10.7602
97	HL-93 Operating	50	930.83	44214.425	-2828.65	-5037.26	8.2159
98	HL-93 Operating	50	930.83	44214.425	-1822.65	-4263.37	9.9433
98	HL-93 Operating	50	930.83	44214.425	-3954.07	-6276.14	6.4148
99	HL-93 Operating	50	930.83	44214.425	-3953.09	-6299.95	6.3907
99	HL-93 Operating	50	930.83	44214.425	-1821.66	-4228.55	10.0254
100	HL-93 Operating	50	930.83	44214.425	-2827.66	-5001.23	8.2753
100	HL-93 Operating	50	930.83	44214.425	-1398.55	-3943.79	10.8565
101	HL-93 Operating	50	930.83	44214.425	-1807.23	-4221.44	10.0457
101	HL-93 Operating	50	930.83	44214.425	282.18	4896.95	8.9713
102	HL-93 Operating	50	930.83	44214.425	-602.15	-3471.16	12.5642
102	HL-93 Operating	50	930.83	44214.425	282.18	4896.95	8.9713
103	HL-93 Operating	50	930.83	44214.425	-602.15	-3471.16	12.5642
103	HL-93 Operating	50	930.83	44214.425	1142.6	6852.17	6.2859
104	HL-93 Operating	50	930.83	44214.425	577.13	4929.42	8.8524
104	HL-93 Operating	50	930.83	44214.425	1641.66	6428.33	6.6227
105	HL-93 Operating	50	930.83	44214.425	1194.55	6914.75	6.2215
105	HL-93 Operating	50	930.83	44214.425	1641.66	6428.33	6.6227
106	HL-93 Operating	50	930.83	44214.425	1194.55	6914.75	6.2215
106	HL-93 Operating	50	930.83	44214.425	1672.43	7198.87	5.9095

107	HL-93 Operating	50	930.83	44214.425	1714.84	6569.99	6.4687
107	HL-93 Operating	50	930.83	44214.425	1395.64	5248.99	8.1575
108	HL-93 Operating	50	930.83	44214.425	1758.58	7372.19	5.7589
108	HL-93 Operating	50	930.83	44214.425	1395.64	5248.99	8.1575
109	HL-93 Operating	50	930.83	44214.425	1758.58	7372.19	5.7589
109	HL-93 Operating	50	930.83	44214.425	1010.22	4916.35	8.7879
110	HL-93 Operating	50	930.83	44214.425	1422.34	5275.29	8.1118
110	HL-93 Operating	50	930.83	44214.425	-12.25	-3482.01	12.6944
111	HL-93 Operating	50	930.83	44214.425	845.77	4484.36	9.6711
111	HL-93 Operating	50	930.83	44214.425	-66.58	-1787.81	24.6938
112	HL-93 Operating	50	930.83	44214.425	-135.21	-3858.02	11.4253
112	HL-93 Operating	50	930.83	44214.425	-12.11	155.08	285.0291
113	HL-93 Operating	50	930.83	44214.425	-0.68	-139.04	317.9930
113	HL-93 Operating	50	930.83	44214.425	-116.97	-1701.89	25.9109
114	HL-93 Operating	50	930.83	44214.425	-33.95	-799.79	55.2401
114	HL-93 Operating	50	930.83	44214.425	953.53	4021.89	10.7564
115	HL-93 Operating	50	930.83	44214.425	-1.02	-1499.94	29.4768
115	HL-93 Operating	50	930.83	44214.425	1563.01	5987.81	7.1230
116	HL-93 Operating	50	930.83	44214.425	1069.45	4334.97	9.9528
116	HL-93 Operating	50	930.83	44214.425	1802.46	7114.26	5.9615
117	HL-93 Operating	50	930.83	44214.425	1506.9	5873.88	7.2708
117	HL-93 Operating	50	930.83	44214.425	1802.46	7114.26	5.9615
118	HL-93 Operating	50	930.83	44214.425	1506.9	5873.88	7.2708
118	HL-93 Operating	50	930.83	44214.425	1715.13	7146.89	5.9465
119	HL-93 Operating	50	930.83	44214.425	1723.17	6951.18	6.1128
119	HL-93 Operating	50	930.83	44214.425	1186.94	6459.07	6.6616
120	HL-93 Operating	50	930.83	44214.425	1663.62	7040.62	6.0436
120	HL-93 Operating	50	930.83	44214.425	1186.94	6459.07	6.6616
121	HL-93 Operating	50	930.83	44214.425	1663.62	7040.62	6.0436
121	HL-93 Operating	50	930.83	44214.425	562.52	5216.33	8.3683
122	HL-93 Operating	50	930.83	44214.425	1148.86	6391.41	6.7380
122	HL-93 Operating	50	930.83	44214.425	-617.18	-3802.5	11.4654
123	HL-93 Operating	50	930.83	44214.425	272.43	4741.07	9.2684
123	HL-93 Operating	50	930.83	44214.425	-617.18	-3802.5	11.4654
124	HL-93 Operating	50	930.83	44214.425	272.43	4741.07	9.2684
124	HL-93 Operating	50	930.83	44214.425	-1809.06	-4565.03	9.2892
125	HL-93 Operating	50	930.83	44214.425	-1402.75	-4277.5	10.0086
125	HL-93 Operating	50	930.83	44214.425	-2826.46	-5385.85	7.6846
126	HL-93 Operating	50	930.83	44214.425	-1824.86	-4573.3	9.2689
126	HL-93 Operating	50	930.83	44214.425	-3948.63	-6408.43	6.2833
127	HL-93 Operating	50	930.83	44214.425	-3947.65	-6381.76	6.3097
127	HL-93 Operating	50	930.83	44214.425	-1823.98	-4537.98	9.3413
128	HL-93 Operating	50	930.83	44214.425	-2825.51	-5349.74	7.7366
128	HL-93 Operating	50	930.83	44214.425	-1401.87	-4241.72	10.0932
129	HL-93 Operating	50	930.83	44214.425	-1808.15	-4529.58	9.3621
129	HL-93 Operating	50	930.83	44214.425	273.22	4705.9	9.3375
130	HL-93 Operating	50	930.83	44214.425	-616.31	-3762.67	11.5870
130	HL-93 Operating	50	930.83	44214.425	273.22	4705.9	9.3375
131	HL-93 Operating	50	930.83	44214.425	-616.31	-3762.67	11.5870
131	HL-93 Operating	50	930.83	44214.425	1149.64	6356.14	6.7753
132	HL-93 Operating	50	930.83	44214.425	563.42	5179.9	8.4270
132	HL-93 Operating	50	930.83	44214.425	1664.29	7008.05	6.0716
133	HL-93 Operating	50	930.83	44214.425	1187.78	6423.3	6.6985
133	HL-93 Operating	50	930.83	44214.425	1664.29	7008.05	6.0716
134	HL-93 Operating	50	930.83	44214.425	1187.78	6423.3	6.6985
134	HL-93 Operating	50	930.83	44214.425	1723.65	6925.76	6.1352
135	HL-93 Operating	50	930.83	44214.425	1715.88	7114.12	5.9738
135	HL-93 Operating	50	930.83	44214.425	1507.13	5856.19	7.2927
136	HL-93 Operating	50	930.83	44214.425	1803.05	7087.96	5.9836
136	HL-93 Operating	50	930.83	44214.425	1507.13	5856.19	7.2927
137	HL-93 Operating	50	930.83	44214.425	1803.05	7087.96	5.9836
137	HL-93 Operating	50	930.83	44214.425	1069.61	4323.19	9.9799
138	HL-93 Operating	50	930.83	44214.425	1563.33	5969.51	7.1448
138	HL-93 Operating	50	930.83	44214.425	-1.05	-1499.96	29.4764
139	HL-93 Operating	50	930.83	44214.425	953.7	4010.71	10.7863
139	HL-93 Operating	50	930.83	44214.425	-33.98	-799.66	55.2490
140	HL-93 Operating	50	930.83	44214.425	-117	-1701.75	25.9130
140	HL-93 Operating	50	930.83	44214.425	-0.68	-139.03	318.0159
141	HL-93 Operating	50	930.83	44214.425	58.93	272.59	161.9850
141	HL-93 Operating	50	930.83	44214.425	109.06	-1939.84	22.7366
142	HL-93 Operating	50	930.83	44214.425	155.03	-753.32	58.4870
142	HL-93 Operating	50	930.83	44214.425	1370.13	5118.39	8.3707
143	HL-93 Operating	50	930.83	44214.425	152.32	-1866.31	23.6092
143	HL-93 Operating	50	930.83	44214.425	1944.11	7321.41	5.7735

144	HL-93 Operating	50	930.83	44214.425	1278.47	4892.37	8.7761
144	HL-93 Operating	50	930.83	44214.425	1902.22	7581.53	5.5810
145	HL-93 Operating	50	930.83	44214.425	1833.31	7043.77	6.0168
145	HL-93 Operating	50	930.83	44214.425	1902.22	7581.53	5.5810
146	HL-93 Operating	50	930.83	44214.425	1833.31	7043.77	6.0168
146	HL-93 Operating	50	930.83	44214.425	1706.67	7607.91	5.5873
147	HL-93 Operating	50	930.83	44214.425	1886.67	7556.79	5.6013
147	HL-93 Operating	50	930.83	44214.425	1169.6	6594.32	6.5276
148	HL-93 Operating	50	930.83	44214.425	1713.96	7621.99	5.5760
148	HL-93 Operating	50	930.83	44214.425	1169.6	6594.32	6.5276
149	HL-93 Operating	50	930.83	44214.425	1713.96	7621.99	5.5760
149	HL-93 Operating	50	930.83	44214.425	522.96	5484.44	7.9664
150	HL-93 Operating	50	930.83	44214.425	1164.64	6574.44	6.5481
150	HL-93 Operating	50	930.83	44214.425	-666.53	-4157.88	10.4736
151	HL-93 Operating	50	930.83	44214.425	247.3	4883.58	9.0031
151	HL-93 Operating	50	930.83	44214.425	-666.53	-4157.88	10.4736
152	HL-93 Operating	50	930.83	44214.425	247.3	4883.58	9.0031
152	HL-93 Operating	50	930.83	44214.425	-1800.28	-4857.52	8.7316
153	HL-93 Operating	50	930.83	44214.425	-1407.95	-4582.59	9.3411
153	HL-93 Operating	50	930.83	44214.425	-2817.36	-5720.8	7.2362
154	HL-93 Operating	50	930.83	44214.425	-1820.09	-4881.47	8.6847
154	HL-93 Operating	50	930.83	44214.425	-3942.87	-6803.18	5.9195
155	HL-93 Operating	50	930.83	44214.425	-3941.88	-6803.84	5.9191
155	HL-93 Operating	50	930.83	44214.425	-1819.32	-4846.05	8.7484
156	HL-93 Operating	50	930.83	44214.425	-2816.45	-5684.66	7.2824
156	HL-93 Operating	50	930.83	44214.425	-1407.2	-4546.86	9.4147
157	HL-93 Operating	50	930.83	44214.425	-1799.47	-4822.06	8.7960
157	HL-93 Operating	50	930.83	44214.425	247.85	4848.32	9.0684
158	HL-93 Operating	50	930.83	44214.425	-665.8	-4118.13	10.5749
158	HL-93 Operating	50	930.83	44214.425	247.85	4848.32	9.0684
159	HL-93 Operating	50	930.83	44214.425	-665.8	-4118.13	10.5749
159	HL-93 Operating	50	930.83	44214.425	1165.09	6537.54	6.5849
160	HL-93 Operating	50	930.83	44214.425	523.6	5448.7	8.0186
160	HL-93 Operating	50	930.83	44214.425	1714.21	7587.31	5.6015
161	HL-93 Operating	50	930.83	44214.425	1170.12	6557.4	6.5642
161	HL-93 Operating	50	930.83	44214.425	1714.21	7587.31	5.6015
162	HL-93 Operating	50	930.83	44214.425	1170.12	6557.4	6.5642
162	HL-93 Operating	50	930.83	44214.425	1886.84	7528.31	5.6225
163	HL-93 Operating	50	930.83	44214.425	1706.98	7573.34	5.6128
163	HL-93 Operating	50	930.83	44214.425	1833.32	7021.17	6.0362
164	HL-93 Operating	50	930.83	44214.425	1902.42	7552.74	5.6022
164	HL-93 Operating	50	930.83	44214.425	1833.32	7021.17	6.0362
165	HL-93 Operating	50	930.83	44214.425	1902.42	7552.74	5.6022
165	HL-93 Operating	50	930.83	44214.425	1278.54	4877.93	8.8021
166	HL-93 Operating	50	930.83	44214.425	1944.18	7297.53	5.7924
166	HL-93 Operating	50	930.83	44214.425	152.41	-1866.45	23.6074
167	HL-93 Operating	50	930.83	44214.425	1370.27	5102.77	8.3963
167	HL-93 Operating	50	930.83	44214.425	155.1	-753.41	58.4799
168	HL-93 Operating	50	930.83	44214.425	109.15	-1939.98	22.7349
168	HL-93 Operating	50	930.83	44214.425	58.95	272.24	162.1932
169	HL-93 Operating	50	930.83	44214.425	-27.98	-245.91	179.6854
169	HL-93 Operating	50	930.83	44214.425	2763.91	9682.74	4.2809
170	HL-93 Operating	50	930.83	44214.425	1347.53	4779.22	8.9694
170	HL-93 Operating	50	930.83	44214.425	2357.71	8531.75	4.9060
171	HL-93 Operating	50	930.83	44214.425	2521.66	8814.23	4.7302
171	HL-93 Operating	50	930.83	44214.425	1919.32	7880.14	5.3673
172	HL-93 Operating	50	930.83	44214.425	2233.93	8082.64	5.1939
172	HL-93 Operating	50	930.83	44214.425	1843.96	8493.95	4.9883
173	HL-93 Operating	50	930.83	44214.425	2117.39	8201	5.1332
173	HL-93 Operating	50	930.83	44214.425	1843.96	8493.95	4.9883
174	HL-93 Operating	50	930.83	44214.425	2117.39	8201	5.1332
174	HL-93 Operating	50	930.83	44214.425	1593.26	8246.09	5.1687
175	HL-93 Operating	50	930.83	44214.425	1999.48	8674.99	4.8663
175	HL-93 Operating	50	930.83	44214.425	1034.92	7310.05	5.9069
176	HL-93 Operating	50	930.83	44214.425	1682.13	8374.94	5.0785
176	HL-93 Operating	50	930.83	44214.425	1034.92	7310.05	5.9069
177	HL-93 Operating	50	930.83	44214.425	1682.13	8374.94	5.0785
177	HL-93 Operating	50	930.83	44214.425	431.21	6002.7	7.2939
178	HL-93 Operating	50	930.83	44214.425	1116.72	7431.01	5.7997
178	HL-93 Operating	50	930.83	44214.425	-703.26	-4326.7	10.0564
179	HL-93 Operating	50	930.83	44214.425	233.07	5507.51	7.9857
179	HL-93 Operating	50	930.83	44214.425	-703.26	-4326.7	10.0564
180	HL-93 Operating	50	930.83	44214.425	233.07	5507.51	7.9857
180	HL-93 Operating	50	930.83	44214.425	-1715.31	-5102.35	8.3293

181	HL-93 Operating	50	930.83	44214.425	-1320.56	-4778.2	8.9770
181	HL-93 Operating	50	930.83	44214.425	-2623.01	-5964.71	6.9729
182	HL-93 Operating	50	930.83	44214.425	-1668.68	-5071.26	8.3896
182	HL-93 Operating	50	930.83	44214.425	-3675.61	-7128.42	5.6869
183	HL-93 Operating	50	930.83	44214.425	-3674.64	-7158.25	5.6634
183	HL-93 Operating	50	930.83	44214.425	-1668.05	-5042.95	8.4368
184	HL-93 Operating	50	930.83	44214.425	-2622.16	-5936.32	7.0064
184	HL-93 Operating	50	930.83	44214.425	-1319.96	-4749.33	9.0317
185	HL-93 Operating	50	930.83	44214.425	-1714.61	-5074.14	8.3758
185	HL-93 Operating	50	930.83	44214.425	233.34	5476.79	8.0304
186	HL-93 Operating	50	930.83	44214.425	-702.69	-4295.7	10.1291
186	HL-93 Operating	50	930.83	44214.425	233.34	5476.79	8.0304
187	HL-93 Operating	50	930.83	44214.425	-702.69	-4295.7	10.1291
187	HL-93 Operating	50	930.83	44214.425	1116.83	7398.59	5.8251
188	HL-93 Operating	50	930.83	44214.425	431.57	5970.75	7.3329
188	HL-93 Operating	50	930.83	44214.425	1681.98	8344.93	5.0968
189	HL-93 Operating	50	930.83	44214.425	1035.1	7278.36	5.9326
189	HL-93 Operating	50	930.83	44214.425	1681.98	8344.93	5.0968
190	HL-93 Operating	50	930.83	44214.425	1035.1	7278.36	5.9326
190	HL-93 Operating	50	930.83	44214.425	1999.37	8649.94	4.8804
191	HL-93 Operating	50	930.83	44214.425	1593.16	8216.29	5.1874
191	HL-93 Operating	50	930.83	44214.425	2117.21	8179.58	5.1466
192	HL-93 Operating	50	930.83	44214.425	1843.78	8470.47	5.0022
192	HL-93 Operating	50	930.83	44214.425	2117.21	8179.58	5.1466
193	HL-93 Operating	50	930.83	44214.425	1843.78	8470.47	5.0022
193	HL-93 Operating	50	930.83	44214.425	2234.09	8057.58	5.2100
194	HL-93 Operating	50	930.83	44214.425	1919.04	7861.31	5.3802
194	HL-93 Operating	50	930.83	44214.425	2522.53	8789.42	4.7434
195	HL-93 Operating	50	930.83	44214.425	2357.96	8506.74	4.9204
195	HL-93 Operating	50	930.83	44214.425	1348.01	4765.12	8.9959
196	HL-93 Operating	50	930.83	44214.425	2764.84	9656.44	4.2924
196	HL-93 Operating	50	930.83	44214.425	-27.99	-247.26	178.7043

LOAD RATING SWING SPAN

RF= RATING FACTOR

RF = (C - f_{DL+SDL}) / (f_{LL+I})

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

C=$\varphi_C\varphi_S\varphi R_n S_x$ = (1.0)(1.0)(.95)(50)(930.83)

Virtual Beam	LOADING	R_n (ksi)	S_x (in^3)	C=$\varphi_C\varphi_S\varphi R_n S_x$	M_{DL+SDL} (kip-in)	M_{LL+I} (kip-in)	RF
1	HS-20	50	930.83	44214.425	-35.32	-266.85	165.5578
1	HS-20	50	930.83	44214.425	2757.58	9257.4	4.4782
2	HS-21	50	930.83	44214.425	1340.69	4621.25	9.2775
2	HS-22	50	930.83	44214.425	2353.36	8046.16	5.2026
3	HS-23	50	930.83	44214.425	2514.92	8426.91	4.9484
3	HS-24	50	930.83	44214.425	1916.1	7405.01	5.7121
4	HS-25	50	930.83	44214.425	2228.89	7602.72	5.5224
4	HS-26	50	930.83	44214.425	1840.96	7996.97	5.2987
5	HS-27	50	930.83	44214.425	2113.66	7670.36	5.4888
5	HS-28	50	930.83	44214.425	1840.96	7996.97	5.2987
6	HS-29	50	930.83	44214.425	2113.66	7670.36	5.4888
6	HS-30	50	930.83	44214.425	1590.57	7678.75	5.5509
7	HS-31	50	930.83	44214.425	1996.24	8132.08	5.1916
7	HS-32	50	930.83	44214.425	1032.56	6924.36	6.2362
8	HS-33	50	930.83	44214.425	1679.31	7799.96	5.4532
8	HS-34	50	930.83	44214.425	1032.56	6924.36	6.2362
9	HS-35	50	930.83	44214.425	1679.31	7799.96	5.4532
9	HS-36	50	930.83	44214.425	429.08	5700.95	7.6804
10	HS-37	50	930.83	44214.425	1114.22	7029.66	6.1312
10	HS-38	50	930.83	44214.425	-704.69	-3859.65	11.2730
11	HS-39	50	930.83	44214.425	231.25	5302.08	8.2955
11	HS-40	50	930.83	44214.425	-704.69	-3859.65	11.2730
12	HS-41	50	930.83	44214.425	231.25	5302.08	8.2955
12	HS-42	50	930.83	44214.425	-1716.52	-4260.47	9.9749
13	HS-43	50	930.83	44214.425	-1321.91	-4121.04	10.4082
13	HS-44	50	930.83	44214.425	-2624.03	-4552.93	9.1349
14	HS-45	50	930.83	44214.425	-1669.96	-4251.4	10.0072
14	HS-46	50	930.83	44214.425	-3676.48	-4986.89	8.1289
15	HS-47	50	930.83	44214.425	-3675.62	-5029.78	8.0598
15	HS-48	50	930.83	44214.425	-1668.81	-4213.22	10.0981
16	HS-49	50	930.83	44214.425	-2623.08	-4511.85	9.2182
16	HS-50	50	930.83	44214.425	-1320.73	-4084.08	10.5027
17	HS-51	50	930.83	44214.425	-1715.44	-4222.26	10.0655
17	HS-52	50	930.83	44214.425	232.73	5279.73	8.3303
18	HS-53	50	930.83	44214.425	-703.49	-3825.31	11.3745
18	HS-54	50	930.83	44214.425	232.73	5279.73	8.3303
19	HS-55	50	930.83	44214.425	-703.49	-3825.31	11.3745
19	HS-56	50	930.83	44214.425	1116.11	7006.69	6.1510
20	HS-57	50	930.83	44214.425	430.7	5678.3	7.7107
20	HS-58	50	930.83	44214.425	1681.38	7778.98	5.4677
21	HS-59	50	930.83	44214.425	1034.3	6901.77	6.2564
21	HS-60	50	930.83	44214.425	1681.38	7778.98	5.4677
22	HS-61	50	930.83	44214.425	1034.3	6901.77	6.2564
22	HS-62	50	930.83	44214.425	1998.88	8118.17	5.2001
23	HS-63	50	930.83	44214.425	1592.45	7657.66	5.5659
23	HS-64	50	930.83	44214.425	2116.96	7660.66	5.4953
24	HS-65	50	930.83	44214.425	1843.23	7983.26	5.3075
24	HS-66	50	930.83	44214.425	2116.96	7660.66	5.4953
25	HS-67	50	930.83	44214.425	1843.23	7983.26	5.3075
25	HS-68	50	930.83	44214.425	2233.75	7596.2	5.5265
26	HS-69	50	930.83	44214.425	1918.69	7396.17	5.7186
26	HS-70	50	930.83	44214.425	2521.94	8426	4.9481
27	HS-71	50	930.83	44214.425	2357.47	8037.63	5.2076
27	HS-72	50	930.83	44214.425	1347.65	4629.07	9.2603
28	HS-73	50	930.83	44214.425	2764.16	9253.77	4.4793
28	HS-74	50	930.83	44214.425	-28.01	-247.97	178.1926
29	HS-75	50	930.83	44214.425	58.91	287	153.8520
29	HS-76	50	930.83	44214.425	109.1	-2390.33	18.4516
30	HS-77	50	930.83	44214.425	155.04	-929.87	47.3823
30	HS-78	50	930.83	44214.425	1368.35	4857.11	8.8213
31	HS-79	50	930.83	44214.425	152.67	-2292.94	19.2163
31	HS-80	50	930.83	44214.425	1941.22	6885.6	6.1394
32	HS-81	50	930.83	44214.425	1277.19	4671.93	9.1905
32	HS-82	50	930.83	44214.425	1899.93	7022.79	6.0253

Minimum Rating factor	4.4782	**Girder 1**
Minimum Rating factor	5.9657	**Girder 2**
Minimum Rating factor	6.3059	**Girder 3**
Minimum Rating factor	5.8383	**Girder 4**
Minimum Rating factor	6.3024	**Girder 5**
Minimum Rating factor	5.9609	**Girder 6**
Minimum Rating factor	4.4676	**Girder 7**

33	HS-83	50	930.83	44214.425	1830.74	6651.22	6.3723
33	HS-84	50	930.83	44214.425	1899.93	7022.79	6.0253
34	HS-85	50	930.83	44214.425	1830.74	6651.22	6.3723
34	HS-86	50	930.83	44214.425	1704.64	7119.54	5.9709
35	HS-87	50	930.83	44214.425	1884.42	7006.2	6.0418
35	HS-88	50	930.83	44214.425	1167.89	6132.65	7.0192
36	HS-89	50	930.83	44214.425	1711.84	7124.46	5.9657
36	HS-90	50	930.83	44214.425	1167.89	6132.65	7.0192
37	HS-91	50	930.83	44214.425	1711.84	7124.46	5.9657
37	HS-92	50	930.83	44214.425	521.46	5246.89	8.3274
38	HS-93	50	930.83	44214.425	1162.86	6111.57	7.0443
38	HS-94	50	930.83	44214.425	-667.57	-3670.16	11.8651
39	HS-95	50	930.83	44214.425	246.03	4670.14	9.4148
39	HS-96	50	930.83	44214.425	-667.57	-3670.16	11.8651
40	HS-97	50	930.83	44214.425	246.03	4670.14	9.4148
40	HS-98	50	930.83	44214.425	-1801.2	-4034.93	10.5115
41	HS-99	50	930.83	44214.425	-1408.94	-3915.13	10.9333
41	HS-100	50	930.83	44214.425	-2818.11	-4339.9	9.5385
42	HS-101	50	930.83	44214.425	-1821.05	-4047.5	10.4740
42	HS-102	50	930.83	44214.425	-3943.48	-4630.7	8.6965
43	HS-103	50	930.83	44214.425	-3942.53	-4632.46	8.6934
43	HS-104	50	930.83	44214.425	-1819.86	-4000.86	10.5964
44	HS-105	50	930.83	44214.425	-2817.07	-4289.64	9.6505
44	HS-106	50	930.83	44214.425	-1407.74	-3870.19	11.0606
45	HS-107	50	930.83	44214.425	-1800.05	-3988.46	10.6343
45	HS-108	50	930.83	44214.425	247.41	4643.28	9.4690
46	HS-109	50	930.83	44214.425	-666.35	-3628.33	12.0022
46	HS-110	50	930.83	44214.425	247.41	4643.28	9.4690
47	HS-111	50	930.83	44214.425	-666.35	-3628.33	12.0022
47	HS-112	50	930.83	44214.425	1164.6	6084.21	7.0757
48	HS-113	50	930.83	44214.425	522.97	5220.74	8.3688
48	HS-114	50	930.83	44214.425	1713.82	7099.26	5.9866
49	HS-115	50	930.83	44214.425	1169.54	6105.14	7.0506
49	HS-116	50	930.83	44214.425	1713.82	7099.26	5.9866
50	HS-117	50	930.83	44214.425	1169.54	6105.14	7.0506
50	HS-118	50	930.83	44214.425	1886.49	6987.7	6.0575
51	HS-119	50	930.83	44214.425	1706.51	7094.15	5.9920
51	HS-120	50	930.83	44214.425	1833.06	6639.38	6.3833
52	HS-121	50	930.83	44214.425	1902	7004.29	6.0409
52	HS-122	50	930.83	44214.425	1833.06	6639.38	6.3833
53	HS-123	50	930.83	44214.425	1902	7004.29	6.0409
53	HS-124	50	930.83	44214.425	1278.31	4662.96	9.2079
54	HS-125	50	930.83	44214.425	1943.83	6874.08	6.1493
54	HS-126	50	930.83	44214.425	152.35	-2293.74	19.2097
55	HS-127	50	930.83	44214.425	1369.91	4849.1	8.8356
55	HS-128	50	930.83	44214.425	155.05	-930.28	47.3614
56	HS-129	50	930.83	44214.425	109.01	-2390.96	18.4467
56	HS-130	50	930.83	44214.425	58.94	286.71	154.0075
57	HS-131	50	930.83	44214.425	-0.66	-170.58	259.1967
57	HS-132	50	930.83	44214.425	-116.89	-1991.72	22.1404
58	HS-133	50	930.83	44214.425	-33.87	-981.97	44.9918
58	HS-134	50	930.83	44214.425	952.79	3921.41	11.0322
59	HS-135	50	930.83	44214.425	-0.84	-1798.78	24.5798
59	HS-136	50	930.83	44214.425	1561.71	5728.72	7.4454
60	HS-137	50	930.83	44214.425	1068.85	4207.24	10.2551
60	HS-138	50	930.83	44214.425	1801.31	6725.94	6.3059
61	HS-139	50	930.83	44214.425	1505.76	5633.99	7.5805
61	HS-140	50	930.83	44214.425	1801.31	6725.94	6.3059
62	HS-141	50	930.83	44214.425	1505.76	5633.99	7.5805
62	HS-142	50	930.83	44214.425	1714.06	6724.18	6.3205
63	HS-143	50	930.83	44214.425	1722.11	6590.5	6.4475
63	HS-144	50	930.83	44214.425	1186.06	6116.22	7.0351
64	HS-145	50	930.83	44214.425	1662.53	6634.51	6.4137
64	HS-146	50	930.83	44214.425	1186.06	6116.22	7.0351
65	HS-147	50	930.83	44214.425	1662.53	6634.51	6.4137
65	HS-148	50	930.83	44214.425	561.77	4989.72	8.7485
66	HS-149	50	930.83	44214.425	1147.95	6064.83	7.1010
66	HS-150	50	930.83	44214.425	-617.7	-3380.42	12.8968
67	HS-151	50	930.83	44214.425	271.79	4578.58	9.5974
67	HS-152	50	930.83	44214.425	-617.7	-3380.42	12.8968
68	HS-153	50	930.83	44214.425	271.79	4578.58	9.5974
68	HS-154	50	930.83	44214.425	-1809.51	-3793.4	11.1786
69	HS-155	50	930.83	44214.425	-1403.25	-3659.46	11.6988
69	HS-156	50	930.83	44214.425	-2826.84	-4093.88	10.1096

70	HS-157	50	930.83	44214.425	-1825.34	-3792.57	11.1769
70	HS-158	50	930.83	44214.425	-3948.95	-4372.31	9.2092
71	HS-159	50	930.83	44214.425	-3947.97	-4335.29	9.2881
71	HS-160	50	930.83	44214.425	-1824.24	-3748.2	11.3095
72	HS-161	50	930.83	44214.425	-2825.82	-4045.75	10.2301
72	HS-162	50	930.83	44214.425	-1402.14	-3616.71	11.8374
73	HS-163	50	930.83	44214.425	-1808.43	-3748.97	11.3114
73	HS-164	50	930.83	44214.425	273	4553.08	9.6509
74	HS-165	50	930.83	44214.425	-616.59	-3341.06	13.0491
74	HS-166	50	930.83	44214.425	273	4553.08	9.6509
75	HS-167	50	930.83	44214.425	-616.59	-3341.06	13.0491
75	HS-168	50	930.83	44214.425	1149.39	6038.3	7.1320
76	HS-169	50	930.83	44214.425	563.1	4963.39	8.7947
76	HS-170	50	930.83	44214.425	1664.1	6609.74	6.4375
77	HS-171	50	930.83	44214.425	1187.49	6089.57	7.0657
77	HS-172	50	930.83	44214.425	1664.1	6609.74	6.4375
78	HS-173	50	930.83	44214.425	1187.49	6089.57	7.0657
78	HS-174	50	930.83	44214.425	1723.47	6571.58	6.4659
79	HS-175	50	930.83	44214.425	1715.65	6699.29	6.3438
79	HS-176	50	930.83	44214.425	1506.98	5622.13	7.5963
80	HS-177	50	930.83	44214.425	1802.83	6707.14	6.3234
80	HS-178	50	930.83	44214.425	1506.98	5622.13	7.5963
81	HS-179	50	930.83	44214.425	1802.83	6707.14	6.3234
81	HS-180	50	930.83	44214.425	1069.54	4198.42	10.2765
82	HS-181	50	930.83	44214.425	1563.11	5717.2	7.4602
82	HS-182	50	930.83	44214.425	-1.01	-1798.95	24.5773
83	HS-183	50	930.83	44214.425	953.57	3913.64	11.0539
83	HS-184	50	930.83	44214.425	-33.98	-981.98	44.9912
84	HS-185	50	930.83	44214.425	-116.98	-1991.68	22.1408
84	HS-186	50	930.83	44214.425	-0.69	-170.59	259.1813
85	HS-187	50	930.83	44214.425	-12.09	192.69	229.3961
85	HS-188	50	930.83	44214.425	-135.14	-4697.71	9.3831
86	HS-189	50	930.83	44214.425	-66.51	-2218.77	19.8975
86	HS-190	50	930.83	44214.425	845.4	4659.56	9.3075
87	HS-191	50	930.83	44214.425	-12.15	-4314.7	10.2446
87	HS-192	50	930.83	44214.425	1421.63	5168.76	8.2791
88	HS-193	50	930.83	44214.425	1009.87	5070.15	8.5214
88	HS-194	50	930.83	44214.425	1757.56	7272.12	5.8383
89	HS-195	50	930.83	44214.425	1395.06	5143.51	8.3249
89	HS-196	50	930.83	44214.425	1757.56	7272.12	5.8383
90	HS-197	50	930.83	44214.425	1395.06	5143.51	8.3249
90	HS-198	50	930.83	44214.425	1713.65	6259.73	6.7896
91	HS-199	50	930.83	44214.425	1671.56	7118.28	5.9766
91	HS-200	50	930.83	44214.425	1193.39	6848.18	6.2821
92	HS-201	50	930.83	44214.425	1640.55	6144.72	6.9285
92	HS-202	50	930.83	44214.425	1193.39	6848.18	6.2821
93	HS-203	50	930.83	44214.425	1640.55	6144.72	6.9285
93	HS-204	50	930.83	44214.425	575.99	4806.84	9.0784
94	HS-205	50	930.83	44214.425	1141.5	6811.48	6.3236
94	HS-206	50	930.83	44214.425	-603.15	-3124.82	13.9564
95	HS-207	50	930.83	44214.425	281.17	4928.52	8.9141
95	HS-208	50	930.83	44214.425	-603.15	-3124.82	13.9564
96	HS-209	50	930.83	44214.425	281.17	4928.52	8.9141
96	HS-210	50	930.83	44214.425	-1808.23	-3523.11	12.0366
97	HS-211	50	930.83	44214.425	-1399.55	-3394.13	12.6144
97	HS-212	50	930.83	44214.425	-2828.65	-3809.32	10.8643
98	HS-213	50	930.83	44214.425	-1822.65	-3519.01	12.0465
98	HS-214	50	930.83	44214.425	-3954.07	-4330.25	9.2975
99	HS-215	50	930.83	44214.425	-3953.09	-4362.03	9.2300
99	HS-216	50	930.83	44214.425	-1821.66	-3477.35	12.1911
100	HS-217	50	930.83	44214.425	-2827.66	-3764.08	10.9952
100	HS-218	50	930.83	44214.425	-1398.55	-3353.95	12.7658
101	HS-219	50	930.83	44214.425	-1807.23	-3481.35	12.1813
101	HS-220	50	930.83	44214.425	282.18	4903.53	8.9593
102	HS-221	50	930.83	44214.425	-602.15	-3087.82	14.1240
102	HS-222	50	930.83	44214.425	282.18	4903.53	8.9593
103	HS-223	50	930.83	44214.425	-602.15	-3087.82	14.1240
103	HS-224	50	930.83	44214.425	1142.6	6784.81	6.3483
104	HS-225	50	930.83	44214.425	577.13	4781.27	9.1267
104	HS-226	50	930.83	44214.425	1641.66	6119.99	6.9563
105	HS-227	50	930.83	44214.425	1194.55	6821.4	6.3066
105	HS-228	50	930.83	44214.425	1641.66	6119.99	6.9563
106	HS-229	50	930.83	44214.425	1194.55	6821.4	6.3066
106	HS-230	50	930.83	44214.425	1672.43	7099.5	5.9923

107	HS-231	50	930.83	44214.425	1714.84	6233.52	6.8179
107	HS-232	50	930.83	44214.425	1395.64	5130.58	8.3458
108	HS-233	50	930.83	44214.425	1758.58	7253.27	5.8533
108	HS-234	50	930.83	44214.425	1395.64	5130.58	8.3458
109	HS-235	50	930.83	44214.425	1758.58	7253.27	5.8533
109	HS-236	50	930.83	44214.425	1010.22	5060.96	8.5368
110	HS-237	50	930.83	44214.425	1422.34	5155.94	8.2996
110	HS-238	50	930.83	44214.425	-12.25	-4315.23	10.2433
111	HS-239	50	930.83	44214.425	845.77	4651.33	9.3239
111	HS-240	50	930.83	44214.425	-66.58	-2218.46	19.9002
112	HS-241	50	930.83	44214.425	-135.21	-4697.46	9.3836
112	HS-242	50	930.83	44214.425	-12.11	192.74	229.3365
113	HS-243	50	930.83	44214.425	-0.68	-170.6	259.1661
113	HS-244	50	930.83	44214.425	-116.97	-1991.91	22.1383
114	HS-245	50	930.83	44214.425	-33.95	-982.16	44.9830
114	HS-246	50	930.83	44214.425	953.53	3923.86	11.0251
115	HS-247	50	930.83	44214.425	-1.02	-1798.88	24.5783
115	HS-248	50	930.83	44214.425	1563.01	5733.12	7.4395
116	HS-249	50	930.83	44214.425	1069.45	4209.18	10.2502
116	HS-250	50	930.83	44214.425	1802.46	6729.48	6.3024
117	HS-251	50	930.83	44214.425	1506.9	5637.73	7.5753
117	HS-252	50	930.83	44214.425	1802.46	6729.48	6.3024
118	HS-253	50	930.83	44214.425	1506.9	5637.73	7.5753
118	HS-254	50	930.83	44214.425	1715.13	6727.29	6.3174
119	HS-255	50	930.83	44214.425	1723.17	6593.62	6.4443
119	HS-256	50	930.83	44214.425	1186.94	6118.1	7.0328
120	HS-257	50	930.83	44214.425	1663.62	6637.63	6.4105
120	HS-258	50	930.83	44214.425	1186.94	6118.1	7.0328
121	HS-259	50	930.83	44214.425	1663.62	6637.63	6.4105
121	HS-260	50	930.83	44214.425	562.52	4990.75	8.7466
122	HS-261	50	930.83	44214.425	1148.86	6066.81	7.0986
122	HS-262	50	930.83	44214.425	-617.18	-3380.37	12.8972
123	HS-263	50	930.83	44214.425	272.43	4579.12	9.5962
123	HS-264	50	930.83	44214.425	-617.18	-3380.37	12.8972
124	HS-265	50	930.83	44214.425	272.43	4579.12	9.5962
124	HS-266	50	930.83	44214.425	-1809.06	-3793.07	11.1797
125	HS-267	50	930.83	44214.425	-1402.75	-3659.25	11.6996
125	HS-268	50	930.83	44214.425	-2826.46	-4093.31	10.1111
126	HS-269	50	930.83	44214.425	-1824.86	-3792.28	11.1779
126	HS-270	50	930.83	44214.425	-3948.63	-4371.53	9.2109
127	HS-271	50	930.83	44214.425	-3947.65	-4337.72	9.2829
127	HS-272	50	930.83	44214.425	-1823.98	-3750.22	11.3035
128	HS-273	50	930.83	44214.425	-2825.51	-4047.86	10.2249
128	HS-274	50	930.83	44214.425	-1401.87	-3618.63	11.8312
129	HS-275	50	930.83	44214.425	-1808.15	-3750.93	11.3055
129	HS-276	50	930.83	44214.425	273.22	4553.74	9.6495
130	HS-277	50	930.83	44214.425	-616.31	-3342.73	13.0427
130	HS-278	50	930.83	44214.425	273.22	4553.74	9.6495
131	HS-279	50	930.83	44214.425	-616.31	-3342.73	13.0427
131	HS-280	50	930.83	44214.425	1149.64	6038.78	7.1314
132	HS-281	50	930.83	44214.425	563.42	4963.88	8.7937
132	HS-282	50	930.83	44214.425	1664.29	6610.11	6.4371
133	HS-283	50	930.83	44214.425	1187.78	6089.98	7.0652
133	HS-284	50	930.83	44214.425	1664.29	6610.11	6.4371
134	HS-285	50	930.83	44214.425	1187.78	6089.98	7.0652
134	HS-286	50	930.83	44214.425	1723.65	6571.86	6.4656
135	HS-287	50	930.83	44214.425	1715.88	6699.6	6.3434
135	HS-288	50	930.83	44214.425	1507.13	5622.27	7.5961
136	HS-289	50	930.83	44214.425	1803.05	6707.37	6.3231
136	HS-290	50	930.83	44214.425	1507.13	5622.27	7.5961
137	HS-291	50	930.83	44214.425	1803.05	6707.37	6.3231
137	HS-292	50	930.83	44214.425	1069.61	4198.51	10.2762
138	HS-293	50	930.83	44214.425	1563.33	5717.27	7.4600
138	HS-294	50	930.83	44214.425	-1.05	-1798.95	24.5773
139	HS-295	50	930.83	44214.425	953.7	3913.65	11.0538
139	HS-296	50	930.83	44214.425	-33.98	-981.98	44.9912
140	HS-297	50	930.83	44214.425	-117	-1991.67	22.1409
140	HS-298	50	930.83	44214.425	-0.68	-170.59	259.1813
141	HS-299	50	930.83	44214.425	58.93	287.04	153.8305
141	HS-300	50	930.83	44214.425	109.06	-2390.35	18.4514
142	HS-301	50	930.83	44214.425	155.03	-929.87	47.3823
142	HS-302	50	930.83	44214.425	1370.13	4862.5	8.8112
143	HS-303	50	930.83	44214.425	152.32	-2293.15	19.2147
143	HS-304	50	930.83	44214.425	1944.11	6895.01	6.1306

144	HS-305	50	930.83	44214.425	1278.47	4675.58	9.1830
144	HS-306	50	930.83	44214.425	1902.22	7029.19	6.0195
145	HS-307	50	930.83	44214.425	1833.31	6659.46	6.3640
145	HS-308	50	930.83	44214.425	1902.22	7029.19	6.0195
146	HS-309	50	930.83	44214.425	1833.31	6659.46	6.3640
146	HS-310	50	930.83	44214.425	1706.67	7124.56	5.9664
147	HS-311	50	930.83	44214.425	1886.67	7012.45	6.0361
147	HS-312	50	930.83	44214.425	1169.6	6135.68	7.0155
148	HS-313	50	930.83	44214.425	1713.96	7129.82	5.9609
148	HS-314	50	930.83	44214.425	1169.6	6135.68	7.0155
149	HS-315	50	930.83	44214.425	1713.96	7129.82	5.9609
149	HS-316	50	930.83	44214.425	522.96	5248.55	8.3245
150	HS-317	50	930.83	44214.425	1164.64	6114.85	7.0402
150	HS-318	50	930.83	44214.425	-666.53	-3669.95	11.8661
151	HS-319	50	930.83	44214.425	247.3	4670.89	9.4130
151	HS-320	50	930.83	44214.425	-666.53	-3669.95	11.8661
152	HS-321	50	930.83	44214.425	247.3	4670.89	9.4130
152	HS-322	50	930.83	44214.425	-1800.28	-4034.22	10.5136
153	HS-323	50	930.83	44214.425	-1407.95	-3914.64	10.9350
153	HS-324	50	930.83	44214.425	-2817.36	-4338.71	9.5413
154	HS-325	50	930.83	44214.425	-1820.09	-4046.84	10.4759
154	HS-326	50	930.83	44214.425	-3942.87	-4629.07	8.6997
155	HS-327	50	930.83	44214.425	-3941.88	-4630.69	8.6969
155	HS-328	50	930.83	44214.425	-1819.32	-4004.27	10.5875
156	HS-329	50	930.83	44214.425	-2816.45	-4293.12	9.6429
156	HS-330	50	930.83	44214.425	-1407.2	-3873.4	11.0516
157	HS-331	50	930.83	44214.425	-1799.47	-3991.72	10.6257
157	HS-332	50	930.83	44214.425	247.85	4644.49	9.4664
158	HS-333	50	930.83	44214.425	-665.8	-3631.13	11.9931
158	HS-334	50	930.83	44214.425	247.85	4644.49	9.4664
159	HS-335	50	930.83	44214.425	-665.8	-3631.13	11.9931
159	HS-336	50	930.83	44214.425	1165.09	6085.06	7.0746
160	HS-337	50	930.83	44214.425	523.6	5221.59	8.3673
160	HS-338	50	930.83	44214.425	1714.21	7099.92	5.9860
161	HS-339	50	930.83	44214.425	1170.12	6105.86	7.0497
161	HS-340	50	930.83	44214.425	1714.21	7099.92	5.9860
162	HS-341	50	930.83	44214.425	1170.12	6105.86	7.0497
162	HS-342	50	930.83	44214.425	1886.84	6988.23	6.0570
163	HS-343	50	930.83	44214.425	1706.98	7094.68	5.9915
163	HS-344	50	930.83	44214.425	1833.32	6639.71	6.3830
164	HS-345	50	930.83	44214.425	1902.42	7004.71	6.0405
164	HS-346	50	930.83	44214.425	1833.32	6639.71	6.3830
165	HS-347	50	930.83	44214.425	1902.42	7004.71	6.0405
165	HS-348	50	930.83	44214.425	1278.54	4663.03	9.2077
166	HS-349	50	930.83	44214.425	1944.18	6874.3	6.1490
166	HS-350	50	930.83	44214.425	152.41	-2293.74	19.2097
167	HS-351	50	930.83	44214.425	1370.27	4849.02	8.8356
167	HS-352	50	930.83	44214.425	155.1	-930.28	47.3614
168	HS-353	50	930.83	44214.425	109.15	-2390.97	18.4466
168	HS-354	50	930.83	44214.425	58.95	286.71	154.0074
169	HS-355	50	930.83	44214.425	-27.98	-246.66	179.1391
169	HS-356	50	930.83	44214.425	2763.91	9278.06	4.4676
170	HS-357	50	930.83	44214.425	1347.53	4642.25	9.2341
170	HS-358	50	930.83	44214.425	2357.71	8060.52	5.1928
171	HS-359	50	930.83	44214.425	2521.66	8449.02	4.9346
171	HS-360	50	930.83	44214.425	1919.32	7412.58	5.7059
172	HS-361	50	930.83	44214.425	2233.93	7619.56	5.5096
172	HS-362	50	930.83	44214.425	1843.96	8003.18	5.2942
173	HS-363	50	930.83	44214.425	2117.39	7679.85	5.4815
173	HS-364	50	930.83	44214.425	1843.96	8003.18	5.2942
174	HS-365	50	930.83	44214.425	2117.39	7679.85	5.4815
174	HS-366	50	930.83	44214.425	1593.26	7683.67	5.5470
175	HS-367	50	930.83	44214.425	1999.48	8139.28	5.1866
175	HS-368	50	930.83	44214.425	1034.92	6927.65	6.2329
176	HS-369	50	930.83	44214.425	1682.13	7805.29	5.4492
176	HS-370	50	930.83	44214.425	1034.92	6927.65	6.2329
177	HS-371	50	930.83	44214.425	1682.13	7805.29	5.4492
177	HS-372	50	930.83	44214.425	431.21	5703.01	7.6772
178	HS-373	50	930.83	44214.425	1116.72	7033.29	6.1277
178	HS-374	50	930.83	44214.425	-703.26	-3859.6	11.2735
179	HS-375	50	930.83	44214.425	233.07	5303.19	8.2934
179	HS-376	50	930.83	44214.425	-703.26	-3859.6	11.2735
180	HS-377	50	930.83	44214.425	233.07	5303.19	8.2934
180	HS-378	50	930.83	44214.425	-1715.31	-4259.97	9.9764

181	HS-379	50	930.83	44214.425	-1320.56	-4120.75	10.4092
181	HS-380	50	930.83	44214.425	-2623.01	-4552.04	9.1369
182	HS-381	50	930.83	44214.425	-1668.68	-4250.98	10.0085
182	HS-382	50	930.83	44214.425	-3675.61	-4989.23	8.1253
183	HS-383	50	930.83	44214.425	-3674.64	-5028.02	8.0628
183	HS-384	50	930.83	44214.425	-1668.05	-4217.16	10.0889
184	HS-385	50	930.83	44214.425	-2622.16	-4515.9	9.2102
184	HS-386	50	930.83	44214.425	-1319.96	-4087.85	10.4932
185	HS-387	50	930.83	44214.425	-1714.61	-4226.07	10.0566
185	HS-388	50	930.83	44214.425	233.34	5281	8.3282
186	HS-389	50	930.83	44214.425	-702.69	-3828.68	11.3647
186	HS-390	50	930.83	44214.425	233.34	5281	8.3282
187	HS-391	50	930.83	44214.425	-702.69	-3828.68	11.3647
187	HS-392	50	930.83	44214.425	1116.83	7007.62	6.1501
188	HS-393	50	930.83	44214.425	431.57	5679.29	7.7092
188	HS-394	50	930.83	44214.425	1681.98	7779.61	5.4672
189	HS-395	50	930.83	44214.425	1035.1	6902.57	6.2555
189	HS-396	50	930.83	44214.425	1681.98	7779.61	5.4672
190	HS-397	50	930.83	44214.425	1035.1	6902.57	6.2555
190	HS-398	50	930.83	44214.425	1999.37	8118.77	5.1997
191	HS-399	50	930.83	44214.425	1593.16	7658.18	5.5655
191	HS-400	50	930.83	44214.425	2117.21	7661.13	5.4949
192	HS-401	50	930.83	44214.425	1843.78	7983.75	5.3071
192	HS-402	50	930.83	44214.425	2117.21	7661.13	5.4949
193	HS-403	50	930.83	44214.425	1843.78	7983.75	5.3071
193	HS-404	50	930.83	44214.425	2234.09	7596.42	5.5263
194	HS-405	50	930.83	44214.425	1919.04	7396.57	5.7182
194	HS-406	50	930.83	44214.425	2522.53	8425.76	4.9481
195	HS-407	50	930.83	44214.425	2357.96	8037.64	5.2076
195	HS-408	50	930.83	44214.425	1348.01	4628.92	9.2606
196	HS-409	50	930.83	44214.425	2764.84	9253.45	4.4794
196	HS-410	50	930.83	44214.425	-27.99	-247.94	178.2142

LOAD RATING SWING SPAN

RF= RATING FACTOR

$RF = (C - f_{DL+SDL}) / (f_{LL+I})$

$f_{DL+SDL}=1.25*DL+1.5*DW$

$f_{LL+I}=\Upsilon_{LL}*LL$

$C=\varphi_C\varphi_S\varphi R_n S_x = (1.0)(1.0)(.95)(50)(930.83)$

Virtual Beam	LOADING	R_n (ksi)	S_x (in^3)	$C=\varphi_C\varphi_S\varphi R_n S_x$	M_{DL+SDL} (kip-in)	M_{LL+I} (kip-in)	RF
1	H-20	50	930.83	44214.425	-35.32	-184.2	239.8431
1	H-20	50	930.83	44214.425	2757.58	5925.53	6.9963
2	H-21	50	930.83	44214.425	1340.69	2973.82	14.4171
2	H-22	50	930.83	44214.425	2353.36	5187.03	8.0703
3	H-23	50	930.83	44214.425	2514.92	5404.08	7.7163
3	H-24	50	930.83	44214.425	1916.1	4947.33	8.5497
4	H-25	50	930.83	44214.425	2228.89	4899.12	8.5700
4	H-26	50	930.83	44214.425	1840.96	5355.92	7.9115
5	H-27	50	930.83	44214.425	2113.66	5128.1	8.2098
5	H-28	50	930.83	44214.425	1840.96	5355.92	7.9115
6	H-29	50	930.83	44214.425	2113.66	5128.1	8.2098
6	H-30	50	930.83	44214.425	1590.57	5183.49	8.2230
7	H-31	50	930.83	44214.425	1996.24	5441.19	7.7590
7	H-32	50	930.83	44214.425	1032.56	4695.36	9.1967
8	H-33	50	930.83	44214.425	1679.31	5244.74	8.1101
8	H-34	50	930.83	44214.425	1032.56	4695.36	9.1967
9	H-35	50	930.83	44214.425	1679.31	5244.74	8.1101
9	H-36	50	930.83	44214.425	429.08	3966.77	11.0380
10	H-37	50	930.83	44214.425	1114.22	4744.92	9.0834
10	H-38	50	930.83	44214.425	-704.69	2595.22	16.7653
11	H-39	50	930.83	44214.425	231.25	3729.93	11.7920
11	H-40	50	930.83	44214.425	-704.69	2595.22	16.7653
12	H-41	50	930.83	44214.425	231.25	3729.93	11.7920
12	H-42	50	930.83	44214.425	-1716.52	-2488.5	17.0777
13	H-43	50	930.83	44214.425	-1321.91	-2407.03	17.8197
13	H-44	50	930.83	44214.425	-2624.03	-2660.46	15.6328
14	H-45	50	930.83	44214.425	-1669.96	-2483.46	17.1311
14	H-46	50	930.83	44214.425	-3676.48	-2919.72	13.8842
15	H-47	50	930.83	44214.425	-3675.62	-2943.27	13.7734
15	H-48	50	930.83	44214.425	-1668.81	-2462.48	17.2775
16	H-49	50	930.83	44214.425	-2623.08	-2637.89	15.7669
16	H-50	50	930.83	44214.425	-1320.73	-2386.74	17.9717
17	H-51	50	930.83	44214.425	-1715.44	-2467.51	17.2234
17	H-52	50	930.83	44214.425	232.73	3718.36	11.8283
18	H-53	50	930.83	44214.425	-703.49	2585.1	16.8314
18	H-54	50	930.83	44214.425	232.73	3718.36	11.8283
19	H-55	50	930.83	44214.425	-703.49	2585.1	16.8314
19	H-56	50	930.83	44214.425	1116.11	4732.91	9.1061
20	H-57	50	930.83	44214.425	430.7	3955.01	11.0704
20	H-58	50	930.83	44214.425	1681.38	5233.77	8.1267
21	H-59	50	930.83	44214.425	1034.3	4683.55	9.2195
21	H-60	50	930.83	44214.425	1681.38	5233.77	8.1267
22	H-61	50	930.83	44214.425	1034.3	4683.55	9.2195
22	H-62	50	930.83	44214.425	1998.88	5433.15	7.7700
23	H-63	50	930.83	44214.425	1592.45	5172.45	8.2402
23	H-64	50	930.83	44214.425	2116.96	5122.54	8.2181
24	H-65	50	930.83	44214.425	1843.23	5347.99	7.9228
24	H-66	50	930.83	44214.425	2116.96	5122.54	8.2181
25	H-67	50	930.83	44214.425	1843.23	5347.99	7.9228
25	H-68	50	930.83	44214.425	2233.75	4893.5	8.5789
26	H-69	50	930.83	44214.425	1918.69	4941.22	8.5598
26	H-70	50	930.83	44214.425	2521.94	5400.17	7.7206
27	H-71	50	930.83	44214.425	2357.47	5180.38	8.0799
27	H-72	50	930.83	44214.425	1347.65	2975.02	14.4089
28	H-73	50	930.83	44214.425	2764.16	5920.16	7.0015
28	H-74	50	930.83	44214.425	-28.01	-175.59	251.6454
29	H-75	50	930.83	44214.425	58.91	228.2	193.4948
29	H-76	50	930.83	44214.425	109.1	-2390.33	18.4516
30	H-77	50	930.83	44214.425	155.04	-929.87	47.3823
30	H-78	50	930.83	44214.425	1368.35	3344.83	12.8096
31	H-79	50	930.83	44214.425	152.67	-2292.94	19.2163
31	H-80	50	930.83	44214.425	1941.22	4551.2	9.2884
32	H-81	50	930.83	44214.425	1277.19	3249.95	13.2117
32	H-82	50	930.83	44214.425	1899.93	4615.47	9.1680

Minimum Rating factor	6.9963	**Girder 1**
Minimum Rating factor	9.0006	**Girder 2**
Minimum Rating factor	9.3572	**Girder 3**
Minimum Rating factor	7.6886	**Girder 4**
Minimum Rating factor	9.3526	**Girder 5**
Minimum Rating factor	8.9943	**Girder 6**
Minimum Rating factor	6.9837	**Girder 7**

33	H-83	50	930.83	44214.425	1830.74	4395.33	9.6429
33	H-84	50	930.83	44214.425	1899.93	4615.47	9.1680
34	H-85	50	930.83	44214.425	1830.74	4395.33	9.6429
34	H-86	50	930.83	44214.425	1704.64	4720.22	9.0059
35	H-87	50	930.83	44214.425	1884.42	4606.73	9.1887
35	H-88	50	930.83	44214.425	1167.89	4099.34	10.5008
36	H-89	50	930.83	44214.425	1711.84	4722.21	9.0006
36	H-90	50	930.83	44214.425	1167.89	4099.34	10.5008
37	H-91	50	930.83	44214.425	1711.84	4722.21	9.0006
37	H-92	50	930.83	44214.425	521.46	3580.23	12.2040
38	H-93	50	930.83	44214.425	1162.86	4093.28	10.5176
38	H-94	50	930.83	44214.425	-667.57	2571.88	16.9319
39	H-95	50	930.83	44214.425	246.03	3185.76	13.8015
39	H-96	50	930.83	44214.425	-667.57	2571.88	16.9319
40	H-97	50	930.83	44214.425	246.03	3185.76	13.8015
40	H-98	50	930.83	44214.425	-1801.2	-2355.85	18.0034
41	H-99	50	930.83	44214.425	-1408.94	-2285.65	18.7279
41	H-100	50	930.83	44214.425	-2818.11	-2533.93	16.3368
42	H-101	50	930.83	44214.425	-1821.05	-2363.44	17.9371
42	H-102	50	930.83	44214.425	-3943.48	-2706.05	14.8818
43	H-103	50	930.83	44214.425	-3942.53	-2712.37	14.8475
43	H-104	50	930.83	44214.425	-1819.86	-2337.85	18.1340
44	H-105	50	930.83	44214.425	-2817.07	-2506.33	16.5171
44	H-106	50	930.83	44214.425	-1407.74	-2260.99	18.9327
45	H-107	50	930.83	44214.425	-1800.05	-2330.35	18.2009
45	H-108	50	930.83	44214.425	247.41	3171.17	13.8646
46	H-109	50	930.83	44214.425	-666.35	2562.88	16.9919
46	H-110	50	930.83	44214.425	247.41	3171.17	13.8646
47	H-111	50	930.83	44214.425	-666.35	2562.88	16.9919
47	H-112	50	930.83	44214.425	1164.6	4079.21	10.5535
48	H-113	50	930.83	44214.425	522.97	3566.04	12.2521
48	H-114	50	930.83	44214.425	1713.82	4709.04	9.0253
49	H-115	50	930.83	44214.425	1169.54	4085.21	10.5368
49	H-116	50	930.83	44214.425	1713.82	4709.04	9.0253
50	H-117	50	930.83	44214.425	1169.54	4085.21	10.5368
50	H-118	50	930.83	44214.425	1886.49	4596.71	9.2083
51	H-119	50	930.83	44214.425	1706.51	4706.79	9.0312
51	H-120	50	930.83	44214.425	1833.06	4387.83	9.6588
52	H-121	50	930.83	44214.425	1902	4605.46	9.1874
52	H-122	50	930.83	44214.425	1833.06	4387.83	9.6588
53	H-123	50	930.83	44214.425	1902	4605.46	9.1874
53	H-124	50	930.83	44214.425	1278.31	3244.49	13.2335
54	H-125	50	930.83	44214.425	1943.83	4543.85	9.3028
54	H-126	50	930.83	44214.425	152.35	-2293.74	19.2097
55	H-127	50	930.83	44214.425	1369.91	3339.8	12.8285
55	H-128	50	930.83	44214.425	155.05	-930.28	47.3614
56	H-129	50	930.83	44214.425	109.01	-2390.96	18.4467
56	H-130	50	930.83	44214.425	58.94	228.08	193.5965
57	H-131	50	930.83	44214.425	-0.66	-166.43	265.6598
57	H-132	50	930.83	44214.425	-116.89	-1977.03	22.3049
58	H-133	50	930.83	44214.425	-33.87	-963.46	45.8561
58	H-134	50	930.83	44214.425	952.79	2705.95	15.9876
59	H-135	50	930.83	44214.425	-0.84	-1798.78	24.5798
59	H-136	50	930.83	44214.425	1561.71	3879.33	10.9949
60	H-137	50	930.83	44214.425	1068.85	2888.31	14.9380
60	H-138	50	930.83	44214.425	1801.31	4532.68	9.3572
61	H-139	50	930.83	44214.425	1505.76	3809.81	11.2102
61	H-140	50	930.83	44214.425	1801.31	4532.68	9.3572
62	H-141	50	930.83	44214.425	1505.76	3809.81	11.2102
62	H-142	50	930.83	44214.425	1714.06	4519.47	9.4038
63	H-143	50	930.83	44214.425	1722.11	4455.36	9.5373
63	H-144	50	930.83	44214.425	1186.06	4129.65	10.4194
64	H-145	50	930.83	44214.425	1662.53	4471.96	9.5153
64	H-146	50	930.83	44214.425	1186.06	4129.65	10.4194
65	H-147	50	930.83	44214.425	1662.53	4471.96	9.5153
65	H-148	50	930.83	44214.425	561.77	3501.03	12.4685
66	H-149	50	930.83	44214.425	1147.95	4100.89	10.5017
66	H-150	50	930.83	44214.425	-617.7	2378.21	18.3317
67	H-151	50	930.83	44214.425	271.79	3262.97	13.4671
67	H-152	50	930.83	44214.425	-617.7	2378.21	18.3317
68	H-153	50	930.83	44214.425	271.79	3262.97	13.4671
68	H-154	50	930.83	44214.425	-1809.51	-2213.73	19.1554
69	H-155	50	930.83	44214.425	-1403.25	-2135.69	20.0456
69	H-156	50	930.83	44214.425	-2826.84	-2388.25	17.3297

70	H-157	50	930.83	44214.425	-1825.34	-2212.72	19.1570
70	H-158	50	930.83	44214.425	-3948.95	-2549.57	15.7930
71	H-159	50	930.83	44214.425	-3947.97	-2531.42	15.9067
71	H-160	50	930.83	44214.425	-1824.24	-2188.39	19.3705
72	H-161	50	930.83	44214.425	-2825.82	-2361.86	17.5237
72	H-162	50	930.83	44214.425	-1402.14	-2112.26	20.2685
73	H-163	50	930.83	44214.425	-1808.43	-2189.37	19.3690
73	H-164	50	930.83	44214.425	273	3249.01	13.5246
74	H-165	50	930.83	44214.425	-616.59	2366.55	18.4225
74	H-166	50	930.83	44214.425	273	3249.01	13.5246
75	H-167	50	930.83	44214.425	-616.59	2366.55	18.4225
75	H-168	50	930.83	44214.425	1149.39	4086.75	10.5377
76	H-169	50	930.83	44214.425	563.1	3487.37	12.5170
76	H-170	50	930.83	44214.425	1664.1	4459.31	9.5419
77	H-171	50	930.83	44214.425	1187.49	4115.44	10.4550
77	H-172	50	930.83	44214.425	1664.1	4459.31	9.5419
78	H-173	50	930.83	44214.425	1187.49	4115.44	10.4550
78	H-174	50	930.83	44214.425	1723.47	4444.82	9.5597
79	H-175	50	930.83	44214.425	1715.65	4505.87	9.4319
79	H-176	50	930.83	44214.425	1506.98	3801.95	11.2330
80	H-177	50	930.83	44214.425	1802.83	4522.22	9.3785
80	H-178	50	930.83	44214.425	1506.98	3801.95	11.2330
81	H-179	50	930.83	44214.425	1802.83	4522.22	9.3785
81	H-180	50	930.83	44214.425	1069.54	2882.89	14.9658
82	H-181	50	930.83	44214.425	1563.11	3871.63	11.0164
82	H-182	50	930.83	44214.425	-1.01	-1798.95	24.5773
83	H-183	50	930.83	44214.425	953.57	2701.12	16.0159
83	H-184	50	930.83	44214.425	-33.98	-963.43	45.8575
84	H-185	50	930.83	44214.425	-116.98	-1976.96	22.3057
84	H-186	50	930.83	44214.425	-0.69	-166.44	265.6437
85	H-187	50	930.83	44214.425	-12.09	192.69	229.3961
85	H-188	50	930.83	44214.425	-135.14	-4563.37	9.6594
86	H-189	50	930.83	44214.425	-66.51	-2092.52	21.0980
86	H-190	50	930.83	44214.425	845.4	3697.04	11.7307
87	H-191	50	930.83	44214.425	-12.15	-4230.81	10.4477
87	H-192	50	930.83	44214.425	1421.63	3639.05	11.7593
88	H-193	50	930.83	44214.425	1009.87	3989.12	10.8306
88	H-194	50	930.83	44214.425	1757.56	5522.04	7.6886
89	H-195	50	930.83	44214.425	1395.06	3626.48	11.8074
89	H-196	50	930.83	44214.425	1757.56	5522.04	7.6886
90	H-197	50	930.83	44214.425	1395.06	3626.48	11.8074
90	H-198	50	930.83	44214.425	1713.65	4421.73	9.6118
91	H-199	50	930.83	44214.425	1671.56	5434.73	7.8280
91	H-200	50	930.83	44214.425	1193.39	5198.58	8.2755
92	H-201	50	930.83	44214.425	1640.55	4365.83	9.7516
92	H-202	50	930.83	44214.425	1193.39	5198.58	8.2755
93	H-203	50	930.83	44214.425	1640.55	4365.83	9.7516
93	H-204	50	930.83	44214.425	575.99	3539.96	12.3274
94	H-205	50	930.83	44214.425	1141.5	5171.08	8.3296
94	H-206	50	930.83	44214.425	-603.15	2529.94	17.2381
95	H-207	50	930.83	44214.425	281.17	3840.15	11.4405
95	H-208	50	930.83	44214.425	-603.15	2529.94	17.2381
96	H-209	50	930.83	44214.425	281.17	3840.15	11.4405
96	H-210	50	930.83	44214.425	-1808.23	2481.78	17.0870
97	H-211	50	930.83	44214.425	-1399.55	2684.04	15.9517
97	H-212	50	930.83	44214.425	-2828.65	-2222.41	18.6220
98	H-213	50	930.83	44214.425	-1822.65	2539.63	16.6921
98	H-214	50	930.83	44214.425	-3954.07	-2488.2	16.1805
99	H-215	50	930.83	44214.425	-3953.09	-2497.96	16.1177
99	H-216	50	930.83	44214.425	-1821.66	2534.53	16.7261
100	H-217	50	930.83	44214.425	-2827.66	-2197.63	18.8325
100	H-218	50	930.83	44214.425	-1398.55	2674.7	16.0077
101	H-219	50	930.83	44214.425	-1807.23	2476.67	17.1227
101	H-220	50	930.83	44214.425	282.18	3827.24	11.4788
102	H-221	50	930.83	44214.425	-602.15	2518.93	17.3138
102	H-222	50	930.83	44214.425	282.18	3827.24	11.4788
103	H-223	50	930.83	44214.425	-602.15	2518.93	17.3138
103	H-224	50	930.83	44214.425	1142.6	5157.09	8.3520
104	H-225	50	930.83	44214.425	577.13	3526.7	12.3734
104	H-226	50	930.83	44214.425	1641.66	4352.51	9.7812
105	H-227	50	930.83	44214.425	1194.55	5184.55	8.2977
105	H-228	50	930.83	44214.425	1641.66	4352.51	9.7812
106	H-229	50	930.83	44214.425	1194.55	5184.55	8.2977
106	H-230	50	930.83	44214.425	1672.43	5423.81	7.8436

107	H-231	50	930.83	44214.425	1714.84	4407.88	9.6417
107	H-232	50	930.83	44214.425	1395.64	3618.09	11.8346
108	H-233	50	930.83	44214.425	1758.58	5511.07	7.7037
108	H-234	50	930.83	44214.425	1395.64	3618.09	11.8346
109	H-235	50	930.83	44214.425	1758.58	5511.07	7.7037
109	H-236	50	930.83	44214.425	1010.22	3983.25	10.8465
110	H-237	50	930.83	44214.425	1422.34	3630.71	11.7861
110	H-238	50	930.83	44214.425	-12.25	-4231.13	10.4469
111	H-239	50	930.83	44214.425	845.77	3691.76	11.7474
111	H-240	50	930.83	44214.425	-66.58	-2092.31	21.1000
112	H-241	50	930.83	44214.425	-135.21	-4563.19	9.6597
112	H-242	50	930.83	44214.425	-12.11	192.74	229.3365
113	H-243	50	930.83	44214.425	-0.68	-166.45	265.6278
113	H-244	50	930.83	44214.425	-116.97	-1977.11	22.3040
114	H-245	50	930.83	44214.425	-33.95	-963.55	45.8518
114	H-246	50	930.83	44214.425	953.53	2707.26	15.9796
115	H-247	50	930.83	44214.425	-1.02	-1798.88	24.5783
115	H-248	50	930.83	44214.425	1563.01	3881.84	10.9874
116	H-249	50	930.83	44214.425	1069.45	2889.35	14.9324
116	H-250	50	930.83	44214.425	1802.46	4534.77	9.3526
117	H-251	50	930.83	44214.425	1506.9	3811.95	11.2036
117	H-252	50	930.83	44214.425	1802.46	4534.77	9.3526
118	H-253	50	930.83	44214.425	1506.9	3811.95	11.2036
118	H-254	50	930.83	44214.425	1715.13	4521.25	9.3999
119	H-255	50	930.83	44214.425	1723.17	4457.2	9.5332
119	H-256	50	930.83	44214.425	1186.94	4130.69	10.4165
120	H-257	50	930.83	44214.425	1663.62	4473.75	9.5112
120	H-258	50	930.83	44214.425	1186.94	4130.69	10.4165
121	H-259	50	930.83	44214.425	1663.62	4473.75	9.5112
121	H-260	50	930.83	44214.425	562.52	3501.59	12.4663
122	H-261	50	930.83	44214.425	1148.86	4101.99	10.4987
122	H-262	50	930.83	44214.425	-617.18	2378.18	18.3322
123	H-263	50	930.83	44214.425	272.43	3263.24	13.4658
123	H-264	50	930.83	44214.425	-617.18	2378.18	18.3322
124	H-265	50	930.83	44214.425	272.43	3263.24	13.4658
124	H-266	50	930.83	44214.425	-1809.06	-2213.53	19.1573
125	H-267	50	930.83	44214.425	-1402.75	-2135.57	20.0470
125	H-268	50	930.83	44214.425	-2826.46	-2387.92	17.3322
126	H-269	50	930.83	44214.425	-1824.86	-2212.55	19.1587
126	H-270	50	930.83	44214.425	-3948.63	-2549.12	15.7960
127	H-271	50	930.83	44214.425	-3947.65	-2532.81	15.8981
127	H-272	50	930.83	44214.425	-1823.98	-2189.55	19.3603
128	H-273	50	930.83	44214.425	-2825.51	-2363.07	17.5149
128	H-274	50	930.83	44214.425	-1401.87	-2113.35	20.2581
129	H-275	50	930.83	44214.425	-1808.15	-2190.49	19.3593
129	H-276	50	930.83	44214.425	273.22	3249.4	13.5229
130	H-277	50	930.83	44214.425	-616.31	2366.9	18.4199
130	H-278	50	930.83	44214.425	273.22	3249.4	13.5229
131	H-279	50	930.83	44214.425	-616.31	2366.9	18.4199
131	H-280	50	930.83	44214.425	1149.64	4087.04	10.5369
132	H-281	50	930.83	44214.425	563.42	3487.65	12.5159
132	H-282	50	930.83	44214.425	1664.29	4459.54	9.5414
133	H-283	50	930.83	44214.425	1187.78	4115.69	10.4543
133	H-284	50	930.83	44214.425	1664.29	4459.54	9.5414
134	H-285	50	930.83	44214.425	1187.78	4115.69	10.4543
134	H-286	50	930.83	44214.425	1723.65	4444.98	9.5593
135	H-287	50	930.83	44214.425	1715.88	4506.07	9.4314
135	H-288	50	930.83	44214.425	1507.13	3802.02	11.2328
136	H-289	50	930.83	44214.425	1803.05	4522.34	9.3782
136	H-290	50	930.83	44214.425	1507.13	3802.02	11.2328
137	H-291	50	930.83	44214.425	1803.05	4522.34	9.3782
137	H-292	50	930.83	44214.425	1069.61	2882.93	14.9656
138	H-293	50	930.83	44214.425	1563.33	3871.65	11.0163
138	H-294	50	930.83	44214.425	-1.05	-1798.95	24.5773
139	H-295	50	930.83	44214.425	953.7	2701.11	16.0159
139	H-296	50	930.83	44214.425	-33.98	-963.43	45.8575
140	H-297	50	930.83	44214.425	-117	-1976.95	22.3058
140	H-298	50	930.83	44214.425	-0.68	-166.44	265.6437
141	H-299	50	930.83	44214.425	58.93	228.22	193.4778
141	H-300	50	930.83	44214.425	109.06	-2390.35	18.4514
142	H-301	50	930.83	44214.425	155.03	-929.87	47.3823
142	H-302	50	930.83	44214.425	1370.13	3347.57	12.7986
143	H-303	50	930.83	44214.425	152.32	-2293.15	19.2147
143	H-304	50	930.83	44214.425	1944.11	4556.59	9.2767

144	H-305	50	930.83	44214.425	1278.47	3251.81	13.2037
144	H-306	50	930.83	44214.425	1902.22	4619	9.1605
145	H-307	50	930.83	44214.425	1833.31	4400.04	9.6320
145	H-308	50	930.83	44214.425	1902.22	4619	9.1605
146	H-309	50	930.83	44214.425	1833.31	4400.04	9.6320
146	H-310	50	930.83	44214.425	1706.67	4723.11	9.0000
147	H-311	50	930.83	44214.425	1886.67	4610.17	9.1814
147	H-312	50	930.83	44214.425	1169.6	4100.9	10.4964
148	H-313	50	930.83	44214.425	1713.96	4725.29	8.9943
148	H-314	50	930.83	44214.425	1169.6	4100.9	10.4964
149	H-315	50	930.83	44214.425	1713.96	4725.29	8.9943
149	H-316	50	930.83	44214.425	522.96	3581.13	12.2005
150	H-317	50	930.83	44214.425	1164.64	4094.98	10.5128
150	H-318	50	930.83	44214.425	-666.53	2571.93	16.9320
151	H-319	50	930.83	44214.425	247.3	3186.15	13.7995
151	H-320	50	930.83	44214.425	-666.53	2571.93	16.9320
152	H-321	50	930.83	44214.425	247.3	3186.15	13.7995
152	H-322	50	930.83	44214.425	-1800.28	-2355.43	18.0070
153	H-323	50	930.83	44214.425	-1407.95	-2285.35	18.7308
153	H-324	50	930.83	44214.425	-2817.36	-2533.23	16.3416
154	H-325	50	930.83	44214.425	-1820.09	-2363.05	17.9405
154	H-326	50	930.83	44214.425	-3942.87	-2706.61	14.8790
155	H-327	50	930.83	44214.425	-3941.88	-2711.33	14.8534
155	H-328	50	930.83	44214.425	-1819.32	-2339.8	18.1191
156	H-329	50	930.83	44214.425	-2816.45	-2508.32	16.5043
156	H-330	50	930.83	44214.425	-1407.2	-2262.83	18.9176
157	H-331	50	930.83	44214.425	-1799.47	-2332.21	18.1866
157	H-332	50	930.83	44214.425	247.85	3171.88	13.8614
158	H-333	50	930.83	44214.425	-665.8	2563.4	16.9886
158	H-334	50	930.83	44214.425	247.85	3171.88	13.8614
159	H-335	50	930.83	44214.425	-665.8	2563.4	16.9886
159	H-336	50	930.83	44214.425	1165.09	4079.69	10.5521
160	H-337	50	930.83	44214.425	523.6	3566.55	12.2502
160	H-338	50	930.83	44214.425	1714.21	4709.44	9.0245
161	H-339	50	930.83	44214.425	1170.12	4085.6	10.5356
161	H-340	50	930.83	44214.425	1714.21	4709.44	9.0245
162	H-341	50	930.83	44214.425	1170.12	4085.6	10.5356
162	H-342	50	930.83	44214.425	1886.84	4597	9.2077
163	H-343	50	930.83	44214.425	1706.98	4707.12	9.0305
163	H-344	50	930.83	44214.425	1833.32	4387.99	9.6584
164	H-345	50	930.83	44214.425	1902.42	4605.69	9.1869
164	H-346	50	930.83	44214.425	1833.32	4387.99	9.6584
165	H-347	50	930.83	44214.425	1902.42	4605.69	9.1869
165	H-348	50	930.83	44214.425	1278.54	3244.51	13.2334
166	H-349	50	930.83	44214.425	1944.18	4543.95	9.3025
166	H-350	50	930.83	44214.425	152.41	-2293.74	19.2097
167	H-351	50	930.83	44214.425	1370.27	3339.74	12.8286
167	H-352	50	930.83	44214.425	155.1	-930.28	47.3614
168	H-353	50	930.83	44214.425	109.15	-2390.97	18.4466
168	H-354	50	930.83	44214.425	58.95	228.07	193.6049
169	H-355	50	930.83	44214.425	-27.98	-174.79	252.7973
169	H-356	50	930.83	44214.425	2763.91	5935.32	6.9837
170	H-357	50	930.83	44214.425	1347.53	2983.21	14.3694
170	H-358	50	930.83	44214.425	2357.71	5194.56	8.0578
171	H-359	50	930.83	44214.425	2521.66	5414.55	7.7001
171	H-360	50	930.83	44214.425	1919.32	4951.66	8.5416
172	H-361	50	930.83	44214.425	2233.93	4907.97	8.5535
172	H-362	50	930.83	44214.425	1843.96	5359.58	7.9056
173	H-363	50	930.83	44214.425	2117.39	5133.61	8.2003
173	H-364	50	930.83	44214.425	1843.96	5359.58	7.9056
174	H-365	50	930.83	44214.425	2117.39	5133.61	8.2003
174	H-366	50	930.83	44214.425	1593.26	5186.31	8.2180
175	H-367	50	930.83	44214.425	1999.48	5445.44	7.7523
175	H-368	50	930.83	44214.425	1034.92	4697.19	9.1926
176	H-369	50	930.83	44214.425	1682.13	5247.8	8.1048
176	H-370	50	930.83	44214.425	1034.92	4697.19	9.1926
177	H-371	50	930.83	44214.425	1682.13	5247.8	8.1048
177	H-372	50	930.83	44214.425	431.21	3967.88	11.0344
178	H-373	50	930.83	44214.425	1116.72	4746.93	9.0791
178	H-374	50	930.83	44214.425	-703.26	2595.22	16.7659
179	H-375	50	930.83	44214.425	233.07	3730.53	11.7896
179	H-376	50	930.83	44214.425	-703.26	2595.22	16.7659
180	H-377	50	930.83	44214.425	233.07	3730.53	11.7896
180	H-378	50	930.83	44214.425	-1715.31	-2488.2	17.0803

181	H-379	50	930.83	44214.425	-1320.56	-2406.86	17.8215
181	H-380	50	930.83	44214.425	-2623.01	-2659.93	15.6363
182	H-381	50	930.83	44214.425	-1668.68	-2483.2	17.1334
182	H-382	50	930.83	44214.425	-3675.61	-2921.06	13.8781
183	H-383	50	930.83	44214.425	-3674.64	-2942.24	13.7785
183	H-384	50	930.83	44214.425	-1668.05	-2464.74	17.2620
184	H-385	50	930.83	44214.425	-2622.16	-2640.21	15.7534
184	H-386	50	930.83	44214.425	-1319.96	-2388.9	17.9557
185	H-387	50	930.83	44214.425	-1714.61	-2469.7	17.2085
185	H-388	50	930.83	44214.425	233.34	3719.1	11.8257
186	H-389	50	930.83	44214.425	-702.69	2585.75	16.8275
186	H-390	50	930.83	44214.425	233.34	3719.1	11.8257
187	H-391	50	930.83	44214.425	-702.69	2585.75	16.8275
187	H-392	50	930.83	44214.425	1116.83	4733.47	9.1049
188	H-393	50	930.83	44214.425	431.57	3955.6	11.0686
188	H-394	50	930.83	44214.425	1681.98	5234.16	8.1259
189	H-395	50	930.83	44214.425	1035.1	4684.02	9.2184
189	H-396	50	930.83	44214.425	1681.98	5234.16	8.1259
190	H-397	50	930.83	44214.425	1035.1	4684.02	9.2184
190	H-398	50	930.83	44214.425	1999.37	5433.49	7.7694
191	H-399	50	930.83	44214.425	1593.16	5172.78	8.2395
191	H-400	50	930.83	44214.425	2117.21	5122.8	8.2176
192	H-401	50	930.83	44214.425	1843.78	5348.27	7.9223
192	H-402	50	930.83	44214.425	2117.21	5122.8	8.2176
193	H-403	50	930.83	44214.425	1843.78	5348.27	7.9223
193	H-404	50	930.83	44214.425	2234.09	4893.58	8.5787
194	H-405	50	930.83	44214.425	1919.04	4941.4	8.5594
194	H-406	50	930.83	44214.425	2522.53	5400.07	7.7206
195	H-407	50	930.83	44214.425	2357.96	5180.37	8.0798
195	H-408	50	930.83	44214.425	1348.01	2974.95	14.4091
196	H-409	50	930.83	44214.425	2764.84	5920.03	7.0016
196	H-410	50	930.83	44214.425	-27.99	-175.58	251.6598

LOAD RATING SWING SPAN

RF= RATING FACTOR

RF = (C - f_{DL+SDL}) / (f_{LL+I})

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

C=$\varphi_C\varphi_S\varphi R_n S_x$ = (1.0)(1.0)(.95)(50)(930.83)

Virtual Beam	LOADING	R_n (ksi)	S_x (in^3)	C=$\varphi_C\varphi_S\varphi R_n S_x$	M_{DL+SDL} (kip-in)	M_{LL+I} (kip-in)	RF
1	CT-L3S2	50	930.83	44214.425	-35.32	-161.62	273.3517
1	CT-L3S2	50	930.83	44214.425	2757.58	5367.37	7.7239
2	CT-L3S3	50	930.83	44214.425	1340.69	2622.29	16.3497
2	CT-L3S4	50	930.83	44214.425	2353.36	4913	8.5205
3	CT-L3S5	50	930.83	44214.425	2514.92	4855.35	8.5884
3	CT-L3S6	50	930.83	44214.425	1916.1	4476.31	9.4494
4	CT-L3S7	50	930.83	44214.425	2228.89	4644.43	9.0400
4	CT-L3S8	50	930.83	44214.425	1840.96	4702.34	9.0111
5	CT-L3S9	50	930.83	44214.425	2113.66	4681.05	8.9939
5	CT-L3S10	50	930.83	44214.425	1840.96	4702.34	9.0111
6	CT-L3S11	50	930.83	44214.425	2113.66	4681.05	8.9939
6	CT-L3S12	50	930.83	44214.425	1590.57	4408.13	9.6694
7	CT-L3S13	50	930.83	44214.425	1996.24	4824.62	8.7506
7	CT-L3S14	50	930.83	44214.425	1032.56	4015.95	10.7526
8	CT-L3S15	50	930.83	44214.425	1679.31	4474.34	9.5065
8	CT-L3S16	50	930.83	44214.425	1032.56	4015.95	10.7526
9	CT-L3S17	50	930.83	44214.425	1679.31	4474.34	9.5065
9	CT-L3S18	50	930.83	44214.425	429.08	3416.79	12.8148
10	CT-L3S19	50	930.83	44214.425	1114.22	4075.29	10.5760
10	CT-L3S20	50	930.83	44214.425	-704.69	-2351.06	18.5064
11	CT-L3S21	50	930.83	44214.425	231.25	3166.62	13.8896
11	CT-L3S22	50	930.83	44214.425	-704.69	-2351.06	18.5064
12	CT-L3S23	50	930.83	44214.425	231.25	3166.62	13.8896
12	CT-L3S24	50	930.83	44214.425	-1716.52	-2594.47	16.3802
13	CT-L3S25	50	930.83	44214.425	-1321.91	-2509.4	17.0927
13	CT-L3S26	50	930.83	44214.425	-2624.03	-2769.19	15.0190
14	CT-L3S27	50	930.83	44214.425	-1669.96	-2587.77	16.4406
14	CT-L3S28	50	930.83	44214.425	-3676.48	-3675.04	11.0306
15	CT-L3S29	50	930.83	44214.425	-3675.62	-3682.07	11.0098
15	CT-L3S30	50	930.83	44214.425	-1668.81	-2554.25	16.6568
16	CT-L3S31	50	930.83	44214.425	-2623.08	-2732.59	15.2205
16	CT-L3S32	50	930.83	44214.425	-1320.73	-2476.93	17.3173
17	CT-L3S33	50	930.83	44214.425	-1715.44	-2560.92	16.5952
17	CT-L3S34	50	930.83	44214.425	232.73	3141.34	14.0009
18	CT-L3S35	50	930.83	44214.425	-703.49	-2320.81	18.7482
18	CT-L3S36	50	930.83	44214.425	232.73	3141.34	14.0009
19	CT-L3S37	50	930.83	44214.425	-703.49	-2320.81	18.7482
19	CT-L3S38	50	930.83	44214.425	1116.11	4049.77	10.6422
20	CT-L3S39	50	930.83	44214.425	430.7	3391.2	12.9110
20	CT-L3S40	50	930.83	44214.425	1681.38	4463.4	9.5293
21	CT-L3S41	50	930.83	44214.425	1034.3	3993.39	10.8129
21	CT-L3S42	50	930.83	44214.425	1681.38	4463.4	9.5293
22	CT-L3S43	50	930.83	44214.425	1034.3	3993.39	10.8129
22	CT-L3S44	50	930.83	44214.425	1998.88	4814.37	8.7687
23	CT-L3S45	50	930.83	44214.425	1592.45	4397.13	9.6931
23	CT-L3S46	50	930.83	44214.425	2116.96	4674.51	9.0057
24	CT-L3S47	50	930.83	44214.425	1843.23	4693.77	9.0271
24	CT-L3S48	50	930.83	44214.425	2116.96	4674.51	9.0057
25	CT-L3S49	50	930.83	44214.425	1843.23	4693.77	9.0271
25	CT-L3S50	50	930.83	44214.425	2233.75	4639.65	9.0482
26	CT-L3S51	50	930.83	44214.425	1918.69	4469.21	9.4638
26	CT-L3S52	50	930.83	44214.425	2521.94	4856.57	8.5848
27	CT-L3S53	50	930.83	44214.425	2357.47	4906.97	8.5301
27	CT-L3S54	50	930.83	44214.425	1347.65	2628.89	16.3060
28	CT-L3S55	50	930.83	44214.425	2764.16	5366.71	7.7236
28	CT-L3S56	50	930.83	44214.425	-28.01	-147.77	299.0216
29	CT-L3S57	50	930.83	44214.425	58.91	166.54	265.1346
29	CT-L3S58	50	930.83	44214.425	109.1	-1263.44	34.9089
30	CT-L3S59	50	930.83	44214.425	155.04	-388.55	113.3944
30	CT-L3S60	50	930.83	44214.425	1368.35	2789.63	15.3591
31	CT-L3S61	50	930.83	44214.425	152.67	-1182.12	37.2735
31	CT-L3S62	50	930.83	44214.425	1941.22	4198.61	10.0684
32	CT-L3S63	50	930.83	44214.425	1277.19	2645.29	16.2316
32	CT-L3S64	50	930.83	44214.425	1899.93	4089.12	10.3481

Minimum Rating factor	7.7236	**Girder 1**
Minimum Rating factor	10.0684	**Girder 2**
Minimum Rating factor	10.7420	**Girder 3**
Minimum Rating factor	9.6244	**Girder 4**
Minimum Rating factor	10.7358	**Girder 5**
Minimum Rating factor	10.0534	**Girder 6**
Minimum Rating factor	7.7012	**Girder 7**

33	CT-L3S65	50	930.83	44214.425	1830.74	4026.59	10.5259
33	CT-L3S66	50	930.83	44214.425	1899.93	4089.12	10.3481
34	CT-L3S67	50	930.83	44214.425	1830.74	4026.59	10.5259
34	CT-L3S68	50	930.83	44214.425	1704.64	4078.47	10.4230
35	CT-L3S69	50	930.83	44214.425	1884.42	4071.91	10.3956
35	CT-L3S70	50	930.83	44214.425	1167.89	3489.28	12.3368
36	CT-L3S71	50	930.83	44214.425	1711.84	4069.4	10.4444
36	CT-L3S72	50	930.83	44214.425	1167.89	3489.28	12.3368
37	CT-L3S73	50	930.83	44214.425	1711.84	4069.4	10.4444
37	CT-L3S74	50	930.83	44214.425	521.46	3151.65	13.8635
38	CT-L3S75	50	930.83	44214.425	1162.86	3496.28	12.3135
38	CT-L3S76	50	930.83	44214.425	-667.57	-2258.87	19.2782
39	CT-L3S77	50	930.83	44214.425	246.03	2799.28	15.7070
39	CT-L3S78	50	930.83	44214.425	-667.57	-2258.87	19.2782
40	CT-L3S79	50	930.83	44214.425	246.03	2799.28	15.7070
40	CT-L3S80	50	930.83	44214.425	-1801.2	-2480.87	17.0961
41	CT-L3S81	50	930.83	44214.425	-1408.94	-2408.02	17.7762
41	CT-L3S82	50	930.83	44214.425	-2818.11	-2668.47	15.5131
42	CT-L3S83	50	930.83	44214.425	-1821.05	-2488.56	17.0353
42	CT-L3S84	50	930.83	44214.425	-3943.48	-3412.53	11.8009
43	CT-L3S85	50	930.83	44214.425	-3942.53	-3411.62	11.8043
43	CT-L3S86	50	930.83	44214.425	-1819.86	-2445.65	17.3347
44	CT-L3S87	50	930.83	44214.425	-2817.07	-2622.43	15.7859
44	CT-L3S88	50	930.83	44214.425	-1407.74	-2366.84	18.0860
45	CT-L3S89	50	930.83	44214.425	-1800.05	-2438.34	17.3948
45	CT-L3S90	50	930.83	44214.425	247.41	2768.4	15.8817
46	CT-L3S91	50	930.83	44214.425	-666.35	-2220.47	19.6121
46	CT-L3S92	50	930.83	44214.425	247.41	2768.4	15.8817
47	CT-L3S93	50	930.83	44214.425	-666.35	-2220.47	19.6121
47	CT-L3S94	50	930.83	44214.425	1164.6	3468.79	12.4106
48	CT-L3S95	50	930.83	44214.425	522.97	3120.93	13.9995
48	CT-L3S96	50	930.83	44214.425	1713.82	4055.8	10.4790
49	CT-L3S97	50	930.83	44214.425	1169.54	3461.67	12.4347
49	CT-L3S98	50	930.83	44214.425	1713.82	4055.8	10.4790
50	CT-L3S99	50	930.83	44214.425	1169.54	3461.67	12.4347
50	CT-L3S100	50	930.83	44214.425	1886.49	4060.82	10.4235
51	CT-L3S101	50	930.83	44214.425	1706.51	4064.76	10.4577
51	CT-L3S102	50	930.83	44214.425	1833.06	4018.01	10.5478
52	CT-L3S103	50	930.83	44214.425	1902	4078.02	10.3757
52	CT-L3S104	50	930.83	44214.425	1833.06	4018.01	10.5478
53	CT-L3S105	50	930.83	44214.425	1902	4078.02	10.3757
53	CT-L3S106	50	930.83	44214.425	1278.31	2638.82	16.2710
54	CT-L3S107	50	930.83	44214.425	1943.83	4190.18	10.0880
54	CT-L3S108	50	930.83	44214.425	152.35	-1182.78	37.2530
55	CT-L3S109	50	930.83	44214.425	1369.91	2783.74	15.3910
55	CT-L3S110	50	930.83	44214.425	155.05	-388.72	113.3448
56	CT-L3S111	50	930.83	44214.425	109.01	-1263.94	34.8952
56	CT-L3S112	50	930.83	44214.425	58.94	166.37	265.4053
57	CT-L3S113	50	930.83	44214.425	-0.66	-89.36	494.7825
57	CT-L3S114	50	930.83	44214.425	-116.89	-1105.71	39.8816
58	CT-L3S115	50	930.83	44214.425	-33.87	-434.94	101.5785
58	CT-L3S116	50	930.83	44214.425	952.79	2223.66	19.4551
59	CT-L3S117	50	930.83	44214.425	-0.84	-960.5	46.0318
59	CT-L3S118	50	930.83	44214.425	1561.71	3411.93	12.5011
60	CT-L3S119	50	930.83	44214.425	1068.85	2396.24	18.0055
60	CT-L3S120	50	930.83	44214.425	1801.31	3948.35	10.7420
61	CT-L3S121	50	930.83	44214.425	1505.76	3333.55	12.8118
61	CT-L3S122	50	930.83	44214.425	1801.31	3948.35	10.7420
62	CT-L3S123	50	930.83	44214.425	1505.76	3333.55	12.8118
62	CT-L3S124	50	930.83	44214.425	1714.06	3830.61	11.0949
63	CT-L3S125	50	930.83	44214.425	1722.11	3865.64	10.9923
63	CT-L3S126	50	930.83	44214.425	1186.06	3534.32	12.1744
64	CT-L3S127	50	930.83	44214.425	1662.53	3791.38	11.2233
64	CT-L3S128	50	930.83	44214.425	1186.06	3534.32	12.1744
65	CT-L3S129	50	930.83	44214.425	1662.53	3791.38	11.2233
65	CT-L3S130	50	930.83	44214.425	561.77	3024.6	14.4325
66	CT-L3S131	50	930.83	44214.425	1147.95	3480.22	12.3746
66	CT-L3S132	50	930.83	44214.425	-617.7	-2082.4	20.9358
67	CT-L3S133	50	930.83	44214.425	271.79	2750.67	15.9752
67	CT-L3S134	50	930.83	44214.425	-617.7	-2082.4	20.9358
68	CT-L3S135	50	930.83	44214.425	271.79	2750.67	15.9752
68	CT-L3S136	50	930.83	44214.425	-1809.51	-2339.86	18.1228
69	CT-L3S137	50	930.83	44214.425	-1403.25	-2256.77	18.9701
69	CT-L3S138	50	930.83	44214.425	-2826.84	-2527.9	16.3723

70	CT-L3S139	50	930.83	44214.425	-1825.34	-2340.99	18.1073
70	CT-L3S140	50	930.83	44214.425	-3948.95	-3276.97	12.2874
71	CT-L3S141	50	930.83	44214.425	-3947.97	-3269.85	12.3145
71	CT-L3S142	50	930.83	44214.425	-1824.24	-2300.14	18.4294
72	CT-L3S143	50	930.83	44214.425	-2825.82	-2483.81	16.6634
72	CT-L3S144	50	930.83	44214.425	-1402.14	-2217.33	19.3080
73	CT-L3S145	50	930.83	44214.425	-1808.43	-2298.91	18.4461
73	CT-L3S146	50	930.83	44214.425	273	2721.13	16.1482
74	CT-L3S147	50	930.83	44214.425	-616.59	-2046.02	21.3086
74	CT-L3S148	50	930.83	44214.425	273	2721.13	16.1482
75	CT-L3S149	50	930.83	44214.425	-616.59	-2046.02	21.3086
75	CT-L3S150	50	930.83	44214.425	1149.39	3451.97	12.4755
76	CT-L3S151	50	930.83	44214.425	563.1	2995.01	14.5747
76	CT-L3S152	50	930.83	44214.425	1664.1	3778.7	11.2606
77	CT-L3S153	50	930.83	44214.425	1187.49	3505.93	12.2726
77	CT-L3S154	50	930.83	44214.425	1664.1	3778.7	11.2606
78	CT-L3S155	50	930.83	44214.425	1187.49	3505.93	12.2726
78	CT-L3S156	50	930.83	44214.425	1723.47	3854.4	11.0240
79	CT-L3S157	50	930.83	44214.425	1715.65	3818.27	11.1304
79	CT-L3S158	50	930.83	44214.425	1506.98	3324.62	12.8458
80	CT-L3S159	50	930.83	44214.425	1802.83	3936.18	10.7748
80	CT-L3S160	50	930.83	44214.425	1506.98	3324.62	12.8458
81	CT-L3S161	50	930.83	44214.425	1802.83	3936.18	10.7748
81	CT-L3S162	50	930.83	44214.425	1069.54	2391.01	18.0446
82	CT-L3S163	50	930.83	44214.425	1563.11	3403.16	12.5329
82	CT-L3S164	50	930.83	44214.425	-1.01	-960.67	46.0235
83	CT-L3S165	50	930.83	44214.425	953.57	2219.06	19.4951
83	CT-L3S166	50	930.83	44214.425	-33.98	-434.94	101.5783
84	CT-L3S167	50	930.83	44214.425	-116.98	-1105.67	39.8830
84	CT-L3S168	50	930.83	44214.425	-0.69	-89.37	494.7268
85	CT-L3S169	50	930.83	44214.425	-12.09	93.98	470.3377
85	CT-L3S170	50	930.83	44214.425	-135.14	-2594.01	16.9927
86	CT-L3S171	50	930.83	44214.425	-66.51	-897.36	49.1976
86	CT-L3S172	50	930.83	44214.425	845.4	2718.62	15.9526
87	CT-L3S173	50	930.83	44214.425	-12.15	-2324.08	19.0193
87	CT-L3S174	50	930.83	44214.425	1421.63	2932.41	14.5930
88	CT-L3S175	50	930.83	44214.425	1009.87	2955	14.6208
88	CT-L3S176	50	930.83	44214.425	1757.56	4411.38	9.6244
89	CT-L3S177	50	930.83	44214.425	1395.06	2904.28	14.7435
89	CT-L3S178	50	930.83	44214.425	1757.56	4411.38	9.6244
90	CT-L3S179	50	930.83	44214.425	1395.06	2904.28	14.7435
90	CT-L3S180	50	930.83	44214.425	1713.65	3539.43	12.0078
91	CT-L3S181	50	930.83	44214.425	1671.56	4335.91	9.8118
91	CT-L3S182	50	930.83	44214.425	1193.39	4145.42	10.3780
92	CT-L3S183	50	930.83	44214.425	1640.55	3498.14	12.1704
92	CT-L3S184	50	930.83	44214.425	1193.39	4145.42	10.3780
93	CT-L3S185	50	930.83	44214.425	1640.55	3498.14	12.1704
93	CT-L3S186	50	930.83	44214.425	575.99	2843.24	15.3481
94	CT-L3S187	50	930.83	44214.425	1141.5	4069.74	10.5837
94	CT-L3S188	50	930.83	44214.425	-603.15	-1925.49	22.6494
95	CT-L3S189	50	930.83	44214.425	281.17	2907.09	15.1125
95	CT-L3S190	50	930.83	44214.425	-603.15	-1925.49	22.6494
96	CT-L3S191	50	930.83	44214.425	281.17	2907.09	15.1125
96	CT-L3S192	50	930.83	44214.425	-1808.23	-2181.29	19.4409
97	CT-L3S193	50	930.83	44214.425	-1399.55	-2099.33	20.3945
97	CT-L3S194	50	930.83	44214.425	-2828.65	-2367.9	17.4778
98	CT-L3S195	50	930.83	44214.425	-1822.65	-2183.24	19.4169
98	CT-L3S196	50	930.83	44214.425	-3954.07	-3505.63	11.4845
99	CT-L3S197	50	930.83	44214.425	-3953.09	-3502.53	11.4949
99	CT-L3S198	50	930.83	44214.425	-1821.66	-2144.97	19.7638
100	CT-L3S199	50	930.83	44214.425	-2827.66	-2326.4	17.7900
100	CT-L3S200	50	930.83	44214.425	-1398.55	-2062.41	20.7601
101	CT-L3S201	50	930.83	44214.425	-1807.23	-2142.94	19.7893
101	CT-L3S202	50	930.83	44214.425	282.18	2881.89	15.2442
102	CT-L3S203	50	930.83	44214.425	-602.15	-1891.23	23.0603
102	CT-L3S204	50	930.83	44214.425	282.18	2881.89	15.2442
103	CT-L3S205	50	930.83	44214.425	-602.15	-1891.23	23.0603
103	CT-L3S206	50	930.83	44214.425	1142.6	4050.21	10.6345
104	CT-L3S207	50	930.83	44214.425	577.13	2817.64	15.4872
104	CT-L3S208	50	930.83	44214.425	1641.66	3484.47	12.2179
105	CT-L3S209	50	930.83	44214.425	1194.55	4116.56	10.4504
105	CT-L3S210	50	930.83	44214.425	1641.66	3484.47	12.2179
106	CT-L3S211	50	930.83	44214.425	1194.55	4116.56	10.4504
106	CT-L3S212	50	930.83	44214.425	1672.43	4322.64	9.8417

107	CT-L3S213	50	930.83	44214.425	1714.84	3527.49	12.0481
107	CT-L3S214	50	930.83	44214.425	1395.64	2894.8	14.7916
108	CT-L3S215	50	930.83	44214.425	1758.58	4398.03	9.6534
108	CT-L3S216	50	930.83	44214.425	1395.64	2894.8	14.7916
109	CT-L3S217	50	930.83	44214.425	1758.58	4398.03	9.6534
109	CT-L3S218	50	930.83	44214.425	1010.22	2949.85	14.6462
110	CT-L3S219	50	930.83	44214.425	1422.34	2922.98	14.6399
110	CT-L3S220	50	930.83	44214.425	-12.25	-2324.38	19.0168
111	CT-L3S221	50	930.83	44214.425	845.77	2714.01	15.9795
111	CT-L3S222	50	930.83	44214.425	-66.58	-897.25	49.2035
112	CT-L3S223	50	930.83	44214.425	-135.21	-2593.87	16.9936
112	CT-L3S224	50	930.83	44214.425	-12.11	94.02	470.1374
113	CT-L3S225	50	930.83	44214.425	-0.68	-89.38	494.6716
113	CT-L3S226	50	930.83	44214.425	-116.97	-1105.8	39.8783
114	CT-L3S227	50	930.83	44214.425	-33.95	-435.02	101.5596
114	CT-L3S228	50	930.83	44214.425	953.53	2225.1	19.4422
115	CT-L3S229	50	930.83	44214.425	-1.02	-960.61	46.0264
115	CT-L3S230	50	930.83	44214.425	1563.01	3414.7	12.4905
116	CT-L3S231	50	930.83	44214.425	1069.45	2397.38	17.9967
116	CT-L3S232	50	930.83	44214.425	1802.46	3950.53	10.7358
117	CT-L3S233	50	930.83	44214.425	1506.9	3335.91	12.8024
117	CT-L3S234	50	930.83	44214.425	1802.46	3950.53	10.7358
118	CT-L3S235	50	930.83	44214.425	1506.9	3335.91	12.8024
118	CT-L3S236	50	930.83	44214.425	1715.13	3832.3	11.0898
119	CT-L3S237	50	930.83	44214.425	1723.17	3867.47	10.9868
119	CT-L3S238	50	930.83	44214.425	1186.94	3535.52	12.1701
120	CT-L3S239	50	930.83	44214.425	1663.62	3793.08	11.2180
120	CT-L3S240	50	930.83	44214.425	1186.94	3535.52	12.1701
121	CT-L3S241	50	930.83	44214.425	1663.62	3793.08	11.2180
121	CT-L3S242	50	930.83	44214.425	562.52	3025.36	14.4287
122	CT-L3S243	50	930.83	44214.425	1148.86	3481.49	12.3699
122	CT-L3S244	50	930.83	44214.425	-617.18	-2082.39	20.9362
123	CT-L3S245	50	930.83	44214.425	272.43	2751.08	15.9726
123	CT-L3S246	50	930.83	44214.425	-617.18	-2082.39	20.9362
124	CT-L3S247	50	930.83	44214.425	272.43	2751.08	15.9726
124	CT-L3S248	50	930.83	44214.425	-1809.06	-2339.67	18.1245
125	CT-L3S249	50	930.83	44214.425	-1402.75	-2256.66	18.9713
125	CT-L3S250	50	930.83	44214.425	-2826.46	-2527.58	16.3745
126	CT-L3S251	50	930.83	44214.425	-1824.86	-2340.83	18.1088
126	CT-L3S252	50	930.83	44214.425	-3948.63	-3276.89	12.2878
127	CT-L3S253	50	930.83	44214.425	-3947.65	-3270.76	12.3111
127	CT-L3S254	50	930.83	44214.425	-1823.98	-2301.48	18.4188
128	CT-L3S255	50	930.83	44214.425	-2825.51	-2485.22	16.6540
128	CT-L3S256	50	930.83	44214.425	-1401.87	-2218.6	19.2971
129	CT-L3S257	50	930.83	44214.425	-1808.15	-2300.21	18.4358
129	CT-L3S258	50	930.83	44214.425	273.22	2721.53	16.1458
130	CT-L3S259	50	930.83	44214.425	-616.31	-2047.12	21.2973
130	CT-L3S260	50	930.83	44214.425	273.22	2721.53	16.1458
131	CT-L3S261	50	930.83	44214.425	-616.31	-2047.12	21.2973
131	CT-L3S262	50	930.83	44214.425	1149.64	3452.23	12.4745
132	CT-L3S263	50	930.83	44214.425	563.42	2995.28	14.5733
132	CT-L3S264	50	930.83	44214.425	1664.29	3778.91	11.2599
133	CT-L3S265	50	930.83	44214.425	1187.78	3506.15	12.2718
133	CT-L3S266	50	930.83	44214.425	1664.29	3778.91	11.2599
134	CT-L3S267	50	930.83	44214.425	1187.78	3506.15	12.2718
134	CT-L3S268	50	930.83	44214.425	1723.65	3854.55	11.0235
135	CT-L3S269	50	930.83	44214.425	1715.88	3818.45	11.1298
135	CT-L3S270	50	930.83	44214.425	1507.13	3324.7	12.8455
136	CT-L3S271	50	930.83	44214.425	1803.05	3936.31	10.7744
136	CT-L3S272	50	930.83	44214.425	1507.13	3324.7	12.8455
137	CT-L3S273	50	930.83	44214.425	1803.05	3936.31	10.7744
137	CT-L3S274	50	930.83	44214.425	1069.61	2391.08	18.0441
138	CT-L3S275	50	930.83	44214.425	1563.33	3403.19	12.5327
138	CT-L3S276	50	930.83	44214.425	-1.05	-960.67	46.0235
139	CT-L3S277	50	930.83	44214.425	953.7	2219.07	19.4950
139	CT-L3S278	50	930.83	44214.425	-33.98	-434.94	101.5783
140	CT-L3S279	50	930.83	44214.425	-117	-1105.66	39.8834
140	CT-L3S280	50	930.83	44214.425	-0.68	-89.37	494.7269
141	CT-L3S281	50	930.83	44214.425	58.93	166.57	265.0867
141	CT-L3S282	50	930.83	44214.425	109.06	-1263.46	34.9084
142	CT-L3S283	50	930.83	44214.425	155.03	-388.55	113.3944
142	CT-L3S284	50	930.83	44214.425	1370.13	2793.12	15.3392
143	CT-L3S285	50	930.83	44214.425	152.32	-1182.31	37.2678
143	CT-L3S286	50	930.83	44214.425	1944.11	4204.58	10.0534

144	CT-L3S287	50	930.83	44214.425	1278.47	2647.65	16.2166
144	CT-L3S288	50	930.83	44214.425	1902.22	4092.86	10.3381
145	CT-L3S289	50	930.83	44214.425	1833.31	4031.81	10.5117
145	CT-L3S290	50	930.83	44214.425	1902.22	4092.86	10.3381
146	CT-L3S291	50	930.83	44214.425	1833.31	4031.81	10.5117
146	CT-L3S292	50	930.83	44214.425	1706.67	4081.24	10.4154
147	CT-L3S293	50	930.83	44214.425	1886.67	4075.56	10.3858
147	CT-L3S294	50	930.83	44214.425	1169.6	3491.29	12.3292
148	CT-L3S295	50	930.83	44214.425	1713.96	4072.36	10.4363
148	CT-L3S296	50	930.83	44214.425	1169.6	3491.29	12.3292
149	CT-L3S297	50	930.83	44214.425	1713.96	4072.36	10.4363
149	CT-L3S298	50	930.83	44214.425	522.96	3152.86	13.8577
150	CT-L3S299	50	930.83	44214.425	1164.64	3498.46	12.3054
150	CT-L3S300	50	930.83	44214.425	-666.53	-2258.78	19.2794
151	CT-L3S301	50	930.83	44214.425	247.3	2799.85	15.7034
151	CT-L3S302	50	930.83	44214.425	-666.53	-2258.78	19.2794
152	CT-L3S303	50	930.83	44214.425	247.3	2799.85	15.7034
152	CT-L3S304	50	930.83	44214.425	-1800.28	-2480.47	17.0992
153	CT-L3S305	50	930.83	44214.425	-1407.95	-2407.75	17.7786
153	CT-L3S306	50	930.83	44214.425	-2817.36	-2667.78	15.5174
154	CT-L3S307	50	930.83	44214.425	-1820.09	-2488.19	17.0382
154	CT-L3S308	50	930.83	44214.425	-3942.87	-3413.03	11.7994
155	CT-L3S309	50	930.83	44214.425	-3941.88	-3412.16	11.8027
155	CT-L3S310	50	930.83	44214.425	-1819.32	-2447.94	17.3187
156	CT-L3S311	50	930.83	44214.425	-2816.45	-2624.76	15.7721
156	CT-L3S312	50	930.83	44214.425	-1407.2	-2369	18.0697
157	CT-L3S313	50	930.83	44214.425	-1799.47	-2440.53	17.3794
157	CT-L3S314	50	930.83	44214.425	247.85	2769.14	15.8773
158	CT-L3S315	50	930.83	44214.425	-665.8	-2222.34	19.5958
158	CT-L3S316	50	930.83	44214.425	247.85	2769.14	15.8773
159	CT-L3S317	50	930.83	44214.425	-665.8	-2222.34	19.5958
159	CT-L3S318	50	930.83	44214.425	1165.09	3469.27	12.4088
160	CT-L3S319	50	930.83	44214.425	523.6	3121.43	13.9971
160	CT-L3S320	50	930.83	44214.425	1714.21	4056.17	10.4779
161	CT-L3S321	50	930.83	44214.425	1170.12	3462.07	12.4331
161	CT-L3S322	50	930.83	44214.425	1714.21	4056.17	10.4779
162	CT-L3S323	50	930.83	44214.425	1170.12	3462.07	12.4331
162	CT-L3S324	50	930.83	44214.425	1886.84	4061.12	10.4226
163	CT-L3S325	50	930.83	44214.425	1706.98	4065.06	10.4568
163	CT-L3S326	50	930.83	44214.425	1833.32	4018.22	10.5472
164	CT-L3S327	50	930.83	44214.425	1902.42	4078.26	10.3750
164	CT-L3S328	50	930.83	44214.425	1833.32	4018.22	10.5472
165	CT-L3S329	50	930.83	44214.425	1902.42	4078.26	10.3750
165	CT-L3S330	50	930.83	44214.425	1278.54	2638.87	16.2706
166	CT-L3S331	50	930.83	44214.425	1944.18	4190.32	10.0876
166	CT-L3S332	50	930.83	44214.425	152.41	-1182.79	37.2526
167	CT-L3S333	50	930.83	44214.425	1370.27	2783.68	15.3912
167	CT-L3S334	50	930.83	44214.425	155.1	-388.73	113.3417
168	CT-L3S335	50	930.83	44214.425	109.15	-1263.96	34.8945
168	CT-L3S336	50	930.83	44214.425	58.95	166.36	265.4212
169	CT-L3S337	50	930.83	44214.425	-27.98	-146.96	300.6699
169	CT-L3S338	50	930.83	44214.425	2763.91	5382.36	7.7012
170	CT-L3S339	50	930.83	44214.425	1347.53	2636.59	16.2585
170	CT-L3S340	50	930.83	44214.425	2357.71	4922.79	8.5026
171	CT-L3S341	50	930.83	44214.425	2521.66	4871.39	8.5587
171	CT-L3S342	50	930.83	44214.425	1919.32	4481.04	9.4387
172	CT-L3S343	50	930.83	44214.425	2233.93	4655.8	9.0168
172	CT-L3S344	50	930.83	44214.425	1843.96	4705.98	9.0035
173	CT-L3S345	50	930.83	44214.425	2117.39	4687.04	8.9816
173	CT-L3S346	50	930.83	44214.425	1843.96	4705.98	9.0035
174	CT-L3S347	50	930.83	44214.425	2117.39	4687.04	8.9816
174	CT-L3S348	50	930.83	44214.425	1593.26	4410.84	9.6628
175	CT-L3S349	50	930.83	44214.425	1999.48	4829.08	8.7418
175	CT-L3S350	50	930.83	44214.425	1034.92	4018.08	10.7463
176	CT-L3S351	50	930.83	44214.425	1682.13	4477.28	9.4996
176	CT-L3S352	50	930.83	44214.425	1034.92	4018.08	10.7463
177	CT-L3S353	50	930.83	44214.425	1682.13	4477.28	9.4996
177	CT-L3S354	50	930.83	44214.425	431.21	3418.28	12.8086
178	CT-L3S355	50	930.83	44214.425	1116.72	4077.61	10.5694
178	CT-L3S356	50	930.83	44214.425	-703.26	-2351.06	18.5070
179	CT-L3S357	50	930.83	44214.425	233.07	3167.46	13.8854
179	CT-L3S358	50	930.83	44214.425	-703.26	-2351.06	18.5070
180	CT-L3S359	50	930.83	44214.425	233.07	3167.46	13.8854
180	CT-L3S360	50	930.83	44214.425	-1715.31	-2594.19	16.3824

181	CT-L3S361	50	930.83	44214.425	-1320.56	-2509.26	17.0942
181	CT-L3S362	50	930.83	44214.425	-2623.01	-2768.69	15.0221
182	CT-L3S363	50	930.83	44214.425	-1668.68	-2587.54	16.4425
182	CT-L3S364	50	930.83	44214.425	-3675.61	-3675.6	11.0292
183	CT-L3S365	50	930.83	44214.425	-3674.64	-3682.11	11.0099
183	CT-L3S366	50	930.83	44214.425	-1668.05	-2556.84	16.6402
184	CT-L3S367	50	930.83	44214.425	-2622.16	-2735.24	15.2061
184	CT-L3S368	50	930.83	44214.425	-1319.96	-2479.4	17.3003
185	CT-L3S369	50	930.83	44214.425	-1714.61	-2563.42	16.5793
185	CT-L3S370	50	930.83	44214.425	233.34	3142.1	13.9974
186	CT-L3S371	50	930.83	44214.425	-702.69	-2323.02	18.7307
186	CT-L3S372	50	930.83	44214.425	233.34	3142.1	13.9974
187	CT-L3S373	50	930.83	44214.425	-702.69	-2323.02	18.7307
187	CT-L3S374	50	930.83	44214.425	1116.83	4050.26	10.6407
188	CT-L3S375	50	930.83	44214.425	431.57	3391.76	12.9086
188	CT-L3S376	50	930.83	44214.425	1681.98	4463.77	9.5284
189	CT-L3S377	50	930.83	44214.425	1035.1	3993.83	10.8115
189	CT-L3S378	50	930.83	44214.425	1681.98	4463.77	9.5284
190	CT-L3S379	50	930.83	44214.425	1035.1	3993.83	10.8115
190	CT-L3S380	50	930.83	44214.425	1999.37	4814.72	8.7679
191	CT-L3S381	50	930.83	44214.425	1593.16	4397.43	9.6923
191	CT-L3S382	50	930.83	44214.425	2117.21	4674.84	9.0051
192	CT-L3S383	50	930.83	44214.425	1843.78	4694.04	9.0265
192	CT-L3S384	50	930.83	44214.425	2117.21	4674.84	9.0051
193	CT-L3S385	50	930.83	44214.425	1843.78	4694.04	9.0265
193	CT-L3S386	50	930.83	44214.425	2234.09	4639.82	9.0478
194	CT-L3S387	50	930.83	44214.425	1919.04	4469.46	9.4632
194	CT-L3S388	50	930.83	44214.425	2522.53	4856.34	8.5850
195	CT-L3S389	50	930.83	44214.425	2357.96	4906.95	8.5300
195	CT-L3S390	50	930.83	44214.425	1348.01	2628.77	16.3066
196	CT-L3S391	50	930.83	44214.425	2764.84	5366.39	7.7239
196	CT-L3S392	50	930.83	44214.425	-27.99	-147.74	299.0824

LOAD RATING SWING SPAN

RF= RATING FACTOR

RF = (C - f_{DL+SDL}) / (f_{LL+I})

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

C=$\varphi_C\varphi_S\varphi R_n S_x$ = (1.0)(1.0)(.95)(50)(930.83)

Virtual Beam	LOADING	R_n (ksi)	S_x (in^3)	C=$\varphi_C\varphi_S\varphi R_n S_x$	M_{DL+SDL} (kip-in)	M_{LL+I} (kip-in)	RF
1	CT-L73.0	50	930.83	44214.425	-35.32	-196.13	225.2542
1	CT-L73.0	50	930.83	44214.425	2757.58	7190.19	5.7658
2	CT-L73.1	50	930.83	44214.425	1340.69	3572.28	12.0018
2	CT-L73.2	50	930.83	44214.425	2353.36	6339.41	6.6033
3	CT-L73.3	50	930.83	44214.425	2514.92	6537.35	6.3787
3	CT-L73.4	50	930.83	44214.425	1916.1	5976.51	7.0774
4	CT-L73.5	50	930.83	44214.425	2228.89	6000.63	6.9969
4	CT-L73.6	50	930.83	44214.425	1840.96	6480.48	6.5386
5	CT-L73.7	50	930.83	44214.425	2113.66	6212.38	6.7769
5	CT-L73.8	50	930.83	44214.425	1840.96	6480.48	6.5386
6	CT-L73.9	50	930.83	44214.425	2113.66	6212.38	6.7769
6	CT-L73.10	50	930.83	44214.425	1590.57	6234.95	6.8363
7	CT-L73.11	50	930.83	44214.425	1996.24	6588.94	6.4074
7	CT-L73.12	50	930.83	44214.425	1032.56	5625.93	7.6755
8	CT-L73.13	50	930.83	44214.425	1679.31	6322.52	6.7276
8	CT-L73.14	50	930.83	44214.425	1032.56	5625.93	7.6755
9	CT-L73.15	50	930.83	44214.425	1679.31	6322.52	6.7276
9	CT-L73.16	50	930.83	44214.425	429.08	4673.79	9.3683
10	CT-L73.17	50	930.83	44214.425	1114.22	5696.74	7.5658
10	CT-L73.18	50	930.83	44214.425	-704.69	-2982.06	14.5905
11	CT-L73.19	50	930.83	44214.425	231.25	4340.45	10.1333
11	CT-L73.20	50	930.83	44214.425	-704.69	-2982.06	14.5905
12	CT-L73.21	50	930.83	44214.425	231.25	4340.45	10.1333
12	CT-L73.22	50	930.83	44214.425	-1716.52	-3291.6	12.9110
13	CT-L73.23	50	930.83	44214.425	-1321.91	-3183.84	13.4719
13	CT-L73.24	50	930.83	44214.425	-2624.03	-3518.28	11.8212
14	CT-L73.25	50	930.83	44214.425	-1669.96	-3284.72	12.9522
14	CT-L73.26	50	930.83	44214.425	-3676.48	-3857	10.5102
15	CT-L73.27	50	930.83	44214.425	-3675.62	-3888.97	10.4240
15	CT-L73.28	50	930.83	44214.425	-1668.81	-3256.26	13.0658
16	CT-L73.29	50	930.83	44214.425	-2623.08	-3487.65	11.9253
16	CT-L73.30	50	930.83	44214.425	-1320.73	-3156.3	13.5899
17	CT-L73.31	50	930.83	44214.425	-1715.44	-3263.11	13.0241
17	CT-L73.32	50	930.83	44214.425	232.73	4324.07	10.1714
18	CT-L73.33	50	930.83	44214.425	-703.49	-2956.48	14.7171
18	CT-L73.34	50	930.83	44214.425	232.73	4324.07	10.1714
19	CT-L73.35	50	930.83	44214.425	-703.49	-2956.48	14.7171
19	CT-L73.36	50	930.83	44214.425	1116.11	5679.85	7.5879
20	CT-L73.37	50	930.83	44214.425	430.7	4657.18	9.4013
20	CT-L73.38	50	930.83	44214.425	1681.38	6307.12	6.7437
21	CT-L73.39	50	930.83	44214.425	1034.3	5609.32	7.6979
21	CT-L73.40	50	930.83	44214.425	1681.38	6307.12	6.7437
22	CT-L73.41	50	930.83	44214.425	1034.3	5609.32	7.6979
22	CT-L73.42	50	930.83	44214.425	1998.88	6578.32	6.4174
23	CT-L73.43	50	930.83	44214.425	1592.45	6219.45	6.8530
23	CT-L73.44	50	930.83	44214.425	2116.96	6205.03	6.7844
24	CT-L73.45	50	930.83	44214.425	1843.23	6470	6.5489
24	CT-L73.46	50	930.83	44214.425	2116.96	6205.03	6.7844
25	CT-L73.47	50	930.83	44214.425	1843.23	6470	6.5489
25	CT-L73.48	50	930.83	44214.425	2233.75	5993.94	7.0039
26	CT-L73.49	50	930.83	44214.425	1918.69	5968.43	7.0866
26	CT-L73.50	50	930.83	44214.425	2521.94	6536.03	6.3789
27	CT-L73.51	50	930.83	44214.425	2357.47	6331.29	6.6111
27	CT-L73.52	50	930.83	44214.425	1347.65	3577.66	11.9818
28	CT-L73.53	50	930.83	44214.425	2764.16	7184.64	5.7693
28	CT-L73.54	50	930.83	44214.425	-28.01	-182.32	242.3564
29	CT-L73.55	50	930.83	44214.425	58.91	203.32	217.1725
29	CT-L73.56	50	930.83	44214.425	109.1	-1263.44	34.9089
30	CT-L73.57	50	930.83	44214.425	155.04	489.59	89.9924
30	CT-L73.58	50	930.83	44214.425	1368.35	3794.48	11.2917
31	CT-L73.59	50	930.83	44214.425	152.67	-1182.12	37.2735
31	CT-L73.60	50	930.83	44214.425	1941.22	5603.49	7.5441
32	CT-L73.61	50	930.83	44214.425	1277.19	3640.74	11.7935
32	CT-L73.62	50	930.83	44214.425	1899.93	5651.39	7.4874

Minimum Rating factor	5.7658	**Girder 1**
Minimum Rating factor	7.3077	**Girder 2**
Minimum Rating factor	7.7884	**Girder 3**
Minimum Rating factor	7.0496	**Girder 4**
Minimum Rating factor	7.7842	**Girder 5**
Minimum Rating factor	7.3023	**Girder 6**
Minimum Rating factor	5.7538	**Girder 7**

33	CT-L73.63	50	930.83	44214.425	1830.74	5395.75	7.8550
33	CT-L73.64	50	930.83	44214.425	1899.93	5651.39	7.4874
34	CT-L73.65	50	930.83	44214.425	1830.74	5395.75	7.8550
34	CT-L73.66	50	930.83	44214.425	1704.64	5814.76	7.3107
35	CT-L73.67	50	930.83	44214.425	1884.42	5640.65	7.5045
35	CT-L73.68	50	930.83	44214.425	1167.89	4942.72	8.7091
36	CT-L73.69	50	930.83	44214.425	1711.84	5816.12	7.3077
36	CT-L73.70	50	930.83	44214.425	1167.89	4942.72	8.7091
37	CT-L73.71	50	930.83	44214.425	1711.84	5816.12	7.3077
37	CT-L73.72	50	930.83	44214.425	521.46	4319.21	10.1160
38	CT-L73.73	50	930.83	44214.425	1162.86	4931.05	8.7307
38	CT-L73.74	50	930.83	44214.425	-667.57	-2834.71	15.3620
39	CT-L73.75	50	930.83	44214.425	246.03	3846.67	11.4302
39	CT-L73.76	50	930.83	44214.425	-667.57	-2834.71	15.3620
40	CT-L73.77	50	930.83	44214.425	246.03	3846.67	11.4302
40	CT-L73.78	50	930.83	44214.425	-1801.2	-3117.2	13.6062
41	CT-L73.79	50	930.83	44214.425	-1408.94	-3024.48	14.1530
41	CT-L73.80	50	930.83	44214.425	-2818.11	-3353.01	12.3460
42	CT-L73.81	50	930.83	44214.425	-1821.05	-3127.1	13.5568
42	CT-L73.82	50	930.83	44214.425	-3943.48	-3578.4	11.2539
43	CT-L73.83	50	930.83	44214.425	-3942.53	-3585.29	11.2325
43	CT-L73.84	50	930.83	44214.425	-1819.86	-3091.99	13.7111
44	CT-L73.85	50	930.83	44214.425	-2817.07	-3315.16	12.4873
44	CT-L73.86	50	930.83	44214.425	-1407.74	-2990.64	14.3136
45	CT-L73.87	50	930.83	44214.425	-1800.05	-3082.21	13.7610
45	CT-L73.88	50	930.83	44214.425	247.41	3826.62	11.4898
46	CT-L73.89	50	930.83	44214.425	-666.35	-2803.23	15.5350
46	CT-L73.90	50	930.83	44214.425	247.41	3826.62	11.4898
47	CT-L73.91	50	930.83	44214.425	-666.35	-2803.23	15.5350
47	CT-L73.92	50	930.83	44214.425	1164.6	4911.09	8.7658
48	CT-L73.93	50	930.83	44214.425	522.97	4299.17	10.1628
48	CT-L73.94	50	930.83	44214.425	1713.82	5799.02	7.3289
49	CT-L73.95	50	930.83	44214.425	1169.54	4922.65	8.7443
49	CT-L73.96	50	930.83	44214.425	1713.82	5799.02	7.3289
50	CT-L73.97	50	930.83	44214.425	1169.54	4922.65	8.7443
50	CT-L73.98	50	930.83	44214.425	1886.49	5626.74	7.5226
51	CT-L73.99	50	930.83	44214.425	1706.51	5797.44	7.3322
51	CT-L73.100	50	930.83	44214.425	1833.06	5385.85	7.8690
52	CT-L73.101	50	930.83	44214.425	1902	5637.48	7.5056
52	CT-L73.102	50	930.83	44214.425	1833.06	5385.85	7.8690
53	CT-L73.103	50	930.83	44214.425	1902	5637.48	7.5056
53	CT-L73.104	50	930.83	44214.425	1278.31	3633.7	11.8161
54	CT-L73.105	50	930.83	44214.425	1943.83	5593.79	7.5567
54	CT-L73.106	50	930.83	44214.425	152.35	-1182.78	37.2530
55	CT-L73.107	50	930.83	44214.425	1369.91	3788.22	11.3099
55	CT-L73.108	50	930.83	44214.425	155.05	488.75	90.1471
56	CT-L73.109	50	930.83	44214.425	109.01	-1263.94	34.8952
56	CT-L73.110	50	930.83	44214.425	58.94	203.1	217.4076
57	CT-L73.111	50	930.83	44214.425	-0.66	-91.83	481.4741
57	CT-L73.112	50	930.83	44214.425	-116.89	-1108.27	39.7895
58	CT-L73.113	50	930.83	44214.425	-33.87	-461.24	95.7865
58	CT-L73.114	50	930.83	44214.425	952.79	3074.21	14.0724
59	CT-L73.115	50	930.83	44214.425	-0.84	-960.5	46.0318
59	CT-L73.116	50	930.83	44214.425	1561.71	4609.08	9.2541
60	CT-L73.117	50	930.83	44214.425	1068.85	3295.97	13.0904
60	CT-L73.118	50	930.83	44214.425	1801.31	5445.69	7.7884
61	CT-L73.119	50	930.83	44214.425	1505.76	4516.48	9.4562
61	CT-L73.120	50	930.83	44214.425	1801.31	5445.69	7.7884
62	CT-L73.121	50	930.83	44214.425	1505.76	4516.48	9.4562
62	CT-L73.122	50	930.83	44214.425	1714.06	5443.62	7.8074
63	CT-L73.123	50	930.83	44214.425	1722.11	5344.71	7.9503
63	CT-L73.124	50	930.83	44214.425	1186.06	4943.26	8.7045
64	CT-L73.125	50	930.83	44214.425	1662.53	5374.99	7.9166
64	CT-L73.126	50	930.83	44214.425	1186.06	4943.26	8.7045
65	CT-L73.127	50	930.83	44214.425	1662.53	5374.99	7.9166
65	CT-L73.128	50	930.83	44214.425	561.77	4101.9	10.6421
66	CT-L73.129	50	930.83	44214.425	1147.95	4904.43	8.7811
66	CT-L73.130	50	930.83	44214.425	-617.7	2630.02	16.5766
67	CT-L73.131	50	930.83	44214.425	271.79	3762.13	11.6803
67	CT-L73.132	50	930.83	44214.425	-617.7	2630.02	16.5766
68	CT-L73.133	50	930.83	44214.425	271.79	3762.13	11.6803
68	CT-L73.134	50	930.83	44214.425	-1809.51	-2929.4	14.4756
69	CT-L73.135	50	930.83	44214.425	-1403.25	-2826.05	15.1488
69	CT-L73.136	50	930.83	44214.425	-2826.84	-3160.94	13.0934

70	CT-L73.137	50	930.83	44214.425	-1825.34	-2928.45	14.4749
70	CT-L73.138	50	930.83	44214.425	-3948.95	-3375.26	11.9296
71	CT-L73.139	50	930.83	44214.425	-3947.97	-3349.52	12.0216
71	CT-L73.140	50	930.83	44214.425	-1824.24	-2895.41	14.6405
72	CT-L73.141	50	930.83	44214.425	-2825.82	-3125.09	13.2440
72	CT-L73.142	50	930.83	44214.425	-1402.14	-2794.21	15.3218
73	CT-L73.143	50	930.83	44214.425	-1808.43	-2896.32	14.6413
73	CT-L73.144	50	930.83	44214.425	273	3743.04	11.7395
74	CT-L73.145	50	930.83	44214.425	-616.59	2613.58	16.6813
74	CT-L73.146	50	930.83	44214.425	273	3743.04	11.7395
75	CT-L73.147	50	930.83	44214.425	-616.59	2613.58	16.6813
75	CT-L73.148	50	930.83	44214.425	1149.39	4885.11	8.8156
76	CT-L73.149	50	930.83	44214.425	563.1	4082.61	10.6920
76	CT-L73.150	50	930.83	44214.425	1664.1	5356.9	7.9431
77	CT-L73.151	50	930.83	44214.425	1187.49	4923.84	8.7385
77	CT-L73.152	50	930.83	44214.425	1664.1	5356.9	7.9431
78	CT-L73.153	50	930.83	44214.425	1187.49	4923.84	8.7385
78	CT-L73.154	50	930.83	44214.425	1723.47	5330.8	7.9708
79	CT-L73.155	50	930.83	44214.425	1715.65	5425.41	7.8333
79	CT-L73.156	50	930.83	44214.425	1506.98	4506.08	9.4777
80	CT-L73.157	50	930.83	44214.425	1802.83	5431.88	7.8079
80	CT-L73.158	50	930.83	44214.425	1506.98	4506.08	9.4777
81	CT-L73.159	50	930.83	44214.425	1802.83	5431.88	7.8079
81	CT-L73.160	50	930.83	44214.425	1069.54	3289.25	13.1169
82	CT-L73.161	50	930.83	44214.425	1563.11	4598.9	9.2742
82	CT-L73.162	50	930.83	44214.425	-1.01	-960.67	46.0235
83	CT-L73.163	50	930.83	44214.425	953.57	3068.29	14.0993
83	CT-L73.164	50	930.83	44214.425	-33.98	-461.23	95.7883
84	CT-L73.165	50	930.83	44214.425	-116.98	-1108.24	39.7905
84	CT-L73.166	50	930.83	44214.425	-0.69	-91.83	481.4738
85	CT-L73.167	50	930.83	44214.425	-12.09	93.98	470.3377
85	CT-L73.168	50	930.83	44214.425	-135.14	-2618.66	16.8328
86	CT-L73.169	50	930.83	44214.425	-66.51	-1048.63	42.1006
86	CT-L73.170	50	930.83	44214.425	845.4	3582.89	12.1045
87	CT-L73.171	50	930.83	44214.425	-12.15	-2337.2	18.9125
87	CT-L73.172	50	930.83	44214.425	1421.63	3926.68	10.8980
88	CT-L73.173	50	930.83	44214.425	1009.87	3942.26	10.9593
88	CT-L73.174	50	930.83	44214.425	1757.56	6022.58	7.0496
89	CT-L73.175	50	930.83	44214.425	1395.06	3925.54	10.9079
89	CT-L73.176	50	930.83	44214.425	1757.56	6022.58	7.0496
90	CT-L73.177	50	930.83	44214.425	1395.06	3925.54	10.9079
90	CT-L73.178	50	930.83	44214.425	1713.65	4934.89	8.6123
91	CT-L73.179	50	930.83	44214.425	1671.56	5906.89	7.2022
91	CT-L73.180	50	930.83	44214.425	1193.39	5628.25	7.6438
92	CT-L73.181	50	930.83	44214.425	1640.55	4864.2	8.7525
92	CT-L73.182	50	930.83	44214.425	1193.39	5628.25	7.6438
93	CT-L73.183	50	930.83	44214.425	1640.55	4864.2	8.7525
93	CT-L73.184	50	930.83	44214.425	575.99	3805.41	11.4675
94	CT-L73.185	50	930.83	44214.425	1141.5	5589.61	7.7059
94	CT-L73.186	50	930.83	44214.425	-603.15	-2413.34	18.0709
95	CT-L73.187	50	930.83	44214.425	281.17	3953.89	11.1114
95	CT-L73.188	50	930.83	44214.425	-603.15	-2413.34	18.0709
96	CT-L73.189	50	930.83	44214.425	281.17	3953.89	11.1114
96	CT-L73.190	50	930.83	44214.425	-1808.23	-2720.65	15.5868
97	CT-L73.191	50	930.83	44214.425	-1399.55	-2621.12	16.3346
97	CT-L73.192	50	930.83	44214.425	-2828.65	-2941.38	14.0702
98	CT-L73.193	50	930.83	44214.425	-1822.65	-2717.38	15.6002
98	CT-L73.194	50	930.83	44214.425	-3954.07	-3196.71	12.5943
99	CT-L73.195	50	930.83	44214.425	-3953.09	-3219.66	12.5048
99	CT-L73.196	50	930.83	44214.425	-1821.66	-2686.38	15.7806
100	CT-L73.197	50	930.83	44214.425	-2827.66	-2907.71	14.2335
100	CT-L73.198	50	930.83	44214.425	-1398.55	-2591.23	16.5234
101	CT-L73.199	50	930.83	44214.425	-1807.23	-2689.57	15.7673
101	CT-L73.200	50	930.83	44214.425	282.18	3935.61	11.1628
102	CT-L73.201	50	930.83	44214.425	-602.15	-2385.82	18.2798
102	CT-L73.202	50	930.83	44214.425	282.18	3935.61	11.1628
103	CT-L73.203	50	930.83	44214.425	-602.15	-2385.82	18.2798
103	CT-L73.204	50	930.83	44214.425	1142.6	5569.98	7.7329
104	CT-L73.205	50	930.83	44214.425	577.13	3786.68	11.5239
104	CT-L73.206	50	930.83	44214.425	1641.66	4848.75	8.7802
105	CT-L73.207	50	930.83	44214.425	1194.55	5608.55	7.6704
105	CT-L73.208	50	930.83	44214.425	1641.66	4848.75	8.7802
106	CT-L73.209	50	930.83	44214.425	1194.55	5608.55	7.6704
106	CT-L73.210	50	930.83	44214.425	1672.43	5892.48	7.2197

107	CT-L73.211	50	930.83	44214.425	1714.84	4915.54	8.6460
107	CT-L73.212	50	930.83	44214.425	1395.64	3914.43	10.9387
108	CT-L73.213	50	930.83	44214.425	1758.58	6008.12	7.0664
108	CT-L73.214	50	930.83	44214.425	1395.64	3914.43	10.9387
109	CT-L73.215	50	930.83	44214.425	1758.58	6008.12	7.0664
109	CT-L73.216	50	930.83	44214.425	1010.22	3934.48	10.9809
110	CT-L73.217	50	930.83	44214.425	1422.34	3915.63	10.9285
110	CT-L73.218	50	930.83	44214.425	-12.25	-2337.54	18.9097
111	CT-L73.219	50	930.83	44214.425	845.77	3575.89	12.1281
111	CT-L73.220	50	930.83	44214.425	-66.58	-1048.42	42.1089
112	CT-L73.221	50	930.83	44214.425	-135.21	-2618.5	16.8338
112	CT-L73.222	50	930.83	44214.425	-12.11	94.02	470.1374
113	CT-L73.223	50	930.83	44214.425	-0.68	-91.85	481.3690
113	CT-L73.224	50	930.83	44214.425	-116.97	-1108.39	39.7851
114	CT-L73.225	50	930.83	44214.425	-33.95	-461.34	95.7655
114	CT-L73.226	50	930.83	44214.425	953.53	3076.08	14.0636
115	CT-L73.227	50	930.83	44214.425	-1.02	-960.61	46.0264
115	CT-L73.228	50	930.83	44214.425	1563.01	4612.44	9.2470
116	CT-L73.229	50	930.83	44214.425	1069.45	3297.45	13.0843
116	CT-L73.230	50	930.83	44214.425	1802.46	5448.44	7.7842
117	CT-L73.231	50	930.83	44214.425	1506.9	4519.33	9.4500
117	CT-L73.232	50	930.83	44214.425	1802.46	5448.44	7.7842
118	CT-L73.233	50	930.83	44214.425	1506.9	4519.33	9.4500
118	CT-L73.234	50	930.83	44214.425	1715.13	5445.99	7.8038
119	CT-L73.235	50	930.83	44214.425	1723.17	5347.14	7.9465
119	CT-L73.236	50	930.83	44214.425	1186.94	4944.67	8.7018
120	CT-L73.237	50	930.83	44214.425	1663.62	5377.38	7.9129
120	CT-L73.238	50	930.83	44214.425	1186.94	4944.67	8.7018
121	CT-L73.239	50	930.83	44214.425	1663.62	5377.38	7.9129
121	CT-L73.240	50	930.83	44214.425	562.52	4102.68	10.6399
122	CT-L73.241	50	930.83	44214.425	1148.86	4905.93	8.7783
122	CT-L73.242	50	930.83	44214.425	-617.18	2629.92	16.5774
123	CT-L73.243	50	930.83	44214.425	272.43	3762.53	11.6788
123	CT-L73.244	50	930.83	44214.425	-617.18	2629.92	16.5774
124	CT-L73.245	50	930.83	44214.425	272.43	3762.53	11.6788
124	CT-L73.246	50	930.83	44214.425	-1809.06	-2929.14	14.4771
125	CT-L73.247	50	930.83	44214.425	-1402.75	-2825.88	15.1499
125	CT-L73.248	50	930.83	44214.425	-2826.46	-3160.51	13.0953
126	CT-L73.249	50	930.83	44214.425	-1824.86	-2928.22	14.4762
126	CT-L73.250	50	930.83	44214.425	-3948.63	-3374.66	11.9318
127	CT-L73.251	50	930.83	44214.425	-3947.65	-3351.38	12.0150
127	CT-L73.252	50	930.83	44214.425	-1823.98	-2896.95	14.6328
128	CT-L73.253	50	930.83	44214.425	-2825.51	-3126.71	13.2372
128	CT-L73.254	50	930.83	44214.425	-1401.87	-2795.68	15.3138
129	CT-L73.255	50	930.83	44214.425	-1808.15	-2897.81	14.6339
129	CT-L73.256	50	930.83	44214.425	273.22	3743.56	11.7378
130	CT-L73.257	50	930.83	44214.425	-616.31	2614.01	16.6786
130	CT-L73.258	50	930.83	44214.425	273.22	3743.56	11.7378
131	CT-L73.259	50	930.83	44214.425	-616.31	2614.01	16.6786
131	CT-L73.260	50	930.83	44214.425	1149.64	4885.48	8.8149
132	CT-L73.261	50	930.83	44214.425	563.42	4082.99	10.6909
132	CT-L73.262	50	930.83	44214.425	1664.29	5357.19	7.9426
133	CT-L73.263	50	930.83	44214.425	1187.78	4924.17	8.7378
133	CT-L73.264	50	930.83	44214.425	1664.29	5357.19	7.9426
134	CT-L73.265	50	930.83	44214.425	1187.78	4924.17	8.7378
134	CT-L73.266	50	930.83	44214.425	1723.65	5331.01	7.9705
135	CT-L73.267	50	930.83	44214.425	1715.88	5425.65	7.8329
135	CT-L73.268	50	930.83	44214.425	1507.13	4506.17	9.4775
136	CT-L73.269	50	930.83	44214.425	1803.05	5432.05	7.8076
136	CT-L73.270	50	930.83	44214.425	1507.13	4506.17	9.4775
137	CT-L73.271	50	930.83	44214.425	1803.05	5432.05	7.8076
137	CT-L73.272	50	930.83	44214.425	1069.61	3289.32	13.1166
138	CT-L73.273	50	930.83	44214.425	1563.33	4598.93	9.2741
138	CT-L73.274	50	930.83	44214.425	-1.05	-960.67	46.0235
139	CT-L73.275	50	930.83	44214.425	953.7	3068.3	14.0992
139	CT-L73.276	50	930.83	44214.425	-33.98	-461.23	95.7883
140	CT-L73.277	50	930.83	44214.425	-117	-1108.24	39.7905
140	CT-L73.278	50	930.83	44214.425	-0.68	-91.84	481.4214
141	CT-L73.279	50	930.83	44214.425	58.93	203.35	217.1404
141	CT-L73.280	50	930.83	44214.425	109.06	-1263.46	34.9084
142	CT-L73.281	50	930.83	44214.425	155.03	489.56	89.9979
142	CT-L73.282	50	930.83	44214.425	1370.13	3798.88	11.2781
143	CT-L73.283	50	930.83	44214.425	152.32	-1182.31	37.2678
143	CT-L73.284	50	930.83	44214.425	1944.11	5610.68	7.5339

144	CT-L73.285	50	930.83	44214.425	1278.47	3643.73	11.7835
144	CT-L73.286	50	930.83	44214.425	1902.22	5656.35	7.4805
145	CT-L73.287	50	930.83	44214.425	1833.31	5402.04	7.8454
145	CT-L73.288	50	930.83	44214.425	1902.22	5656.35	7.4805
146	CT-L73.289	50	930.83	44214.425	1833.31	5402.04	7.8454
146	CT-L73.290	50	930.83	44214.425	1706.67	5818.53	7.3056
147	CT-L73.291	50	930.83	44214.425	1886.67	5645.49	7.4976
147	CT-L73.292	50	930.83	44214.425	1169.6	4945	8.7047
148	CT-L73.293	50	930.83	44214.425	1713.96	5820.12	7.3023
148	CT-L73.294	50	930.83	44214.425	1169.6	4945	8.7047
149	CT-L73.295	50	930.83	44214.425	1713.96	5820.12	7.3023
149	CT-L73.296	50	930.83	44214.425	522.96	4320.45	10.1127
150	CT-L73.297	50	930.83	44214.425	1164.64	4933.53	8.7260
150	CT-L73.298	50	930.83	44214.425	-666.53	-2834.55	15.3632
151	CT-L73.299	50	930.83	44214.425	247.3	3847.22	11.4283
151	CT-L73.300	50	930.83	44214.425	-666.53	-2834.55	15.3632
152	CT-L73.301	50	930.83	44214.425	247.3	3847.22	11.4283
152	CT-L73.302	50	930.83	44214.425	-1800.28	-3116.64	13.6089
153	CT-L73.303	50	930.83	44214.425	-1407.95	-3024.1	14.1551
153	CT-L73.304	50	930.83	44214.425	-2817.36	-3352.08	12.3497
154	CT-L73.305	50	930.83	44214.425	-1820.09	-3126.59	13.5593
154	CT-L73.306	50	930.83	44214.425	-3942.87	-3577.14	11.2580
155	CT-L73.307	50	930.83	44214.425	-3941.88	-3583.92	11.2370
155	CT-L73.308	50	930.83	44214.425	-1819.32	-3094.59	13.6997
156	CT-L73.309	50	930.83	44214.425	-2816.45	-3317.81	12.4775
156	CT-L73.310	50	930.83	44214.425	-1407.2	-2993.1	14.3020
157	CT-L73.311	50	930.83	44214.425	-1799.47	-3084.7	13.7501
157	CT-L73.312	50	930.83	44214.425	247.85	3827.56	11.4868
158	CT-L73.313	50	930.83	44214.425	-665.8	-2805.36	15.5234
158	CT-L73.314	50	930.83	44214.425	247.85	3827.56	11.4868
159	CT-L73.315	50	930.83	44214.425	-665.8	-2805.36	15.5234
159	CT-L73.316	50	930.83	44214.425	1165.09	4911.76	8.7645
160	CT-L73.317	50	930.83	44214.425	523.6	4299.84	10.1610
160	CT-L73.318	50	930.83	44214.425	1714.21	5799.57	7.3282
161	CT-L73.319	50	930.83	44214.425	1170.12	4923.21	8.7431
161	CT-L73.320	50	930.83	44214.425	1714.21	5799.57	7.3282
162	CT-L73.321	50	930.83	44214.425	1170.12	4923.21	8.7431
162	CT-L73.322	50	930.83	44214.425	1886.84	5627.15	7.5220
163	CT-L73.323	50	930.83	44214.425	1706.98	5797.88	7.3315
163	CT-L73.324	50	930.83	44214.425	1833.32	5386.07	7.8687
164	CT-L73.325	50	930.83	44214.425	1902.42	5637.8	7.5051
164	CT-L73.326	50	930.83	44214.425	1833.32	5386.07	7.8687
165	CT-L73.327	50	930.83	44214.425	1902.42	5637.8	7.5051
165	CT-L73.328	50	930.83	44214.425	1278.54	3633.76	11.8158
166	CT-L73.329	50	930.83	44214.425	1944.18	5593.93	7.5564
166	CT-L73.330	50	930.83	44214.425	152.41	-1182.79	37.2526
167	CT-L73.331	50	930.83	44214.425	1370.27	3788.16	11.3100
167	CT-L73.332	50	930.83	44214.425	155.1	488.71	90.1543
168	CT-L73.333	50	930.83	44214.425	109.15	-1263.96	34.8945
168	CT-L73.334	50	930.83	44214.425	58.95	203.09	217.4183
169	CT-L73.335	50	930.83	44214.425	-27.98	-181.31	243.7066
169	CT-L73.336	50	930.83	44214.425	2763.91	7204.05	5.7538
170	CT-L73.337	50	930.83	44214.425	1347.53	3587.84	11.9478
170	CT-L73.338	50	930.83	44214.425	2357.71	6349.81	6.5918
171	CT-L73.339	50	930.83	44214.425	2521.66	6553.83	6.3616
171	CT-L73.340	50	930.83	44214.425	1919.32	5982.29	7.0701
172	CT-L73.341	50	930.83	44214.425	2233.93	6012.82	6.9818
172	CT-L73.342	50	930.83	44214.425	1843.96	6485.3	6.5333
173	CT-L73.343	50	930.83	44214.425	2117.39	6219.71	6.7683
173	CT-L73.344	50	930.83	44214.425	1843.96	6485.3	6.5333
174	CT-L73.345	50	930.83	44214.425	2117.39	6219.71	6.7683
174	CT-L73.346	50	930.83	44214.425	1593.26	6238.72	6.8317
175	CT-L73.347	50	930.83	44214.425	1999.48	6594.53	6.4015
175	CT-L73.348	50	930.83	44214.425	1034.92	5628.42	7.6717
176	CT-L73.349	50	930.83	44214.425	1682.13	6326.61	6.7228
176	CT-L73.350	50	930.83	44214.425	1034.92	5628.42	7.6717
177	CT-L73.351	50	930.83	44214.425	1682.13	6326.61	6.7228
177	CT-L73.352	50	930.83	44214.425	431.21	4675.33	9.3647
178	CT-L73.353	50	930.83	44214.425	1116.72	5699.47	7.5617
178	CT-L73.354	50	930.83	44214.425	-703.26	-2982.02	14.5912
179	CT-L73.355	50	930.83	44214.425	233.07	4341.27	10.1310
179	CT-L73.356	50	930.83	44214.425	-703.26	-2982.02	14.5912
180	CT-L73.357	50	930.83	44214.425	233.07	4341.27	10.1310
180	CT-L73.358	50	930.83	44214.425	-1715.31	-3291.2	12.9130

181	CT-L73.359	50	930.83	44214.425	-1320.56	-3183.62	13.4733
181	CT-L73.360	50	930.83	44214.425	-2623.01	-3517.59	11.8238
182	CT-L73.361	50	930.83	44214.425	-1668.68	-3284.39	12.9539
182	CT-L73.362	50	930.83	44214.425	-3675.61	-3858.78	10.5056
183	CT-L73.363	50	930.83	44214.425	-3674.64	-3887.6	10.4280
183	CT-L73.364	50	930.83	44214.425	-1668.05	-3259.27	13.0540
184	CT-L73.365	50	930.83	44214.425	-2622.16	-3490.75	11.9150
184	CT-L73.366	50	930.83	44214.425	-1319.96	-3159.18	13.5777
185	CT-L73.367	50	930.83	44214.425	-1714.61	-3266.02	13.0127
185	CT-L73.368	50	930.83	44214.425	233.34	4325.06	10.1689
186	CT-L73.369	50	930.83	44214.425	-702.69	-2959.05	14.7046
186	CT-L73.370	50	930.83	44214.425	233.34	4325.06	10.1689
187	CT-L73.371	50	930.83	44214.425	-702.69	-2959.05	14.7046
187	CT-L73.372	50	930.83	44214.425	1116.83	5680.58	7.5868
188	CT-L73.373	50	930.83	44214.425	431.57	4657.95	9.3996
188	CT-L73.374	50	930.83	44214.425	1681.98	6307.62	6.7430
189	CT-L73.375	50	930.83	44214.425	1035.1	5609.95	7.6969
189	CT-L73.376	50	930.83	44214.425	1681.98	6307.62	6.7430
190	CT-L73.377	50	930.83	44214.425	1035.1	5609.95	7.6969
190	CT-L73.378	50	930.83	44214.425	1999.37	6578.78	6.4169
191	CT-L73.379	50	930.83	44214.425	1593.16	6219.87	6.8524
191	CT-L73.380	50	930.83	44214.425	2117.21	6205.38	6.7840
192	CT-L73.381	50	930.83	44214.425	1843.78	6470.38	6.5484
192	CT-L73.382	50	930.83	44214.425	2117.21	6205.38	6.7840
193	CT-L73.383	50	930.83	44214.425	1843.78	6470.38	6.5484
193	CT-L73.384	50	930.83	44214.425	2234.09	5994.06	7.0037
194	CT-L73.385	50	930.83	44214.425	1919.04	5968.69	7.0862
194	CT-L73.386	50	930.83	44214.425	2522.53	6535.85	6.3790
195	CT-L73.387	50	930.83	44214.425	2357.96	6331.28	6.6111
195	CT-L73.388	50	930.83	44214.425	1348.01	3577.56	11.9820
196	CT-L73.389	50	930.83	44214.425	2764.84	7184.42	5.7694
196	CT-L73.390	50	930.83	44214.425	-27.99	-182.3	242.3831

LOAD RATING SWING SPAN

RF= RATING FACTOR

$RF = (C - f_{DL+SDL}) / (f_{LL+I})$

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

$C=\varphi_C\varphi_S\varphi R_nS_x$ = (1.0)(1.0)(.95)(50 ksi)(930.83 in^3)

Virtual Beam	LOADING	R_n (ksi)	S_x (in^3)	$C=\varphi_C\varphi_S\varphi R_nS_x$	M_{DL+SDL} (kip-in)	M_{LL+I} (kip-in)	RF
1	CT-L3S2 + Lane Load	50	930.83	44214.425	-35.32	-161.62	273.3517
1	CT-L3S2 + Lane Load	50	930.83	44214.425	2757.58	5367.37	7.7239
2	CT-L3S2 + Lane Load	50	930.83	44214.425	1340.69	2622.29	16.3497
2	CT-L3S2 + Lane Load	50	930.83	44214.425	2353.36	4913	8.5205
3	CT-L3S2 + Lane Load	50	930.83	44214.425	2514.92	4855.35	8.5884
3	CT-L3S2 + Lane Load	50	930.83	44214.425	1916.1	4476.31	9.4494
4	CT-L3S2 + Lane Load	50	930.83	44214.425	2228.89	4644.43	9.0400
4	CT-L3S2 + Lane Load	50	930.83	44214.425	1840.96	4702.34	9.0111
5	CT-L3S2 + Lane Load	50	930.83	44214.425	2113.66	4681.05	8.9939
5	CT-L3S2 + Lane Load	50	930.83	44214.425	1840.96	4702.34	9.0111
6	CT-L3S2 + Lane Load	50	930.83	44214.425	2113.66	4681.05	8.9939
6	CT-L3S2 + Lane Load	50	930.83	44214.425	1590.57	4408.13	9.6694
7	CT-L3S2 + Lane Load	50	930.83	44214.425	1996.24	4824.62	8.7506
7	CT-L3S2 + Lane Load	50	930.83	44214.425	1032.56	4015.95	10.7526
8	CT-L3S2 + Lane Load	50	930.83	44214.425	1679.31	4474.34	9.5065
8	CT-L3S2 + Lane Load	50	930.83	44214.425	1032.56	4015.95	10.7526
9	CT-L3S2 + Lane Load	50	930.83	44214.425	1679.31	4474.34	9.5065
9	CT-L3S2 + Lane Load	50	930.83	44214.425	429.08	3416.79	12.8148
10	CT-L3S2 + Lane Load	50	930.83	44214.425	1114.22	4075.29	10.5760
10	CT-L3S2 + Lane Load	50	930.83	44214.425	-704.69	-2351.06	18.5064
11	CT-L3S2 + Lane Load	50	930.83	44214.425	231.25	3166.62	13.8896
11	CT-L3S2 + Lane Load	50	930.83	44214.425	-704.69	-2351.06	18.5064
12	CT-L3S2 + Lane Load	50	930.83	44214.425	231.25	3166.62	13.8896
12	CT-L3S2 + Lane Load	50	930.83	44214.425	-1716.52	-2594.47	16.3802
13	CT-L3S2 + Lane Load	50	930.83	44214.425	-1321.91	-2509.4	17.0927
13	CT-L3S2 + Lane Load	50	930.83	44214.425	-2624.03	-2769.19	15.0190
14	CT-L3S2 + Lane Load	50	930.83	44214.425	-1669.96	-2587.77	16.4406
14	CT-L3S2 + Lane Load	50	930.83	44214.425	-3676.48	-3675.04	11.0306
15	CT-L3S2 + Lane Load	50	930.83	44214.425	-3675.62	-3682.07	11.0098
15	CT-L3S2 + Lane Load	50	930.83	44214.425	-1668.81	-2554.25	16.6568
16	CT-L3S2 + Lane Load	50	930.83	44214.425	-2623.08	-2732.59	15.2205
16	CT-L3S2 + Lane Load	50	930.83	44214.425	-1320.73	-2476.93	17.3173
17	CT-L3S2 + Lane Load	50	930.83	44214.425	-1715.44	-2560.92	16.5952
17	CT-L3S2 + Lane Load	50	930.83	44214.425	232.73	3141.34	14.0009
18	CT-L3S2 + Lane Load	50	930.83	44214.425	-703.49	-2320.81	18.7482
18	CT-L3S2 + Lane Load	50	930.83	44214.425	232.73	3141.34	14.0009
19	CT-L3S2 + Lane Load	50	930.83	44214.425	-703.49	-2320.81	18.7482
19	CT-L3S2 + Lane Load	50	930.83	44214.425	1116.11	4049.77	10.6422
20	CT-L3S2 + Lane Load	50	930.83	44214.425	430.7	3391.2	12.9110
20	CT-L3S2 + Lane Load	50	930.83	44214.425	1681.38	4463.4	9.5293
21	CT-L3S2 + Lane Load	50	930.83	44214.425	1034.3	3993.39	10.8129
21	CT-L3S2 + Lane Load	50	930.83	44214.425	1681.38	4463.4	9.5293
22	CT-L3S2 + Lane Load	50	930.83	44214.425	1034.3	3993.39	10.8129
22	CT-L3S2 + Lane Load	50	930.83	44214.425	1998.88	4814.37	8.7687
23	CT-L3S2 + Lane Load	50	930.83	44214.425	1592.45	4397.13	9.6931
23	CT-L3S2 + Lane Load	50	930.83	44214.425	2116.96	4674.51	9.0057
24	CT-L3S2 + Lane Load	50	930.83	44214.425	1843.23	4693.77	9.0271
24	CT-L3S2 + Lane Load	50	930.83	44214.425	2116.96	4674.51	9.0057
25	CT-L3S2 + Lane Load	50	930.83	44214.425	1843.23	4693.77	9.0271
25	CT-L3S2 + Lane Load	50	930.83	44214.425	2233.75	4639.65	9.0482
26	CT-L3S2 + Lane Load	50	930.83	44214.425	1918.69	4469.21	9.4638
26	CT-L3S2 + Lane Load	50	930.83	44214.425	2521.94	4856.57	8.5848
27	CT-L3S2 + Lane Load	50	930.83	44214.425	2357.47	4906.97	8.5301
27	CT-L3S2 + Lane Load	50	930.83	44214.425	1347.65	2628.89	16.3060
28	CT-L3S2 + Lane Load	50	930.83	44214.425	2764.16	5366.71	7.7236
28	CT-L3S2 + Lane Load	50	930.83	44214.425	-28.01	-147.77	299.0216
29	CT-L3S2 + Lane Load	50	930.83	44214.425	58.91	166.54	265.1346
29	CT-L3S2 + Lane Load	50	930.83	44214.425	109.1	-1263.44	34.9089
30	CT-L3S2 + Lane Load	50	930.83	44214.425	155.04	-388.55	113.3944
30	CT-L3S2 + Lane Load	50	930.83	44214.425	1368.35	2789.63	15.3591
31	CT-L3S2 + Lane Load	50	930.83	44214.425	152.67	-1182.12	37.2735
31	CT-L3S2 + Lane Load	50	930.83	44214.425	1941.22	4198.61	10.0684
32	CT-L3S2 + Lane Load	50	930.83	44214.425	1277.19	2645.29	16.2316
32	CT-L3S2 + Lane Load	50	930.83	44214.425	1899.93	4089.12	10.3481
33	CT-L3S2 + Lane Load	50	930.83	44214.425	1830.74	4026.59	10.5259

Minimum Rating factor	7.7236	**Girder 1**
Minimum Rating factor	10.0684	**Girder 2**
Minimum Rating factor	10.7420	**Girder 3**
Minimum Rating factor	9.6244	**Girder 4**
Minimum Rating factor	10.7358	**Girder 5**
Minimum Rating factor	10.0534	**Girder 6**
Minimum Rating factor	7.7012	**Girder 7**

33	CT-L3S2 + Lane Load	50	930.83	44214.425	1899.93	4089.12	10.3481
34	CT-L3S2 + Lane Load	50	930.83	44214.425	1830.74	4026.59	10.5259
34	CT-L3S2 + Lane Load	50	930.83	44214.425	1704.64	4078.47	10.4230
35	CT-L3S2 + Lane Load	50	930.83	44214.425	1884.42	4071.91	10.3956
35	CT-L3S2 + Lane Load	50	930.83	44214.425	1167.89	3489.28	12.3368
36	CT-L3S2 + Lane Load	50	930.83	44214.425	1711.84	4069.4	10.4444
36	CT-L3S2 + Lane Load	50	930.83	44214.425	1167.89	3489.28	12.3368
37	CT-L3S2 + Lane Load	50	930.83	44214.425	1711.84	4069.4	10.4444
37	CT-L3S2 + Lane Load	50	930.83	44214.425	521.46	3151.65	13.8635
38	CT-L3S2 + Lane Load	50	930.83	44214.425	1162.86	3496.28	12.3135
38	CT-L3S2 + Lane Load	50	930.83	44214.425	-667.57	-2258.87	19.2782
39	CT-L3S2 + Lane Load	50	930.83	44214.425	246.03	2799.28	15.7070
39	CT-L3S2 + Lane Load	50	930.83	44214.425	-667.57	-2258.87	19.2782
40	CT-L3S2 + Lane Load	50	930.83	44214.425	246.03	2799.28	15.7070
40	CT-L3S2 + Lane Load	50	930.83	44214.425	-1801.2	-2480.87	17.0961
41	CT-L3S2 + Lane Load	50	930.83	44214.425	-1408.94	-2408.02	17.7762
41	CT-L3S2 + Lane Load	50	930.83	44214.425	-2818.11	-2668.47	15.5131
42	CT-L3S2 + Lane Load	50	930.83	44214.425	-1821.05	-2488.56	17.0353
42	CT-L3S2 + Lane Load	50	930.83	44214.425	-3943.48	-3412.53	11.8009
43	CT-L3S2 + Lane Load	50	930.83	44214.425	-3942.53	-3411.62	11.8043
43	CT-L3S2 + Lane Load	50	930.83	44214.425	-1819.86	-2445.65	17.3347
44	CT-L3S2 + Lane Load	50	930.83	44214.425	-2817.07	-2622.43	15.7859
44	CT-L3S2 + Lane Load	50	930.83	44214.425	-1407.74	-2366.84	18.0860
45	CT-L3S2 + Lane Load	50	930.83	44214.425	-1800.05	-2438.34	17.3948
45	CT-L3S2 + Lane Load	50	930.83	44214.425	247.41	2768.4	15.8817
46	CT-L3S2 + Lane Load	50	930.83	44214.425	-666.35	-2220.47	19.6121
46	CT-L3S2 + Lane Load	50	930.83	44214.425	247.41	2768.4	15.8817
47	CT-L3S2 + Lane Load	50	930.83	44214.425	-666.35	-2220.47	19.6121
47	CT-L3S2 + Lane Load	50	930.83	44214.425	1164.6	3468.79	12.4106
48	CT-L3S2 + Lane Load	50	930.83	44214.425	522.97	3120.93	13.9995
48	CT-L3S2 + Lane Load	50	930.83	44214.425	1713.82	4055.8	10.4790
49	CT-L3S2 + Lane Load	50	930.83	44214.425	1169.54	3461.67	12.4347
49	CT-L3S2 + Lane Load	50	930.83	44214.425	1713.82	4055.8	10.4790
50	CT-L3S2 + Lane Load	50	930.83	44214.425	1169.54	3461.67	12.4347
50	CT-L3S2 + Lane Load	50	930.83	44214.425	1886.49	4060.82	10.4235
51	CT-L3S2 + Lane Load	50	930.83	44214.425	1706.51	4064.76	10.4577
51	CT-L3S2 + Lane Load	50	930.83	44214.425	1833.06	4018.01	10.5478
52	CT-L3S2 + Lane Load	50	930.83	44214.425	1902	4078.02	10.3757
52	CT-L3S2 + Lane Load	50	930.83	44214.425	1833.06	4018.01	10.5478
53	CT-L3S2 + Lane Load	50	930.83	44214.425	1902	4078.02	10.3757
53	CT-L3S2 + Lane Load	50	930.83	44214.425	1278.31	2638.82	16.2710
54	CT-L3S2 + Lane Load	50	930.83	44214.425	1943.83	4190.18	10.0880
54	CT-L3S2 + Lane Load	50	930.83	44214.425	152.35	-1182.78	37.2530
55	CT-L3S2 + Lane Load	50	930.83	44214.425	1369.91	2783.74	15.3910
55	CT-L3S2 + Lane Load	50	930.83	44214.425	155.05	-388.72	113.3448
56	CT-L3S2 + Lane Load	50	930.83	44214.425	109.01	-1263.94	34.8952
56	CT-L3S2 + Lane Load	50	930.83	44214.425	58.94	166.37	265.4053
57	CT-L3S2 + Lane Load	50	930.83	44214.425	-0.66	-89.36	494.7825
57	CT-L3S2 + Lane Load	50	930.83	44214.425	-116.89	-1105.71	39.8816
58	CT-L3S2 + Lane Load	50	930.83	44214.425	-33.87	-434.94	101.5785
58	CT-L3S2 + Lane Load	50	930.83	44214.425	952.79	2223.66	19.4551
59	CT-L3S2 + Lane Load	50	930.83	44214.425	-0.84	-960.5	46.0318
59	CT-L3S2 + Lane Load	50	930.83	44214.425	1561.71	3411.93	12.5011
60	CT-L3S2 + Lane Load	50	930.83	44214.425	1068.85	2396.24	18.0055
60	CT-L3S2 + Lane Load	50	930.83	44214.425	1801.31	3948.35	10.7420
61	CT-L3S2 + Lane Load	50	930.83	44214.425	1505.76	3333.55	12.8118
61	CT-L3S2 + Lane Load	50	930.83	44214.425	1801.31	3948.35	10.7420
62	CT-L3S2 + Lane Load	50	930.83	44214.425	1505.76	3333.55	12.8118
62	CT-L3S2 + Lane Load	50	930.83	44214.425	1714.06	3830.61	11.0949
63	CT-L3S2 + Lane Load	50	930.83	44214.425	1722.11	3865.64	10.9923
63	CT-L3S2 + Lane Load	50	930.83	44214.425	1186.06	3534.32	12.1744
64	CT-L3S2 + Lane Load	50	930.83	44214.425	1662.53	3791.38	11.2233
64	CT-L3S2 + Lane Load	50	930.83	44214.425	1186.06	3534.32	12.1744
65	CT-L3S2 + Lane Load	50	930.83	44214.425	1662.53	3791.38	11.2233
65	CT-L3S2 + Lane Load	50	930.83	44214.425	561.77	3024.6	14.4325
66	CT-L3S2 + Lane Load	50	930.83	44214.425	1147.95	3480.22	12.3746
66	CT-L3S2 + Lane Load	50	930.83	44214.425	-617.7	-2082.4	20.9358
67	CT-L3S2 + Lane Load	50	930.83	44214.425	271.79	2750.67	15.9752
67	CT-L3S2 + Lane Load	50	930.83	44214.425	-617.7	-2082.4	20.9358
68	CT-L3S2 + Lane Load	50	930.83	44214.425	271.79	2750.67	15.9752
68	CT-L3S2 + Lane Load	50	930.83	44214.425	-1809.51	-2339.86	18.1228
69	CT-L3S2 + Lane Load	50	930.83	44214.425	-1403.25	-2256.77	18.9701
69	CT-L3S2 + Lane Load	50	930.83	44214.425	-2826.84	-2527.9	16.3723
70	CT-L3S2 + Lane Load	50	930.83	44214.425	-1825.34	-2340.99	18.1073
70	CT-L3S2 + Lane Load	50	930.83	44214.425	-3948.95	-3276.97	12.2874

71	CT-L3S2 + Lane Load	50	930.83	44214.425	-3947.97	-3269.85	12.3145
71	CT-L3S2 + Lane Load	50	930.83	44214.425	-1824.24	-2300.14	18.4294
72	CT-L3S2 + Lane Load	50	930.83	44214.425	-2825.82	-2483.81	16.6634
72	CT-L3S2 + Lane Load	50	930.83	44214.425	-1402.14	-2217.33	19.3080
73	CT-L3S2 + Lane Load	50	930.83	44214.425	-1808.43	-2298.91	18.4461
73	CT-L3S2 + Lane Load	50	930.83	44214.425	273	2721.13	16.1482
74	CT-L3S2 + Lane Load	50	930.83	44214.425	-616.59	-2046.02	21.3086
74	CT-L3S2 + Lane Load	50	930.83	44214.425	273	2721.13	16.1482
75	CT-L3S2 + Lane Load	50	930.83	44214.425	-616.59	-2046.02	21.3086
75	CT-L3S2 + Lane Load	50	930.83	44214.425	1149.39	3451.97	12.4755
76	CT-L3S2 + Lane Load	50	930.83	44214.425	563.1	2995.01	14.5747
76	CT-L3S2 + Lane Load	50	930.83	44214.425	1664.1	3778.7	11.2606
77	CT-L3S2 + Lane Load	50	930.83	44214.425	1187.49	3505.93	12.2726
77	CT-L3S2 + Lane Load	50	930.83	44214.425	1664.1	3778.7	11.2606
78	CT-L3S2 + Lane Load	50	930.83	44214.425	1187.49	3505.93	12.2726
78	CT-L3S2 + Lane Load	50	930.83	44214.425	1723.47	3854.4	11.0240
79	CT-L3S2 + Lane Load	50	930.83	44214.425	1715.65	3818.27	11.1304
79	CT-L3S2 + Lane Load	50	930.83	44214.425	1506.98	3324.62	12.8458
80	CT-L3S2 + Lane Load	50	930.83	44214.425	1802.83	3936.18	10.7748
80	CT-L3S2 + Lane Load	50	930.83	44214.425	1506.98	3324.62	12.8458
81	CT-L3S2 + Lane Load	50	930.83	44214.425	1802.83	3936.18	10.7748
81	CT-L3S2 + Lane Load	50	930.83	44214.425	1069.54	2391.01	18.0446
82	CT-L3S2 + Lane Load	50	930.83	44214.425	1563.11	3403.16	12.5329
82	CT-L3S2 + Lane Load	50	930.83	44214.425	-1.01	-960.67	46.0235
83	CT-L3S2 + Lane Load	50	930.83	44214.425	953.57	2219.06	19.4951
83	CT-L3S2 + Lane Load	50	930.83	44214.425	-33.98	-434.94	101.5783
84	CT-L3S2 + Lane Load	50	930.83	44214.425	-116.98	-1105.67	39.8830
84	CT-L3S2 + Lane Load	50	930.83	44214.425	-0.69	-89.37	494.7268
85	CT-L3S2 + Lane Load	50	930.83	44214.425	-12.09	93.98	470.3377
85	CT-L3S2 + Lane Load	50	930.83	44214.425	-135.14	-2594.01	16.9927
86	CT-L3S2 + Lane Load	50	930.83	44214.425	-66.51	-897.36	49.1976
86	CT-L3S2 + Lane Load	50	930.83	44214.425	845.4	2718.62	15.9526
87	CT-L3S2 + Lane Load	50	930.83	44214.425	-12.15	-2324.08	19.0193
87	CT-L3S2 + Lane Load	50	930.83	44214.425	1421.63	2932.41	14.5930
88	CT-L3S2 + Lane Load	50	930.83	44214.425	1009.87	2955	14.6208
88	CT-L3S2 + Lane Load	50	930.83	44214.425	1757.56	4411.38	9.6244
89	CT-L3S2 + Lane Load	50	930.83	44214.425	1395.06	2904.28	14.7435
89	CT-L3S2 + Lane Load	50	930.83	44214.425	1757.56	4411.38	9.6244
90	CT-L3S2 + Lane Load	50	930.83	44214.425	1395.06	2904.28	14.7435
90	CT-L3S2 + Lane Load	50	930.83	44214.425	1713.65	3539.43	12.0078
91	CT-L3S2 + Lane Load	50	930.83	44214.425	1671.56	4335.91	9.8118
91	CT-L3S2 + Lane Load	50	930.83	44214.425	1193.39	4145.42	10.3780
92	CT-L3S2 + Lane Load	50	930.83	44214.425	1640.55	3498.14	12.1704
92	CT-L3S2 + Lane Load	50	930.83	44214.425	1193.39	4145.42	10.3780
93	CT-L3S2 + Lane Load	50	930.83	44214.425	1640.55	3498.14	12.1704
93	CT-L3S2 + Lane Load	50	930.83	44214.425	575.99	2843.24	15.3481
94	CT-L3S2 + Lane Load	50	930.83	44214.425	1141.5	4069.74	10.5837
94	CT-L3S2 + Lane Load	50	930.83	44214.425	-603.15	-1925.49	22.6494
95	CT-L3S2 + Lane Load	50	930.83	44214.425	281.17	2907.09	15.1125
95	CT-L3S2 + Lane Load	50	930.83	44214.425	-603.15	-1925.49	22.6494
96	CT-L3S2 + Lane Load	50	930.83	44214.425	281.17	2907.09	15.1125
96	CT-L3S2 + Lane Load	50	930.83	44214.425	-1808.23	-2181.29	19.4409
97	CT-L3S2 + Lane Load	50	930.83	44214.425	-1399.55	-2099.33	20.3945
97	CT-L3S2 + Lane Load	50	930.83	44214.425	-2828.65	-2367.9	17.4778
98	CT-L3S2 + Lane Load	50	930.83	44214.425	-1822.65	-2183.24	19.4169
98	CT-L3S2 + Lane Load	50	930.83	44214.425	-3954.07	-3505.63	11.4845
99	CT-L3S2 + Lane Load	50	930.83	44214.425	-3953.09	-3502.53	11.4949
99	CT-L3S2 + Lane Load	50	930.83	44214.425	-1821.66	-2144.97	19.7638
100	CT-L3S2 + Lane Load	50	930.83	44214.425	-2827.66	-2326.4	17.7900
100	CT-L3S2 + Lane Load	50	930.83	44214.425	-1398.55	-2062.41	20.7601
101	CT-L3S2 + Lane Load	50	930.83	44214.425	-1807.23	-2142.94	19.7893
101	CT-L3S2 + Lane Load	50	930.83	44214.425	282.18	2881.89	15.2442
102	CT-L3S2 + Lane Load	50	930.83	44214.425	-602.15	-1891.23	23.0603
102	CT-L3S2 + Lane Load	50	930.83	44214.425	282.18	2881.89	15.2442
103	CT-L3S2 + Lane Load	50	930.83	44214.425	-602.15	-1891.23	23.0603
103	CT-L3S2 + Lane Load	50	930.83	44214.425	1142.6	4050.21	10.6345
104	CT-L3S2 + Lane Load	50	930.83	44214.425	577.13	2817.64	15.4872
104	CT-L3S2 + Lane Load	50	930.83	44214.425	1641.66	3484.47	12.2179
105	CT-L3S2 + Lane Load	50	930.83	44214.425	1194.55	4116.56	10.4504
105	CT-L3S2 + Lane Load	50	930.83	44214.425	1641.66	3484.47	12.2179
106	CT-L3S2 + Lane Load	50	930.83	44214.425	1194.55	4116.56	10.4504
106	CT-L3S2 + Lane Load	50	930.83	44214.425	1672.43	4322.64	9.8417
107	CT-L3S2 + Lane Load	50	930.83	44214.425	1714.84	3527.49	12.0481
107	CT-L3S2 + Lane Load	50	930.83	44214.425	1395.64	2894.8	14.7916
108	CT-L3S2 + Lane Load	50	930.83	44214.425	1758.58	4398.03	9.6534

108	CT-L3S2 + Lane Load	50	930.83	44214.425	1395.64	2894.8	14.7916
109	CT-L3S2 + Lane Load	50	930.83	44214.425	1758.58	4398.03	9.6534
109	CT-L3S2 + Lane Load	50	930.83	44214.425	1010.22	2949.85	14.6462
110	CT-L3S2 + Lane Load	50	930.83	44214.425	1422.34	2922.98	14.6399
110	CT-L3S2 + Lane Load	50	930.83	44214.425	-12.25	-2324.38	19.0168
111	CT-L3S2 + Lane Load	50	930.83	44214.425	845.77	2714.01	15.9795
111	CT-L3S2 + Lane Load	50	930.83	44214.425	-66.58	-897.25	49.2035
112	CT-L3S2 + Lane Load	50	930.83	44214.425	-135.21	-2593.87	16.9936
112	CT-L3S2 + Lane Load	50	930.83	44214.425	-12.11	94.02	470.1374
113	CT-L3S2 + Lane Load	50	930.83	44214.425	-0.68	-89.38	494.6716
113	CT-L3S2 + Lane Load	50	930.83	44214.425	-116.97	-1105.8	39.8783
114	CT-L3S2 + Lane Load	50	930.83	44214.425	-33.95	-435.02	101.5596
114	CT-L3S2 + Lane Load	50	930.83	44214.425	953.53	2225.1	19.4422
115	CT-L3S2 + Lane Load	50	930.83	44214.425	-1.02	-960.61	46.0264
115	CT-L3S2 + Lane Load	50	930.83	44214.425	1563.01	3414.7	12.4905
116	CT-L3S2 + Lane Load	50	930.83	44214.425	1069.45	2397.38	17.9967
116	CT-L3S2 + Lane Load	50	930.83	44214.425	1802.46	3950.53	10.7358
117	CT-L3S2 + Lane Load	50	930.83	44214.425	1506.9	3335.91	12.8024
117	CT-L3S2 + Lane Load	50	930.83	44214.425	1802.46	3950.53	10.7358
118	CT-L3S2 + Lane Load	50	930.83	44214.425	1506.9	3335.91	12.8024
118	CT-L3S2 + Lane Load	50	930.83	44214.425	1715.13	3832.3	11.0898
119	CT-L3S2 + Lane Load	50	930.83	44214.425	1723.17	3867.47	10.9868
119	CT-L3S2 + Lane Load	50	930.83	44214.425	1186.94	3535.52	12.1701
120	CT-L3S2 + Lane Load	50	930.83	44214.425	1663.62	3793.08	11.2180
120	CT-L3S2 + Lane Load	50	930.83	44214.425	1186.94	3535.52	12.1701
121	CT-L3S2 + Lane Load	50	930.83	44214.425	1663.62	3793.08	11.2180
121	CT-L3S2 + Lane Load	50	930.83	44214.425	562.52	3025.36	14.4287
122	CT-L3S2 + Lane Load	50	930.83	44214.425	1148.86	3481.49	12.3699
122	CT-L3S2 + Lane Load	50	930.83	44214.425	-617.18	-2082.39	20.9362
123	CT-L3S2 + Lane Load	50	930.83	44214.425	272.43	2751.08	15.9726
123	CT-L3S2 + Lane Load	50	930.83	44214.425	-617.18	-2082.39	20.9362
124	CT-L3S2 + Lane Load	50	930.83	44214.425	272.43	2751.08	15.9726
124	CT-L3S2 + Lane Load	50	930.83	44214.425	-1809.06	-2339.67	18.1245
125	CT-L3S2 + Lane Load	50	930.83	44214.425	-1402.75	-2256.66	18.9713
125	CT-L3S2 + Lane Load	50	930.83	44214.425	-2826.46	-2527.58	16.3745
126	CT-L3S2 + Lane Load	50	930.83	44214.425	-1824.86	-2340.83	18.1088
126	CT-L3S2 + Lane Load	50	930.83	44214.425	-3948.63	-3276.89	12.2878
127	CT-L3S2 + Lane Load	50	930.83	44214.425	-3947.65	-3270.76	12.3111
127	CT-L3S2 + Lane Load	50	930.83	44214.425	-1823.98	-2301.48	18.4188
128	CT-L3S2 + Lane Load	50	930.83	44214.425	-2825.51	-2485.22	16.6540
128	CT-L3S2 + Lane Load	50	930.83	44214.425	-1401.87	-2218.6	19.2971
129	CT-L3S2 + Lane Load	50	930.83	44214.425	-1808.15	-2300.21	18.4358
129	CT-L3S2 + Lane Load	50	930.83	44214.425	273.22	2721.53	16.1458
130	CT-L3S2 + Lane Load	50	930.83	44214.425	-616.31	-2047.12	21.2973
130	CT-L3S2 + Lane Load	50	930.83	44214.425	273.22	2721.53	16.1458
131	CT-L3S2 + Lane Load	50	930.83	44214.425	-616.31	-2047.12	21.2973
131	CT-L3S2 + Lane Load	50	930.83	44214.425	1149.64	3452.23	12.4745
132	CT-L3S2 + Lane Load	50	930.83	44214.425	563.42	2995.28	14.5733
132	CT-L3S2 + Lane Load	50	930.83	44214.425	1664.29	3778.91	11.2599
133	CT-L3S2 + Lane Load	50	930.83	44214.425	1187.78	3506.15	12.2718
133	CT-L3S2 + Lane Load	50	930.83	44214.425	1664.29	3778.91	11.2599
134	CT-L3S2 + Lane Load	50	930.83	44214.425	1187.78	3506.15	12.2718
134	CT-L3S2 + Lane Load	50	930.83	44214.425	1723.65	3854.55	11.0235
135	CT-L3S2 + Lane Load	50	930.83	44214.425	1715.88	3818.45	11.1298
135	CT-L3S2 + Lane Load	50	930.83	44214.425	1507.13	3324.7	12.8455
136	CT-L3S2 + Lane Load	50	930.83	44214.425	1803.05	3936.31	10.7744
136	CT-L3S2 + Lane Load	50	930.83	44214.425	1507.13	3324.7	12.8455
137	CT-L3S2 + Lane Load	50	930.83	44214.425	1803.05	3936.31	10.7744
137	CT-L3S2 + Lane Load	50	930.83	44214.425	1069.61	2391.08	18.0441
138	CT-L3S2 + Lane Load	50	930.83	44214.425	1563.33	3403.19	12.5327
138	CT-L3S2 + Lane Load	50	930.83	44214.425	-1.05	-960.67	46.0235
139	CT-L3S2 + Lane Load	50	930.83	44214.425	953.7	2219.07	19.4950
139	CT-L3S2 + Lane Load	50	930.83	44214.425	-33.98	-434.94	101.5783
140	CT-L3S2 + Lane Load	50	930.83	44214.425	-117	-1105.66	39.8834
140	CT-L3S2 + Lane Load	50	930.83	44214.425	-0.68	-89.37	494.7269
141	CT-L3S2 + Lane Load	50	930.83	44214.425	58.93	166.57	265.0867
141	CT-L3S2 + Lane Load	50	930.83	44214.425	109.06	-1263.46	34.9084
142	CT-L3S2 + Lane Load	50	930.83	44214.425	155.03	-388.55	113.3944
142	CT-L3S2 + Lane Load	50	930.83	44214.425	1370.13	2793.12	15.3392
143	CT-L3S2 + Lane Load	50	930.83	44214.425	152.32	-1182.31	37.2678
143	CT-L3S2 + Lane Load	50	930.83	44214.425	1944.11	4204.58	10.0534
144	CT-L3S2 + Lane Load	50	930.83	44214.425	1278.47	2647.65	16.2166
144	CT-L3S2 + Lane Load	50	930.83	44214.425	1902.22	4092.86	10.3381
145	CT-L3S2 + Lane Load	50	930.83	44214.425	1833.31	4031.81	10.5117
145	CT-L3S2 + Lane Load	50	930.83	44214.425	1902.22	4092.86	10.3381

146	CT-L3S2 + Lane Load	50	930.83	44214.425	1833.31	4031.81	10.5117
146	CT-L3S2 + Lane Load	50	930.83	44214.425	1706.67	4081.24	10.4154
147	CT-L3S2 + Lane Load	50	930.83	44214.425	1886.67	4075.56	10.3858
147	CT-L3S2 + Lane Load	50	930.83	44214.425	1169.6	3491.29	12.3292
148	CT-L3S2 + Lane Load	50	930.83	44214.425	1713.96	4072.36	10.4363
148	CT-L3S2 + Lane Load	50	930.83	44214.425	1169.6	3491.29	12.3292
149	CT-L3S2 + Lane Load	50	930.83	44214.425	1713.96	4072.36	10.4363
149	CT-L3S2 + Lane Load	50	930.83	44214.425	522.96	3152.86	13.8577
150	CT-L3S2 + Lane Load	50	930.83	44214.425	1164.64	3498.46	12.3054
150	CT-L3S2 + Lane Load	50	930.83	44214.425	-666.53	-2258.78	19.2794
151	CT-L3S2 + Lane Load	50	930.83	44214.425	247.3	2799.85	15.7034
151	CT-L3S2 + Lane Load	50	930.83	44214.425	-666.53	-2258.78	19.2794
152	CT-L3S2 + Lane Load	50	930.83	44214.425	247.3	2799.85	15.7034
152	CT-L3S2 + Lane Load	50	930.83	44214.425	-1800.28	-2480.47	17.0992
153	CT-L3S2 + Lane Load	50	930.83	44214.425	-1407.95	-2407.75	17.7786
153	CT-L3S2 + Lane Load	50	930.83	44214.425	-2817.36	-2667.78	15.5174
154	CT-L3S2 + Lane Load	50	930.83	44214.425	-1820.09	-2488.19	17.0382
154	CT-L3S2 + Lane Load	50	930.83	44214.425	-3942.87	-3413.03	11.7994
155	CT-L3S2 + Lane Load	50	930.83	44214.425	-3941.88	-3412.16	11.8027
155	CT-L3S2 + Lane Load	50	930.83	44214.425	-1819.32	-2447.94	17.3187
156	CT-L3S2 + Lane Load	50	930.83	44214.425	-2816.45	-2624.76	15.7721
156	CT-L3S2 + Lane Load	50	930.83	44214.425	-1407.2	-2369	18.0697
157	CT-L3S2 + Lane Load	50	930.83	44214.425	-1799.47	-2440.53	17.3794
157	CT-L3S2 + Lane Load	50	930.83	44214.425	247.85	2769.14	15.8773
158	CT-L3S2 + Lane Load	50	930.83	44214.425	-665.8	-2222.34	19.5958
158	CT-L3S2 + Lane Load	50	930.83	44214.425	247.85	2769.14	15.8773
159	CT-L3S2 + Lane Load	50	930.83	44214.425	-665.8	-2222.34	19.5958
159	CT-L3S2 + Lane Load	50	930.83	44214.425	1165.09	3469.27	12.4088
160	CT-L3S2 + Lane Load	50	930.83	44214.425	523.6	3121.43	13.9971
160	CT-L3S2 + Lane Load	50	930.83	44214.425	1714.21	4056.17	10.4779
161	CT-L3S2 + Lane Load	50	930.83	44214.425	1170.12	3462.07	12.4331
161	CT-L3S2 + Lane Load	50	930.83	44214.425	1714.21	4056.17	10.4779
162	CT-L3S2 + Lane Load	50	930.83	44214.425	1170.12	3462.07	12.4331
162	CT-L3S2 + Lane Load	50	930.83	44214.425	1886.84	4061.12	10.4226
163	CT-L3S2 + Lane Load	50	930.83	44214.425	1706.98	4065.06	10.4568
163	CT-L3S2 + Lane Load	50	930.83	44214.425	1833.32	4018.22	10.5472
164	CT-L3S2 + Lane Load	50	930.83	44214.425	1902.42	4078.26	10.3750
164	CT-L3S2 + Lane Load	50	930.83	44214.425	1833.32	4018.22	10.5472
165	CT-L3S2 + Lane Load	50	930.83	44214.425	1902.42	4078.26	10.3750
165	CT-L3S2 + Lane Load	50	930.83	44214.425	1278.54	2638.87	16.2706
166	CT-L3S2 + Lane Load	50	930.83	44214.425	1944.18	4190.32	10.0876
166	CT-L3S2 + Lane Load	50	930.83	44214.425	152.41	-1182.79	37.2526
167	CT-L3S2 + Lane Load	50	930.83	44214.425	1370.27	2783.68	15.3912
167	CT-L3S2 + Lane Load	50	930.83	44214.425	155.1	-388.73	113.3417
168	CT-L3S2 + Lane Load	50	930.83	44214.425	109.15	-1263.96	34.8945
168	CT-L3S2 + Lane Load	50	930.83	44214.425	58.95	166.36	265.4212
169	CT-L3S2 + Lane Load	50	930.83	44214.425	-27.98	-146.96	300.6699
169	CT-L3S2 + Lane Load	50	930.83	44214.425	2763.91	5382.36	7.7012
170	CT-L3S2 + Lane Load	50	930.83	44214.425	1347.53	2636.59	16.2585
170	CT-L3S2 + Lane Load	50	930.83	44214.425	2357.71	4922.79	8.5026
171	CT-L3S2 + Lane Load	50	930.83	44214.425	2521.66	4871.39	8.5587
171	CT-L3S2 + Lane Load	50	930.83	44214.425	1919.32	4481.04	9.4387
172	CT-L3S2 + Lane Load	50	930.83	44214.425	2233.93	4655.8	9.0168
172	CT-L3S2 + Lane Load	50	930.83	44214.425	1843.96	4705.98	9.0035
173	CT-L3S2 + Lane Load	50	930.83	44214.425	2117.39	4687.04	8.9816
173	CT-L3S2 + Lane Load	50	930.83	44214.425	1843.96	4705.98	9.0035
174	CT-L3S2 + Lane Load	50	930.83	44214.425	2117.39	4687.04	8.9816
174	CT-L3S2 + Lane Load	50	930.83	44214.425	1593.26	4410.84	9.6628
175	CT-L3S2 + Lane Load	50	930.83	44214.425	1999.48	4829.08	8.7418
175	CT-L3S2 + Lane Load	50	930.83	44214.425	1034.92	4018.08	10.7463
176	CT-L3S2 + Lane Load	50	930.83	44214.425	1682.13	4477.28	9.4996
176	CT-L3S2 + Lane Load	50	930.83	44214.425	1034.92	4018.08	10.7463
177	CT-L3S2 + Lane Load	50	930.83	44214.425	1682.13	4477.28	9.4996
177	CT-L3S2 + Lane Load	50	930.83	44214.425	431.21	3418.28	12.8086
178	CT-L3S2 + Lane Load	50	930.83	44214.425	1116.72	4077.61	10.5694
178	CT-L3S2 + Lane Load	50	930.83	44214.425	-703.26	-2351.06	18.5070
179	CT-L3S2 + Lane Load	50	930.83	44214.425	233.07	3167.46	13.8854
179	CT-L3S2 + Lane Load	50	930.83	44214.425	-703.26	-2351.06	18.5070
180	CT-L3S2 + Lane Load	50	930.83	44214.425	233.07	3167.46	13.8854
180	CT-L3S2 + Lane Load	50	930.83	44214.425	-1715.31	-2594.19	16.3824
181	CT-L3S2 + Lane Load	50	930.83	44214.425	-1320.56	-2509.26	17.0942
181	CT-L3S2 + Lane Load	50	930.83	44214.425	-2623.01	-2768.69	15.0221
182	CT-L3S2 + Lane Load	50	930.83	44214.425	-1668.68	-2587.54	16.4425
182	CT-L3S2 + Lane Load	50	930.83	44214.425	-3675.61	-3675.6	11.0292
183	CT-L3S2 + Lane Load	50	930.83	44214.425	-3674.64	-3682.11	11.0099

183	CT-L3S2 + Lane Load	50	930.83	44214.425	-1668.05	-2556.84	16.6402
184	CT-L3S2 + Lane Load	50	930.83	44214.425	-2622.16	-2735.24	15.2061
184	CT-L3S2 + Lane Load	50	930.83	44214.425	-1319.96	-2479.4	17.3003
185	CT-L3S2 + Lane Load	50	930.83	44214.425	-1714.61	-2563.42	16.5793
185	CT-L3S2 + Lane Load	50	930.83	44214.425	233.34	3142.1	13.9974
186	CT-L3S2 + Lane Load	50	930.83	44214.425	-702.69	-2323.02	18.7307
186	CT-L3S2 + Lane Load	50	930.83	44214.425	233.34	3142.1	13.9974
187	CT-L3S2 + Lane Load	50	930.83	44214.425	-702.69	-2323.02	18.7307
187	CT-L3S2 + Lane Load	50	930.83	44214.425	1116.83	4050.26	10.6407
188	CT-L3S2 + Lane Load	50	930.83	44214.425	431.57	3391.76	12.9086
188	CT-L3S2 + Lane Load	50	930.83	44214.425	1681.98	4463.77	9.5284
189	CT-L3S2 + Lane Load	50	930.83	44214.425	1035.1	3993.83	10.8115
189	CT-L3S2 + Lane Load	50	930.83	44214.425	1681.98	4463.77	9.5284
190	CT-L3S2 + Lane Load	50	930.83	44214.425	1035.1	3993.83	10.8115
190	CT-L3S2 + Lane Load	50	930.83	44214.425	1999.37	4814.72	8.7679
191	CT-L3S2 + Lane Load	50	930.83	44214.425	1593.16	4397.43	9.6923
191	CT-L3S2 + Lane Load	50	930.83	44214.425	2117.21	4674.84	9.0051
192	CT-L3S2 + Lane Load	50	930.83	44214.425	1843.78	4694.04	9.0265
192	CT-L3S2 + Lane Load	50	930.83	44214.425	2117.21	4674.84	9.0051
193	CT-L3S2 + Lane Load	50	930.83	44214.425	1843.78	4694.04	9.0265
193	CT-L3S2 + Lane Load	50	930.83	44214.425	2234.09	4639.82	9.0478
194	CT-L3S2 + Lane Load	50	930.83	44214.425	1919.04	4469.46	9.4632
194	CT-L3S2 + Lane Load	50	930.83	44214.425	2522.53	4856.34	8.5850
195	CT-L3S2 + Lane Load	50	930.83	44214.425	2357.96	4906.95	8.5300
195	CT-L3S2 + Lane Load	50	930.83	44214.425	1348.01	2628.77	16.3066
196	CT-L3S2 + Lane Load	50	930.83	44214.425	2764.84	5366.39	7.7239
196	CT-L3S2 + Lane Load	50	930.83	44214.425	-27.99	-147.74	299.0824

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

SWING SPAN – LOAD COMBINATION ANALYSIS

```
*****************************************************************************************************
**          MIDAS/Civil V.8.5.1    Modeling, Integrated Design & Analysis Software                  **
**                           CIVIL STRUCTURE DESIGN SYSTEM                                         **
*****************************************************************************************************

                    XXX   XXX     XX    XXXXXXXX      XXXXXXX    XXXXXXXX
                    XXXX XXXX     XX    XX     XX     XX   XX    XX    XX
                    XX XXX XX     XX    XX     XX     XX   XX    XX
                    XX  X  XX     XX    XX     XX     XXXXXXX    XXXXXXXX
                    XXX    XX    XXX    XXX    XX     XX   XX         XXX
                    XXX    XX    XXX    XXX    XX    XXX   XX    XX   XXX
                    XXX    XX    XXX    XXX    XX    XXX   XX    XX   XXX
                    XXX    XX    XXX    XXXXXXXX     XXX   XX    XXXXXXXX  /Civil

                                     VERSION 8.5.1
```



```
*****************************************************************************************************
```

ANALYSIS RESULT OUTPUT

```
LOAD SET FOR DISPLACMENT OUTPUT - Strength I HL-93 Inv.


<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

   ABBREVIATION    FULL NAME                       TYPE             DESCRIPTION
   ------------  ------------------------------ ---------- ----------------------------------------
     Self W~1       Self Weight                   Static
     Guide ~1       Guide Rail                    Static
     Wearin~1       Wearing Surface               Static
     S1 HL-~1       S1 HL-93 INV                  Gen.Comb
   ------------  ------------------------------ ---------- ----------------------------------------


<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>


[Selected Load Combinations]

    L. COMB    TYPE                             COMBINATION DETAIL
    -------- ---------- ---------------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

LOAD SET FOR REACTION OUTPUT - Strength I HL-93 Inv.

<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

```
   ABBREVIATION    FULL NAME                       TYPE             DESCRIPTION
   ------------  ------------------------------ ---------- ----------------------------------------
    No Abbreviation was defined in this Load Set. All names are less than 8 char.'s
   ------------  ------------------------------ ---------- ----------------------------------------
```

<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>

[Selected Load Combinations]

```
    L. COMB    TYPE                              COMBINATION DETAIL
    -------- ---------- ----------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

LOAD SET FOR ELEMENT OUTPUT - Strength I HL-93 Inv.

<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

```
   ABBREVIATION    FULL NAME                       TYPE             DESCRIPTION
   ------------  ------------------------------ ---------- ----------------------------------------
    No Abbreviation was defined in this Load Set. All names are less than 8 char.'s
   ------------  ------------------------------ ---------- ----------------------------------------
```

<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>

[Selected Load Combinations]

```
    L. COMB    TYPE                              COMBINATION DETAIL
    -------- ---------- ----------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

NODE DISPLACEMENT AND ROTATIONS DEFAULT PRINTOUT Unit System : kips , in

NODE	LC		UX	UY	UZ	RX	RY	RZ
35	S1 HL-~1	Max	0.051	0.001	-0.157	-0.0	0.0	-0.0
		Min	0.051	0.001	-0.157	-0.0	0.0	-0.0
36	S1 HL-~1	Max	0.046	-0.000	-0.156	-0.0	0.0	-0.0
		Min	0.046	-0.000	-0.156	-0.0	0.0	-0.0
55	S1 HL-~1	Max	0.058	0.001	-0.207	-0.0	0.0	-0.0
		Min	0.058	0.001	-0.207	-0.0	0.0	-0.0
56	S1 HL-~1	Max	0.035	0.000	-0.207	-0.0	0.0	0.0
		Min	0.035	0.000	-0.207	-0.0	0.0	0.0
63	S1 HL-~1	Max	0.043	0.001	-0.182	-0.0	-0.0	-0.0
		Min	0.043	0.001	-0.182	-0.0	-0.0	-0.0
64	S1 HL-~1	Max	0.057	0.000	-0.182	-0.0	-0.0	-0.0
		Min	0.057	0.000	-0.182	-0.0	-0.0	-0.0
81	S1 HL-~1	Max	0.041	-0.001	-0.278	0.0	-0.0	0.0
		Min	0.041	-0.001	-0.278	0.0	-0.0	0.0
82	S1 HL-~1	Max	0.061	0.000	-0.277	0.0	-0.0	0.0
		Min	0.061	0.000	-0.277	0.0	-0.0	0.0
95	S1 HL-~1	Max	0.046	-0.001	-0.343	0.0	-0.0	0.0
		Min	0.046	-0.001	-0.343	0.0	-0.0	0.0
96	S1 HL-~1	Max	0.050	0.002	-0.343	0.0	-0.0	-0.0
		Min	0.050	0.002	-0.343	0.0	-0.0	-0.0
688	S1 HL-~1	Max	0.051	-0.000	-0.465	-0.0	-0.0	0.0
		Min	0.051	-0.000	-0.465	-0.0	-0.0	0.0
689	S1 HL-~1	Max	0.047	-0.003	-0.398	-0.0	0.0	0.0
		Min	0.047	-0.003	-0.398	-0.0	0.0	0.0
690	S1 HL-~1	Max	0.046	-0.004	-0.263	0.0	0.0	0.0
		Min	0.046	-0.004	-0.263	0.0	0.0	0.0
691	S1 HL-~1	Max	0.031	0.025	-0.004	0.0	0.0	0.0
		Min	0.031	0.025	-0.004	0.0	0.0	0.0
692	S1 HL-~1	Max	0.065	0.023	-0.206	0.0	-0.0	-0.0
		Min	0.065	0.023	-0.206	0.0	-0.0	-0.0
693	S1 HL-~1	Max	0.048	0.001	-0.157	0.0	0.0	-0.0
		Min	0.048	0.001	-0.157	0.0	0.0	-0.0
700	S1 HL-~1	Max	0.055	-0.000	-0.251	-0.0	0.0	0.0
		Min	0.055	-0.000	-0.251	-0.0	0.0	0.0
701	S1 HL-~1	Max	0.049	-0.001	-0.343	0.0	0.0	0.0
		Min	0.049	-0.001	-0.343	0.0	0.0	0.0

702 S1 HL-~1	Max	0.042	-0.001	-0.315	-0.0	-0.0	0.0
	Min	0.042	-0.001	-0.315	-0.0	-0.0	0.0
703 S1 HL-~1	Max	0.046	-0.002	-0.413	-0.0	-0.0	-0.0
	Min	0.046	-0.002	-0.413	-0.0	-0.0	-0.0
704 S1 HL-~1	Max	0.052	-0.003	-0.465	0.0	0.0	-0.0
	Min	0.052	-0.003	-0.465	0.0	0.0	-0.0
705 S1 HL-~1	Max	0.059	-0.002	-0.398	-0.0	0.0	-0.0
	Min	0.059	-0.002	-0.398	-0.0	0.0	-0.0
712 S1 HL-~1	Max	0.021	-0.010	-0.250	-0.0	0.0	0.0
	Min	0.021	-0.010	-0.250	-0.0	0.0	0.0
713 S1 HL-~1	Max	0.042	0.005	-0.342	0.0	0.0	0.0
	Min	0.042	0.005	-0.342	0.0	0.0	0.0
714 S1 HL-~1	Max	0.058	0.000	-0.315	0.0	-0.0	-0.0
	Min	0.058	0.000	-0.315	0.0	-0.0	-0.0
715 S1 HL-~1	Max	0.072	-0.012	-0.413	-0.0	-0.0	-0.0
	Min	0.072	-0.012	-0.413	-0.0	-0.0	-0.0
716 S1 HL-~1	Max	0.050	0.004	-0.465	0.0	0.0	-0.0
	Min	0.050	0.004	-0.465	0.0	0.0	-0.0
717 S1 HL-~1	Max	0.035	-0.001	-0.397	0.0	0.0	0.0
	Min	0.035	-0.001	-0.397	0.0	0.0	0.0
719 S1 HL-~1	Max	0.046	0.000	-0.207	0.0	0.0	0.0
	Min	0.046	0.000	-0.207	0.0	0.0	0.0
721 S1 HL-~1	Max	0.050	0.001	-0.182	0.0	-0.0	-0.0
	Min	0.050	0.001	-0.182	0.0	-0.0	-0.0
723 S1 HL-~1	Max	0.051	-0.000	-0.278	0.0	-0.0	0.0
	Min	0.051	-0.000	-0.278	0.0	-0.0	0.0
725 S1 HL-~1	Max	0.048	0.000	-0.343	0.0	-0.0	-0.0
	Min	0.048	0.000	-0.343	0.0	-0.0	-0.0
727 S1 HL-~1	Max	0.041	0.001	-0.306	0.0	0.0	-0.0
	Min	0.041	0.001	-0.306	0.0	0.0	-0.0
729 S1 HL-~1	Max	0.033	-0.007	-0.134	-0.0	0.0	-0.0
	Min	0.033	-0.007	-0.134	-0.0	0.0	-0.0
731 S1 HL-~1	Max	0.046	-0.001	-0.343	0.0	0.0	-0.0
	Min	0.046	-0.001	-0.343	0.0	0.0	-0.0
733 S1 HL-~1	Max	0.049	-0.001	-0.449	0.0	0.0	0.0
	Min	0.049	-0.001	-0.449	0.0	0.0	0.0
735 S1 HL-~1	Max	0.055	-0.001	-0.451	0.0	-0.0	0.0
	Min	0.055	-0.001	-0.451	0.0	-0.0	0.0

737	S1	HL--~1	Max	0.064	-0.009	-0.319	-0.0	-0.0	0.0
			Min	0.064	-0.009	-0.319	-0.0	-0.0	0.0
1013	S1	HL--~1	Max	0.050	0.002	-0.344	0.0	-0.0	0.0
			Min	0.050	0.002	-0.344	0.0	-0.0	0.0
1015	S1	HL--~1	Max	0.006	-0.018	-0.128	-0.0	0.0	0.0
			Min	0.006	-0.018	-0.128	-0.0	0.0	0.0
1087	S1	HL--~1	Max	0.061	0.000	-0.221	0.0	-0.0	0.0
			Min	0.061	0.000	-0.221	0.0	-0.0	0.0
1121	S1	HL--~1	Max	0.032	-0.000	-0.263	0.0	0.0	0.0
			Min	0.032	-0.000	-0.263	0.0	0.0	0.0
1148	S1	HL--~1	Max	0.043	0.001	-0.449	0.0	0.0	0.0
			Min	0.043	0.001	-0.449	0.0	0.0	0.0
1152	S1	HL--~1	Max	0.087	-0.020	-0.314	-0.0	-0.0	0.0
			Min	0.087	-0.020	-0.314	-0.0	-0.0	0.0
1153	S1	HL--~1	Max	0.002	-0.000	-0.024	-0.0	0.0	0.0
			Min	0.002	-0.000	-0.024	-0.0	0.0	0.0
1177	S1	HL--~1	Max	0.090	-0.002	-0.226	-0.0	-0.0	0.0
			Min	0.090	-0.002	-0.226	-0.0	-0.0	0.0
1206	S1	HL--~1	Max	0.061	0.000	-0.278	0.0	-0.0	0.0
			Min	0.061	0.000	-0.278	0.0	-0.0	0.0
1207	S1	HL--~1	Max	0.031	0.003	-0.306	0.0	0.0	0.0
			Min	0.031	0.003	-0.306	0.0	0.0	0.0
1208	S1	HL--~1	Max	0.032	-0.000	-0.343	0.0	0.0	0.0
			Min	0.032	-0.000	-0.343	0.0	0.0	0.0
1332	S1	HL--~1	Max	0.061	0.001	-0.451	0.0	-0.0	0.0
			Min	0.061	0.001	-0.451	0.0	-0.0	0.0
1383	S1	HL--~1	Max	0.062	-0.002	-0.005	-0.0	0.0	0.0
			Min	0.062	-0.002	-0.005	-0.0	0.0	0.0
1384	S1	HL--~1	Max	0.093	-0.002	-0.202	-0.0	-0.0	0.0
			Min	0.093	-0.002	-0.202	-0.0	-0.0	0.0
1492	S1	HL--~1	Max	0.039	-0.004	-0.207	-0.0	-0.0	-0.0
			Min	0.039	-0.004	-0.207	-0.0	-0.0	-0.0
1493	S1	HL--~1	Max	-0.000	0.000	0.000	-0.0	0.0	-0.0
			Min	-0.000	0.000	0.000	-0.0	0.0	-0.0
1591	S1	HL--~1	Max	0.059	-0.004	-0.413	0.0	-0.0	-0.0
			Min	0.059	-0.004	-0.413	0.0	-0.0	-0.0
1599	S1	HL--~1	Max	0.002	-0.012	-0.071	-0.0	0.0	-0.0
			Min	0.002	-0.012	-0.071	-0.0	0.0	-0.0
1614	S1	HL--~1	Max	0.042	0.001	-0.193	-0.0	-0.0	0.0
			Min	0.042	0.001	-0.193	-0.0	-0.0	0.0

1615	S1	HL-~1	Max	0.059	0.000	-0.194	0.0	-0.0	0.0
			Min	0.059	0.000	-0.194	0.0	-0.0	0.0
1621	S1	HL-~1	Max	0.041	0.000	-0.220	-0.0	-0.0	0.0
			Min	0.041	0.000	-0.220	-0.0	-0.0	0.0
1662	S1	HL-~1	Max	0.042	0.001	-0.448	0.0	0.0	0.0
			Min	0.042	0.001	-0.448	0.0	0.0	0.0
1697	S1	HL-~1	Max	0.053	-0.001	-0.306	0.0	0.0	-0.0
			Min	0.053	-0.001	-0.306	0.0	0.0	-0.0
1705	S1	HL-~1	Max	0.030	0.003	-0.306	0.0	0.0	0.0
			Min	0.030	0.003	-0.306	0.0	0.0	0.0
1718	S1	HL-~1	Max	0.063	0.001	-0.451	0.0	-0.0	-0.0
			Min	0.063	0.001	-0.451	0.0	-0.0	-0.0
1766	S1	HL-~1	Max	0.086	-0.021	-0.323	-0.0	-0.0	0.0
			Min	0.086	-0.021	-0.323	-0.0	-0.0	0.0
1801	S1	HL-~1	Max	0.060	0.003	-0.134	-0.0	0.0	0.0
			Min	0.060	0.003	-0.134	-0.0	0.0	0.0
1809	S1	HL-~1	Max	0.006	-0.018	-0.133	-0.0	0.0	0.0
			Min	0.006	-0.018	-0.133	-0.0	0.0	0.0
1862	S1	HL-~1	Max	0.061	0.000	-0.219	0.0	-0.0	0.0
			Min	0.061	0.000	-0.219	0.0	-0.0	0.0
1870	S1	HL-~1	Max	0.032	-0.000	-0.262	0.0	0.0	0.0
			Min	0.032	-0.000	-0.262	0.0	0.0	0.0
1905	S1	HL-~1	Max	0.060	-0.001	-0.343	0.0	0.0	-0.0
			Min	0.060	-0.001	-0.343	0.0	0.0	-0.0
1913	S1	HL-~1	Max	0.032	-0.001	-0.343	0.0	0.0	-0.0
			Min	0.032	-0.001	-0.343	0.0	0.0	-0.0
1926	S1	HL-~1	Max	-0.000	-0.012	-0.064	-0.0	0.0	0.0
			Min	-0.000	-0.012	-0.064	-0.0	0.0	0.0
1982	S1	HL-~1	Max	0.003	-0.012	-0.078	-0.0	0.0	0.0
			Min	0.003	-0.012	-0.078	-0.0	0.0	0.0
2030	S1	HL-~1	Max	0.091	-0.014	-0.265	-0.0	-0.0	0.0
			Min	0.091	-0.014	-0.265	-0.0	-0.0	0.0
2086	S1	HL-~1	Max	0.093	-0.014	-0.258	-0.0	-0.0	0.0
			Min	0.093	-0.014	-0.258	-0.0	-0.0	0.0
2087	S1	HL-~1	Max	0.062	0.001	-0.070	-0.0	0.0	-0.0
			Min	0.062	0.001	-0.070	-0.0	0.0	-0.0
2089	S1	HL-~1	Max	0.055	-0.002	-0.449	0.0	0.0	-0.0
			Min	0.055	-0.002	-0.449	0.0	0.0	-0.0

2097	S1	HL-~1	Max	0.043	0.001	-0.449	0.0	0.0	0.0
			Min	0.043	0.001	-0.449	0.0	0.0	0.0
2138	S1	HL-~1	Max	0.089	-0.014	-0.272	-0.0	-0.0	0.0
			Min	0.089	-0.014	-0.272	-0.0	-0.0	0.0
2139	S1	HL-~1	Max	0.039	-0.001	-0.264	-0.0	-0.0	0.0
			Min	0.039	-0.001	-0.264	-0.0	-0.0	0.0
2190	S1	HL-~1	Max	0.034	0.000	-0.225	0.0	0.0	-0.0
			Min	0.034	0.000	-0.225	0.0	0.0	-0.0
2193	S1	HL-~1	Max	0.049	-0.003	-0.451	0.0	-0.0	0.0
			Min	0.049	-0.003	-0.451	0.0	-0.0	0.0
2201	S1	HL-~1	Max	0.062	0.001	-0.451	0.0	-0.0	-0.0
			Min	0.062	0.001	-0.451	0.0	-0.0	-0.0
2242	S1	HL-~1	Max	0.059	0.000	-0.193	0.0	-0.0	0.0
			Min	0.059	0.000	-0.193	0.0	-0.0	0.0
2298	S1	HL-~1	Max	0.034	-0.000	-0.225	0.0	0.0	0.0
			Min	0.034	-0.000	-0.225	0.0	0.0	0.0
2299	S1	HL-~1	Max	0.059	0.000	-0.225	-0.0	0.0	-0.0
			Min	0.059	0.000	-0.225	-0.0	0.0	-0.0
2300	S1	HL-~1	Max	0.046	-0.000	-0.157	-0.0	0.0	-0.0
			Min	0.046	-0.000	-0.157	-0.0	0.0	-0.0
2301	S1	HL-~1	Max	0.041	0.001	-0.319	-0.0	-0.0	-0.0
			Min	0.041	0.001	-0.319	-0.0	-0.0	-0.0
2309	S1	HL-~1	Max	0.087	-0.020	-0.318	-0.0	-0.0	-0.0
			Min	0.087	-0.020	-0.318	-0.0	-0.0	-0.0
2372	S1	HL-~1	Max	0.035	0.000	-0.207	0.0	0.0	-0.0
			Min	0.035	0.000	-0.207	0.0	0.0	-0.0
2402	S1	HL-~1	Max	0.034	0.000	-0.225	0.0	0.0	0.0
			Min	0.034	0.000	-0.225	0.0	0.0	0.0
2404	S1	HL-~1	Max	0.057	0.001	-0.182	0.0	-0.0	0.0
			Min	0.057	0.001	-0.182	0.0	-0.0	0.0
2458	S1	HL-~1	Max	0.059	0.001	-0.193	0.0	-0.0	0.0
			Min	0.059	0.001	-0.193	0.0	-0.0	0.0
2476	S1	HL-~1	Max	0.061	0.000	-0.277	0.0	-0.0	0.0
			Min	0.061	0.000	-0.277	0.0	-0.0	0.0
2485	S1	HL-~1	Max	0.061	0.000	-0.220	0.0	-0.0	0.0
			Min	0.061	0.000	-0.220	0.0	-0.0	0.0
2493	S1	HL-~1	Max	0.060	-0.000	-0.263	-0.0	0.0	-0.0
			Min	0.060	-0.000	-0.263	-0.0	0.0	-0.0
2501	S1	HL-~1	Max	0.032	-0.000	-0.263	0.0	0.0	-0.0
			Min	0.032	-0.000	-0.263	0.0	0.0	-0.0

2509	S1	HL-~1	Max	-0.002	0.000	0.024	-0.0	0.0	0.0
			Min	-0.002	0.000	0.024	-0.0	0.0	0.0
2517	S1	HL-~1	Max	0.095	-0.002	-0.179	-0.0	-0.0	0.0
			Min	0.095	-0.002	-0.179	-0.0	-0.0	0.0
2524	S1	HL-~1	Max	0.050	0.002	-0.343	0.0	-0.0	-0.0
			Min	0.050	0.002	-0.343	0.0	-0.0	-0.0
2580	S1	HL-~1	Max	0.030	0.002	-0.305	0.0	0.0	0.0
			Min	0.030	0.002	-0.305	0.0	0.0	0.0
2613	S1	HL-~1	Max	0.046	-0.001	-0.155	-0.0	0.0	0.0
			Min	0.046	-0.001	-0.155	-0.0	0.0	0.0
2628	S1	HL-~1	Max	0.007	-0.019	-0.138	-0.0	0.0	-0.0
			Min	0.007	-0.019	-0.138	-0.0	0.0	-0.0
2684	S1	HL-~1	Max	0.032	-0.001	-0.343	-0.0	0.0	-0.0
			Min	0.032	-0.001	-0.343	-0.0	0.0	-0.0
2693	S1	HL-~1	Max	0.035	-0.000	-0.207	-0.0	0.0	0.0
			Min	0.035	-0.000	-0.207	-0.0	0.0	0.0
2699	S1	HL-~1	Max	0.038	-0.002	-0.251	0.0	0.0	0.0
			Min	0.038	-0.002	-0.251	0.0	0.0	0.0
2707	S1	HL-~1	Max	0.045	0.001	-0.343	-0.0	0.0	-0.0
			Min	0.045	0.001	-0.343	-0.0	0.0	-0.0
2715	S1	HL-~1	Max	0.050	-0.002	-0.315	-0.0	0.0	-0.0
			Min	0.050	-0.002	-0.315	-0.0	0.0	-0.0
2723	S1	HL-~1	Max	0.051	-0.004	-0.220	0.0	-0.0	-0.0
			Min	0.051	-0.004	-0.220	0.0	-0.0	-0.0
2725	S1	HL-~1	Max	0.057	0.000	-0.182	-0.0	-0.0	0.0
			Min	0.057	0.000	-0.182	-0.0	-0.0	0.0
3540	S1	HL-~1	Max	0.019	-0.010	-0.254	-0.0	0.0	0.0
			Min	0.019	-0.010	-0.254	-0.0	0.0	0.0
3541	S1	HL-~1	Max	0.042	0.005	-0.340	0.0	0.0	0.0
			Min	0.042	0.005	-0.340	0.0	0.0	0.0
3542	S1	HL-~1	Max	0.057	0.000	-0.314	0.0	-0.0	0.0
			Min	0.057	0.000	-0.314	0.0	-0.0	0.0
3543	S1	HL-~1	Max	0.073	-0.012	-0.417	-0.0	-0.0	0.0
			Min	0.073	-0.012	-0.417	-0.0	-0.0	0.0
3544	S1	HL-~1	Max	0.050	0.004	-0.463	0.0	0.0	0.0
			Min	0.050	0.004	-0.463	0.0	0.0	0.0
3545	S1	HL-~1	Max	0.035	-0.001	-0.397	0.0	0.0	0.0
			Min	0.035	-0.001	-0.397	0.0	0.0	0.0

3552 S1 HL-~1	Max	0.022	-0.010	-0.246	-0.0	0.0	0.0
	Min	0.022	-0.010	-0.246	-0.0	0.0	0.0
3553 S1 HL-~1	Max	0.042	0.006	-0.345	0.0	0.0	0.0
	Min	0.042	0.006	-0.345	0.0	0.0	0.0
3554 S1 HL-~1	Max	0.057	0.000	-0.316	0.0	-0.0	0.0
	Min	0.057	0.000	-0.316	0.0	-0.0	0.0
3555 S1 HL-~1	Max	0.070	-0.012	-0.409	-0.0	-0.0	0.0
	Min	0.070	-0.012	-0.409	-0.0	-0.0	0.0
3556 S1 HL-~1	Max	0.051	0.004	-0.467	0.0	0.0	0.0
	Min	0.051	0.004	-0.467	0.0	0.0	0.0
3557 S1 HL-~1	Max	0.035	-0.001	-0.399	0.0	0.0	0.0
	Min	0.035	-0.001	-0.399	0.0	0.0	0.0
3728 S1 HL-~1	Max	0.051	0.001	-0.157	0.0	0.0	-0.0
	Min	0.051	0.001	-0.157	0.0	0.0	-0.0
3736 S1 HL-~1	Max	0.058	0.001	-0.208	-0.0	0.0	-0.0
	Min	0.058	0.001	-0.208	-0.0	0.0	-0.0
3739 S1 HL-~1	Max	0.043	0.001	-0.182	-0.0	-0.0	0.0
	Min	0.043	0.001	-0.182	-0.0	-0.0	0.0
3744 S1 HL-~1	Max	0.041	0.000	-0.221	0.0	-0.0	0.0
	Min	0.041	0.000	-0.221	0.0	-0.0	0.0
3747 S1 HL-~1	Max	0.041	-0.000	-0.277	0.0	-0.0	0.0
	Min	0.041	-0.000	-0.277	0.0	-0.0	0.0
3753 S1 HL-~1	Max	0.046	-0.001	-0.341	0.0	-0.0	-0.0
	Min	0.046	-0.001	-0.341	0.0	-0.0	-0.0
3759 S1 HL-~1	Max	0.053	-0.001	-0.304	0.0	0.0	-0.0
	Min	0.053	-0.001	-0.304	0.0	0.0	-0.0
3765 S1 HL-~1	Max	0.059	0.003	-0.147	-0.0	0.0	0.0
	Min	0.059	0.003	-0.147	-0.0	0.0	0.0
3771 S1 HL-~1	Max	0.060	-0.001	-0.343	0.0	0.0	-0.0
	Min	0.060	-0.001	-0.343	0.0	0.0	-0.0
3776 S1 HL-~1	Max	0.060	-0.000	-0.264	0.0	0.0	0.0
	Min	0.060	-0.000	-0.264	0.0	0.0	0.0
3782 S1 HL-~1	Max	0.055	-0.002	-0.447	0.0	0.0	0.0
	Min	0.055	-0.002	-0.447	0.0	0.0	0.0
3788 S1 HL-~1	Max	0.048	-0.002	-0.449	0.0	-0.0	0.0
	Min	0.048	-0.002	-0.449	0.0	-0.0	0.0
3794 S1 HL-~1	Max	0.042	0.001	-0.332	-0.0	-0.0	-0.0
	Min	0.042	0.001	-0.332	-0.0	-0.0	-0.0
3806 S1 HL-~1	Max	0.060	0.001	-0.099	-0.0	0.0	0.0
	Min	0.060	0.001	-0.099	-0.0	0.0	0.0

3812	S1	HL-~1	Max	0.041	-0.001	-0.294	-0.0	-0.0	0.0
			Min	0.041	-0.001	-0.294	-0.0	-0.0	0.0
3818	S1	HL-~1	Max	0.059	0.000	-0.226	-0.0	0.0	0.0
			Min	0.059	0.000	-0.226	-0.0	0.0	0.0
3824	S1	HL-~1	Max	0.043	0.001	-0.194	0.0	-0.0	0.0
			Min	0.043	0.001	-0.194	0.0	-0.0	0.0
3841	S1	HL-~1	Max	0.041	-0.003	-0.254	-0.0	-0.0	0.0
			Min	0.041	-0.003	-0.254	-0.0	-0.0	0.0
3847	S1	HL-~1	Max	0.060	-0.002	-0.051	-0.0	0.0	0.0
			Min	0.060	-0.002	-0.051	-0.0	0.0	0.0
3849	S1	HL-~1	Max	0.056	0.000	-0.251	0.0	0.0	0.0
			Min	0.056	0.000	-0.251	0.0	0.0	0.0
3854	S1	HL-~1	Max	0.049	-0.001	-0.342	0.0	0.0	0.0
			Min	0.049	-0.001	-0.342	0.0	0.0	0.0
3859	S1	HL-~1	Max	0.043	-0.001	-0.316	0.0	-0.0	0.0
			Min	0.043	-0.001	-0.316	0.0	-0.0	0.0
3864	S1	HL-~1	Max	0.059	-0.002	-0.398	0.0	0.0	0.0
			Min	0.059	-0.002	-0.398	0.0	0.0	0.0
3869	S1	HL-~1	Max	0.052	-0.002	-0.464	0.0	0.0	0.0
			Min	0.052	-0.002	-0.464	0.0	0.0	0.0
3874	S1	HL-~1	Max	0.045	-0.001	-0.414	0.0	-0.0	0.0
			Min	0.045	-0.001	-0.414	0.0	-0.0	0.0
4356	S1	HL-~1	Max	0.051	0.001	-0.157	0.0	0.0	-0.0
			Min	0.051	0.001	-0.157	0.0	0.0	-0.0
4364	S1	HL-~1	Max	0.058	0.001	-0.207	-0.0	0.0	0.0
			Min	0.058	0.001	-0.207	-0.0	0.0	0.0
4367	S1	HL-~1	Max	0.043	0.001	-0.182	-0.0	-0.0	-0.0
			Min	0.043	0.001	-0.182	-0.0	-0.0	-0.0
4375	S1	HL-~1	Max	0.041	-0.001	-0.277	0.0	-0.0	-0.0
			Min	0.041	-0.001	-0.277	0.0	-0.0	-0.0
4381	S1	HL-~1	Max	0.046	-0.001	-0.343	0.0	-0.0	-0.0
			Min	0.046	-0.001	-0.343	0.0	-0.0	-0.0
4387	S1	HL-~1	Max	0.053	-0.001	-0.305	0.0	0.0	-0.0
			Min	0.053	-0.001	-0.305	0.0	0.0	-0.0
4393	S1	HL-~1	Max	0.060	0.003	-0.138	-0.0	0.0	0.0
			Min	0.060	0.003	-0.138	-0.0	0.0	0.0
4399	S1	HL-~1	Max	0.060	-0.001	-0.343	0.0	0.0	0.0
			Min	0.060	-0.001	-0.343	0.0	0.0	0.0

4410 S1 HL--~1	Max	0.055	-0.002	-0.448	0.0	0.0	0.0
	Min	0.055	-0.002	-0.448	0.0	0.0	0.0
4416 S1 HL--~1	Max	0.048	-0.003	-0.451	0.0	-0.0	0.0
	Min	0.048	-0.003	-0.451	0.0	-0.0	0.0
4422 S1 HL--~1	Max	0.041	0.001	-0.323	-0.0	-0.0	-0.0
	Min	0.041	0.001	-0.323	-0.0	-0.0	-0.0
4432 S1 HL--~1	Max	0.041	0.000	-0.221	-0.0	-0.0	0.0
	Min	0.041	0.000	-0.221	-0.0	-0.0	0.0
4433 S1 HL--~1	Max	0.060	-0.000	-0.263	-0.0	0.0	0.0
	Min	0.060	-0.000	-0.263	-0.0	0.0	0.0
4440 S1 HL--~1	Max	0.061	0.001	-0.079	-0.0	0.0	0.0
	Min	0.061	0.001	-0.079	-0.0	0.0	0.0
4452 S1 HL--~1	Max	0.040	-0.001	-0.273	-0.0	-0.0	0.0
	Min	0.040	-0.001	-0.273	-0.0	-0.0	0.0
4470 S1 HL--~1	Max	0.059	0.000	-0.225	-0.0	0.0	0.0
	Min	0.059	0.000	-0.225	-0.0	0.0	0.0
4476 S1 HL--~1	Max	0.043	0.001	-0.194	-0.0	-0.0	0.0
	Min	0.043	0.001	-0.194	-0.0	-0.0	0.0
4511 S1 HL--~1	Max	0.062	-0.002	-0.020	-0.0	0.0	0.0
	Min	0.062	-0.002	-0.020	-0.0	0.0	0.0
4517 S1 HL--~1	Max	0.039	-0.004	-0.223	-0.0	-0.0	0.0
	Min	0.039	-0.004	-0.223	-0.0	-0.0	0.0
4556 S1 HL--~1	Max	0.055	0.000	-0.251	-0.0	0.0	0.0
	Min	0.055	0.000	-0.251	-0.0	0.0	0.0
4557 S1 HL--~1	Max	0.049	-0.001	-0.342	0.0	0.0	0.0
	Min	0.049	-0.001	-0.342	0.0	0.0	0.0
4558 S1 HL--~1	Max	0.043	-0.001	-0.315	-0.0	-0.0	0.0
	Min	0.043	-0.001	-0.315	-0.0	-0.0	0.0
4559 S1 HL--~1	Max	0.046	-0.002	-0.414	-0.0	-0.0	0.0
	Min	0.046	-0.002	-0.414	-0.0	-0.0	0.0
4560 S1 HL--~1	Max	0.052	-0.003	-0.465	0.0	0.0	0.0
	Min	0.052	-0.003	-0.465	0.0	0.0	0.0
4561 S1 HL--~1	Max	0.059	-0.002	-0.398	-0.0	0.0	0.0
	Min	0.059	-0.002	-0.398	-0.0	0.0	0.0
4784 S1 HL--~1	Max	0.046	0.002	-0.163	-0.0	-0.0	0.0
	Min	0.046	0.002	-0.163	-0.0	-0.0	0.0
4785 S1 HL--~1	Max	0.053	-0.000	-0.163	-0.0	-0.0	-0.0
	Min	0.053	-0.000	-0.163	-0.0	-0.0	-0.0
4795 S1 HL--~1	Max	0.053	-0.000	-0.163	-0.0	-0.0	0.0
	Min	0.053	-0.000	-0.163	-0.0	-0.0	0.0

4799 S1 HL-~1	Max	0.053	0.000	-0.164	-0.0	-0.0	0.0
	Min	0.053	0.000	-0.164	-0.0	-0.0	0.0
4806 S1 HL-~1	Max	0.049	0.001	-0.162	-0.0	0.0	-0.0
	Min	0.049	0.001	-0.162	-0.0	0.0	-0.0
4817 S1 HL-~1	Max	0.046	0.001	-0.164	0.0	-0.0	0.0
	Min	0.046	0.001	-0.164	0.0	-0.0	0.0
4844 S1 HL-~1	Max	0.046	0.001	-0.163	-0.0	-0.0	0.0
	Min	0.046	0.001	-0.163	-0.0	-0.0	0.0
4852 S1 HL-~1	Max	0.055	0.001	-0.175	-0.0	0.0	-0.0
	Min	0.055	0.001	-0.175	-0.0	0.0	-0.0
4853 S1 HL-~1	Max	0.040	-0.000	-0.176	-0.0	0.0	0.0
	Min	0.040	-0.000	-0.176	-0.0	0.0	0.0
4866 S1 HL-~1	Max	0.040	-0.000	-0.175	-0.0	0.0	0.0
	Min	0.040	-0.000	-0.175	-0.0	0.0	0.0
4873 S1 HL-~1	Max	0.040	-0.000	-0.177	-0.0	0.0	0.0
	Min	0.040	-0.000	-0.177	-0.0	0.0	0.0
4881 S1 HL-~1	Max	0.048	0.001	-0.175	-0.0	0.0	-0.0
	Min	0.048	0.001	-0.175	-0.0	0.0	-0.0
4888 S1 HL-~1	Max	0.055	0.001	-0.177	0.0	0.0	0.0
	Min	0.055	0.001	-0.177	0.0	0.0	0.0
4918 S1 HL-~1	Max	0.055	0.001	-0.176	-0.0	0.0	0.0
	Min	0.055	0.001	-0.176	-0.0	0.0	0.0
4934 S1 HL-~1	Max	0.032	-0.008	-0.070	-0.0	0.0	-0.0
	Min	0.032	-0.008	-0.070	-0.0	0.0	-0.0
4940 S1 HL-~1	Max	0.064	-0.010	-0.264	-0.0	0.0	0.0
	Min	0.064	-0.010	-0.264	-0.0	0.0	0.0
4946 S1 HL-~1	Max	0.046	0.000	-0.225	-0.0	0.0	-0.0
	Min	0.046	0.000	-0.225	-0.0	0.0	-0.0
4952 S1 HL-~1	Max	0.051	0.001	-0.193	-0.0	0.0	0.0
	Min	0.051	0.001	-0.193	-0.0	0.0	0.0
4991 S1 HL-~1	Max	0.060	-0.001	-0.324	0.0	0.0	0.0
	Min	0.060	-0.001	-0.324	0.0	0.0	0.0
4992 S1 HL-~1	Max	0.060	-0.001	-0.323	-0.0	0.0	0.0
	Min	0.060	-0.001	-0.323	-0.0	0.0	0.0
4993 S1 HL-~1	Max	0.060	-0.001	-0.323	-0.0	0.0	-0.0
	Min	0.060	-0.001	-0.323	-0.0	0.0	-0.0
5007 S1 HL-~1	Max	0.046	-0.000	-0.323	-0.0	0.0	0.0
	Min	0.046	-0.000	-0.323	-0.0	0.0	0.0

5008	S1	HL-~1	Max	0.031	-0.000	-0.323	0.0	0.0	-0.0
			Min	0.031	-0.000	-0.323	0.0	0.0	-0.0
5021	S1	HL-~1	Max	0.031	-0.000	-0.323	0.0	0.0	0.0
			Min	0.031	-0.000	-0.323	0.0	0.0	0.0
5022	S1	HL-~1	Max	0.031	-0.000	-0.323	0.0	0.0	0.0
			Min	0.031	-0.000	-0.323	0.0	0.0	0.0
5046	S1	HL-~1	Max	0.041	-0.000	-0.264	0.0	-0.0	0.0
			Min	0.041	-0.000	-0.264	0.0	-0.0	0.0
5047	S1	HL-~1	Max	0.041	-0.000	-0.263	-0.0	-0.0	0.0
			Min	0.041	-0.000	-0.263	-0.0	-0.0	0.0
5048	S1	HL-~1	Max	0.041	-0.000	-0.263	-0.0	-0.0	0.0
			Min	0.041	-0.000	-0.263	-0.0	-0.0	0.0
5062	S1	HL-~1	Max	0.051	0.001	-0.263	-0.0	0.0	-0.0
			Min	0.051	0.001	-0.263	-0.0	0.0	-0.0
5063	S1	HL-~1	Max	0.061	0.000	-0.263	0.0	-0.0	0.0
			Min	0.061	0.000	-0.263	0.0	-0.0	0.0
5076	S1	HL-~1	Max	0.061	0.000	-0.263	0.0	-0.0	0.0
			Min	0.061	0.000	-0.263	0.0	-0.0	0.0
5077	S1	HL-~1	Max	0.061	0.000	-0.264	0.0	-0.0	0.0
			Min	0.061	0.000	-0.264	0.0	-0.0	0.0
5107	S1	HL-~1	Max	0.063	-0.002	0.022	-0.0	0.0	0.0
			Min	0.063	-0.002	0.022	-0.0	0.0	0.0
5108	S1	HL-~1	Max	0.063	0.001	-0.054	-0.0	0.0	0.0
			Min	0.063	0.001	-0.054	-0.0	0.0	0.0
5109	S1	HL-~1	Max	0.060	0.002	-0.126	-0.0	0.0	0.0
			Min	0.060	0.002	-0.126	-0.0	0.0	0.0
5110	S1	HL-~1	Max	0.055	-0.000	-0.251	0.0	0.0	0.0
			Min	0.055	-0.000	-0.251	0.0	0.0	0.0
5111	S1	HL-~1	Max	0.052	-0.001	-0.308	0.0	0.0	0.0
			Min	0.052	-0.001	-0.308	0.0	0.0	0.0
5112	S1	HL-~1	Max	0.049	-0.002	-0.345	0.0	0.0	0.0
			Min	0.049	-0.002	-0.345	0.0	0.0	0.0
5113	S1	HL-~1	Max	0.046	-0.002	-0.346	0.0	-0.0	0.0
			Min	0.046	-0.002	-0.346	0.0	-0.0	0.0
5114	S1	HL-~1	Max	0.043	-0.001	-0.316	0.0	-0.0	0.0
			Min	0.043	-0.001	-0.316	0.0	-0.0	0.0
5115	S1	HL-~1	Max	0.041	-0.001	-0.279	0.0	-0.0	0.0
			Min	0.041	-0.001	-0.279	0.0	-0.0	0.0
5116	S1	HL-~1	Max	0.041	-0.000	-0.264	0.0	-0.0	0.0
			Min	0.041	-0.000	-0.264	0.0	-0.0	0.0

5117	S1	HL-~1	Max	0.041	0.000	-0.219	-0.0	-0.0	0.0
			Min	0.041	0.000	-0.219	-0.0	-0.0	0.0
5118	S1	HL-~1	Max	0.043	0.001	-0.193	0.0	-0.0	0.0
			Min	0.043	0.001	-0.193	0.0	-0.0	0.0
5119	S1	HL-~1	Max	0.044	0.001	-0.182	0.0	-0.0	0.0
			Min	0.044	0.001	-0.182	0.0	-0.0	0.0
5120	S1	HL-~1	Max	0.046	0.002	-0.163	0.0	-0.0	0.0
			Min	0.046	0.002	-0.163	0.0	-0.0	0.0
5121	S1	HL-~1	Max	0.051	0.002	-0.154	-0.0	0.0	0.0
			Min	0.051	0.002	-0.154	-0.0	0.0	0.0
5122	S1	HL-~1	Max	0.055	0.002	-0.176	0.0	0.0	0.0
			Min	0.055	0.002	-0.176	0.0	0.0	0.0
5123	S1	HL-~1	Max	0.057	0.001	-0.208	0.0	0.0	0.0
			Min	0.057	0.001	-0.208	0.0	0.0	0.0
5124	S1	HL-~1	Max	0.058	0.001	-0.225	0.0	0.0	0.0
			Min	0.058	0.001	-0.225	0.0	0.0	0.0
5125	S1	HL-~1	Max	0.060	-0.000	-0.262	-0.0	0.0	0.0
			Min	0.060	-0.000	-0.262	-0.0	0.0	0.0
5126	S1	HL-~1	Max	0.060	-0.001	-0.324	0.0	0.0	0.0
			Min	0.060	-0.001	-0.324	0.0	0.0	0.0
5127	S1	HL-~1	Max	0.060	-0.001	-0.344	0.0	0.0	0.0
			Min	0.060	-0.001	-0.344	0.0	0.0	0.0
5128	S1	HL-~1	Max	0.058	-0.002	-0.398	0.0	0.0	0.0
			Min	0.058	-0.002	-0.398	0.0	0.0	0.0
5129	S1	HL-~1	Max	0.055	-0.003	-0.451	0.0	0.0	0.0
			Min	0.055	-0.003	-0.451	0.0	0.0	0.0
5130	S1	HL-~1	Max	0.052	-0.003	-0.468	0.0	0.0	0.0
			Min	0.052	-0.003	-0.468	0.0	0.0	0.0
5131	S1	HL-~1	Max	0.049	-0.003	-0.454	0.0	-0.0	0.0
			Min	0.049	-0.003	-0.454	0.0	-0.0	0.0
5132	S1	HL-~1	Max	0.046	-0.002	-0.414	0.0	-0.0	0.0
			Min	0.046	-0.002	-0.414	0.0	-0.0	0.0
5133	S1	HL-~1	Max	0.041	0.001	-0.311	-0.0	-0.0	0.0
			Min	0.041	0.001	-0.311	-0.0	-0.0	0.0
5134	S1	HL-~1	Max	0.039	-0.001	-0.248	-0.0	-0.0	0.0
			Min	0.039	-0.001	-0.248	-0.0	-0.0	0.0
5135	S1	HL-~1	Max	0.038	-0.004	-0.180	-0.0	-0.0	0.0
			Min	0.038	-0.004	-0.180	-0.0	-0.0	0.0

REACTION FORCES & MOMENTS DEFAULT PRINTOUT

Unit System : kips , in

Node	LC		FX	FY	FZ	MX	MY	MZ

SUMMATION OF REACTION FORCES

LC		SUM-FX	SUM-FY	SUM-FZ

REACTION FORCES & MOMENTS LOCAL PRINTOUT Unit System : kips , in

Node	LC		FX	FY	FZ	MX	MY	MZ

PLATE ELEMENT FORCES (GLOBAL) DEFAULT PRINTOUT Unit System : kips , in

ELEM	MAT	SEC	LC		NODE	FX	FY	FZ	MX	MY	MZ
4147	3	2	S1 HL-~1	Max	3847	-4.7	6.0	-0.3	1.8	-0.0	0.0
					4511	9.0	-1.6	0.4	1.2	0.1	0.0
					4440	4.4	-3.8	0.2	1.5	0.1	0.0
					3806	-8.8	-0.7	-0.1	1.7	-0.0	0.0
				Min	3847	-4.7	6.0	-0.3	1.8	-0.0	0.0
					4511	9.0	-1.6	0.4	1.2	0.1	0.0
					4440	4.4	-3.8	0.2	1.5	0.1	0.0
					3806	-8.8	-0.7	-0.1	1.7	-0.0	0.0
4148	3	2	S1 HL-~1	Max	4511	-9.0	1.6	-0.5	-1.2	-0.1	0.0
					1383	11.8	1.9	0.5	3.3	0.0	0.0
					2087	9.0	-2.4	0.3	3.8	0.2	-0.0
					4440	-11.8	-1.0	-0.2	-1.4	0.2	0.0
				Min	4511	-9.0	1.6	-0.5	-1.2	-0.1	0.0
					1383	11.8	1.9	0.5	3.3	0.0	0.0
					2087	9.0	-2.4	0.3	3.8	0.2	-0.0
					4440	-11.8	-1.0	-0.2	-1.4	0.2	0.0
4149	3	2	S1 HL-~1	Max	1383	6.6	-2.3	0.1	-2.5	-0.0	0.0
					5107	0.0	0.0	-0.0	0.0	0.0	0.0
					5108	-7.0	-0.1	-0.2	-0.0	0.0	0.0
					2087	0.4	2.4	0.3	-1.3	0.1	-0.0
				Min	1383	6.6	-2.3	0.1	-2.5	-0.0	0.0
					5107	0.0	0.0	-0.0	0.0	0.0	0.0
					5108	-7.0	-0.1	-0.2	-0.0	0.0	0.0
					2087	0.4	2.4	0.3	-1.3	0.1	-0.0
4173	3	2	S1 HL-~1	Max	3806	1.1	-2.5	-0.3	1.0	0.0	0.0
					4440	11.9	5.7	0.4	0.9	-0.1	0.0
					4393	-2.2	1.9	-0.0	0.2	-0.3	0.0
					3765	-10.7	-5.2	0.1	0.5	-0.1	0.0
				Min	3806	1.1	-2.5	-0.3	1.0	0.0	0.0
					4440	11.9	5.7	0.4	0.9	-0.1	0.0
					4393	-2.2	1.9	-0.0	0.2	-0.3	0.0
					3765	-10.7	-5.2	0.1	0.5	-0.1	0.0
4174	3	2	S1 HL-~1	Max	4440	-4.5	-0.9	-0.4	-1.0	-0.2	0.0
					2087	13.5	3.8	0.5	3.0	-0.2	-0.0
					1801	4.1	-0.8	0.2	1.9	-0.1	0.0
					4393	-13.1	-2.1	-0.2	-0.1	-0.1	0.0
				Min	4440	-4.5	-0.9	-0.4	-1.0	-0.2	0.0
					2087	13.5	3.8	0.5	3.0	-0.2	-0.0
					1801	4.1	-0.8	0.2	1.9	-0.1	0.0
					4393	-13.1	-2.1	-0.2	-0.1	-0.1	0.0
4175	3	2	S1 HL-~1	Max	2087	16.2	-3.5	-0.0	-0.3	-0.1	-0.0
					5108	7.0	0.1	0.1	0.0	-0.0	0.0
					5109	-17.2	1.5	-0.1	-0.0	-0.3	0.0
					1801	-6.0	1.9	0.2	-0.5	-0.2	0.0
				Min	2087	16.2	-3.5	-0.0	-0.3	-0.1	-0.0
					5108	7.0	0.1	0.1	0.0	-0.0	0.0
					5109	-17.2	1.5	-0.1	-0.0	-0.3	0.0
					1801	-6.0	1.9	0.2	-0.5	-0.2	0.0
4199	3	2	S1 HL-~1	Max	3765	-8.8	-7.9	0.1	1.3	-0.1	0.0
					4393	25.5	12.1	0.2	-1.3	0.4	0.0
					4556	8.1	5.2	0.2	-1.0	-0.3	0.0
					3849	-24.8	-9.4	0.0	2.5	-0.0	0.0

			Min	3765	-8.8	-7.9	0.1	1.3	-0.1	0.0
				4393	25.5	12.1	0.2	-1.3	0.4	0.0
				4556	8.1	5.2	0.2	-1.0	-0.3	0.0
				3849	-24.8	-9.4	0.0	2.5	-0.0	0.0
4200	3	2 S1 HL-~1	Max	4393	-10.2	-0.8	-0.5	1.2	-0.1	0.0
				1801	20.1	2.6	0.6	2.0	0.2	0.0
				700	10.0	2.9	0.5	1.7	-0.2	0.0
				4556	-19.9	-4.8	-0.4	1.0	0.1	0.0
			Min	4393	-10.2	-0.8	-0.5	1.2	-0.1	0.0
				1801	20.1	2.6	0.6	2.0	0.2	0.0
				700	10.0	2.9	0.5	1.7	-0.2	0.0
				4556	-19.9	-4.8	-0.4	1.0	0.1	0.0
4201	3	2 S1 HL-~1	Max	1801	4.6	3.0	0.2	-2.0	0.1	0.0
				5109	17.2	-1.5	-0.0	0.0	0.3	0.0
				5110	-4.9	2.2	-0.1	0.1	-0.1	0.0
				700	-17.0	-3.7	0.3	-2.3	0.1	0.0
			Min	1801	4.6	3.0	0.2	-2.0	0.1	0.0
				5109	17.2	-1.5	-0.0	0.0	0.3	0.0
				5110	-4.9	2.2	-0.1	0.1	-0.1	0.0
				700	-17.0	-3.7	0.3	-2.3	0.1	0.0
4225	3	2 S1 HL-~1	Max	3849	15.2	-2.2	-0.0	1.7	0.2	0.0
				4556	0.3	-0.2	0.2	-0.6	0.2	0.0
				4387	-15.0	0.8	0.1	-0.5	-0.1	-0.0
				3759	-0.5	1.7	0.1	0.7	-0.1	-0.0
			Min	3849	15.2	-2.2	-0.0	1.7	0.2	0.0
				4556	0.3	-0.2	0.2	-0.6	0.2	0.0
				4387	-15.0	0.8	0.1	-0.5	-0.1	-0.0
				3759	-0.5	1.7	0.1	0.7	-0.1	-0.0
4226	3	2 S1 HL-~1	Max	4556	11.5	-0.1	-0.3	0.6	0.0	0.0
				700	-4.5	-1.2	0.4	1.2	0.1	0.0
				1697	-11.4	0.3	0.3	1.4	-0.0	-0.0
				4387	4.4	1.0	-0.3	0.5	-0.0	-0.0
			Min	4556	11.5	-0.1	-0.3	0.6	0.0	0.0
				700	-4.5	-1.2	0.4	1.2	0.1	0.0
				1697	-11.4	0.3	0.3	1.4	-0.0	-0.0
				4387	4.4	1.0	-0.3	0.5	-0.0	-0.0
4227	3	2 S1 HL-~1	Max	700	7.4	1.8	0.2	-1.8	0.0	0.0
				5110	4.9	-2.2	-0.1	-0.1	0.1	0.0
				5111	-7.1	-1.4	-0.1	-0.0	-0.1	0.0
				1697	-5.1	1.7	0.2	-1.8	-0.0	-0.0
			Min	700	7.4	1.8	0.2	-1.8	0.0	0.0
				5110	4.9	-2.2	-0.1	-0.1	0.1	0.0
				5111	-7.1	-1.4	-0.1	-0.0	-0.1	0.0
				1697	-5.1	1.7	0.2	-1.8	-0.0	-0.0
4251	3	2 S1 HL-~1	Max	3759	16.7	0.2	0.1	0.9	0.1	-0.0
				4387	-0.4	-2.4	0.2	-0.4	0.1	-0.0
				4557	-16.6	0.0	0.3	-0.1	-0.2	0.0
				3854	0.3	2.1	-0.1	2.3	-0.2	0.0
			Min	3759	16.7	0.2	0.1	0.9	0.1	-0.0
				4387	-0.4	-2.4	0.2	-0.4	0.1	-0.0
				4557	-16.6	0.0	0.3	-0.1	-0.2	0.0
				3854	0.3	2.1	-0.1	2.3	-0.2	0.0
4252	3	2 S1 HL-~1	Max	4387	11.0	-1.4	-0.4	0.4	0.0	-0.0
				1697	-3.0	0.5	0.5	2.4	0.0	-0.0
				701	-11.1	0.0	0.6	2.8	-0.0	0.0
				4557	3.0	0.9	-0.4	0.1	-0.0	0.0
			Min	4387	11.0	-1.4	-0.4	0.4	0.0	-0.0

					1697	-3.0	0.5	0.5	2.4	0.0	-0.0
					701	-11.1	0.0	0.6	2.8	-0.0	0.0
					4557	3.0	0.9	-0.4	0.1	-0.0	0.0
4253	3	2	S1 HL--~1	Max	1697	8.8	-1.6	0.3	-2.4	0.0	-0.0
					5111	7.1	1.4	-0.1	0.0	0.1	0.0
					5112	-8.7	0.1	-0.1	0.0	-0.1	0.0
					701	-7.2	0.1	0.3	-2.5	-0.0	0.0
				Min	1697	8.8	-1.6	0.3	-2.4	0.0	-0.0
					5111	7.1	1.4	-0.1	0.0	0.1	0.0
					5112	-8.7	0.1	-0.1	0.0	-0.1	0.0
					701	-7.2	0.1	0.3	-2.5	-0.0	0.0
4277	3	2	S1 HL--~1	Max	3854	12.1	-0.9	-0.1	1.7	0.2	0.0
					4557	4.5	-0.4	0.2	-0.1	0.2	0.0
					4381	-12.1	1.5	0.1	-0.3	-0.1	-0.0
					3753	-4.4	-0.2	0.1	0.7	-0.0	-0.0
				Min	3854	12.1	-0.9	-0.1	1.7	0.2	0.0
					4557	4.5	-0.4	0.2	-0.1	0.2	0.0
					4381	-12.1	1.5	0.1	-0.3	-0.1	-0.0
					3753	-4.4	-0.2	0.1	0.7	-0.0	-0.0
4278	3	2	S1 HL--~1	Max	4557	9.1	-0.5	-0.3	0.1	0.0	0.0
					701	-0.9	-0.3	0.4	2.1	0.0	0.0
					95	-9.1	1.6	0.4	1.8	-0.0	0.0
					4381	0.9	-0.8	-0.3	0.3	-0.0	-0.0
				Min	4557	9.1	-0.5	-0.3	0.1	0.0	0.0
					701	-0.9	-0.3	0.4	2.1	0.0	0.0
					95	-9.1	1.6	0.4	1.8	-0.0	0.0
					4381	0.9	-0.8	-0.3	0.3	-0.0	-0.0
4279	3	2	S1 HL--~1	Max	701	7.4	0.3	0.2	-1.9	0.0	0.0
					5112	8.7	-0.1	-0.1	-0.0	0.1	0.0
					5113	-7.4	0.5	-0.1	0.0	-0.1	0.0
					95	-8.7	-0.7	0.2	-1.8	-0.0	0.0
				Min	701	7.4	0.3	0.2	-1.9	0.0	0.0
					5112	8.7	-0.1	-0.1	-0.0	0.1	0.0
					5113	-7.4	0.5	-0.1	0.0	-0.1	0.0
					95	-8.7	-0.7	0.2	-1.8	-0.0	0.0
4303	3	2	S1 HL--~1	Max	3753	11.7	0.1	0.1	1.1	0.1	-0.0
					4381	1.3	-1.4	0.2	-0.5	0.1	-0.0
					4558	-11.6	1.6	0.3	-0.5	-0.1	0.0
					3859	-1.4	-0.3	-0.1	2.4	-0.2	0.0
				Min	3753	11.7	0.1	0.1	1.1	0.1	-0.0
					4381	1.3	-1.4	0.2	-0.5	0.1	-0.0
					4558	-11.6	1.6	0.3	-0.5	-0.1	0.0
					3859	-1.4	-0.3	-0.1	2.4	-0.2	0.0
4304	3	2	S1 HL--~1	Max	4381	9.9	-0.4	-0.4	0.5	0.0	-0.0
					95	-3.4	-0.5	0.5	2.2	0.0	0.0
					702	-9.9	1.4	0.5	2.4	0.0	0.0
					4558	3.4	-0.6	-0.4	0.5	-0.0	0.0
				Min	4381	9.9	-0.4	-0.4	0.5	0.0	-0.0
					95	-3.4	-0.5	0.5	2.2	0.0	0.0
					702	-9.9	1.4	0.5	2.4	0.0	0.0
					4558	3.4	-0.6	-0.4	0.5	-0.0	0.0
4305	3	2	S1 HL--~1	Max	95	5.4	0.7	0.3	-2.4	0.0	0.0
					5113	7.4	-0.5	-0.1	-0.0	0.1	0.0
					5114	-5.3	1.0	-0.1	-0.0	-0.0	0.0
					702	-7.5	-1.2	0.3	-2.6	0.0	0.0
				Min	95	5.4	0.7	0.3	-2.4	0.0	0.0
					5113	7.4	-0.5	-0.1	-0.0	0.1	0.0

				5114	-5.3	1.0	-0.1	-0.0	-0.0	0.0
				702	-7.5	-1.2	0.3	-2.6	0.0	0.0
4329	3	2 S1 HL-~1	Max	3859	7.6	0.4	-0.1	1.9	0.2	0.0
				4558	0.1	-1.7	0.2	-0.3	0.1	0.0
				4375	-7.6	1.5	0.1	-0.3	-0.0	-0.0
				3747	-0.1	-0.2	0.0	0.8	0.0	0.0
			Min	3859	7.6	0.4	-0.1	1.9	0.2	0.0
				4558	0.1	-1.7	0.2	-0.3	0.1	0.0
				4375	-7.6	1.5	0.1	-0.3	-0.0	-0.0
				3747	-0.1	-0.2	0.0	0.8	0.0	0.0
4330	3	2 S1 HL-~1	Max	4558	8.1	0.7	-0.3	0.3	0.0	0.0
				702	-4.3	-1.7	0.4	1.8	0.0	0.0
				81	-8.1	1.2	0.3	1.6	-0.0	0.0
				4375	4.3	-0.2	-0.3	0.3	0.0	-0.0
			Min	4558	8.1	0.7	-0.3	0.3	0.0	0.0
				702	-4.3	-1.7	0.4	1.8	0.0	0.0
				81	-8.1	1.2	0.3	1.6	-0.0	0.0
				4375	4.3	-0.2	-0.3	0.3	0.0	-0.0
4331	3	2 S1 HL-~1	Max	702	2.1	1.5	0.2	-1.9	-0.0	0.0
				5114	5.3	-1.0	-0.1	0.0	0.0	0.0
				5115	-2.0	-0.1	-0.1	-0.0	-0.0	0.0
				81	-5.4	-0.5	0.2	-1.7	0.0	0.0
			Min	702	2.1	1.5	0.2	-1.9	-0.0	0.0
				5114	5.3	-1.0	-0.1	0.0	0.0	0.0
				5115	-2.0	-0.1	-0.1	-0.0	-0.0	0.0
				81	-5.4	-0.5	0.2	-1.7	0.0	0.0
4355	3	2 S1 HL-~1	Max	3747	3.1	-0.7	0.0	0.2	-0.0	0.0
				4375	0.1	-0.8	0.0	-0.1	0.0	-0.0
				5047	-3.0	1.1	0.1	-0.0	-0.1	0.0
				5046	-0.1	0.4	-0.0	0.4	-0.1	0.0
			Min	3747	3.1	-0.7	0.0	0.2	-0.0	0.0
				4375	0.1	-0.8	0.0	-0.1	0.0	-0.0
				5047	-3.0	1.1	0.1	-0.0	-0.1	0.0
				5046	-0.1	0.4	-0.0	0.4	-0.1	0.0
4356	3	2 S1 HL-~1	Max	4375	3.2	-0.6	-0.1	0.1	0.0	-0.0
				81	-1.6	-0.6	0.1	0.6	-0.0	0.0
				5048	-3.2	1.0	0.1	0.7	0.0	0.0
				5047	1.6	0.2	-0.1	0.0	0.0	0.0
			Min	4375	3.2	-0.6	-0.1	0.1	0.0	-0.0
				81	-1.6	-0.6	0.1	0.6	-0.0	0.0
				5048	-3.2	1.0	0.1	0.7	0.0	0.0
				5047	1.6	0.2	-0.1	0.0	0.0	0.0
4357	3	2 S1 HL-~1	Max	81	1.2	0.4	0.1	-0.5	-0.0	0.0
				5115	2.0	0.1	-0.0	0.0	0.0	0.0
				5116	-1.2	0.2	-0.0	0.0	0.0	0.0
				5048	-2.0	-0.6	0.1	-0.6	0.1	0.0
			Min	81	1.2	0.4	0.1	-0.5	-0.0	0.0
				5115	2.0	0.1	-0.0	0.0	0.0	0.0
				5116	-1.2	0.2	-0.0	0.0	0.0	0.0
				5048	-2.0	-0.6	0.1	-0.6	0.1	0.0
4381	3	2 S1 HL-~1	Max	3744	-1.3	0.0	-0.0	1.4	0.1	0.0
				4432	-8.5	-1.8	0.1	-0.5	0.0	0.0
				4476	1.3	1.2	0.1	-0.3	-0.0	0.0
				3824	8.5	0.6	-0.0	1.3	-0.1	0.0
			Min	3744	-1.3	0.0	-0.0	1.4	0.1	0.0
				4432	-8.5	-1.8	0.1	-0.5	0.0	0.0
				4476	1.3	1.2	0.1	-0.3	-0.0	0.0

				3824	8.5	0.6	-0.0	1.3	-0.1	0.0
4382	3	2 S1 HL--~1	Max	4432	3.5	0.3	-0.2	0.5	0.0	0.0
				1621	-8.4	-1.8	0.3	0.8	-0.0	0.0
				1614	-3.5	1.0	0.3	1.2	0.1	0.0
				4476	8.4	0.5	-0.2	0.3	0.0	0.0
			Min	4432	3.5	0.3	-0.2	0.5	0.0	0.0
				1621	-8.4	-1.8	0.3	0.8	-0.0	0.0
				1614	-3.5	1.0	0.3	1.2	0.1	0.0
				4476	8.4	0.5	-0.2	0.3	0.0	0.0
4383	3	2 S1 HL--~1	Max	1621	-6.4	1.5	0.2	-1.3	-0.1	0.0
				5117	-3.6	-0.8	-0.0	0.0	-0.1	0.0
				5118	6.4	-0.2	-0.1	-0.0	0.1	0.0
				1614	3.5	-0.5	0.2	-1.2	0.1	0.0
			Min	1621	-6.4	1.5	0.2	-1.3	-0.1	0.0
				5117	-3.6	-0.8	-0.0	0.0	-0.1	0.0
				5118	6.4	-0.2	-0.1	-0.0	0.1	0.0
				1614	3.5	-0.5	0.2	-1.2	0.1	0.0
4407	3	2 S1 HL--~1	Max	3824	-5.2	-0.8	-0.0	0.4	0.1	0.0
				4476	-9.2	-1.2	0.1	0.0	0.0	0.0
				4367	5.2	1.2	0.1	0.1	0.2	-0.0
				3739	9.3	0.8	0.0	0.2	0.2	0.0
			Min	3824	-5.2	-0.8	-0.0	0.4	0.1	0.0
				4476	-9.2	-1.2	0.1	0.0	0.0	0.0
				4367	5.2	1.2	0.1	0.1	0.2	-0.0
				3739	9.3	0.8	0.0	0.2	0.2	0.0
4408	3	2 S1 HL--~1	Max	4476	-0.5	-0.4	-0.1	-0.0	-0.0	0.0
				1614	-6.7	-1.1	0.1	0.5	-0.0	0.0
				63	0.6	0.6	0.0	0.2	0.0	-0.0
				4367	6.7	0.9	0.0	-0.1	0.1	-0.0
			Min	4476	-0.5	-0.4	-0.1	-0.0	-0.0	0.0
				1614	-6.7	-1.1	0.1	0.5	-0.0	0.0
				63	0.6	0.6	0.0	0.2	0.0	-0.0
				4367	6.7	0.9	0.0	-0.1	0.1	-0.0
4409	3	2 S1 HL--~1	Max	1614	-8.1	0.6	0.1	-0.6	-0.1	0.0
				5118	-6.4	0.2	-0.0	0.0	-0.1	0.0
				5119	8.0	-0.1	-0.0	-0.0	0.1	0.0
				63	6.4	-0.7	0.1	-0.6	0.1	-0.0
			Min	1614	-8.1	0.6	0.1	-0.6	-0.1	0.0
				5118	-6.4	0.2	-0.0	0.0	-0.1	0.0
				5119	8.0	-0.1	-0.0	-0.0	0.1	0.0
				63	6.4	-0.7	0.1	-0.6	0.1	-0.0
4433	3	2 S1 HL--~1	Max	3739	-6.2	0.2	0.0	0.7	-0.1	0.0
				4367	-15.4	-2.3	0.1	-0.1	-0.1	-0.0
				4844	6.1	1.9	0.1	-0.5	-0.1	0.0
				4817	15.5	0.2	-0.0	1.2	-0.1	0.0
			Min	3739	-6.2	0.2	0.0	0.7	-0.1	0.0
				4367	-15.4	-2.3	0.1	-0.1	-0.1	-0.0
				4844	6.1	1.9	0.1	-0.5	-0.1	0.0
				4817	15.5	0.2	-0.0	1.2	-0.1	0.0
4434	3	2 S1 HL--~1	Max	4367	3.6	0.3	-0.3	0.0	-0.1	-0.0
				63	-14.0	-2.2	0.3	1.7	-0.0	-0.0
				4784	-3.6	2.5	0.7	3.7	0.1	0.0
				4844	14.0	-0.6	-0.7	0.5	0.1	0.0
			Min	4367	3.6	0.3	-0.3	0.0	-0.1	-0.0
				63	-14.0	-2.2	0.3	1.7	-0.0	-0.0
				4784	-3.6	2.5	0.7	3.7	0.1	0.0
				4844	14.0	-0.6	-0.7	0.5	0.1	0.0

4435	3	2 S1 HL-~1	Max	63	-12.0	0.7	0.2	-1.3	-0.1	-0.0
				5119	-8.0	0.1	-0.0	0.0	-0.1	0.0
				5120	11.9	1.0	-0.0	0.0	0.1	0.0
				4784	8.1	-1.8	0.2	-1.1	0.1	0.0
			Min	63	-12.0	0.7	0.2	-1.3	-0.1	-0.0
				5119	-8.0	0.1	-0.0	0.0	-0.1	0.0
				5120	11.9	1.0	-0.0	0.0	0.1	0.0
				4784	8.1	-1.8	0.2	-1.1	0.1	0.0
4459	3	2 S1 HL-~1	Max	4817	-15.1	3.8	-0.0	1.1	0.1	0.0
				4844	-15.4	-3.9	0.2	0.1	0.1	0.0
				4356	15.2	-4.7	0.2	1.1	0.4	-0.0
				3728	15.3	4.7	-0.0	0.3	0.3	-0.0
			Min	4817	-15.1	3.8	-0.0	1.1	0.1	0.0
				4844	-15.4	-3.9	0.2	0.1	0.1	0.0
				4356	15.2	-4.7	0.2	1.1	0.4	-0.0
				3728	15.3	4.7	-0.0	0.3	0.3	-0.0
4460	3	2 S1 HL-~1	Max	4844	-4.7	2.5	0.2	-0.1	-0.1	0.0
				4784	-10.9	-3.2	-0.2	-1.2	-0.2	0.0
				35	4.8	-2.6	-1.5	-8.1	-0.2	-0.0
				4356	10.8	3.3	1.6	-1.1	-0.0	-0.0
			Min	4844	-4.7	2.5	0.2	-0.1	-0.1	0.0
				4784	-10.9	-3.2	-0.2	-1.2	-0.2	0.0
				35	4.8	-2.6	-1.5	-8.1	-0.2	-0.0
				4356	10.8	3.3	1.6	-1.1	-0.0	-0.0
4461	3	2 S1 HL-~1	Max	4784	-19.1	2.5	0.2	-1.3	-0.1	0.0
				5120	-11.9	-1.0	-0.1	-0.0	-0.1	0.0
				5121	18.9	-0.0	-0.1	-0.0	0.3	0.0
				35	12.1	-1.5	0.2	-1.7	0.3	-0.0
			Min	4784	-19.1	2.5	0.2	-1.3	-0.1	0.0
				5120	-11.9	-1.0	-0.1	-0.0	-0.1	0.0
				5121	18.9	-0.0	-0.1	-0.0	0.3	0.0
				35	12.1	-1.5	0.2	-1.7	0.3	-0.0
4485	3	2 S1 HL-~1	Max	3728	-15.3	4.7	-0.0	0.3	-0.3	-0.0
				4356	-15.2	-4.7	0.2	1.1	-0.4	-0.0
				4918	15.4	-3.9	0.2	0.1	-0.1	0.0
				4888	15.1	3.8	-0.0	1.1	-0.1	0.0
			Min	3728	-15.3	4.7	-0.0	0.3	-0.3	-0.0
				4356	-15.2	-4.7	0.2	1.1	-0.4	-0.0
				4918	15.4	-3.9	0.2	0.1	-0.1	0.0
				4888	15.1	3.8	-0.0	1.1	-0.1	0.0
4486	3	2 S1 HL-~1	Max	4356	-10.8	3.3	1.6	-1.1	0.0	-0.0
				35	-4.8	-2.6	-1.5	-8.1	0.2	-0.0
				4852	10.9	-3.2	-0.2	-1.2	0.2	-0.0
				4918	4.7	2.5	0.2	-0.1	0.1	0.0
			Min	4356	-10.8	3.3	1.6	-1.1	0.0	-0.0
				35	-4.8	-2.6	-1.5	-8.1	0.2	-0.0
				4852	10.9	-3.2	-0.2	-1.2	0.2	-0.0
				4918	4.7	2.5	0.2	-0.1	0.1	0.0
4487	3	2 S1 HL-~1	Max	35	-12.1	-1.6	0.2	-1.7	-0.3	-0.0
				5121	-18.9	0.0	-0.1	0.0	-0.3	0.0
				5122	11.9	-1.0	-0.1	-0.0	0.1	0.0
				4852	19.1	2.5	0.2	-1.3	0.1	-0.0
			Min	35	-12.1	-1.6	0.2	-1.7	-0.3	-0.0
				5121	-18.9	0.0	-0.1	0.0	-0.3	0.0
				5122	11.9	-1.0	-0.1	-0.0	0.1	0.0
				4852	19.1	2.5	0.2	-1.3	0.1	-0.0

4511	3	2 S1 HL-~1	Max	4888	-15.5	0.2	-0.0	1.2	0.1	0.0
				4918	-6.1	1.9	0.1	-0.5	0.1	0.0
				4364	15.4	-2.3	0.1	-0.1	0.1	0.0
				3736	6.2	0.2	0.0	0.7	0.1	-0.0
			Min	4888	-15.5	0.2	-0.0	1.2	0.1	0.0
				4918	-6.1	1.9	0.1	-0.5	0.1	0.0
				4364	15.4	-2.3	0.1	-0.1	0.1	0.0
				3736	6.2	0.2	0.0	0.7	0.1	-0.0
4512	3	2 S1 HL-~1	Max	4918	-14.0	-0.6	-0.7	0.5	-0.1	0.0
				4852	3.6	2.5	0.7	3.7	-0.1	-0.0
				55	14.0	-2.2	0.3	1.7	0.0	-0.0
				4364	-3.6	0.3	-0.3	0.0	0.1	0.0
			Min	4918	-14.0	-0.6	-0.7	0.5	-0.1	0.0
				4852	3.6	2.5	0.7	3.7	-0.1	-0.0
				55	14.0	-2.2	0.3	1.7	0.0	-0.0
				4364	-3.6	0.3	-0.3	0.0	0.1	0.0
4513	3	2 S1 HL-~1	Max	4852	-8.1	-1.8	0.2	-1.1	-0.1	-0.0
				5122	-11.9	1.0	-0.0	0.0	-0.1	0.0
				5123	8.0	0.1	-0.0	0.0	0.1	0.0
				55	12.0	0.7	0.2	-1.3	0.1	-0.0
			Min	4852	-8.1	-1.8	0.2	-1.1	-0.1	-0.0
				5122	-11.9	1.0	-0.0	0.0	-0.1	0.0
				5123	8.0	0.1	-0.0	0.0	0.1	0.0
				55	12.0	0.7	0.2	-1.3	0.1	-0.0
4537	3	2 S1 HL-~1	Max	3736	-9.3	0.8	0.0	0.2	-0.2	-0.0
				4364	-5.2	1.2	0.1	0.1	-0.2	0.0
				4470	9.2	-1.2	0.1	0.0	-0.0	0.0
				3818	5.2	-0.8	-0.0	0.4	-0.1	0.0
			Min	3736	-9.3	0.8	0.0	0.2	-0.2	-0.0
				4364	-5.2	1.2	0.1	0.1	-0.2	0.0
				4470	9.2	-1.2	0.1	0.0	-0.0	0.0
				3818	5.2	-0.8	-0.0	0.4	-0.1	0.0
4538	3	2 S1 HL-~1	Max	4364	-6.7	0.9	0.0	-0.1	-0.1	0.0
				55	-0.6	0.6	0.0	0.2	-0.0	-0.0
				2299	6.7	-1.1	0.1	0.5	0.0	-0.0
				4470	0.5	-0.4	-0.1	-0.0	0.0	0.0
			Min	4364	-6.7	0.9	0.0	-0.1	-0.1	0.0
				55	-0.6	0.6	0.0	0.2	-0.0	-0.0
				2299	6.7	-1.1	0.1	0.5	0.0	-0.0
				4470	0.5	-0.4	-0.1	-0.0	0.0	0.0
4539	3	2 S1 HL-~1	Max	55	-6.4	-0.7	0.1	-0.6	-0.1	-0.0
				5123	-8.0	-0.1	-0.0	-0.0	-0.1	0.0
				5124	6.4	0.2	-0.0	0.0	0.1	0.0
				2299	8.1	0.6	0.1	-0.6	0.1	-0.0
			Min	55	-6.4	-0.7	0.1	-0.6	-0.1	-0.0
				5123	-8.0	-0.1	-0.0	-0.0	-0.1	0.0
				5124	6.4	0.2	-0.0	0.0	0.1	0.0
				2299	8.1	0.6	0.1	-0.6	0.1	-0.0
4563	3	2 S1 HL-~1	Max	3818	-8.4	0.6	-0.0	1.3	0.1	0.0
				4470	-1.3	1.2	0.1	-0.3	0.0	0.0
				4433	8.5	-1.8	0.1	-0.5	-0.0	0.0
				3776	1.3	0.1	-0.0	1.4	-0.1	0.0
			Min	3818	-8.4	0.6	-0.0	1.3	0.1	0.0
				4470	-1.3	1.2	0.1	-0.3	0.0	0.0
				4433	8.5	-1.8	0.1	-0.5	-0.0	0.0
				3776	1.3	0.1	-0.0	1.4	-0.1	0.0

4564	3	2 S1 HL-~1	Max	4470	-8.4	0.5	-0.2	0.3	-0.0	0.0
				2299	3.5	1.0	0.3	1.2	-0.1	-0.0
				2493	8.4	-1.8	0.3	0.8	0.0	-0.0
				4433	-3.5	0.3	-0.2	0.5	-0.0	0.0
			Min	4470	-8.4	0.5	-0.2	0.3	-0.0	0.0
				2299	3.5	1.0	0.3	1.2	-0.1	-0.0
				2493	8.4	-1.8	0.3	0.8	0.0	-0.0
				4433	-3.5	0.3	-0.2	0.5	-0.0	0.0
4565	3	2 S1 HL-~1	Max	2299	-3.5	-0.5	0.2	-1.2	-0.1	-0.0
				5124	-6.4	-0.2	-0.1	-0.0	-0.1	0.0
				5125	3.6	-0.8	-0.0	0.0	0.1	0.0
				2493	6.4	1.5	0.2	-1.3	0.1	-0.0
			Min	2299	-3.5	-0.5	0.2	-1.2	-0.1	-0.0
				5124	-6.4	-0.2	-0.1	-0.0	-0.1	0.0
				5125	3.6	-0.8	-0.0	0.0	0.1	0.0
				2493	6.4	1.5	0.2	-1.3	0.1	-0.0
4589	3	2 S1 HL-~1	Max	3776	-5.2	-0.7	-0.0	2.1	0.1	0.0
				4433	2.9	2.0	0.2	-0.7	0.0	0.0
				4992	5.2	-1.4	0.2	-0.3	-0.0	0.0
				4991	-2.9	0.1	-0.0	1.9	-0.1	0.0
			Min	3776	-5.2	-0.7	-0.0	2.1	0.1	0.0
				4433	2.9	2.0	0.2	-0.7	0.0	0.0
				4992	5.2	-1.4	0.2	-0.3	-0.0	0.0
				4991	-2.9	0.1	-0.0	1.9	-0.1	0.0
4590	3	2 S1 HL-~1	Max	4433	-7.8	-0.5	-0.3	0.7	0.0	0.0
				2493	6.7	1.7	0.4	1.3	-0.0	-0.0
				4993	7.8	-1.4	0.4	1.8	0.1	-0.0
				4992	-6.7	0.1	-0.3	0.3	-0.0	0.0
			Min	4433	-7.8	-0.5	-0.3	0.7	0.0	0.0
				2493	6.7	1.7	0.4	1.3	-0.0	-0.0
				4993	7.8	-1.4	0.4	1.8	0.1	-0.0
				4992	-6.7	0.1	-0.3	0.3	-0.0	0.0
4591	3	2 S1 HL-~1	Max	2493	1.2	-1.6	0.2	-2.0	-0.1	-0.0
				5125	-3.6	0.8	-0.1	-0.0	-0.1	0.0
				5126	-1.2	-0.2	-0.1	-0.0	0.0	0.0
				4993	3.6	1.0	0.3	-1.9	0.0	-0.0
			Min	2493	1.2	-1.6	0.2	-2.0	-0.1	-0.0
				5125	-3.6	0.8	-0.1	-0.0	-0.1	0.0
				5126	-1.2	-0.2	-0.1	-0.0	0.0	0.0
				4993	3.6	1.0	0.3	-1.9	0.0	-0.0
4615	3	2 S1 HL-~1	Max	3771	0.1	-0.2	0.0	0.8	-0.0	-0.0
				4399	7.6	1.5	0.1	-0.3	0.0	0.0
				4561	-0.1	-1.7	0.2	-0.3	-0.1	0.0
				3864	-7.6	0.4	-0.1	1.9	-0.2	0.0
			Min	3771	0.1	-0.2	0.0	0.8	-0.0	-0.0
				4399	7.6	1.5	0.1	-0.3	0.0	0.0
				4561	-0.1	-1.7	0.2	-0.3	-0.1	0.0
				3864	-7.6	0.4	-0.1	1.9	-0.2	0.0
4616	3	2 S1 HL-~1	Max	4399	-4.3	-0.2	-0.3	0.3	-0.0	0.0
				1905	8.1	1.2	0.3	1.6	0.0	-0.0
				705	4.3	-1.7	0.4	1.8	-0.0	-0.0
				4561	-8.1	0.7	-0.3	0.3	-0.0	0.0
			Min	4399	-4.3	-0.2	-0.3	0.3	-0.0	0.0
				1905	8.1	1.2	0.3	1.6	0.0	-0.0
				705	4.3	-1.7	0.4	1.8	-0.0	-0.0
				4561	-8.1	0.7	-0.3	0.3	-0.0	0.0
4617	3	2 S1 HL-~1	Max	1905	5.4	-0.5	0.2	-1.7	-0.0	-0.0

				5127	2.0	-0.1	-0.1	-0.0	0.0	0.0
				5128	-5.3	-1.0	-0.1	0.0	-0.0	0.0
				705	-2.1	1.5	0.2	-1.9	0.0	-0.0
			Min	1905	5.4	-0.5	0.2	-1.7	-0.0	-0.0
				5127	2.0	-0.1	-0.1	-0.0	0.0	0.0
				5128	-5.3	-1.0	-0.1	0.0	-0.0	0.0
				705	-2.1	1.5	0.2	-1.9	0.0	-0.0
4641	3	2 S1 HL--~1	Max	3864	1.4	-0.3	-0.1	2.4	0.2	0.0
				4561	11.6	1.6	0.3	-0.5	0.1	0.0
				4410	-1.3	-1.4	0.2	-0.5	-0.1	0.0
				3782	-11.7	0.1	0.1	1.1	-0.1	0.0
			Min	3864	1.4	-0.3	-0.1	2.4	0.2	0.0
				4561	11.6	1.6	0.3	-0.5	0.1	0.0
				4410	-1.3	-1.4	0.2	-0.5	-0.1	0.0
				3782	-11.7	0.1	0.1	1.1	-0.1	0.0
4642	3	2 S1 HL--~1	Max	4561	-3.4	-0.6	-0.4	0.5	0.0	0.0
				705	9.9	1.4	0.5	2.4	-0.0	-0.0
				2089	3.4	-0.5	0.5	2.2	-0.0	-0.0
				4410	-9.9	-0.4	-0.4	0.5	-0.0	0.0
			Min	4561	-3.4	-0.6	-0.4	0.5	0.0	0.0
				705	9.9	1.4	0.5	2.4	-0.0	-0.0
				2089	3.4	-0.5	0.5	2.2	-0.0	-0.0
				4410	-9.9	-0.4	-0.4	0.5	-0.0	0.0
4643	3	2 S1 HL--~1	Max	705	7.5	-1.2	0.3	-2.6	-0.0	-0.0
				5128	5.3	1.0	-0.1	-0.0	0.0	0.0
				5129	-7.4	-0.5	-0.1	-0.0	-0.1	0.0
				2089	-5.4	0.7	0.3	-2.4	-0.0	-0.0
			Min	705	7.5	-1.2	0.3	-2.6	-0.0	-0.0
				5128	5.3	1.0	-0.1	-0.0	0.0	0.0
				5129	-7.4	-0.5	-0.1	-0.0	-0.1	0.0
				2089	-5.4	0.7	0.3	-2.4	-0.0	-0.0
4667	3	2 S1 HL--~1	Max	3782	4.4	-0.2	0.1	0.7	0.0	0.0
				4410	12.1	1.5	0.1	-0.3	0.1	0.0
				4560	-4.5	-0.4	0.2	-0.1	-0.2	0.0
				3869	-12.1	-0.9	-0.1	1.7	-0.2	0.0
			Min	3782	4.4	-0.2	0.1	0.7	0.0	0.0
				4410	12.1	1.5	0.1	-0.3	0.1	0.0
				4560	-4.5	-0.4	0.2	-0.1	-0.2	0.0
				3869	-12.1	-0.9	-0.1	1.7	-0.2	0.0
4668	3	2 S1 HL--~1	Max	4410	-0.9	-0.8	-0.3	0.3	0.0	0.0
				2089	9.1	1.6	0.4	1.8	0.0	-0.0
				704	0.9	-0.3	0.4	2.1	-0.0	-0.0
				4560	-9.1	-0.5	-0.3	0.1	-0.0	0.0
			Min	4410	-0.9	-0.8	-0.3	0.3	0.0	0.0
				2089	9.1	1.6	0.4	1.8	0.0	-0.0
				704	0.9	-0.3	0.4	2.1	-0.0	-0.0
				4560	-9.1	-0.5	-0.3	0.1	-0.0	0.0
4669	3	2 S1 HL--~1	Max	2089	8.7	-0.7	0.2	-1.8	0.0	-0.0
				5129	7.4	0.5	-0.1	0.0	0.1	0.0
				5130	-8.7	-0.1	-0.1	-0.0	-0.1	0.0
				704	-7.4	0.3	0.2	-1.9	-0.0	-0.0
			Min	2089	8.7	-0.7	0.2	-1.8	0.0	-0.0
				5129	7.4	0.5	-0.1	0.0	0.1	0.0
				5130	-8.7	-0.1	-0.1	-0.0	-0.1	0.0
				704	-7.4	0.3	0.2	-1.9	-0.0	-0.0
4693	3	2 S1 HL--~1	Max	3869	-0.3	2.1	-0.1	2.3	0.2	0.0
				4560	16.6	0.0	0.3	-0.1	0.2	0.0

				4416	0.4	-2.4	0.2	-0.4	-0.1	0.0
				3788	-16.7	0.2	0.1	0.9	-0.1	0.0
			Min	3869	-0.3	2.1	-0.1	2.3	0.2	0.0
				4560	16.6	0.0	0.3	-0.1	0.2	0.0
				4416	0.4	-2.4	0.2	-0.4	-0.1	0.0
				3788	-16.7	0.2	0.1	0.9	-0.1	0.0
4694	3	2 S1 HL-~1	Max	4560	-3.0	0.9	-0.4	0.1	0.0	0.0
				704	11.1	0.0	0.6	2.8	0.0	-0.0
				2193	3.0	0.5	0.5	2.4	-0.0	0.0
				4416	-11.0	-1.4	-0.4	0.4	-0.0	0.0
			Min	4560	-3.0	0.9	-0.4	0.1	0.0	0.0
				704	11.1	0.0	0.6	2.8	0.0	-0.0
				2193	3.0	0.5	0.5	2.4	-0.0	0.0
				4416	-11.0	-1.4	-0.4	0.4	-0.0	0.0
4695	3	2 S1 HL-~1	Max	704	7.2	0.1	0.3	-2.5	0.0	-0.0
				5130	8.7	0.1	-0.1	0.0	0.1	0.0
				5131	-7.1	1.4	-0.1	0.0	-0.1	0.0
				2193	-8.8	-1.6	0.3	-2.4	-0.0	0.0
			Min	704	7.2	0.1	0.3	-2.5	0.0	-0.0
				5130	8.7	0.1	-0.1	0.0	0.1	0.0
				5131	-7.1	1.4	-0.1	0.0	-0.1	0.0
				2193	-8.8	-1.6	0.3	-2.4	-0.0	0.0
4719	3	2 S1 HL-~1	Max	3788	0.5	1.7	0.1	0.7	0.1	0.0
				4416	15.0	0.8	0.1	-0.5	0.1	0.0
				4559	-0.3	-0.2	0.2	-0.6	-0.2	0.0
				3874	-15.2	-2.2	-0.0	1.7	-0.2	0.0
			Min	3788	0.5	1.7	0.1	0.7	0.1	0.0
				4416	15.0	0.8	0.1	-0.5	0.1	0.0
				4559	-0.3	-0.2	0.2	-0.6	-0.2	0.0
				3874	-15.2	-2.2	-0.0	1.7	-0.2	0.0
4720	3	2 S1 HL-~1	Max	4416	-4.4	1.0	-0.3	0.5	0.0	0.0
				2193	11.4	0.3	0.3	1.4	0.0	0.0
				703	4.5	-1.2	0.4	1.2	-0.1	-0.0
				4559	-11.5	-0.1	-0.3	0.6	-0.0	0.0
			Min	4416	-4.4	1.0	-0.3	0.5	0.0	0.0
				2193	11.4	0.3	0.3	1.4	0.0	0.0
				703	4.5	-1.2	0.4	1.2	-0.1	-0.0
				4559	-11.5	-0.1	-0.3	0.6	-0.0	0.0
4721	3	2 S1 HL-~1	Max	2193	5.1	1.7	0.2	-1.8	0.0	0.0
				5131	7.1	-1.4	-0.1	-0.0	0.1	0.0
				5132	-4.9	-2.2	-0.1	-0.1	-0.1	0.0
				703	-7.4	1.8	0.2	-1.8	-0.0	-0.0
			Min	2193	5.1	1.7	0.2	-1.8	0.0	0.0
				5131	7.1	-1.4	-0.1	-0.0	0.1	0.0
				5132	-4.9	-2.2	-0.1	-0.1	-0.1	0.0
				703	-7.4	1.8	0.2	-1.8	-0.0	-0.0
4745	3	2 S1 HL-~1	Max	3874	24.8	-9.4	0.0	2.5	0.0	0.0
				4559	-8.1	5.2	0.2	-1.0	0.3	0.0
				4422	-25.5	12.1	0.2	-1.3	-0.4	-0.0
				3794	8.8	-7.9	0.1	1.3	0.1	-0.0
			Min	3874	24.8	-9.4	0.0	2.5	0.0	0.0
				4559	-8.1	5.2	0.2	-1.0	0.3	0.0
				4422	-25.5	12.1	0.2	-1.3	-0.4	-0.0
				3794	8.8	-7.9	0.1	1.3	0.1	-0.0
4746	3	2 S1 HL-~1	Max	4559	19.9	-4.8	-0.4	1.0	-0.1	0.0
				703	-10.0	3.0	0.5	1.7	0.2	-0.0
				2301	-20.1	2.6	0.6	2.0	-0.2	-0.0

				4422	10.2	-0.7	-0.5	1.2	0.1	-0.0
			Min	4559	19.9	-4.8	-0.4	1.0	-0.1	0.0
				703	-10.0	3.0	0.5	1.7	0.2	-0.0
				2301	-20.1	2.6	0.6	2.0	-0.2	-0.0
				4422	10.2	-0.7	-0.5	1.2	0.1	-0.0
4747	3	2 S1 HL-~1	Max	703	17.0	-3.7	0.3	-2.3	-0.1	-0.0
				5132	4.9	2.2	-0.1	0.1	0.1	0.0
				5133	-17.2	-1.5	-0.0	0.0	-0.3	0.0
				2301	-4.6	3.0	0.2	-2.0	-0.1	-0.0
			Min	703	17.0	-3.7	0.3	-2.3	-0.1	-0.0
				5132	4.9	2.2	-0.1	0.1	0.1	0.0
				5133	-17.2	-1.5	-0.0	0.0	-0.3	0.0
				2301	-4.6	3.0	0.2	-2.0	-0.1	-0.0
4771	3	2 S1 HL-~1	Max	3794	10.7	-5.2	0.1	0.5	0.1	-0.0
				4422	2.2	1.9	-0.0	0.2	0.3	-0.0
				4452	-11.9	5.7	0.4	0.9	0.1	0.0
				3812	-1.1	-2.5	-0.3	1.0	-0.0	0.0
			Min	3794	10.7	-5.2	0.1	0.5	0.1	-0.0
				4422	2.2	1.9	-0.0	0.2	0.3	-0.0
				4452	-11.9	5.7	0.4	0.9	0.1	0.0
				3812	-1.1	-2.5	-0.3	1.0	-0.0	0.0
4772	3	2 S1 HL-~1	Max	4422	13.1	-2.1	-0.2	-0.1	0.1	-0.0
				2301	-4.1	-0.8	0.2	1.9	0.1	-0.0
				2139	-13.5	3.8	0.5	3.0	0.2	0.0
				4452	4.5	-0.9	-0.4	-1.0	0.2	0.0
			Min	4422	13.1	-2.1	-0.2	-0.1	0.1	-0.0
				2301	-4.1	-0.8	0.2	1.9	0.1	-0.0
				2139	-13.5	3.8	0.5	3.0	0.2	0.0
				4452	4.5	-0.9	-0.4	-1.0	0.2	0.0
4773	3	2 S1 HL-~1	Max	2301	6.0	1.9	0.2	-0.5	0.2	-0.0
				5133	17.2	1.5	-0.1	-0.0	0.3	0.0
				5134	-7.0	0.1	0.1	0.0	0.0	0.0
				2139	-16.2	-3.5	-0.0	-0.3	0.1	0.0
			Min	2301	6.0	1.9	0.2	-0.5	0.2	-0.0
				5133	17.2	1.5	-0.1	-0.0	0.3	0.0
				5134	-7.0	0.1	0.1	0.0	0.0	0.0
				2139	-16.2	-3.5	-0.0	-0.3	0.1	0.0
4797	3	2 S1 HL-~1	Max	3812	8.8	-0.7	-0.1	1.7	0.0	0.0
				4452	-4.4	-3.8	0.2	1.5	-0.1	0.0
				4517	-9.0	-1.6	0.4	1.2	-0.1	0.0
				3841	4.7	6.0	-0.3	1.8	0.0	0.0
			Min	3812	8.8	-0.7	-0.1	1.7	0.0	0.0
				4452	-4.4	-3.8	0.2	1.5	-0.1	0.0
				4517	-9.0	-1.6	0.4	1.2	-0.1	0.0
				3841	4.7	6.0	-0.3	1.8	0.0	0.0
4798	3	2 S1 HL-~1	Max	4452	11.8	-1.0	-0.2	-1.4	-0.2	0.0
				2139	-9.0	-2.4	0.3	3.8	-0.2	0.0
				1492	-11.8	1.9	0.5	3.3	-0.0	-0.0
				4517	9.0	1.6	-0.5	-1.2	0.1	0.0
			Min	4452	11.8	-1.0	-0.2	-1.4	-0.2	0.0
				2139	-9.0	-2.4	0.3	3.8	-0.2	0.0
				1492	-11.8	1.9	0.5	3.3	-0.0	-0.0
				4517	9.0	1.6	-0.5	-1.2	0.1	0.0
4799	3	2 S1 HL-~1	Max	2139	-0.4	2.4	0.3	-1.3	-0.1	0.0
				5134	7.0	-0.1	-0.2	-0.0	-0.0	0.0
				5135	0.0	0.0	-0.0	0.0	0.0	0.0
				1492	-6.7	-2.3	0.1	-2.5	0.0	-0.0

			Min	2139	-0.4	2.4	0.3	-1.3	-0.1	0.0
				5134	7.0	-0.1	-0.2	-0.0	-0.0	0.0
				5135	0.0	0.0	-0.0	0.0	0.0	0.0
				1492	-6.7	-2.3	0.1	-2.5	0.0	-0.0
5112	3	3 S1 HL-~1	Max	1153	0.0	0.0	0.0	0.0	0.0	0.0
				1493	-7.8	-1.2	0.0	-1.7	0.3	-0.0
				1599	0.6	3.2	-0.2	0.3	-0.0	-0.0
				1982	7.2	-2.0	0.3	0.0	0.2	0.0
			Min	1153	0.0	0.0	0.0	0.0	0.0	0.0
				1493	-7.8	-1.2	0.0	-1.7	0.3	-0.0
				1599	0.6	3.2	-0.2	0.3	-0.0	-0.0
				1982	7.2	-2.0	0.3	0.0	0.2	0.0
5113	3	3 S1 HL-~1	Max	1493	-10.1	1.7	0.1	-1.9	-0.3	-0.0
				2509	0.0	0.0	0.0	0.0	0.0	0.0
				1926	10.3	2.3	-0.3	0.0	-0.3	0.0
				1599	-0.2	-4.0	0.3	0.2	-0.1	-0.0
			Min	1493	-10.1	1.7	0.1	-1.9	-0.3	-0.0
				2509	0.0	0.0	0.0	0.0	0.0	0.0
				1926	10.3	2.3	-0.3	0.0	-0.3	0.0
				1599	-0.2	-4.0	0.3	0.2	-0.1	-0.0
5114	3	3 S1 HL-~1	Max	1982	-7.2	2.0	-0.3	-0.0	-0.2	0.0
				1599	-11.6	-2.5	0.3	1.6	0.1	-0.0
				1809	8.1	-0.1	0.1	1.0	-0.2	0.0
				2628	10.6	0.7	-0.1	0.0	0.0	-0.0
			Min	1982	-7.2	2.0	-0.3	-0.0	-0.2	0.0
				1599	-11.6	-2.5	0.3	1.6	0.1	-0.0
				1809	8.1	-0.1	0.1	1.0	-0.2	0.0
				2628	10.6	0.7	-0.1	0.0	0.0	-0.0
5115	3	3 S1 HL-~1	Max	1599	-14.5	3.2	-0.2	1.3	0.1	-0.0
				1926	-10.3	-2.3	0.3	-0.0	0.3	0.0
				1015	15.6	0.1	0.1	0.1	-0.1	0.0
				1809	9.2	-1.0	-0.0	0.5	0.1	0.0
			Min	1599	-14.5	3.2	-0.2	1.3	0.1	-0.0
				1926	-10.3	-2.3	0.3	-0.0	0.3	0.0
				1015	15.6	0.1	0.1	0.1	-0.1	0.0
				1809	9.2	-1.0	-0.0	0.5	0.1	0.0
5116	3	3 S1 HL-~1	Max	2628	-10.5	5.1	-0.1	-0.0	0.1	-0.0
				1809	-14.3	-5.3	0.2	0.6	0.0	0.0
				712	11.1	0.0	0.1	0.3	-0.0	0.0
				3540	13.6	0.2	0.0	-0.0	-0.0	0.0
			Min	2628	-10.5	5.1	-0.1	-0.0	0.1	-0.0
				1809	-14.3	-5.3	0.2	0.6	0.0	0.0
				712	11.1	0.0	0.1	0.3	-0.0	0.0
				3540	13.6	0.2	0.0	-0.0	-0.0	0.0
5117	3	3 S1 HL-~1	Max	1809	-12.5	-0.0	0.2	-0.7	0.0	0.0
				1015	-15.6	-0.1	-0.1	-0.1	0.1	0.0
				3552	13.0	-2.5	-0.0	-0.0	-0.0	0.0
				712	15.1	2.7	0.1	-0.5	-0.0	0.0
			Min	1809	-12.5	-0.0	0.2	-0.7	0.0	0.0
				1015	-15.6	-0.1	-0.1	-0.1	0.1	0.0
				3552	13.0	-2.5	-0.0	-0.0	-0.0	0.0
				712	15.1	2.7	0.1	-0.5	-0.0	0.0
5118	3	3 S1 HL-~1	Max	3540	-13.6	-0.2	-0.0	0.0	0.0	0.0
				712	-11.3	0.3	0.1	0.1	0.1	0.0
				1705	13.2	-3.2	0.0	0.2	-0.0	0.0
				2580	11.7	3.0	0.0	-0.1	0.0	0.0

			Min	3540	-13.6	-0.2	-0.0	0.0	0.0	0.0
				712	-11.3	0.3	0.1	0.1	0.1	0.0
				1705	13.2	-3.2	0.0	0.2	-0.0	0.0
				2580	11.7	3.0	0.0	-0.1	0.0	0.0
5119	3	3 S1 HL-~1	Max	712	-9.8	-2.8	0.0	-0.2	0.0	0.0
				3552	-13.0	2.5	0.0	0.0	0.0	0.0
				1207	9.5	-0.3	-0.0	0.0	-0.1	0.0
				1705	13.3	0.6	0.1	-0.2	-0.0	0.0
			Min	712	-9.8	-2.8	0.0	-0.2	0.0	0.0
				3552	-13.0	2.5	0.0	0.0	0.0	0.0
				1207	9.5	-0.3	-0.0	0.0	-0.1	0.0
				1705	13.3	0.6	0.1	-0.2	-0.0	0.0
5120	3	3 S1 HL-~1	Max	2580	-11.6	1.6	-0.0	0.1	0.0	0.0
				1705	-10.5	-1.5	0.1	0.4	0.0	0.0
				713	11.4	-1.3	0.1	0.4	-0.0	0.0
				3541	10.7	1.2	-0.0	0.0	-0.0	0.0
			Min	2580	-11.6	1.6	-0.0	0.1	0.0	0.0
				1705	-10.5	-1.5	0.1	0.4	0.0	0.0
				713	11.4	-1.3	0.1	0.4	-0.0	0.0
				3541	10.7	1.2	-0.0	0.0	-0.0	0.0
5121	3	3 S1 HL-~1	Max	1705	-10.9	-0.2	0.1	-0.2	0.0	0.0
				1207	-9.5	0.3	0.0	-0.0	0.1	0.0
				3553	10.6	-0.3	0.0	0.0	-0.1	0.0
				713	9.8	0.3	0.1	-0.2	-0.0	0.0
			Min	1705	-10.9	-0.2	0.1	-0.2	0.0	0.0
				1207	-9.5	0.3	0.0	-0.0	0.1	0.0
				3553	10.6	-0.3	0.0	0.0	-0.1	0.0
				713	9.8	0.3	0.1	-0.2	-0.0	0.0
5122	3	3 S1 HL-~1	Max	3541	-10.7	-1.2	0.0	-0.0	0.0	0.0
				713	-7.9	1.5	0.1	0.3	0.0	0.0
				96	10.7	-3.0	0.1	0.3	-0.0	-0.0
				2524	7.9	2.8	-0.0	0.0	-0.0	-0.0
			Min	3541	-10.7	-1.2	0.0	-0.0	0.0	0.0
				713	-7.9	1.5	0.1	0.3	0.0	0.0
				96	10.7	-3.0	0.1	0.3	-0.0	-0.0
				2524	7.9	2.8	-0.0	0.0	-0.0	-0.0
5123	3	3 S1 HL-~1	Max	713	-8.0	-0.5	0.1	-0.2	0.0	0.0
				3553	-10.6	0.3	-0.0	-0.0	0.1	0.0
				1013	8.1	-1.6	0.0	0.0	-0.0	0.0
				96	10.6	1.8	0.1	-0.3	-0.0	-0.0
			Min	713	-8.0	-0.5	0.1	-0.2	0.0	0.0
				3553	-10.6	0.3	-0.0	-0.0	0.1	0.0
				1013	8.1	-1.6	0.0	0.0	-0.0	0.0
				96	10.6	1.8	0.1	-0.3	-0.0	-0.0
5124	3	3 S1 HL-~1	Max	2524	-7.9	0.2	-0.0	-0.0	0.0	-0.0
				96	-5.7	-0.1	0.1	0.4	0.0	-0.0
				714	8.0	-2.8	0.1	0.3	-0.0	-0.0
				3542	5.6	2.6	-0.0	0.0	-0.0	0.0
			Min	2524	-7.9	0.2	-0.0	-0.0	0.0	-0.0
				96	-5.7	-0.1	0.1	0.4	0.0	-0.0
				714	8.0	-2.8	0.1	0.3	-0.0	-0.0
				3542	5.6	2.6	-0.0	0.0	-0.0	0.0
5125	3	3 S1 HL-~1	Max	96	-5.9	-1.7	0.1	-0.4	0.0	-0.0
				1013	-8.1	1.6	-0.0	-0.0	0.0	0.0
				3554	6.0	-2.6	0.0	0.0	-0.0	0.0
				714	8.0	2.7	0.1	-0.3	-0.0	-0.0
			Min	96	-5.9	-1.7	0.1	-0.4	0.0	-0.0

				1013	-8.1	1.6	-0.0	-0.0	0.0	0.0
				3554	6.0	-2.6	0.0	0.0	-0.0	0.0
				714	8.0	2.7	0.1	-0.3	-0.0	-0.0
5126	3	3 S1 HL-~1	Max	3542	-5.6	-2.6	0.0	-0.0	0.0	0.0
				714	-2.1	2.9	0.1	0.3	0.0	-0.0
				82	5.6	-1.2	0.1	0.3	-0.0	0.0
				2476	2.1	1.0	-0.0	-0.0	-0.0	0.0
			Min	3542	-5.6	-2.6	0.0	-0.0	0.0	0.0
				714	-2.1	2.9	0.1	0.3	0.0	-0.0
				82	5.6	-1.2	0.1	0.3	-0.0	0.0
				2476	2.1	1.0	-0.0	-0.0	-0.0	0.0
5127	3	3 S1 HL-~1	Max	714	-1.9	-2.9	0.1	-0.2	0.0	-0.0
				3554	-6.0	2.6	-0.0	-0.0	0.0	0.0
				1206	1.9	-0.3	-0.0	0.0	0.0	0.0
				82	5.9	0.6	0.1	-0.3	-0.0	0.0
			Min	714	-1.9	-2.9	0.1	-0.2	0.0	-0.0
				3554	-6.0	2.6	-0.0	-0.0	0.0	0.0
				1206	1.9	-0.3	-0.0	0.0	0.0	0.0
				82	5.9	0.6	0.1	-0.3	-0.0	0.0
5128	3	3 S1 HL-~1	Max	2476	-2.2	0.2	-0.0	0.0	0.0	0.0
				82	-1.3	0.0	0.0	0.1	0.0	0.0
				5063	2.2	-1.2	0.0	0.0	0.0	0.0
				5076	1.3	1.0	0.0	-0.0	0.0	0.0
			Min	2476	-2.2	0.2	-0.0	0.0	0.0	0.0
				82	-1.3	0.0	0.0	0.1	0.0	0.0
				5063	2.2	-1.2	0.0	0.0	0.0	0.0
				5076	1.3	1.0	0.0	-0.0	0.0	0.0
5129	3	3 S1 HL-~1	Max	82	-1.3	-0.5	0.0	-0.1	-0.0	0.0
				1206	-1.9	0.3	0.0	-0.0	-0.0	0.0
				5077	1.2	-0.7	-0.0	-0.0	-0.0	0.0
				5063	2.0	0.9	0.0	-0.1	-0.0	0.0
			Min	82	-1.3	-0.5	0.0	-0.1	-0.0	0.0
				1206	-1.9	0.3	0.0	-0.0	-0.0	0.0
				5077	1.2	-0.7	-0.0	-0.0	-0.0	0.0
				5063	2.0	0.9	0.0	-0.1	-0.0	0.0
5130	3	4 S1 HL-~1	Max	1862	4.1	-2.6	0.0	-0.0	-0.1	0.0
				2485	7.8	3.1	0.1	0.4	-0.0	0.0
				2242	-4.0	-0.9	0.1	0.4	0.0	0.0
				2458	-7.9	0.4	-0.1	0.0	0.1	0.0
			Min	1862	4.1	-2.6	0.0	-0.0	-0.1	0.0
				2485	7.8	3.1	0.1	0.4	-0.0	0.0
				2242	-4.0	-0.9	0.1	0.4	0.0	0.0
				2458	-7.9	0.4	-0.1	0.0	0.1	0.0
5131	3	4 S1 HL-~1	Max	2485	8.0	-3.3	0.1	-0.1	-0.0	0.0
				1087	3.8	2.7	-0.0	-0.0	0.0	0.0
				1615	-8.1	-0.2	0.0	-0.0	0.1	0.0
				2242	-3.8	0.8	0.0	-0.2	0.1	0.0
			Min	2485	8.0	-3.3	0.1	-0.1	-0.0	0.0
				1087	3.8	2.7	-0.0	-0.0	0.0	0.0
				1615	-8.1	-0.2	0.0	-0.0	0.1	0.0
				2242	-3.8	0.8	0.0	-0.2	0.1	0.0
5132	3	4 S1 HL-~1	Max	2458	7.9	-0.4	0.1	-0.0	-0.1	0.0
				2242	10.0	0.9	-0.0	-0.0	-0.1	0.0
				64	-8.1	-0.4	0.0	-0.3	0.2	-0.0
				2404	-9.8	-0.1	0.0	-0.0	0.2	0.0
			Min	2458	7.9	-0.4	0.1	-0.0	-0.1	0.0
				2242	10.0	0.9	-0.0	-0.0	-0.1	0.0

				64	-8.1	-0.4	0.0	-0.3	0.2	-0.0
				2404	-9.8	-0.1	0.0	-0.0	0.2	0.0
5133	3	4 S1 HL-~1	Max	2242	10.2	-0.8	0.1	-0.2	-0.1	0.0
				1615	8.1	0.2	-0.0	0.0	-0.1	0.0
				2725	-10.2	-0.6	0.0	-0.0	0.2	0.0
				64	-8.1	1.1	0.0	-0.2	0.2	-0.0
			Min	2242	10.2	-0.8	0.1	-0.2	-0.1	0.0
				1615	8.1	0.2	-0.0	0.0	-0.1	0.0
				2725	-10.2	-0.6	0.0	-0.0	0.2	0.0
				64	-8.1	1.1	0.0	-0.2	0.2	-0.0
5134	3	4 S1 HL-~1	Max	2404	9.8	-1.9	-0.1	0.0	-0.1	0.0
				64	15.6	2.6	0.2	0.8	-0.2	-0.0
				4785	-9.8	-3.8	0.5	2.7	0.2	-0.0
				4799	-15.6	3.1	-0.4	0.0	0.1	0.0
			Min	2404	9.8	-1.9	-0.1	0.0	-0.1	0.0
				64	15.6	2.6	0.2	0.8	-0.2	-0.0
				4785	-9.8	-3.8	0.5	2.7	0.2	-0.0
				4799	-15.6	3.1	-0.4	0.0	0.1	0.0
5135	3	4 S1 HL-~1	Max	64	15.5	-1.2	0.1	-0.3	-0.2	-0.0
				2725	10.2	0.6	-0.0	0.0	-0.2	0.0
				4795	-15.6	-3.0	0.1	0.0	0.1	0.0
				4785	-10.1	3.6	0.0	-0.1	0.0	-0.0
			Min	64	15.5	-1.2	0.1	-0.3	-0.2	-0.0
				2725	10.2	0.6	-0.0	0.0	-0.2	0.0
				4795	-15.6	-3.0	0.1	0.0	0.1	0.0
				4785	-10.1	3.6	0.0	-0.1	0.0	-0.0
5136	3	4 S1 HL-~1	Max	4799	15.6	-3.1	0.4	-0.0	-0.1	0.0
				4785	21.1	3.8	-0.3	-2.3	-0.2	-0.0
				36	-15.6	0.6	-1.5	-9.2	0.2	-0.0
				2300	-21.1	-1.2	1.6	0.0	0.3	-0.0
			Min	4799	15.6	-3.1	0.4	-0.0	-0.1	0.0
				4785	21.1	3.8	-0.3	-2.3	-0.2	-0.0
				36	-15.6	0.6	-1.5	-9.2	0.2	-0.0
				2300	-21.1	-1.2	1.6	0.0	0.3	-0.0
5137	3	4 S1 HL-~1	Max	4785	20.7	-3.5	0.1	-0.2	-0.0	-0.0
				4795	15.6	3.0	-0.1	-0.0	-0.1	0.0
				2613	-20.6	0.0	0.0	-0.0	0.6	0.0
				36	-15.7	0.5	0.1	-0.7	0.5	-0.0
			Min	4785	20.7	-3.5	0.1	-0.2	-0.0	-0.0
				4795	15.6	3.0	-0.1	-0.0	-0.1	0.0
				2613	-20.6	0.0	0.0	-0.0	0.6	0.0
				36	-15.7	0.5	0.1	-0.7	0.5	-0.0
5138	3	4 S1 HL-~1	Max	2300	21.1	-1.2	1.6	-0.0	-0.3	-0.0
				36	15.6	0.6	-1.5	-9.2	-0.2	-0.0
				4853	-21.1	3.8	-0.3	-2.3	0.2	0.0
				4873	-15.6	-3.1	0.4	-0.0	0.1	0.0
			Min	2300	21.1	-1.2	1.6	-0.0	-0.3	-0.0
				36	15.6	0.6	-1.5	-9.2	-0.2	-0.0
				4853	-21.1	3.8	-0.3	-2.3	0.2	0.0
				4873	-15.6	-3.1	0.4	-0.0	0.1	0.0
5139	3	4 S1 HL-~1	Max	36	15.7	0.6	0.1	-0.7	-0.5	-0.0
				2613	20.6	-0.0	-0.0	0.0	-0.6	0.0
				4866	-15.5	3.0	-0.1	-0.0	0.1	0.0
				4853	-20.7	-3.5	0.1	-0.2	0.0	0.0
			Min	36	15.7	0.6	0.1	-0.7	-0.5	-0.0
				2613	20.6	-0.0	-0.0	0.0	-0.6	0.0
				4866	-15.5	3.0	-0.1	-0.0	0.1	0.0

				4853	-20.7	-3.5	0.1	-0.2	0.0	0.0
5140	3	4 S1 HL--~1	Max	4873	15.6	3.1	-0.4	0.0	-0.1	0.0
				4853	9.8	-3.8	0.5	2.7	-0.2	0.0
				56	-15.6	2.6	0.2	0.8	0.2	0.0
				2372	-9.8	-1.9	-0.1	0.0	0.1	-0.0
			Min	4873	15.6	3.1	-0.4	0.0	-0.1	0.0
				4853	9.8	-3.8	0.5	2.7	-0.2	0.0
				56	-15.6	2.6	0.2	0.8	0.2	0.0
				2372	-9.8	-1.9	-0.1	0.0	0.1	-0.0
5141	3	4 S1 HL--~1	Max	4853	10.1	3.6	0.0	-0.1	-0.0	0.0
				4866	15.5	-3.0	0.1	0.0	-0.1	0.0
				2693	-10.2	0.6	-0.0	0.0	0.2	0.0
				56	-15.4	-1.2	0.1	-0.3	0.2	0.0
			Min	4853	10.1	3.6	0.0	-0.1	-0.0	0.0
				4866	15.5	-3.0	0.1	0.0	-0.1	0.0
				2693	-10.2	0.6	-0.0	0.0	0.2	0.0
				56	-15.4	-1.2	0.1	-0.3	0.2	0.0
5142	3	4 S1 HL--~1	Max	2372	9.8	-0.1	0.0	-0.0	-0.2	-0.0
				56	8.1	-0.4	0.0	-0.3	-0.2	0.0
				2190	-10.0	0.9	-0.0	-0.0	0.1	-0.0
				2402	-7.9	-0.4	0.1	-0.0	0.1	0.0
			Min	2372	9.8	-0.1	0.0	-0.0	-0.2	-0.0
				56	8.1	-0.4	0.0	-0.3	-0.2	0.0
				2190	-10.0	0.9	-0.0	-0.0	0.1	-0.0
				2402	-7.9	-0.4	0.1	-0.0	0.1	0.0
5143	3	4 S1 HL--~1	Max	56	8.1	1.1	0.0	-0.2	-0.2	0.0
				2693	10.2	-0.6	0.0	-0.0	-0.2	0.0
				2298	-8.1	0.2	-0.0	0.0	0.1	0.0
				2190	-10.2	-0.8	0.1	-0.2	0.1	-0.0
			Min	56	8.1	1.1	0.0	-0.2	-0.2	0.0
				2693	10.2	-0.6	0.0	-0.0	-0.2	0.0
				2298	-8.1	0.2	-0.0	0.0	0.1	0.0
				2190	-10.2	-0.8	0.1	-0.2	0.1	-0.0
5144	3	4 S1 HL--~1	Max	2402	7.9	0.4	-0.1	0.0	-0.1	0.0
				2190	4.0	-0.9	0.1	0.4	-0.0	-0.0
				2501	-7.8	3.1	0.1	0.4	0.0	-0.0
				1870	-4.1	-2.6	0.0	-0.0	0.1	0.0
			Min	2402	7.9	0.4	-0.1	0.0	-0.1	0.0
				2190	4.0	-0.9	0.1	0.4	-0.0	-0.0
				2501	-7.8	3.1	0.1	0.4	0.0	-0.0
				1870	-4.1	-2.6	0.0	-0.0	0.1	0.0
5145	3	4 S1 HL--~1	Max	2190	3.8	0.8	0.0	-0.2	-0.1	-0.0
				2298	8.1	-0.2	0.0	-0.0	-0.1	0.0
				1121	-3.8	2.7	-0.0	-0.0	-0.0	0.0
				2501	-8.0	-3.3	0.1	-0.1	0.0	-0.0
			Min	2190	3.8	0.8	0.0	-0.2	-0.1	-0.0
				2298	8.1	-0.2	0.0	-0.0	-0.1	0.0
				1121	-3.8	2.7	-0.0	-0.0	-0.0	0.0
				2501	-8.0	-3.3	0.1	-0.1	0.0	-0.0
5146	3	4 S1 HL--~1	Max	1870	4.1	2.6	-0.0	0.0	-0.1	0.0
				2501	-1.3	-3.1	0.1	0.6	-0.0	-0.0
				5008	-4.1	1.4	0.2	0.4	-0.0	-0.0
				5021	1.3	-1.0	-0.0	0.0	0.0	0.0
			Min	1870	4.1	2.6	-0.0	0.0	-0.1	0.0
				2501	-1.3	-3.1	0.1	0.6	-0.0	-0.0
				5008	-4.1	1.4	0.2	0.4	-0.0	-0.0
				5021	1.3	-1.0	-0.0	0.0	0.0	0.0

5147	3	4 S1 HL-~1	Max	2501	-1.2	3.2	0.1	-0.3	-0.1	-0.0
				1121	3.8	-2.7	0.0	0.0	0.0	0.0
				5022	1.2	0.7	0.0	0.0	-0.0	0.0
				5008	-3.9	-1.1	0.1	-0.5	0.0	-0.0
			Min	2501	-1.2	3.2	0.1	-0.3	-0.1	-0.0
				1121	3.8	-2.7	0.0	0.0	0.0	0.0
				5022	1.2	0.7	0.0	0.0	-0.0	0.0
				5008	-3.9	-1.1	0.1	-0.5	0.0	-0.0
5148	3	3 S1 HL-~1	Max	2684	-2.2	1.0	-0.0	-0.0	0.0	-0.0
				1913	-5.6	-1.2	0.1	0.3	0.0	-0.0
				717	2.1	2.9	0.1	0.3	-0.0	0.0
				3545	5.6	-2.6	0.0	-0.0	-0.0	0.0
			Min	2684	-2.2	1.0	-0.0	-0.0	0.0	-0.0
				1913	-5.6	-1.2	0.1	0.3	0.0	-0.0
				717	2.1	2.9	0.1	0.3	-0.0	0.0
				3545	5.6	-2.6	0.0	-0.0	-0.0	0.0
5149	3	3 S1 HL-~1	Max	1913	-5.9	0.6	0.1	-0.3	0.0	-0.0
				1208	-1.9	-0.3	-0.0	0.0	-0.0	0.0
				3557	6.0	2.6	-0.0	-0.0	-0.0	0.0
				717	1.9	-2.9	0.1	-0.2	-0.0	0.0
			Min	1913	-5.9	0.6	0.1	-0.3	0.0	-0.0
				1208	-1.9	-0.3	-0.0	0.0	-0.0	0.0
				3557	6.0	2.6	-0.0	-0.0	-0.0	0.0
				717	1.9	-2.9	0.1	-0.2	-0.0	0.0
5150	3	3 S1 HL-~1	Max	3545	-5.6	2.6	-0.0	0.0	0.0	0.0
				717	-8.0	-2.8	0.1	0.3	0.0	0.0
				2097	5.7	-0.1	0.1	0.4	-0.0	0.0
				1662	7.9	0.2	-0.0	-0.0	-0.0	0.0
			Min	3545	-5.6	2.6	-0.0	0.0	0.0	0.0
				717	-8.0	-2.8	0.1	0.3	0.0	0.0
				2097	5.7	-0.1	0.1	0.4	-0.0	0.0
				1662	7.9	0.2	-0.0	-0.0	-0.0	0.0
5151	3	3 S1 HL-~1	Max	717	-8.0	2.7	0.1	-0.3	0.0	0.0
				3557	-6.0	-2.6	0.0	0.0	0.0	0.0
				1148	8.1	1.6	-0.0	-0.0	-0.0	0.0
				2097	5.9	-1.7	0.1	-0.4	-0.0	0.0
			Min	717	-8.0	2.7	0.1	-0.3	0.0	0.0
				3557	-6.0	-2.6	0.0	0.0	0.0	0.0
				1148	8.1	1.6	-0.0	-0.0	-0.0	0.0
				2097	5.9	-1.7	0.1	-0.4	-0.0	0.0
5152	3	3 S1 HL-~1	Max	1662	-7.9	2.8	-0.0	0.0	0.0	0.0
				2097	-10.7	-3.0	0.1	0.3	0.0	0.0
				716	7.9	1.5	0.1	0.3	-0.0	-0.0
				3544	10.7	-1.2	0.0	-0.0	-0.0	0.0
			Min	1662	-7.9	2.8	-0.0	0.0	0.0	0.0
				2097	-10.7	-3.0	0.1	0.3	0.0	0.0
				716	7.9	1.5	0.1	0.3	-0.0	-0.0
				3544	10.7	-1.2	0.0	-0.0	-0.0	0.0
5153	3	3 S1 HL-~1	Max	2097	-10.6	1.8	0.1	-0.3	0.0	0.0
				1148	-8.1	-1.6	0.0	0.0	0.0	0.0
				3556	10.6	0.3	-0.0	-0.0	-0.1	0.0
				716	8.0	-0.5	0.1	-0.2	-0.0	-0.0
			Min	2097	-10.6	1.8	0.1	-0.3	0.0	0.0
				1148	-8.1	-1.6	0.0	0.0	0.0	0.0
				3556	10.6	0.3	-0.0	-0.0	-0.1	0.0
				716	8.0	-0.5	0.1	-0.2	-0.0	-0.0

5154	3	3 S1 HL-~1	Max	3544	-10.7	1.2	-0.0	0.0	0.0	0.0
				716	-11.4	-1.3	0.1	0.4	0.0	-0.0
				2201	10.5	-1.5	0.1	0.4	-0.0	-0.0
				1718	11.6	1.6	-0.0	0.1	-0.0	-0.0
			Min	3544	-10.7	1.2	-0.0	0.0	0.0	0.0
				716	-11.4	-1.3	0.1	0.4	0.0	-0.0
				2201	10.5	-1.5	0.1	0.4	-0.0	-0.0
				1718	11.6	1.6	-0.0	0.1	-0.0	-0.0
5155	3	3 S1 HL-~1	Max	716	-9.8	0.3	0.1	-0.2	0.0	-0.0
				3556	-10.6	-0.3	0.0	0.0	0.1	0.0
				1332	9.5	0.3	0.0	-0.0	-0.1	0.0
				2201	10.9	-0.2	0.1	-0.2	-0.0	-0.0
			Min	716	-9.8	0.3	0.1	-0.2	0.0	-0.0
				3556	-10.6	-0.3	0.0	0.0	0.1	0.0
				1332	9.5	0.3	0.0	-0.0	-0.1	0.0
				2201	10.9	-0.2	0.1	-0.2	-0.0	-0.0
5156	3	3 S1 HL-~1	Max	1718	-11.7	3.0	0.0	-0.1	-0.0	-0.0
				2201	-13.2	-3.2	0.0	0.2	0.0	-0.0
				715	11.3	0.3	0.1	0.1	-0.1	-0.0
				3543	13.6	-0.1	-0.0	0.0	-0.0	0.0
			Min	1718	-11.7	3.0	0.0	-0.1	-0.0	-0.0
				2201	-13.2	-3.2	0.0	0.2	0.0	-0.0
				715	11.3	0.3	0.1	0.1	-0.1	-0.0
				3543	13.6	-0.1	-0.0	0.0	-0.0	0.0
5157	3	3 S1 HL-~1	Max	2201	-13.3	0.6	0.1	-0.2	0.0	-0.0
				1332	-9.5	-0.3	-0.0	0.0	0.1	0.0
				3555	13.0	2.5	0.0	0.0	-0.0	0.0
				715	9.8	-2.8	0.0	-0.2	-0.0	-0.0
			Min	2201	-13.3	0.6	0.1	-0.2	0.0	-0.0
				1332	-9.5	-0.3	-0.0	0.0	0.1	0.0
				3555	13.0	2.5	0.0	0.0	-0.0	0.0
				715	9.8	-2.8	0.0	-0.2	-0.0	-0.0
5158	3	3 S1 HL-~1	Max	3543	-13.6	0.1	0.0	-0.0	0.0	0.0
				715	-11.1	0.1	0.1	0.3	0.0	-0.0
				2309	14.3	-5.3	0.2	0.6	-0.0	-0.0
				1766	10.4	5.1	-0.1	-0.0	-0.1	0.0
			Min	3543	-13.6	0.1	0.0	-0.0	0.0	0.0
				715	-11.1	0.1	0.1	0.3	0.0	-0.0
				2309	14.3	-5.3	0.2	0.6	-0.0	-0.0
				1766	10.4	5.1	-0.1	-0.0	-0.1	0.0
5159	3	3 S1 HL-~1	Max	715	-15.2	2.7	0.1	-0.5	0.0	-0.0
				3555	-13.0	-2.5	-0.0	-0.0	0.0	0.0
				1152	15.7	-0.1	-0.1	-0.1	-0.1	0.0
				2309	12.5	-0.0	0.2	-0.7	-0.0	-0.0
			Min	715	-15.2	2.7	0.1	-0.5	0.0	-0.0
				3555	-13.0	-2.5	-0.0	-0.0	0.0	0.0
				1152	15.7	-0.1	-0.1	-0.1	-0.1	0.0
				2309	12.5	-0.0	0.2	-0.7	-0.0	-0.0
5160	3	3 S1 HL-~1	Max	1766	-10.6	0.7	-0.1	0.0	-0.0	0.0
				2309	-8.1	-0.1	0.2	1.0	0.2	-0.0
				2030	11.5	-2.5	0.3	1.6	-0.1	0.0
				2138	7.2	2.0	-0.3	-0.0	0.2	0.0
			Min	1766	-10.6	0.7	-0.1	0.0	-0.0	0.0
				2309	-8.1	-0.1	0.2	1.0	0.2	-0.0
				2030	11.5	-2.5	0.3	1.6	-0.1	0.0
				2138	7.2	2.0	-0.3	-0.0	0.2	0.0

5161	3	3	S1	HL--~1	Max	2309	-9.2	-1.0	-0.0	0.5	-0.1	-0.0
						1152	-15.7	0.1	0.1	0.1	0.1	0.0
						2086	10.3	-2.3	0.3	-0.0	-0.3	0.0
						2030	14.6	3.2	-0.2	1.3	-0.1	0.0
					Min	2309	-9.2	-1.0	-0.0	0.5	-0.1	-0.0
						1152	-15.7	0.1	0.1	0.1	0.1	0.0
						2086	10.3	-2.3	0.3	-0.0	-0.3	0.0
						2030	14.6	3.2	-0.2	1.3	-0.1	0.0
5162	3	3	S1	HL--~1	Max	2138	-7.2	-2.0	0.3	0.0	-0.2	0.0
						2030	-0.6	3.2	-0.2	0.3	0.0	0.0
						1384	7.8	-1.2	0.0	-1.7	-0.3	0.0
						1177	0.0	0.0	0.0	0.0	0.0	0.0
					Min	2138	-7.2	-2.0	0.3	0.0	-0.2	0.0
						2030	-0.6	3.2	-0.2	0.3	0.0	0.0
						1384	7.8	-1.2	0.0	-1.7	-0.3	0.0
						1177	0.0	0.0	0.0	0.0	0.0	0.0
5163	3	3	S1	HL--~1	Max	2030	0.2	-4.0	0.3	0.2	0.1	0.0
						2086	-10.3	2.3	-0.3	0.0	0.3	0.0
						2517	0.0	0.0	0.0	0.0	0.0	0.0
						1384	10.1	1.7	0.1	-1.9	0.3	0.0
					Min	2030	0.2	-4.0	0.3	0.2	0.1	0.0
						2086	-10.3	2.3	-0.3	0.0	0.3	0.0
						2517	0.0	0.0	0.0	0.0	0.0	0.0
						1384	10.1	1.7	0.1	-1.9	0.3	0.0
5476	3	1	S1	HL--~1	Max	1383	-18.4	0.4	-0.7	-0.8	0.0	-0.0
						691	18.3	-0.4	20.2	9.3	0.0	-0.8
						4934	20.7	-0.0	-6.2	2.2	0.0	0.2
						2087	-20.6	0.0	-13.2	-2.3	0.0	0.4
					Min	1383	-18.4	0.4	-0.7	-0.8	0.0	-0.0
						691	18.3	-0.4	20.2	9.3	0.0	-0.8
						4934	20.7	-0.0	-6.2	2.2	0.0	0.2
						2087	-20.6	0.0	-13.2	-2.3	0.0	0.4
5477	3	1	S1	HL--~1	Max	691	-23.4	1.2	-28.9	15.5	0.0	2.5
						1493	17.8	-1.1	50.3	3.6	0.0	0.0
						1599	24.9	-0.2	2.7	-0.3	0.0	-0.1
						4934	-19.3	0.1	-24.0	4.5	0.0	0.5
					Min	691	-23.4	1.2	-28.9	15.5	0.0	2.5
						1493	17.8	-1.1	50.3	3.6	0.0	0.0
						1599	24.9	-0.2	2.7	-0.3	0.0	-0.1
						4934	-19.3	0.1	-24.0	4.5	0.0	0.5
5478	3	1	S1	HL--~1	Max	2087	-18.5	-0.3	12.1	-2.8	0.0	-0.4
						4934	24.2	0.3	11.1	-3.0	0.0	-0.1
						729	22.1	0.2	-10.9	-1.4	0.0	-0.2
						1801	-27.8	-0.1	-12.2	-1.5	0.0	-0.1
					Min	2087	-18.5	-0.3	12.1	-2.8	0.0	-0.4
						4934	24.2	0.3	11.1	-3.0	0.0	-0.1
						729	22.1	0.2	-10.9	-1.4	0.0	-0.2
						1801	-27.8	-0.1	-12.2	-1.5	0.0	-0.1
5479	3	1	S1	HL--~1	Max	4934	-25.6	-0.4	19.1	-3.7	0.0	-0.6
						1599	0.8	0.4	-2.9	-3.0	0.0	0.1
						1809	31.5	0.1	-11.4	-1.5	0.0	-0.0
						729	-6.7	-0.1	-4.6	-1.5	0.0	-0.2
					Min	4934	-25.6	-0.4	19.1	-3.7	0.0	-0.6
						1599	0.8	0.4	-2.9	-3.0	0.0	0.1
						1809	31.5	0.1	-11.4	-1.5	0.0	-0.0
						729	-6.7	-0.1	-4.6	-1.5	0.0	-0.2
5480	3	1	S1	HL--~1	Max	1801	4.9	0.1	-1.3	-0.0	0.0	-0.0

				729	-4.4	-0.1	0.9	1.0	0.0	-0.1
				2699	0.8	-0.1	1.9	1.2	0.0	0.1
				700	-1.3	0.1	-1.1	0.5	0.0	-0.0
			Min	1801	4.9	0.1	-1.3	-0.0	0.0	-0.0
				729	-4.4	-0.1	0.9	1.0	0.0	-0.1
				2699	0.8	-0.1	1.9	1.2	0.0	0.1
				700	-1.3	0.1	-1.1	0.5	0.0	-0.0
5481	3	1 S1 HL-~1	Max	729	-11.0	0.1	-2.9	1.9	0.0	0.0
				1809	-22.1	-0.1	2.1	0.1	0.0	0.0
				712	16.6	-0.1	1.1	0.3	0.0	-0.0
				2699	16.5	0.1	0.2	2.4	0.0	-0.1
			Min	729	-11.0	0.1	-2.9	1.9	0.0	0.0
				1809	-22.1	-0.1	2.1	0.1	0.0	0.0
				712	16.6	-0.1	1.1	0.3	0.0	-0.0
				2699	16.5	0.1	0.2	2.4	0.0	-0.1
5482	3	1 S1 HL-~1	Max	700	5.4	0.1	-0.6	0.6	0.0	0.0
				2699	-7.8	-0.1	-1.5	0.7	0.0	-0.0
				727	-1.0	-0.0	0.6	0.4	0.0	-0.0
				1697	3.4	0.0	1.8	0.4	0.0	0.0
			Min	700	5.4	0.1	-0.6	0.6	0.0	0.0
				2699	-7.8	-0.1	-1.5	0.7	0.0	-0.0
				727	-1.0	-0.0	0.6	0.4	0.0	-0.0
				1697	3.4	0.0	1.8	0.4	0.0	0.0
5483	3	1 S1 HL-~1	Max	2699	-8.3	0.1	-0.6	1.4	0.0	0.1
				712	-21.8	-0.1	-1.4	0.1	0.0	0.0
				1705	13.1	-0.0	-0.3	-0.0	0.0	-0.0
				727	17.0	0.0	2.6	0.6	0.0	-0.0
			Min	2699	-8.3	0.1	-0.6	1.4	0.0	0.1
				712	-21.8	-0.1	-1.4	0.1	0.0	0.0
				1705	13.1	-0.0	-0.3	-0.0	0.0	-0.0
				727	17.0	0.0	2.6	0.6	0.0	-0.0
5484	3	1 S1 HL-~1	Max	1697	7.3	-0.0	-1.6	-0.1	0.0	-0.0
				727	-7.3	0.0	-0.1	-0.3	0.0	0.0
				2707	-2.8	0.1	1.6	-0.7	0.0	-0.1
				701	2.8	-0.1	0.5	-0.3	0.0	0.0
			Min	1697	7.3	-0.0	-1.6	-0.1	0.0	-0.0
				727	-7.3	0.0	-0.1	-0.3	0.0	0.0
				2707	-2.8	0.1	1.6	-0.7	0.0	-0.1
				701	2.8	-0.1	0.5	-0.3	0.0	0.0
5485	3	1 S1 HL-~1	Max	727	-8.7	-0.0	0.2	-0.6	0.0	-0.0
				1705	-18.2	0.0	-0.9	-0.3	0.0	0.0
				713	13.1	0.1	0.2	-0.2	0.0	0.0
				2707	13.8	-0.1	0.9	-1.0	0.0	0.0
			Min	727	-8.7	-0.0	0.2	-0.6	0.0	-0.0
				1705	-18.2	0.0	-0.9	-0.3	0.0	0.0
				713	13.1	0.1	0.2	-0.2	0.0	0.0
				2707	13.8	-0.1	0.9	-1.0	0.0	0.0
5486	3	1 S1 HL-~1	Max	701	8.9	-0.0	-2.2	-0.2	0.0	-0.0
				2707	-7.4	0.0	-0.7	-0.4	0.0	-0.0
				725	-4.9	-0.0	2.0	-0.0	-0.0	0.0
				95	3.4	0.0	1.3	0.0	-0.0	-0.0
			Min	701	8.9	-0.0	-2.2	-0.2	0.0	-0.0
				2707	-7.4	0.0	-0.7	-0.4	0.0	-0.0
				725	-4.9	-0.0	2.0	-0.0	-0.0	0.0
				95	3.4	0.0	1.3	0.0	-0.0	-0.0
5487	3	1 S1 HL-~1	Max	2707	-4.2	-0.0	-1.9	-0.6	0.0	-0.1
				713	-18.5	0.0	-0.6	-0.1	0.0	-0.0

					96	8.2	0.0	0.3	-0.0	-0.0	-0.0
					725	14.5	-0.0	2.4	-0.2	-0.0	-0.0
				Min	2707	-4.2	-0.0	-1.9	-0.6	0.0	-0.1
					713	-18.5	0.0	-0.6	-0.1	0.0	-0.0
					96	8.2	0.0	0.3	-0.0	-0.0	-0.0
					725	14.5	-0.0	2.4	-0.2	-0.0	-0.0
5488	3	1	S1 HL-~1	Max	95	12.5	0.0	-2.3	0.3	-0.0	-0.0
					725	-10.7	-0.0	-1.3	0.3	-0.0	-0.0
					2715	-9.5	-0.0	2.8	0.1	0.0	-0.0
					702	7.7	0.0	1.2	0.2	-0.0	0.0
				Min	95	12.5	0.0	-2.3	0.3	-0.0	-0.0
					725	-10.7	-0.0	-1.3	0.3	-0.0	-0.0
					2715	-9.5	-0.0	2.8	0.1	0.0	-0.0
					702	7.7	0.0	1.2	0.2	-0.0	0.0
5489	3	1	S1 HL-~1	Max	725	1.1	-0.0	-1.4	-0.1	-0.0	0.0
					96	-17.8	0.0	-1.4	-0.0	-0.0	-0.0
					714	2.0	0.0	0.5	-0.1	-0.0	0.0
					2715	14.7	-0.0	2.7	-0.5	0.0	-0.0
				Min	725	1.1	-0.0	-1.4	-0.1	-0.0	0.0
					96	-17.8	0.0	-1.4	-0.0	-0.0	-0.0
					714	2.0	0.0	0.5	-0.1	-0.0	0.0
					2715	14.7	-0.0	2.7	-0.5	0.0	-0.0
5490	3	1	S1 HL-~1	Max	702	11.9	0.0	-3.0	0.1	-0.0	-0.0
					2715	-10.9	-0.0	-2.2	0.1	0.0	-0.1
					723	-10.1	-0.0	3.1	0.1	-0.0	-0.0
					81	9.1	0.0	2.3	0.1	-0.0	-0.0
				Min	702	11.9	0.0	-3.0	0.1	-0.0	-0.0
					2715	-10.9	-0.0	-2.2	0.1	0.0	-0.1
					723	-10.1	-0.0	3.1	0.1	-0.0	-0.0
					81	9.1	0.0	2.3	0.1	-0.0	-0.0
5491	3	1	S1 HL-~1	Max	2715	4.6	-0.0	-3.3	-0.5	0.0	-0.1
					714	-14.1	0.0	-0.8	-0.1	-0.0	-0.0
					82	-2.9	0.0	1.9	0.0	-0.0	-0.0
					723	12.4	-0.0	2.5	-0.1	-0.0	-0.0
				Min	2715	4.6	-0.0	-3.3	-0.5	0.0	-0.1
					714	-14.1	0.0	-0.8	-0.1	-0.0	-0.0
					82	-2.9	0.0	1.9	0.0	-0.0	-0.0
					723	12.4	-0.0	2.5	-0.1	-0.0	-0.0
5492	3	1	S1 HL-~1	Max	81	4.7	-0.0	-3.2	-0.0	-0.0	0.0
					723	-4.1	-0.0	-2.8	-0.0	-0.0	-0.0
					5062	-4.0	0.0	3.3	-0.1	0.0	-0.0
					5048	3.4	-0.0	2.8	-0.1	-0.0	0.0
				Min	81	4.7	-0.0	-3.2	-0.0	-0.0	0.0
					723	-4.1	-0.0	-2.8	-0.0	-0.0	-0.0
					5062	-4.0	0.0	3.3	-0.1	0.0	-0.0
					5048	3.4	-0.0	2.8	-0.1	-0.0	0.0
5493	3	1	S1 HL-~1	Max	723	1.9	0.0	-2.6	0.0	-0.0	-0.0
					82	-5.9	-0.0	-2.5	0.0	-0.0	0.0
					5063	-1.0	-0.0	2.3	0.1	-0.0	0.0
					5062	5.1	0.0	3.0	0.0	0.0	-0.0
				Min	723	1.9	0.0	-2.6	0.0	-0.0	-0.0
					82	-5.9	-0.0	-2.5	0.0	-0.0	0.0
					5063	-1.0	-0.0	2.3	0.1	-0.0	0.0
					5062	5.1	0.0	3.0	0.0	0.0	-0.0
5494	3	1	S1 HL-~1	Max	1621	8.3	0.1	-4.1	0.5	-0.0	-0.0
					2723	-11.2	-0.1	-3.8	0.8	-0.0	-0.2
					4952	-10.0	0.0	4.6	-0.1	0.0	-0.1

				1614	12.9	-0.0	3.4	-0.0	-0.0	-0.0
			Min	1621	8.3	0.1	-4.1	0.5	-0.0	-0.0
				2723	-11.2	-0.1	-3.8	0.8	-0.0	-0.2
				4952	-10.0	0.0	4.6	-0.1	0.0	-0.1
				1614	12.9	-0.0	3.4	-0.0	-0.0	-0.0
5495	3	1 S1 HL-~1	Max	2723	12.4	-0.1	-4.1	-0.5	-0.0	-0.1
				2485	-5.1	0.0	-3.1	-0.3	-0.0	0.0
				2242	-14.1	0.0	3.3	-0.2	-0.0	-0.0
				4952	6.8	-0.0	4.0	-0.5	0.0	-0.0
			Min	2723	12.4	-0.1	-4.1	-0.5	-0.0	-0.1
				2485	-5.1	0.0	-3.1	-0.3	-0.0	0.0
				2242	-14.1	0.0	3.3	-0.2	-0.0	-0.0
				4952	6.8	-0.0	4.0	-0.5	0.0	-0.0
5496	3	1 S1 HL-~1	Max	1614	1.9	0.0	-4.1	0.1	-0.0	0.0
				4952	-6.6	-0.0	-4.1	0.2	0.0	0.1
				721	-4.4	-0.1	4.0	0.9	-0.0	0.2
				63	9.1	0.1	4.3	0.4	-0.0	0.0
			Min	1614	1.9	0.0	-4.1	0.1	-0.0	0.0
				4952	-6.6	-0.0	-4.1	0.2	0.0	0.1
				721	-4.4	-0.1	4.0	0.9	-0.0	0.2
				63	9.1	0.1	4.3	0.4	-0.0	0.0
5497	3	1 S1 HL-~1	Max	4952	9.8	0.0	-4.5	0.3	0.0	0.0
				2242	1.7	-0.0	-3.6	0.2	-0.0	0.0
				64	-12.6	-0.1	4.8	0.5	-0.0	0.0
				721	1.1	0.1	3.4	1.0	-0.0	-0.2
			Min	4952	9.8	0.0	-4.5	0.3	0.0	0.0
				2242	1.7	-0.0	-3.6	0.2	-0.0	0.0
				64	-12.6	-0.1	4.8	0.5	-0.0	0.0
				721	1.1	0.1	3.4	1.0	-0.0	-0.2
5498	3	1 S1 HL-~1	Max	63	9.9	-0.1	-4.7	-0.5	-0.0	-0.0
				721	-15.1	0.1	-4.8	-0.9	-0.0	-0.2
				4806	-13.7	0.5	5.7	-5.4	0.0	-0.5
				4784	19.0	-0.4	4.0	-2.6	-0.0	-0.0
			Min	63	9.9	-0.1	-4.7	-0.5	-0.0	-0.0
				721	-15.1	0.1	-4.8	-0.9	-0.0	-0.2
				4806	-13.7	0.5	5.7	-5.4	0.0	-0.5
				4784	19.0	-0.4	4.0	-2.6	-0.0	-0.0
5499	3	1 S1 HL-~1	Max	721	18.4	-0.1	-3.1	-0.9	-0.0	0.2
				64	-2.3	0.1	-4.8	-0.5	-0.0	-0.0
				4785	-21.9	0.5	-1.6	-2.7	-0.0	-0.0
				4806	5.8	-0.5	9.8	-5.4	0.0	0.5
			Min	721	18.4	-0.1	-3.1	-0.9	-0.0	0.2
				64	-2.3	0.1	-4.8	-0.5	-0.0	-0.0
				4785	-21.9	0.5	-1.6	-2.7	-0.0	-0.0
				4806	5.8	-0.5	9.8	-5.4	0.0	0.5
5500	3	1 S1 HL-~1	Max	4784	6.5	0.4	-5.1	2.6	-0.0	0.0
				4806	-16.7	-0.4	-4.3	5.4	0.0	0.5
				693	-11.8	-1.7	6.2	20.9	0.0	1.8
				35	22.0	1.7	3.4	9.8	0.0	0.1
			Min	4784	6.5	0.4	-5.1	2.6	-0.0	0.0
				4806	-16.7	-0.4	-4.3	5.4	0.0	0.5
				693	-11.8	-1.7	6.2	20.9	0.0	1.8
				35	22.0	1.7	3.4	9.8	0.0	0.1
5501	3	1 S1 HL-~1	Max	4806	24.7	0.4	-11.2	5.5	0.0	-0.5
				4785	0.1	-0.4	1.2	2.6	-0.0	0.0
				36	-30.3	-1.7	24.0	10.0	0.0	-0.0
				693	5.5	1.8	-13.9	21.0	0.0	-1.8

			Min	4806	24.7	0.4	-11.2	5.5	0.0	-0.5
				4785	0.1	-0.4	1.2	2.6	-0.0	0.0
				36	-30.3	-1.7	24.0	10.0	0.0	-0.0
				693	5.5	1.8	-13.9	21.0	0.0	-1.8
5502	3	1 S1 HL-~1	Max	35	-22.0	1.7	3.4	9.8	0.0	-0.1
				693	11.8	-1.7	6.2	20.9	0.0	-1.8
				4881	16.7	-0.4	-4.3	5.4	0.0	-0.5
				4852	-6.5	0.4	-5.1	2.6	0.0	-0.0
			Min	35	-22.0	1.7	3.4	9.8	0.0	-0.1
				693	11.8	-1.7	6.2	20.9	0.0	-1.8
				4881	16.7	-0.4	-4.3	5.4	0.0	-0.5
				4852	-6.5	0.4	-5.1	2.6	0.0	-0.0
5503	3	1 S1 HL-~1	Max	693	-5.5	1.8	-13.9	21.0	0.0	1.8
				36	30.3	-1.7	24.0	10.0	0.0	0.0
				4853	-0.1	-0.4	1.2	2.6	0.0	-0.0
				4881	-24.7	0.4	-11.2	5.5	0.0	0.5
			Min	693	-5.5	1.8	-13.9	21.0	0.0	1.8
				36	30.3	-1.7	24.0	10.0	0.0	0.0
				4853	-0.1	-0.4	1.2	2.6	0.0	-0.0
				4881	-24.7	0.4	-11.2	5.5	0.0	0.5
5504	3	1 S1 HL-~1	Max	4852	-19.0	-0.4	4.0	-2.6	0.0	0.0
				4881	13.7	0.5	5.7	-5.4	0.0	0.5
				719	15.1	0.1	-4.8	-0.9	0.0	0.2
				55	-9.8	-0.1	-4.7	-0.5	0.0	0.0
			Min	4852	-19.0	-0.4	4.0	-2.6	0.0	0.0
				4881	13.7	0.5	5.7	-5.4	0.0	0.5
				719	15.1	0.1	-4.8	-0.9	0.0	0.2
				55	-9.8	-0.1	-4.7	-0.5	0.0	0.0
5505	3	1 S1 HL-~1	Max	4881	-5.8	-0.5	9.8	-5.4	0.0	-0.5
				4853	21.9	0.5	-1.6	-2.7	0.0	0.0
				56	2.3	0.1	-4.8	-0.5	0.0	0.0
				719	-18.4	-0.1	-3.1	-0.9	0.0	-0.2
			Min	4881	-5.8	-0.5	9.8	-5.4	0.0	-0.5
				4853	21.9	0.5	-1.6	-2.7	0.0	0.0
				56	2.3	0.1	-4.8	-0.5	0.0	0.0
				719	-18.4	-0.1	-3.1	-0.9	0.0	-0.2
5506	3	1 S1 HL-~1	Max	55	-9.1	0.1	4.3	0.4	0.0	-0.0
				719	4.4	-0.1	4.0	0.9	0.0	-0.2
				4946	6.6	-0.0	-4.1	0.2	0.0	-0.1
				2299	-1.9	0.0	-4.1	0.1	0.0	-0.0
			Min	55	-9.1	0.1	4.3	0.4	0.0	-0.0
				719	4.4	-0.1	4.0	0.9	0.0	-0.2
				4946	6.6	-0.0	-4.1	0.2	0.0	-0.1
				2299	-1.9	0.0	-4.1	0.1	0.0	-0.0
5507	3	1 S1 HL-~1	Max	719	-1.1	0.1	3.4	1.0	0.0	0.2
				56	12.6	-0.1	4.8	0.5	0.0	-0.0
				2190	-1.7	-0.0	-3.6	0.2	0.0	-0.0
				4946	-9.8	0.0	-4.5	0.3	0.0	-0.0
			Min	719	-1.1	0.1	3.4	1.0	0.0	0.2
				56	12.6	-0.1	4.8	0.5	0.0	-0.0
				2190	-1.7	-0.0	-3.6	0.2	0.0	-0.0
				4946	-9.8	0.0	-4.5	0.3	0.0	-0.0
5508	3	1 S1 HL-~1	Max	2299	-12.9	-0.0	3.4	-0.0	0.0	0.0
				4946	10.0	0.0	4.6	-0.1	0.0	0.1
				690	11.2	-0.1	-3.8	0.8	0.0	0.2
				2493	-8.3	0.1	-4.1	0.5	0.0	0.0

			Min	2299	-12.9	-0.0	3.4	-0.0	0.0	0.0
				4946	10.0	0.0	4.6	-0.1	0.0	0.1
				690	11.2	-0.1	-3.8	0.8	0.0	0.2
				2493	-8.3	0.1	-4.1	0.5	0.0	0.0
5509	3	1 S1 HL-~1	Max	4946	-6.8	-0.0	4.0	-0.5	0.0	0.0
				2190	14.1	0.0	3.3	-0.2	0.0	0.0
				2501	5.1	0.0	-3.1	-0.3	0.0	-0.0
				690	-12.4	-0.1	-4.0	-0.5	0.0	0.1
			Min	4946	-6.8	-0.0	4.0	-0.5	0.0	0.0
				2190	14.1	0.0	3.3	-0.2	0.0	0.0
				2501	5.1	0.0	-3.1	-0.3	0.0	-0.0
				690	-12.4	-0.1	-4.0	-0.5	0.0	0.1
5510	3	1 S1 HL-~1	Max	2493	-14.3	0.1	2.9	0.7	0.0	-0.0
				690	13.7	-0.1	4.2	1.2	0.0	-0.1
				5007	13.9	-0.0	-3.0	0.3	0.0	-0.0
				4993	-13.3	0.0	-3.8	0.1	0.0	0.0
			Min	2493	-14.3	0.1	2.9	0.7	0.0	-0.0
				690	13.7	-0.1	4.2	1.2	0.0	-0.1
				5007	13.9	-0.0	-3.0	0.3	0.0	-0.0
				4993	-13.3	0.0	-3.8	0.1	0.0	0.0
5511	3	1 S1 HL-~1	Max	690	-11.5	-0.0	3.6	-0.3	0.0	0.0
				2501	13.3	0.0	2.6	-0.3	0.0	0.0
				5008	11.1	0.0	-2.6	-0.0	0.0	0.0
				5007	-12.9	-0.0	-3.3	-0.2	0.0	-0.0
			Min	690	-11.5	-0.0	3.6	-0.3	0.0	0.0
				2501	13.3	0.0	2.6	-0.3	0.0	0.0
				5008	11.1	0.0	-2.6	-0.0	0.0	0.0
				5007	-12.9	-0.0	-3.3	-0.2	0.0	-0.0
5512	3	1 S1 HL-~1	Max	1905	-9.1	0.0	2.3	0.1	0.0	0.0
				731	10.1	-0.0	3.1	0.1	0.0	0.0
				689	10.9	-0.0	-2.2	0.1	0.0	0.1
				705	-11.9	0.0	-3.0	0.1	0.0	0.0
			Min	1905	-9.1	0.0	2.3	0.1	0.0	0.0
				731	10.1	-0.0	3.1	0.1	0.0	0.0
				689	10.9	-0.0	-2.2	0.1	0.0	0.1
				705	-11.9	0.0	-3.0	0.1	0.0	0.0
5513	3	1 S1 HL-~1	Max	731	-12.4	-0.0	2.5	-0.1	0.0	0.0
				1913	2.9	0.0	1.9	0.0	0.0	0.0
				717	14.1	0.0	-0.8	-0.1	0.0	0.0
				689	-4.6	-0.0	-3.3	-0.5	0.0	0.1
			Min	731	-12.4	-0.0	2.5	-0.1	0.0	0.0
				1913	2.9	0.0	1.9	0.0	0.0	0.0
				717	14.1	0.0	-0.8	-0.1	0.0	0.0
				689	-4.6	-0.0	-3.3	-0.5	0.0	0.1
5514	3	1 S1 HL-~1	Max	705	-7.7	0.0	1.2	0.2	0.0	-0.0
				689	9.5	-0.0	2.8	0.1	0.0	0.0
				733	10.7	-0.0	-1.3	0.3	0.0	0.0
				2089	-12.5	0.0	-2.3	0.3	0.0	0.0
			Min	705	-7.7	0.0	1.2	0.2	0.0	-0.0
				689	9.5	-0.0	2.8	0.1	0.0	0.0
				733	10.7	-0.0	-1.3	0.3	0.0	0.0
				2089	-12.5	0.0	-2.3	0.3	0.0	0.0
5515	3	1 S1 HL-~1	Max	689	-14.7	-0.0	2.7	-0.5	0.0	0.0
				717	-2.0	0.0	0.5	-0.1	0.0	-0.0
				2097	17.8	0.0	-1.4	-0.0	0.0	0.0
				733	-1.1	-0.0	-1.4	-0.1	0.0	-0.0
			Min	689	-14.7	-0.0	2.7	-0.5	0.0	0.0

				717	-2.0	0.0	0.5	-0.1	0.0	-0.0
				2097	17.8	0.0	-1.4	-0.0	0.0	0.0
				733	-1.1	-0.0	-1.4	-0.1	0.0	-0.0
5516	3	1 S1 HL-~1	Max	2089	-3.4	0.0	1.3	0.0	0.0	0.0
				733	4.9	-0.0	2.0	-0.0	0.0	-0.0
				688	7.4	0.0	-0.7	-0.4	-0.0	0.0
				704	-8.9	-0.0	-2.2	-0.2	0.0	0.0
			Min	2089	-3.4	0.0	1.3	0.0	0.0	0.0
				733	4.9	-0.0	2.0	-0.0	0.0	-0.0
				688	7.4	0.0	-0.7	-0.4	-0.0	0.0
				704	-8.9	-0.0	-2.2	-0.2	0.0	0.0
5517	3	1 S1 HL-~1	Max	733	-14.5	-0.0	2.4	-0.2	0.0	0.0
				2097	-8.2	0.0	0.3	-0.0	0.0	0.0
				716	18.5	0.0	-0.6	-0.1	0.0	0.0
				688	4.2	-0.0	-1.9	-0.6	-0.0	0.1
			Min	733	-14.5	-0.0	2.4	-0.2	0.0	0.0
				2097	-8.2	0.0	0.3	-0.0	0.0	0.0
				716	18.5	0.0	-0.6	-0.1	0.0	0.0
				688	4.2	-0.0	-1.9	-0.6	-0.0	0.1
5518	3	1 S1 HL-~1	Max	704	-2.8	-0.1	0.5	-0.3	0.0	-0.0
				688	2.8	0.1	1.6	-0.7	-0.0	0.1
				735	7.3	0.0	-0.1	-0.3	-0.0	-0.0
				2193	-7.3	-0.0	-1.6	-0.1	-0.0	0.0
			Min	704	-2.8	-0.1	0.5	-0.3	0.0	-0.0
				688	2.8	0.1	1.6	-0.7	-0.0	0.1
				735	7.3	0.0	-0.1	-0.3	-0.0	-0.0
				2193	-7.3	-0.0	-1.6	-0.1	-0.0	0.0
5519	3	1 S1 HL-~1	Max	688	-13.8	-0.1	0.9	-1.0	-0.0	-0.0
				716	-13.1	0.1	0.2	-0.2	0.0	-0.0
				2201	18.2	0.0	-0.9	-0.3	-0.0	-0.0
				735	8.7	-0.0	0.2	-0.6	-0.0	0.0
			Min	688	-13.8	-0.1	0.9	-1.0	-0.0	-0.0
				716	-13.1	0.1	0.2	-0.2	0.0	-0.0
				2201	18.2	0.0	-0.9	-0.3	-0.0	-0.0
				735	8.7	-0.0	0.2	-0.6	-0.0	0.0
5520	3	1 S1 HL-~1	Max	2193	-3.4	0.0	1.8	0.4	-0.0	-0.0
				735	1.0	-0.0	0.6	0.4	-0.0	0.0
				1591	7.8	-0.1	-1.5	0.7	-0.0	0.0
				703	-5.4	0.1	-0.6	0.6	-0.0	-0.0
			Min	2193	-3.4	0.0	1.8	0.4	-0.0	-0.0
				735	1.0	-0.0	0.6	0.4	-0.0	0.0
				1591	7.8	-0.1	-1.5	0.7	-0.0	0.0
				703	-5.4	0.1	-0.6	0.6	-0.0	-0.0
5521	3	1 S1 HL-~1	Max	735	-17.0	0.0	2.6	0.6	-0.0	0.0
				2201	-13.1	-0.0	-0.3	-0.0	-0.0	0.0
				715	21.8	-0.1	-1.4	0.1	-0.0	-0.0
				1591	8.3	0.1	-0.6	1.4	-0.0	-0.1
			Min	735	-17.0	0.0	2.6	0.6	-0.0	0.0
				2201	-13.1	-0.0	-0.3	-0.0	-0.0	0.0
				715	21.8	-0.1	-1.4	0.1	-0.0	-0.0
				1591	8.3	0.1	-0.6	1.4	-0.0	-0.1
5522	3	1 S1 HL-~1	Max	703	1.3	0.1	-1.1	0.5	-0.0	0.0
				1591	-0.8	-0.1	1.9	1.2	-0.0	-0.1
				737	4.4	-0.1	0.9	1.0	-0.0	0.1
				2301	-4.9	0.1	-1.3	-0.0	-0.0	0.0
			Min	703	1.3	0.1	-1.1	0.5	-0.0	0.0
				1591	-0.8	-0.1	1.9	1.2	-0.0	-0.1

				737	4.4	-0.1	0.9	1.0	-0.0	0.1
				2301	-4.9	0.1	-1.3	-0.0	-0.0	0.0
5523	3	1 S1 HL-~1	Max	1591	-16.5	0.1	0.2	2.4	-0.0	0.1
				715	-16.6	-0.1	1.1	0.3	-0.0	0.0
				2309	22.1	-0.1	2.1	0.1	-0.0	-0.0
				737	11.0	0.1	-2.9	1.9	-0.0	-0.0
			Min	1591	-16.5	0.1	0.2	2.4	-0.0	0.1
				715	-16.6	-0.1	1.1	0.3	-0.0	0.0
				2309	22.1	-0.1	2.1	0.1	-0.0	-0.0
				737	11.0	0.1	-2.9	1.9	-0.0	-0.0
5524	3	1 S1 HL-~1	Max	2301	27.8	-0.1	-12.2	-1.5	-0.0	0.1
				737	-22.1	0.2	-10.9	-1.4	-0.0	0.2
				4940	-24.2	0.3	11.1	-3.0	0.0	0.1
				2139	18.5	-0.3	12.1	-2.8	-0.0	0.4
			Min	2301	27.8	-0.1	-12.2	-1.5	-0.0	0.1
				737	-22.1	0.2	-10.9	-1.4	-0.0	0.2
				4940	-24.2	0.3	11.1	-3.0	0.0	0.1
				2139	18.5	-0.3	12.1	-2.8	-0.0	0.4
5525	3	1 S1 HL-~1	Max	737	6.7	-0.1	-4.6	-1.5	-0.0	0.2
				2309	-31.5	0.1	-11.4	-1.5	-0.0	0.0
				2030	-0.8	0.4	-2.9	-3.0	-0.0	-0.1
				4940	25.6	-0.4	19.1	-3.7	0.0	0.6
			Min	737	6.7	-0.1	-4.6	-1.5	-0.0	0.2
				2309	-31.5	0.1	-11.4	-1.5	-0.0	0.0
				2030	-0.8	0.4	-2.9	-3.0	-0.0	-0.1
				4940	25.6	-0.4	19.1	-3.7	0.0	0.6
5526	3	1 S1 HL-~1	Max	2139	20.6	0.0	-13.2	-2.3	-0.0	-0.4
				4940	-20.7	-0.0	-6.2	2.2	0.0	-0.2
				692	-18.3	-0.4	20.3	9.3	-0.0	0.8
				1492	18.4	0.4	-0.7	-0.8	-0.0	0.0
			Min	2139	20.6	0.0	-13.2	-2.3	-0.0	-0.4
				4940	-20.7	-0.0	-6.2	2.2	0.0	-0.2
				692	-18.3	-0.4	20.3	9.3	-0.0	0.8
				1492	18.4	0.4	-0.7	-0.8	-0.0	0.0
5527	3	1 S1 HL-~1	Max	4940	19.3	0.1	-24.0	4.5	0.0	-0.5
				2030	-24.9	-0.2	2.7	-0.3	-0.0	0.1
				1384	-17.8	-1.1	50.3	3.6	-0.0	-0.0
				692	23.4	1.2	-28.9	15.5	-0.0	-2.5
			Min	4940	19.3	0.1	-24.0	4.5	0.0	-0.5
				2030	-24.9	-0.2	2.7	-0.3	-0.0	0.1
				1384	-17.8	-1.1	50.3	3.6	-0.0	-0.0
				692	23.4	1.2	-28.9	15.5	-0.0	-2.5
6079	3	2 S1 HL-~1	Max	4991	0.1	0.4	-0.0	0.4	0.1	0.0
				4992	3.0	1.1	0.1	-0.0	0.1	0.0
				4399	-0.1	-0.8	0.0	-0.1	-0.0	0.0
				3771	-3.1	-0.7	0.0	0.2	0.0	-0.0
			Min	4991	0.1	0.4	-0.0	0.4	0.1	0.0
				4992	3.0	1.1	0.1	-0.0	0.1	0.0
				4399	-0.1	-0.8	0.0	-0.1	-0.0	0.0
				3771	-3.1	-0.7	0.0	0.2	0.0	-0.0
6080	3	2 S1 HL-~1	Max	4992	-1.6	0.2	-0.1	0.0	-0.0	0.0
				4993	3.2	1.0	0.1	0.7	-0.0	-0.0
				1905	1.6	-0.6	0.1	0.6	0.0	-0.0
				4399	-3.2	-0.6	-0.1	0.1	-0.0	0.0
			Min	4992	-1.6	0.2	-0.1	0.0	-0.0	0.0
				4993	3.2	1.0	0.1	0.7	-0.0	-0.0
				1905	1.6	-0.6	0.1	0.6	0.0	-0.0

				4399	-3.2	-0.6	-0.1	0.1	-0.0	0.0
6081	3	2 S1 HL-~1	Max	4993	2.0	-0.6	0.1	-0.6	-0.1	-0.0
				5126	1.2	0.2	-0.0	0.0	-0.0	0.0
				5127	-2.0	0.1	-0.0	0.0	-0.0	0.0
				1905	-1.2	0.4	0.1	-0.5	0.0	-0.0
			Min	4993	2.0	-0.6	0.1	-0.6	-0.1	-0.0
				5126	1.2	0.2	-0.0	0.0	-0.0	0.0
				5127	-2.0	0.1	-0.0	0.0	-0.0	0.0
				1905	-1.2	0.4	0.1	-0.5	0.0	-0.0
6094	3	1 S1 HL-~1	Max	4993	-3.4	-0.0	2.8	-0.1	0.0	-0.0
				5007	4.0	0.0	3.3	-0.1	0.0	0.0
				731	4.1	-0.0	-2.8	-0.0	0.0	0.0
				1905	-4.7	-0.0	-3.2	-0.0	0.0	-0.0
			Min	4993	-3.4	-0.0	2.8	-0.1	0.0	-0.0
				5007	4.0	0.0	3.3	-0.1	0.0	0.0
				731	4.1	-0.0	-2.8	-0.0	0.0	0.0
				1905	-4.7	-0.0	-3.2	-0.0	0.0	-0.0
6095	3	1 S1 HL-~1	Max	5007	-5.1	0.0	3.0	0.0	0.0	0.0
				5008	1.0	-0.0	2.3	0.1	0.0	-0.0
				1913	5.9	-0.0	-2.5	0.0	0.0	-0.0
				731	-1.9	0.0	-2.6	0.0	0.0	0.0
			Min	5007	-5.1	0.0	3.0	0.0	0.0	0.0
				5008	1.0	-0.0	2.3	0.1	0.0	-0.0
				1913	5.9	-0.0	-2.5	0.0	0.0	-0.0
				731	-1.9	0.0	-2.6	0.0	0.0	0.0
6108	3	3 S1 HL-~1	Max	5021	-1.3	1.0	0.0	-0.0	-0.0	0.0
				5008	-2.2	-1.2	0.0	0.0	-0.0	-0.0
				1913	1.3	0.0	0.0	0.1	-0.0	-0.0
				2684	2.2	0.2	-0.0	0.0	-0.0	-0.0
			Min	5021	-1.3	1.0	0.0	-0.0	-0.0	0.0
				5008	-2.2	-1.2	0.0	0.0	-0.0	-0.0
				1913	1.3	0.0	0.0	0.1	-0.0	-0.0
				2684	2.2	0.2	-0.0	0.0	-0.0	-0.0
6109	3	3 S1 HL-~1	Max	5008	-2.0	0.9	0.0	-0.1	0.0	-0.0
				5022	-1.2	-0.7	-0.0	-0.0	0.0	0.0
				1208	1.9	0.3	0.0	-0.0	0.0	0.0
				1913	1.3	-0.5	0.0	-0.1	0.0	-0.0
			Min	5008	-2.0	0.9	0.0	-0.1	0.0	-0.0
				5022	-1.2	-0.7	-0.0	-0.0	0.0	0.0
				1208	1.9	0.3	0.0	-0.0	0.0	0.0
				1913	1.3	-0.5	0.0	-0.1	0.0	-0.0
6133	3	2 S1 HL-~1	Max	5046	2.9	0.1	-0.0	1.9	0.1	0.0
				5047	-5.2	-1.4	0.2	-0.3	0.0	0.0
				4432	-2.9	2.0	0.2	-0.7	-0.0	0.0
				3744	5.2	-0.7	-0.0	2.1	-0.1	0.0
			Min	5046	2.9	0.1	-0.0	1.9	0.1	0.0
				5047	-5.2	-1.4	0.2	-0.3	0.0	0.0
				4432	-2.9	2.0	0.2	-0.7	-0.0	0.0
				3744	5.2	-0.7	-0.0	2.1	-0.1	0.0
6134	3	2 S1 HL-~1	Max	5047	6.7	0.1	-0.3	0.3	0.0	0.0
				5048	-7.8	-1.4	0.4	1.8	-0.1	0.0
				1621	-6.7	1.7	0.4	1.3	0.0	0.0
				4432	7.8	-0.5	-0.3	0.7	-0.0	0.0
			Min	5047	6.7	0.1	-0.3	0.3	0.0	0.0
				5048	-7.8	-1.4	0.4	1.8	-0.1	0.0
				1621	-6.7	1.7	0.4	1.3	0.0	0.0
				4432	7.8	-0.5	-0.3	0.7	-0.0	0.0

6135	3	2 S1 HL-~1	Max	5048	-3.6	1.0	0.3	-1.9	-0.0	0.0
				5116	1.2	-0.2	-0.1	-0.0	-0.0	0.0
				5117	3.6	0.8	-0.1	-0.0	0.1	0.0
				1621	-1.2	-1.6	0.2	-2.0	0.1	0.0
			Min	5048	-3.6	1.0	0.3	-1.9	-0.0	0.0
				5116	1.2	-0.2	-0.1	-0.0	-0.0	0.0
				5117	3.6	0.8	-0.1	-0.0	0.1	0.0
				1621	-1.2	-1.6	0.2	-2.0	0.1	0.0
6148	3	1 S1 HL-~1	Max	5048	13.3	0.0	-3.8	0.1	-0.0	-0.0
				5062	-13.9	-0.0	-3.0	0.3	0.0	0.0
				2723	-13.7	-0.1	4.2	1.2	-0.0	0.1
				1621	14.3	0.1	2.9	0.7	-0.0	0.0
			Min	5048	13.3	0.0	-3.8	0.1	-0.0	-0.0
				5062	-13.9	-0.0	-3.0	0.3	0.0	0.0
				2723	-13.7	-0.1	4.2	1.2	-0.0	0.1
				1621	14.3	0.1	2.9	0.7	-0.0	0.0
6149	3	1 S1 HL-~1	Max	5062	12.9	-0.0	-3.3	-0.2	0.0	0.0
				5063	-11.1	0.0	-2.6	-0.0	-0.0	-0.0
				2485	-13.3	0.0	2.6	-0.3	-0.0	-0.0
				2723	11.5	-0.0	3.6	-0.3	-0.0	-0.0
			Min	5062	12.9	-0.0	-3.3	-0.2	0.0	0.0
				5063	-11.1	0.0	-2.6	-0.0	-0.0	-0.0
				2485	-13.3	0.0	2.6	-0.3	-0.0	-0.0
				2723	11.5	-0.0	3.6	-0.3	-0.0	-0.0
6162	3	4 S1 HL-~1	Max	5076	-1.3	-1.0	-0.0	0.0	-0.0	0.0
				5063	4.1	1.4	0.2	0.4	0.0	0.0
				2485	1.3	-3.1	0.1	0.6	0.0	0.0
				1862	-4.1	2.6	-0.0	0.0	0.1	0.0
			Min	5076	-1.3	-1.0	-0.0	0.0	-0.0	0.0
				5063	4.1	1.4	0.2	0.4	0.0	0.0
				2485	1.3	-3.1	0.1	0.6	0.0	0.0
				1862	-4.1	2.6	-0.0	0.0	0.1	0.0
6163	3	4 S1 HL-~1	Max	5063	3.9	-1.1	0.1	-0.5	-0.0	0.0
				5077	-1.2	0.7	0.0	0.0	0.0	0.0
				1087	-3.8	-2.7	0.0	0.0	-0.0	0.0
				2485	1.2	3.2	0.1	-0.3	0.1	0.0
			Min	5063	3.9	-1.1	0.1	-0.5	-0.0	0.0
				5077	-1.2	0.7	0.0	0.0	0.0	0.0
				1087	-3.8	-2.7	0.0	0.0	-0.0	0.0
				2485	1.2	3.2	0.1	-0.3	0.1	0.0

PLATE ELEMENT FORCES (LOCAL, UNIT LENGTH) PRINTOUT Unit System : kips , in

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4147	3	2	S1 HL-~1	Max	Cent	0.1	-0.4	0.4	0.3	-0.6	27.83
					3847	0.3	-0.3	0.4	0.5	-0.5	24.78
					4511	0.3	-0.4	0.4	0.5	-0.6	22.26
					4440	-0.0	-0.4	0.4	0.2	-0.7	31.41
					3806	-0.0	-0.3	0.4	0.2	-0.6	35.38
				Min	Cent	0.1	-0.4	0.4	0.3	-0.6	27.83
					3847	0.3	-0.3	0.4	0.5	-0.5	24.78
					4511	0.3	-0.4	0.4	0.5	-0.6	22.26
					4440	-0.0	-0.4	0.4	0.2	-0.7	31.41
					3806	-0.0	-0.3	0.4	0.2	-0.6	35.38

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	-0.1	0.1	-0.1	-42.29
	3847	0.1	0.0	-0.1	0.1	-0.0	-27.34
	4511	-0.1	0.0	-0.1	0.1	-0.1	-54.17
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-56.93
	3806	0.1	0.0	-0.1	0.1	-0.0	-33.09
Min	Cent	0.0	-0.0	-0.1	0.1	-0.1	-42.29
	3847	0.1	0.0	-0.1	0.1	-0.0	-27.34
	4511	-0.1	0.0	-0.1	0.1	-0.1	-54.17
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-56.93
	3806	0.1	0.0	-0.1	0.1	-0.0	-33.09

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3847	0.0	-0.0
	4511	0.0	0.0
	4440	0.0	0.0
	3806	0.0	-0.0
Min	Cent	0.0	-0.0
	3847	0.0	-0.0
	4511	0.0	0.0
	4440	0.0	0.0
	3806	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4148	3	2	S1 HL-~1	Max	Cent	0.0	-0.5	0.6	0.4	-0.8	33.81
					4511	-0.1	-0.5	0.6	0.4	-0.9	35.35
					1383	-0.1	-0.5	0.6	0.4	-0.9	35.47
					2087	0.1	-0.5	0.6	0.5	-0.8	32.34
					4440	0.1	-0.5	0.6	0.5	-0.8	32.24
				Min	Cent	0.0	-0.5	0.6	0.4	-0.8	33.81
					4511	-0.1	-0.5	0.6	0.4	-0.9	35.35
					1383	-0.1	-0.5	0.6	0.4	-0.9	35.47
					2087	0.1	-0.5	0.6	0.5	-0.8	32.34
					4440	0.1	-0.5	0.6	0.5	-0.8	32.24

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.1	-0.0	-0.1	0.0	-0.2	-62.18
	4511	-0.0	0.0	-0.1	0.1	-0.1	-53.34
	1383	-0.2	-0.0	-0.1	0.0	-0.2	-65.26
	2087	-0.2	-0.1	-0.1	-0.1	-0.3	-68.30
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-56.72
Min	Cent	-0.1	-0.0	-0.1	0.0	-0.2	-62.18
	4511	-0.0	0.0	-0.1	0.1	-0.1	-53.34
	1383	-0.2	-0.0	-0.1	0.0	-0.2	-65.26
	2087	-0.2	-0.1	-0.1	-0.1	-0.3	-68.30
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-56.72

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4511	0.0	0.0
	1383	0.0	0.0
	2087	0.0	0.0
	4440	0.0	0.0

Min	Cent	0.0	0.0				
	4511	0.0	0.0				
	1383	0.0	0.0				
	2087	0.0	0.0				
	4440	0.0	0.0				

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4149	3	2	S1 HL-~1	Max	Cent	0.0	-0.6	-0.2	0.1	-0.6	-17.51
					1383	-0.2	-0.5	-0.2	-0.1	-0.6	-28.04
					5107	-0.2	-0.6	-0.2	-0.1	-0.7	-20.55
					5108	0.2	-0.6	-0.2	0.2	-0.7	-12.32
					2087	0.2	-0.5	-0.2	0.3	-0.5	-15.18
				Min	Cent	0.0	-0.6	-0.2	0.1	-0.6	-17.51
					1383	-0.2	-0.5	-0.2	-0.1	-0.6	-28.04
					5107	-0.2	-0.6	-0.2	-0.1	-0.7	-20.55
					5108	0.2	-0.6	-0.2	0.2	-0.7	-12.32
					2087	0.2	-0.5	-0.2	0.3	-0.5	-15.18

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.1	-0.0	-0.1	0.0	-0.1	-54.67
	1383	-0.2	-0.0	-0.1	0.0	-0.2	-71.02
	5107	-0.0	0.0	-0.1	0.1	-0.1	-47.62
	5108	0.0	0.0	-0.1	0.1	-0.1	-46.44
	2087	-0.0	-0.0	-0.1	0.1	-0.1	-43.45
Min	Cent	-0.1	-0.0	-0.1	0.0	-0.1	-54.67
	1383	-0.2	-0.0	-0.1	0.0	-0.2	-71.02
	5107	-0.0	0.0	-0.1	0.1	-0.1	-47.62
	5108	0.0	0.0	-0.1	0.1	-0.1	-46.44
	2087	-0.0	-0.0	-0.1	0.1	-0.1	-43.45

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	1383	-0.0	0.0
	5107	-0.0	0.0
	5108	-0.0	0.0
	2087	-0.0	0.0
Min	Cent	-0.0	0.0
	1383	-0.0	0.0
	5107	-0.0	0.0
	5108	-0.0	0.0
	2087	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4173	3	2	S1 HL-~1	Max	Cent	-0.2	-1.1	0.3	-0.1	-1.2	15.92
					3806	-0.3	-0.8	0.3	-0.1	-0.9	22.35
					4440	-0.3	-1.4	0.3	-0.2	-1.4	12.99
					4393	-0.2	-1.4	0.3	-0.1	-1.4	12.17
					3765	-0.2	-0.8	0.3	-0.1	-0.9	20.28
				Min	Cent	-0.2	-1.1	0.3	-0.1	-1.2	15.92
					3806	-0.3	-0.8	0.3	-0.1	-0.9	22.35
					4440	-0.3	-1.4	0.3	-0.2	-1.4	12.99
					4393	-0.2	-1.4	0.3	-0.1	-1.4	12.17
					3765	-0.2	-0.8	0.3	-0.1	-0.9	20.28

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.1	0.1	-0.1	-46.46
	3806	0.1	0.0	-0.1	0.1	-0.0	-35.18
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-55.40
	4393	0.0	0.1	-0.1	0.1	-0.0	-48.79
	3765	0.0	0.0	-0.1	0.1	-0.1	-47.16
Min	Cent	0.0	0.0	-0.1	0.1	-0.1	-46.46
	3806	0.1	0.0	-0.1	0.1	-0.0	-35.18
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-55.40
	4393	0.0	0.1	-0.1	0.1	-0.0	-48.79
	3765	0.0	0.0	-0.1	0.1	-0.1	-47.16

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3806	0.0	-0.0
	4440	0.0	-0.0

					NODE	Vxx	Vyy
					4393	-0.0	-0.0
					3765	-0.0	-0.0
				Min	Cent	0.0	-0.0
					3806	0.0	-0.0
					4440	0.0	-0.0
					4393	-0.0	-0.0
					3765	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4174	3	2	S1 HL-~1	Max	Cent	-0.1	-1.5	0.5	0.1	-1.7	17.35
					4440	-0.2	-1.3	0.5	-0.0	-1.5	20.91
					2087	-0.2	-1.7	0.5	-0.1	-1.8	16.97
					1801	0.1	-1.7	0.5	0.2	-1.8	14.73
					4393	0.1	-1.3	0.5	0.2	-1.5	17.74
				Min	Cent	-0.1	-1.5	0.5	0.1	-1.7	17.35
					4440	-0.2	-1.3	0.5	-0.0	-1.5	20.91
					2087	-0.2	-1.7	0.5	-0.1	-1.8	16.97
					1801	0.1	-1.7	0.5	0.2	-1.8	14.73
					4393	0.1	-1.3	0.5	0.2	-1.5	17.74

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.1	-0.0	-0.1	0.0	-0.1	-62.08
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-56.44
	2087	-0.2	-0.1	-0.1	-0.1	-0.2	-71.70
	1801	-0.0	0.0	-0.0	0.1	-0.1	-64.28
	4393	0.0	0.1	-0.1	0.1	-0.0	-49.60
Min	Cent	-0.1	-0.0	-0.1	0.0	-0.1	-62.08
	4440	-0.1	-0.0	-0.1	0.0	-0.1	-56.44
	2087	-0.2	-0.1	-0.1	-0.1	-0.2	-71.70
	1801	-0.0	0.0	-0.0	0.1	-0.1	-64.28
	4393	0.0	0.1	-0.1	0.1	-0.0	-49.60

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4440	0.0	-0.0
	2087	0.0	-0.0
	1801	0.0	-0.0
	4393	0.0	-0.0
Min	Cent	0.0	-0.0
	4440	0.0	-0.0
	2087	0.0	-0.0
	1801	0.0	-0.0
	4393	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4175	3	2	S1 HL-~1	Max	Cent	-0.0	-1.9	-0.3	-0.0	-2.0	-8.35
					2087	-0.2	-1.7	-0.3	-0.2	-1.7	-10.61
					5108	-0.2	-2.2	-0.3	-0.2	-2.2	-7.96
					5109	0.1	-2.2	-0.3	0.2	-2.2	-6.87
					1801	0.1	-1.7	-0.3	0.2	-1.7	-8.78
				Min	Cent	-0.0	-1.9	-0.3	-0.0	-2.0	-8.35
					2087	-0.2	-1.7	-0.3	-0.2	-1.7	-10.61
					5108	-0.2	-2.2	-0.3	-0.2	-2.2	-7.96
					5109	0.1	-2.2	-0.3	0.2	-2.2	-6.87
					1801	0.1	-1.7	-0.3	0.2	-1.7	-8.78

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.1	0.1	-0.1	-53.12
	2087	-0.0	-0.0	-0.1	0.0	-0.1	-45.77
	5108	-0.0	-0.0	-0.1	0.1	-0.1	-43.46
	5109	0.0	0.1	-0.0	0.1	-0.0	-60.49
	1801	-0.0	0.0	-0.0	0.1	-0.1	-63.13
Min	Cent	-0.0	0.0	-0.1	0.1	-0.1	-53.12
	2087	-0.0	-0.0	-0.1	0.0	-0.1	-45.77
	5108	-0.0	-0.0	-0.1	0.1	-0.1	-43.46
	5109	0.0	0.1	-0.0	0.1	-0.0	-60.49
	1801	-0.0	0.0	-0.0	0.1	-0.1	-63.13

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0

				2087	-0.0	-0.0
				5108	-0.0	-0.0
				5109	-0.0	-0.0
				1801	-0.0	-0.0
			Min	Cent	-0.0	-0.0
				2087	-0.0	-0.0
				5108	-0.0	-0.0
				5109	-0.0	-0.0
				1801	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4199	3	2	S1 HL-~1	Max	Cent	-0.2	-1.4	0.4	-0.1	-1.5	15.03
					3765	-0.3	-1.2	0.4	-0.1	-1.3	18.28
					4393	-0.3	-1.6	0.4	-0.2	-1.7	14.07
					4556	-0.1	-1.6	0.4	-0.0	-1.7	12.69
					3849	-0.1	-1.2	0.4	0.0	-1.3	16.11
				Min	Cent	-0.2	-1.4	0.4	-0.1	-1.5	15.03
					3765	-0.3	-1.2	0.4	-0.1	-1.3	18.28
					4393	-0.3	-1.6	0.4	-0.2	-1.7	14.07
					4556	-0.1	-1.6	0.4	-0.0	-1.7	12.69
					3849	-0.1	-1.2	0.4	0.0	-1.3	16.11

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-41.03
	3765	0.0	0.0	-0.0	0.0	-0.0	-49.18
	4393	0.0	0.0	-0.0	0.1	0.0	-47.92
	4556	0.0	0.0	-0.0	0.0	0.0	-49.79
	3849	0.1	0.0	-0.0	0.1	0.0	-12.97
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-41.03
	3765	0.0	0.0	-0.0	0.0	-0.0	-49.18
	4393	0.0	0.0	-0.0	0.1	0.0	-47.92
	4556	0.0	0.0	-0.0	0.0	0.0	-49.79
	3849	0.1	0.0	-0.0	0.1	0.0	-12.97

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3765	-0.0	-0.0
	4393	-0.0	0.0
	4556	0.0	0.0
	3849	0.0	-0.0
Min	Cent	0.0	0.0
	3765	-0.0	-0.0
	4393	-0.0	0.0
	4556	0.0	0.0
	3849	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4200	3	2	S1 HL-~1	Max	Cent	-0.1	-1.7	0.3	0.0	-1.7	10.74
					4393	0.0	-1.5	0.3	0.1	-1.6	11.04
					1801	0.0	-1.8	0.3	0.1	-1.8	9.71
					700	-0.1	-1.8	0.3	-0.1	-1.8	10.46
					4556	-0.1	-1.5	0.3	-0.1	-1.6	12.00
				Min	Cent	-0.1	-1.7	0.3	0.0	-1.7	10.74
					4393	0.0	-1.5	0.3	0.1	-1.6	11.04
					1801	0.0	-1.8	0.3	0.1	-1.8	9.71
					700	-0.1	-1.8	0.3	-0.1	-1.8	10.46
					4556	-0.1	-1.5	0.3	-0.1	-1.6	12.00

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-65.29
	4393	0.0	0.0	-0.0	0.1	0.0	-48.29
	1801	-0.0	0.0	-0.0	0.0	-0.1	-70.20
	700	-0.0	0.0	-0.0	0.0	-0.0	-76.22
	4556	0.0	0.0	-0.0	0.0	0.0	-48.91
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-65.29
	4393	0.0	0.0	-0.0	0.1	0.0	-48.29
	1801	-0.0	0.0	-0.0	0.0	-0.1	-70.20
	700	-0.0	0.0	-0.0	0.0	-0.0	-76.22
	4556	0.0	0.0	-0.0	0.0	0.0	-48.91

	NODE	Vxx	Vyy

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4393	0.0	0.0
	1801	0.0	0.0
	700	0.0	0.0
	4556	0.0	0.0
Min	Cent	0.0	0.0
	4393	0.0	0.0
	1801	0.0	0.0
	700	0.0	0.0
	4556	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4201	3	2	S1 HL-~1	Max	Cent	-0.0	-1.8	0.1	0.0	-1.8	4.05
					1801	0.2	-1.8	0.1	0.2	-1.8	3.84
					5109	0.2	-1.9	0.1	0.2	-1.9	3.60
					5110	-0.2	-1.9	0.1	-0.2	-1.9	4.28
					700	-0.2	-1.8	0.1	-0.2	-1.8	4.62
				Min	Cent	-0.0	-1.8	0.1	0.0	-1.8	4.05
					1801	0.2	-1.8	0.1	0.2	-1.8	3.84
					5109	0.2	-1.9	0.1	0.2	-1.9	3.60
					5110	-0.2	-1.9	0.1	-0.2	-1.9	4.28
					700	-0.2	-1.8	0.1	-0.2	-1.8	4.62

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-70.70
	1801	-0.0	0.0	-0.0	0.0	-0.0	-70.42
	5109	0.0	0.0	-0.0	0.1	-0.0	-66.91
	5110	-0.0	0.0	-0.0	0.0	-0.0	-55.79
	700	-0.1	-0.0	-0.0	-0.0	-0.1	-76.56
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-70.70
	1801	-0.0	0.0	-0.0	0.0	-0.0	-70.42
	5109	0.0	0.0	-0.0	0.1	-0.0	-66.91
	5110	-0.0	0.0	-0.0	0.0	-0.0	-55.79
	700	-0.1	-0.0	-0.0	-0.0	-0.1	-76.56

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	1801	-0.0	0.0
	5109	-0.0	0.0
	5110	-0.0	0.0
	700	-0.0	0.0
Min	Cent	-0.0	0.0
	1801	-0.0	0.0
	5109	-0.0	0.0
	5110	-0.0	0.0
	700	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4225	3	2	S1 HL-~1	Max	Cent	-0.0	-1.3	-0.2	0.0	-1.3	-8.81
					3849	-0.1	-1.4	-0.2	-0.0	-1.4	-8.83
					4556	-0.1	-1.2	-0.2	-0.0	-1.3	-9.63
					4387	0.1	-1.2	-0.2	0.1	-1.3	-8.80
					3759	0.1	-1.4	-0.2	0.1	-1.4	-8.12
				Min	Cent	-0.0	-1.3	-0.2	0.0	-1.3	-8.81
					3849	-0.1	-1.4	-0.2	-0.0	-1.4	-8.83
					4556	-0.1	-1.2	-0.2	-0.0	-1.3	-9.63
					4387	0.1	-1.2	-0.2	0.1	-1.3	-8.80
					3759	0.1	-1.4	-0.2	0.1	-1.4	-8.12

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-37.87
	3849	0.1	0.0	-0.0	0.1	0.0	-7.48
	4556	0.0	0.0	-0.0	0.0	0.0	-54.68
	4387	0.0	0.0	-0.0	0.0	0.0	-58.74
	3759	-0.0	0.0	-0.0	0.0	-0.0	-84.33
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-37.87
	3849	0.1	0.0	-0.0	0.1	0.0	-7.48
	4556	0.0	0.0	-0.0	0.0	0.0	-54.68
	4387	0.0	0.0	-0.0	0.0	0.0	-58.74
	3759	-0.0	0.0	-0.0	0.0	-0.0	-84.33

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3849	0.0	0.0
	4556	0.0	0.0
	4387	-0.0	0.0
	3759	-0.0	0.0
Min	Cent	0.0	0.0
	3849	0.0	0.0
	4556	0.0	0.0
	4387	-0.0	0.0
	3759	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4226	3	2	S1 HL-~1	Max	Cent	0.0	-1.2	-0.2	0.1	-1.2	-10.26
					4556	0.0	-1.2	-0.2	0.1	-1.3	-9.71
					700	0.0	-1.1	-0.2	0.1	-1.1	-10.76
					1697	0.0	-1.1	-0.2	0.0	-1.1	-10.88
					4387	0.0	-1.2	-0.2	0.0	-1.3	-9.81
				Min	Cent	0.0	-1.2	-0.2	0.1	-1.2	-10.26
					4556	0.0	-1.2	-0.2	0.1	-1.3	-9.71
					700	0.0	-1.1	-0.2	0.1	-1.1	-10.76
					1697	0.0	-1.1	-0.2	0.0	-1.1	-10.88
					4387	0.0	-1.2	-0.2	0.0	-1.3	-9.81

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-74.16
	4556	0.0	0.0	-0.0	0.0	0.0	-53.50
	700	-0.0	0.0	-0.0	0.0	-0.0	-77.34
	1697	-0.0	0.0	-0.0	0.0	-0.0	-84.05
	4387	0.0	0.0	-0.0	0.0	0.0	-58.79
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-74.16
	4556	0.0	0.0	-0.0	0.0	0.0	-53.50
	700	-0.0	0.0	-0.0	0.0	-0.0	-77.34
	1697	-0.0	0.0	-0.0	0.0	-0.0	-84.05
	4387	0.0	0.0	-0.0	0.0	0.0	-58.79

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4556	0.0	0.0
	700	0.0	0.0
	1697	0.0	0.0
	4387	0.0	0.0
Min	Cent	0.0	0.0
	4556	0.0	0.0
	700	0.0	0.0
	1697	0.0	0.0
	4387	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4227	3	2	S1 HL-~1	Max	Cent	0.0	-1.0	-0.0	0.1	-1.0	-1.69
					700	0.1	-1.1	-0.0	0.1	-1.1	-1.56
					5110	0.1	-1.0	-0.0	0.1	-1.0	-1.77
					5111	0.0	-1.0	-0.0	0.0	-1.0	-1.83
					1697	0.0	-1.1	-0.0	0.0	-1.1	-1.61
				Min	Cent	0.0	-1.0	-0.0	0.1	-1.0	-1.69
					700	0.1	-1.1	-0.0	0.1	-1.1	-1.56
					5110	0.1	-1.0	-0.0	0.1	-1.0	-1.77
					5111	0.0	-1.0	-0.0	0.0	-1.0	-1.83
					1697	0.0	-1.1	-0.0	0.0	-1.1	-1.61

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-79.99
	700	-0.1	0.0	-0.0	0.0	-0.1	-80.31
	5110	0.0	0.0	-0.0	0.0	-0.0	-68.80
	5111	-0.0	0.0	-0.0	0.0	-0.0	-75.25
	1697	-0.0	0.0	-0.0	0.0	-0.0	-84.83
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-79.99
	700	-0.1	0.0	-0.0	0.0	-0.1	-80.31
	5110	0.0	0.0	-0.0	0.0	-0.0	-68.80

					5111	-0.0	0.0	-0.0	0.0	-0.0	-75.25
					1697	-0.0	0.0	-0.0	0.0	-0.0	-84.83

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	700	-0.0	0.0
	5110	-0.0	0.0
	5111	-0.0	0.0
	1697	-0.0	0.0
Min	Cent	-0.0	0.0
	700	-0.0	0.0
	5110	-0.0	0.0
	5111	-0.0	0.0
	1697	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4251	3	2	S1 HL-~1	Max	Cent	0.0	-1.4	-0.2	0.0	-1.4	-7.18
					3759	0.0	-1.4	-0.2	0.1	-1.4	-6.99
					4387	0.0	-1.3	-0.2	0.1	-1.3	-7.30
					4557	0.0	-1.3	-0.2	0.0	-1.3	-7.39
					3854	0.0	-1.4	-0.2	0.0	-1.4	-7.07
				Min	Cent	0.0	-1.4	-0.2	0.0	-1.4	-7.18
					3759	0.0	-1.4	-0.2	0.1	-1.4	-6.99
					4387	0.0	-1.3	-0.2	0.1	-1.3	-7.30
					4557	0.0	-1.3	-0.2	0.0	-1.3	-7.39
					3854	0.0	-1.4	-0.2	0.0	-1.4	-7.07

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	59.02
	3759	-0.0	0.0	0.0	0.0	-0.0	89.55
	4387	0.0	0.0	0.0	0.0	0.0	73.83
	4557	-0.0	0.0	0.0	0.0	-0.0	83.23
	3854	0.1	0.0	0.0	0.1	0.0	1.49
Min	Cent	0.0	0.0	0.0	0.0	0.0	59.02
	3759	-0.0	0.0	0.0	0.0	-0.0	89.55
	4387	0.0	0.0	0.0	0.0	0.0	73.83
	4557	-0.0	0.0	0.0	0.0	-0.0	83.23
	3854	0.1	0.0	0.0	0.1	0.0	1.49

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3759	-0.0	-0.0
	4387	-0.0	-0.0
	4557	0.0	-0.0
	3854	0.0	-0.0
Min	Cent	0.0	-0.0
	3759	-0.0	-0.0
	4387	-0.0	-0.0
	4557	0.0	-0.0
	3854	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4252	3	2	S1 HL-~1	Max	Cent	-0.0	-1.3	-0.1	0.0	-1.4	-6.19
					4387	-0.0	-1.3	-0.1	-0.0	-1.4	-6.40
					1697	-0.0	-1.3	-0.1	-0.0	-1.4	-6.37
					701	0.0	-1.3	-0.1	0.1	-1.4	-5.99
					4557	0.0	-1.3	-0.1	0.1	-1.4	-6.03
				Min	Cent	-0.0	-1.3	-0.1	0.0	-1.4	-6.19
					4387	-0.0	-1.3	-0.1	-0.0	-1.4	-6.40
					1697	-0.0	-1.3	-0.1	-0.0	-1.4	-6.37
					701	0.0	-1.3	-0.1	0.1	-1.4	-5.99
					4557	0.0	-1.3	-0.1	0.1	-1.4	-6.03

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	86.77
	4387	0.0	0.0	0.0	0.0	0.0	76.55
	1697	-0.0	0.0	0.0	0.0	-0.0	88.89
	701	-0.1	-0.0	0.0	-0.0	-0.1	88.43
	4557	-0.0	0.0	0.0	0.0	-0.0	83.56
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	86.77

```
                                   4387        0.0        0.0        0.0        0.0        0.0      76.55
                                   1697       -0.0        0.0        0.0        0.0       -0.0      88.89
                                    701       -0.1       -0.0        0.0       -0.0       -0.1      88.43
                                   4557       -0.0        0.0        0.0        0.0       -0.0      83.56

                                   NODE        Vxx        Vyy
                              ---- ------ ---------- ----------
                              Max  Cent        0.0       -0.0
                                   4387        0.0       -0.0
                                   1697        0.0       -0.0
                                    701        0.0       -0.0
                                   4557        0.0       -0.0
                              Min  Cent        0.0       -0.0
                                   4387        0.0       -0.0
                                   1697        0.0       -0.0
                                    701        0.0       -0.0
                                   4557        0.0       -0.0

  ELEM    MAT    SEC       LC      NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4253      3      2 S1 HL-~1 Max  Cent       -0.0       -1.3       -0.0       -0.0       -1.3      -0.72
                                   1697       -0.1       -1.3       -0.0       -0.1       -1.3      -0.74
                                   5111       -0.1       -1.3       -0.0       -0.1       -1.3      -0.76
                                   5112        0.0       -1.3       -0.0        0.0       -1.3      -0.71
                                    701        0.0       -1.3       -0.0        0.0       -1.3      -0.69
                              Min  Cent       -0.0       -1.3       -0.0       -0.0       -1.3      -0.72
                                   1697       -0.1       -1.3       -0.0       -0.1       -1.3      -0.74
                                   5111       -0.1       -1.3       -0.0       -0.1       -1.3      -0.76
                                   5112        0.0       -1.3       -0.0        0.0       -1.3      -0.71
                                    701        0.0       -1.3       -0.0        0.0       -1.3      -0.69

                                   NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                              ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                              Max  Cent       -0.0        0.0        0.0        0.0       -0.0      87.04
                                   1697       -0.0        0.0        0.0        0.0       -0.0      89.82
                                   5111        0.0        0.0        0.0        0.0        0.0      89.88
                                   5112       -0.0        0.0        0.0        0.0       -0.0      83.60
                                    701       -0.1        0.0        0.0        0.0       -0.1      88.20
                              Min  Cent       -0.0        0.0        0.0        0.0       -0.0      87.04
                                   1697       -0.0        0.0        0.0        0.0       -0.0      89.82
                                   5111        0.0        0.0        0.0        0.0        0.0      89.88
                                   5112       -0.0        0.0        0.0        0.0       -0.0      83.60
                                    701       -0.1        0.0        0.0        0.0       -0.1      88.20

                                   NODE        Vxx        Vyy
                              ---- ------ ---------- ----------
                              Max  Cent       -0.0        0.0
                                   1697       -0.0       -0.0
                                   5111       -0.0        0.0
                                   5112       -0.0        0.0
                                    701       -0.0       -0.0
                              Min  Cent       -0.0        0.0
                                   1697       -0.0       -0.0
                                   5111       -0.0        0.0
                                   5112       -0.0        0.0
                                    701       -0.0       -0.0

  ELEM    MAT    SEC       LC      NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4277      3      2 S1 HL-~1 Max  Cent       -0.0       -1.4       -0.1       -0.0       -1.4      -4.42
                                   3854        0.0       -1.4       -0.1        0.0       -1.4      -4.34
                                   4557        0.0       -1.4       -0.1        0.0       -1.4      -4.34
                                   4381       -0.0       -1.4       -0.1       -0.0       -1.4      -4.49
                                   3753       -0.0       -1.4       -0.1       -0.0       -1.4      -4.50
                              Min  Cent       -0.0       -1.4       -0.1       -0.0       -1.4      -4.42
                                   3854        0.0       -1.4       -0.1        0.0       -1.4      -4.34
                                   4557        0.0       -1.4       -0.1        0.0       -1.4      -4.34
                                   4381       -0.0       -1.4       -0.1       -0.0       -1.4      -4.49
                                   3753       -0.0       -1.4       -0.1       -0.0       -1.4      -4.50

                                   NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                              ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                              Max  Cent        0.0        0.0       -0.0        0.0        0.0     -44.46
                                   3854        0.1        0.0       -0.0        0.1        0.0      -0.75
                                   4557       -0.0        0.0       -0.0        0.0       -0.0     -83.49
                                   4381        0.0        0.0       -0.0        0.0        0.0     -55.05
```

```
                                  3753       -0.0        0.0        0.0        0.0       -0.0      89.13
                             Min  Cent        0.0        0.0       -0.0        0.0        0.0     -44.46
                                  3854        0.1        0.0       -0.0        0.1        0.0      -0.75
                                  4557       -0.0        0.0       -0.0        0.0       -0.0     -83.49
                                  4381        0.0        0.0       -0.0        0.0        0.0     -55.05
                                  3753       -0.0        0.0        0.0        0.0       -0.0      89.13

                                  NODE        Vxx        Vyy
                            ---- ------ ---------- ----------
                             Max  Cent        0.0        0.0
                                  3854        0.0        0.0
                                  4557        0.0        0.0
                                  4381       -0.0        0.0
                                  3753       -0.0        0.0
                             Min  Cent        0.0        0.0
                                  3854        0.0        0.0
                                  4557        0.0        0.0
                                  4381       -0.0        0.0
                                  3753       -0.0        0.0

  ELEM    MAT    SEC         LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4278      3      2 S1 HL-~1  Max  Cent       -0.0       -1.4       -0.1       -0.0       -1.4      -5.82
                                  4557        0.0       -1.4       -0.1        0.0       -1.4      -5.58
                                   701        0.0       -1.4       -0.1        0.0       -1.4      -5.68
                                    95       -0.1       -1.4       -0.1       -0.0       -1.4      -6.08
                                  4381       -0.1       -1.4       -0.1       -0.0       -1.4      -5.96
                             Min  Cent       -0.0       -1.4       -0.1       -0.0       -1.4      -5.82
                                  4557        0.0       -1.4       -0.1        0.0       -1.4      -5.58
                                   701        0.0       -1.4       -0.1        0.0       -1.4      -5.68
                                    95       -0.1       -1.4       -0.1       -0.0       -1.4      -6.08
                                  4381       -0.1       -1.4       -0.1       -0.0       -1.4      -5.96

                                  NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                            ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                             Max  Cent       -0.0        0.0       -0.0        0.0       -0.0     -86.26
                                  4557       -0.0        0.0       -0.0        0.0       -0.0     -84.16
                                   701       -0.1       -0.0       -0.0       -0.0       -0.1     -88.80
                                    95       -0.0        0.0       -0.0        0.0       -0.0     -89.28
                                  4381        0.0        0.0       -0.0        0.0        0.0     -60.21
                             Min  Cent       -0.0        0.0       -0.0        0.0       -0.0     -86.26
                                  4557       -0.0        0.0       -0.0        0.0       -0.0     -84.16
                                   701       -0.1       -0.0       -0.0       -0.0       -0.1     -88.80
                                    95       -0.0        0.0       -0.0        0.0       -0.0     -89.28
                                  4381        0.0        0.0       -0.0        0.0        0.0     -60.21

                                  NODE        Vxx        Vyy
                            ---- ------ ---------- ----------
                             Max  Cent        0.0        0.0
                                  4557        0.0        0.0
                                   701        0.0        0.0
                                    95        0.0        0.0
                                  4381        0.0        0.0
                             Min  Cent        0.0        0.0
                                  4557        0.0        0.0
                                   701        0.0        0.0
                                    95        0.0        0.0
                                  4381        0.0        0.0

  ELEM    MAT    SEC         LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4279      3      2 S1 HL-~1  Max  Cent       -0.0       -1.3        0.0       -0.0       -1.3       0.77
                                   701        0.0       -1.3        0.0        0.0       -1.3       0.75
                                  5112        0.0       -1.3        0.0        0.0       -1.3       0.75
                                  5113       -0.0       -1.3        0.0       -0.0       -1.3       0.79
                                    95       -0.0       -1.3        0.0       -0.0       -1.3       0.78
                             Min  Cent       -0.0       -1.3        0.0       -0.0       -1.3       0.77
                                   701        0.0       -1.3        0.0        0.0       -1.3       0.75
                                  5112        0.0       -1.3        0.0        0.0       -1.3       0.75
                                  5113       -0.0       -1.3        0.0       -0.0       -1.3       0.79
                                    95       -0.0       -1.3        0.0       -0.0       -1.3       0.78

                                  NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                            ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                             Max  Cent       -0.0        0.0       -0.0        0.0       -0.0     -89.53
                                   701       -0.1       -0.0       -0.0       -0.0       -0.1     -89.05
```

	5112	0.0	0.0	-0.0	0.0	0.0	-87.53
	5113	-0.0	0.0	0.0	0.0	-0.0	88.16
	95	-0.0	-0.0	0.0	-0.0	-0.0	89.73
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-89.53
	701	-0.1	-0.0	-0.0	-0.0	-0.1	-89.05
	5112	0.0	0.0	-0.0	0.0	0.0	-87.53
	5113	-0.0	0.0	0.0	0.0	-0.0	88.16
	95	-0.0	-0.0	0.0	-0.0	-0.0	89.73

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	701	-0.0	0.0
	5112	-0.0	0.0
	5113	-0.0	0.0
	95	-0.0	0.0
Min	Cent	-0.0	0.0
	701	-0.0	0.0
	5112	-0.0	0.0
	5113	-0.0	0.0
	95	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4303	3	2	S1 HL-~1	Max	Cent	-0.0	-1.1	-0.1	0.0	-1.1	-5.62
					3753	0.0	-1.1	-0.1	0.1	-1.1	-5.32
					4381	0.0	-1.1	-0.1	0.1	-1.1	-5.44
					4558	-0.1	-1.1	-0.1	-0.0	-1.1	-5.97
					3859	-0.1	-1.1	-0.1	-0.0	-1.1	-5.83
				Min	Cent	-0.0	-1.1	-0.1	0.0	-1.1	-5.62
					3753	0.0	-1.1	-0.1	0.1	-1.1	-5.32
					4381	0.0	-1.1	-0.1	0.1	-1.1	-5.44
					4558	-0.1	-1.1	-0.1	-0.0	-1.1	-5.97
					3859	-0.1	-1.1	-0.1	-0.0	-1.1	-5.83

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	29.31
	3753	-0.0	0.0	0.0	0.0	-0.0	78.95
	4381	0.0	0.0	0.0	0.0	0.0	51.01
	4558	0.0	0.0	0.0	0.0	0.0	62.15
	3859	0.1	0.0	0.0	0.1	0.0	3.19
Min	Cent	0.0	0.0	0.0	0.0	0.0	29.31
	3753	-0.0	0.0	0.0	0.0	-0.0	78.95
	4381	0.0	0.0	0.0	0.0	0.0	51.01
	4558	0.0	0.0	0.0	0.0	0.0	62.15
	3859	0.1	0.0	0.0	0.1	0.0	3.19

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3753	-0.0	-0.0
	4381	-0.0	0.0
	4558	0.0	0.0
	3859	0.0	-0.0
Min	Cent	0.0	-0.0
	3753	-0.0	-0.0
	4381	-0.0	0.0
	4558	0.0	0.0
	3859	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4304	3	2	S1 HL-~1	Max	Cent	-0.0	-1.1	-0.1	0.0	-1.1	-7.28
					4381	0.0	-1.1	-0.1	0.0	-1.1	-7.09
					95	0.0	-1.1	-0.1	0.0	-1.1	-7.04
					702	-0.0	-1.1	-0.1	-0.0	-1.1	-7.49
					4558	-0.0	-1.1	-0.1	-0.0	-1.1	-7.53
				Min	Cent	-0.0	-1.1	-0.1	0.0	-1.1	-7.28
					4381	0.0	-1.1	-0.1	0.0	-1.1	-7.09
					95	0.0	-1.1	-0.1	0.0	-1.1	-7.04
					702	-0.0	-1.1	-0.1	-0.0	-1.1	-7.49
					4558	-0.0	-1.1	-0.1	-0.0	-1.1	-7.53

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE

```
                                Max   Cent        -0.0        0.0        0.0        0.0       -0.0      78.68
                                      4381         0.0        0.0        0.0        0.0        0.0      51.15
                                        95        -0.0        0.0        0.0        0.0       -0.0      83.41
                                       702        -0.1       -0.0        0.0       -0.0       -0.1      85.56
                                      4558         0.0        0.0        0.0        0.0        0.0      61.81
                                Min   Cent        -0.0        0.0        0.0        0.0       -0.0      78.68
                                      4381         0.0        0.0        0.0        0.0        0.0      51.15
                                        95        -0.0        0.0        0.0        0.0       -0.0      83.41
                                       702        -0.1       -0.0        0.0       -0.0       -0.1      85.56
                                      4558         0.0        0.0        0.0        0.0        0.0      61.81

                                      NODE         Vxx        Vyy
                               ---- ------ ---------- ----------
                                Max   Cent         0.0        0.0
                                      4381         0.0        0.0
                                        95         0.0        0.0
                                       702         0.0        0.0
                                      4558         0.0        0.0
                                Min   Cent         0.0        0.0
                                      4381         0.0        0.0
                                        95         0.0        0.0
                                       702         0.0        0.0
                                      4558         0.0        0.0

  ELEM    MAT    SEC         LC       NODE         Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4305      3      2 S1 HL-~1  Max   Cent        -0.0       -1.1        0.0       -0.0       -1.1       1.18
                                        95         0.0       -1.1        0.0        0.0       -1.1       1.11
                                      5113         0.0       -1.1        0.0        0.0       -1.1       1.14
                                      5114        -0.1       -1.1        0.0       -0.1       -1.1       1.26
                                       702        -0.1       -1.1        0.0       -0.1       -1.1       1.23
                                Min   Cent        -0.0       -1.1        0.0       -0.0       -1.1       1.18
                                        95         0.0       -1.1        0.0        0.0       -1.1       1.11
                                      5113         0.0       -1.1        0.0        0.0       -1.1       1.14
                                      5114        -0.1       -1.1        0.0       -0.1       -1.1       1.26
                                       702        -0.1       -1.1        0.0       -0.1       -1.1       1.23

                                      NODE         Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                               ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                                Max   Cent        -0.0        0.0        0.0        0.0       -0.0      81.10
                                        95        -0.0       -0.0        0.0       -0.0       -0.0      84.86
                                      5113         0.0        0.0        0.0        0.0       -0.0      76.04
                                      5114         0.0        0.0        0.0        0.0       -0.0      65.62
                                       702        -0.1       -0.0        0.0       -0.0       -0.1      85.62
                                Min   Cent        -0.0        0.0        0.0        0.0       -0.0      81.10
                                        95        -0.0       -0.0        0.0       -0.0       -0.0      84.86
                                      5113         0.0        0.0        0.0        0.0       -0.0      76.04
                                      5114         0.0        0.0        0.0        0.0       -0.0      65.62
                                       702        -0.1       -0.0        0.0       -0.0       -0.1      85.62

                                      NODE         Vxx        Vyy
                               ---- ------ ---------- ----------
                                Max   Cent        -0.0        0.0
                                        95        -0.0        0.0
                                      5113        -0.0        0.0
                                      5114        -0.0        0.0
                                       702        -0.0        0.0
                                Min   Cent        -0.0        0.0
                                        95        -0.0        0.0
                                      5113        -0.0        0.0
                                      5114        -0.0        0.0
                                       702        -0.0        0.0

  ELEM    MAT    SEC         LC       NODE         Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4329      3      2 S1 HL-~1  Max   Cent         0.0       -0.6       -0.1        0.0       -0.7      -9.03
                                      3859         0.1       -0.6       -0.1        0.1       -0.6      -8.14
                                      4558         0.1       -0.6       -0.1        0.1       -0.7      -8.07
                                      4375        -0.1       -0.6       -0.1       -0.1       -0.7     -10.13
                                      3747        -0.1       -0.6       -0.1       -0.1       -0.7     -10.25
                                Min   Cent         0.0       -0.6       -0.1        0.0       -0.7      -9.03
                                      3859         0.1       -0.6       -0.1        0.1       -0.6      -8.14
                                      4558         0.1       -0.6       -0.1        0.1       -0.7      -8.07
                                      4375        -0.1       -0.6       -0.1       -0.1       -0.7     -10.13
                                      3747        -0.1       -0.6       -0.1       -0.1       -0.7     -10.25
```

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-13.64
	3859	0.1	0.0	-0.0	0.1	0.0	-1.62
	4558	0.0	0.0	-0.0	0.0	0.0	-66.40
	4375	0.0	0.0	-0.0	0.0	0.0	-19.19
	3747	-0.0	-0.0	0.0	-0.0	-0.0	20.40
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-13.64
	3859	0.1	0.0	-0.0	0.1	0.0	-1.62
	4558	0.0	0.0	-0.0	0.0	0.0	-66.40
	4375	0.0	0.0	-0.0	0.0	0.0	-19.19
	3747	-0.0	-0.0	0.0	-0.0	-0.0	20.40

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3859	0.0	0.0
	4558	0.0	0.0
	4375	-0.0	0.0
	3747	-0.0	0.0
Min	Cent	0.0	0.0
	3859	0.0	0.0
	4558	0.0	0.0
	4375	-0.0	0.0
	3747	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4330	3	2	S1 HL-~1	Max	Cent	0.0	-0.6	-0.2	0.1	-0.7	-14.19
					4558	0.1	-0.6	-0.2	0.1	-0.7	-12.74
					702	0.1	-0.6	-0.2	0.1	-0.7	-12.87
					81	-0.1	-0.6	-0.2	-0.0	-0.7	-15.97
					4375	-0.1	-0.6	-0.2	-0.0	-0.7	-15.79
				Min	Cent	0.0	-0.6	-0.2	0.1	-0.7	-14.19
					4558	0.1	-0.6	-0.2	0.1	-0.7	-12.74
					702	0.1	-0.6	-0.2	0.1	-0.7	-12.87
					81	-0.1	-0.6	-0.2	-0.0	-0.7	-15.97
					4375	-0.1	-0.6	-0.2	-0.0	-0.7	-15.79

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-78.77
	4558	0.0	0.0	-0.0	0.0	0.0	-63.30
	702	-0.1	-0.0	-0.0	-0.0	-0.1	-85.57
	81	-0.0	-0.0	-0.0	-0.0	-0.0	-87.55
	4375	0.0	0.0	-0.0	0.0	0.0	-18.95
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-78.77
	4558	0.0	0.0	-0.0	0.0	0.0	-63.30
	702	-0.1	-0.0	-0.0	-0.0	-0.1	-85.57
	81	-0.0	-0.0	-0.0	-0.0	-0.0	-87.55
	4375	0.0	0.0	-0.0	0.0	0.0	-18.95

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4558	0.0	0.0
	702	0.0	0.0
	81	0.0	0.0
	4375	0.0	0.0
Min	Cent	0.0	0.0
	4558	0.0	0.0
	702	0.0	0.0
	81	0.0	0.0
	4375	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4331	3	2	S1 HL-~1	Max	Cent	0.0	-0.6	0.0	0.0	-0.6	4.12
					702	0.1	-0.6	0.0	0.1	-0.6	3.70
					5114	0.1	-0.6	0.0	0.1	-0.6	3.81
					5115	-0.0	-0.6	0.0	-0.0	-0.6	4.64
					81	-0.0	-0.6	0.0	-0.0	-0.6	4.48
				Min	Cent	0.0	-0.6	0.0	0.0	-0.6	4.12
					702	0.1	-0.6	0.0	0.1	-0.6	3.70
					5114	0.1	-0.6	0.0	0.1	-0.6	3.81
					5115	-0.0	-0.6	0.0	-0.0	-0.6	4.64

	NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
	81	-0.0	-0.6	0.0	-0.0	-0.6	4.48

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-84.04
	702	-0.1	-0.0	-0.0	-0.0	-0.1	-86.89
	5114	-0.0	0.0	-0.0	0.0	-0.0	-68.96
	5115	0.0	0.0	-0.0	0.0	0.0	-85.08
	81	-0.0	-0.0	-0.0	-0.0	-0.0	-87.96
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-84.04
	702	-0.1	-0.0	-0.0	-0.0	-0.1	-86.89
	5114	-0.0	0.0	-0.0	0.0	-0.0	-68.96
	5115	0.0	0.0	-0.0	0.0	0.0	-85.08
	81	-0.0	-0.0	-0.0	-0.0	-0.0	-87.96

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	702	-0.0	0.0
	5114	-0.0	-0.0
	5115	-0.0	-0.0
	81	-0.0	0.0
Min	Cent	-0.0	-0.0
	702	-0.0	0.0
	5114	-0.0	-0.0
	5115	-0.0	-0.0
	81	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4355	3	2	S1 HL-~1	Max	Cent	-0.0	-0.3	-0.1	0.0	-0.3	-22.21
					3747	0.0	-0.3	-0.1	0.1	-0.3	-19.24
					4375	0.0	-0.3	-0.1	0.1	-0.3	-20.32
					5047	-0.1	-0.3	-0.1	0.0	-0.3	-25.99
					5046	-0.1	-0.3	-0.1	-0.0	-0.3	-24.40
				Min	Cent	-0.0	-0.3	-0.1	0.0	-0.3	-22.21
					3747	0.0	-0.3	-0.1	0.1	-0.3	-19.24
					4375	0.0	-0.3	-0.1	0.1	-0.3	-20.32
					5047	-0.1	-0.3	-0.1	0.0	-0.3	-25.99
					5046	-0.1	-0.3	-0.1	-0.0	-0.3	-24.40

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	31.90
	3747	-0.0	-0.0	0.0	-0.0	-0.0	43.58
	4375	0.0	0.0	0.0	0.0	0.0	42.30
	5047	-0.0	0.0	0.0	0.0	-0.0	48.24
	5046	0.1	0.0	0.0	0.1	0.0	9.08
Min	Cent	0.0	0.0	0.0	0.0	0.0	31.90
	3747	-0.0	-0.0	0.0	-0.0	-0.0	43.58
	4375	0.0	0.0	0.0	0.0	0.0	42.30
	5047	-0.0	0.0	0.0	0.0	-0.0	48.24
	5046	0.1	0.0	0.0	0.1	0.0	9.08

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3747	-0.0	-0.0
	4375	-0.0	0.0
	5047	0.0	0.0
	5046	0.0	-0.0
Min	Cent	0.0	-0.0
	3747	-0.0	-0.0
	4375	-0.0	0.0
	5047	0.0	0.0
	5046	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4356	3	2	S1 HL-~1	Max	Cent	-0.0	-0.3	-0.2	0.1	-0.4	-28.93
					4375	0.0	-0.3	-0.2	0.1	-0.4	-27.01
					81	0.0	-0.3	-0.2	0.1	-0.4	-25.95
					5048	-0.1	-0.3	-0.2	0.1	-0.4	-31.02
					5047	-0.1	-0.3	-0.2	0.1	-0.4	-32.34
				Min	Cent	-0.0	-0.3	-0.2	0.1	-0.4	-28.93
					4375	0.0	-0.3	-0.2	0.1	-0.4	-27.01

	81	0.0	-0.3	-0.2	0.1	-0.4	-25.95
	5048	-0.1	-0.3	-0.2	0.1	-0.4	-31.02
	5047	-0.1	-0.3	-0.2	0.1	-0.4	-32.34

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	71.88
	4375	0.0	0.0	0.0	0.0	0.0	42.98
	81	-0.0	-0.0	0.0	-0.0	-0.0	80.09
	5048	-0.1	-0.0	0.0	-0.0	-0.1	81.87
	5047	-0.0	0.0	0.0	0.0	-0.0	47.98
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	71.88
	4375	0.0	0.0	0.0	0.0	0.0	42.98
	81	-0.0	-0.0	0.0	-0.0	-0.0	80.09
	5048	-0.1	-0.0	0.0	-0.0	-0.1	81.87
	5047	-0.0	0.0	0.0	0.0	-0.0	47.98

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4375	0.0	0.0
	81	0.0	0.0
	5048	0.0	0.0
	5047	0.0	0.0
Min	Cent	0.0	0.0
	4375	0.0	0.0
	81	0.0	0.0
	5048	0.0	0.0
	5047	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4357	3	2	S1 HL-~1	Max	Cent	-0.0	-0.3	0.0	-0.0	-0.3	7.37
					81	0.1	-0.3	0.0	0.1	-0.3	5.89
					5115	0.1	-0.3	0.0	0.1	-0.3	5.98
					5116	-0.1	-0.3	0.0	-0.1	-0.3	9.79
					5048	-0.1	-0.3	0.0	-0.1	-0.3	9.55
				Min	Cent	-0.0	-0.3	0.0	-0.0	-0.3	7.37
					81	0.1	-0.3	0.0	0.1	-0.3	5.89
					5115	0.1	-0.3	0.0	0.1	-0.3	5.98
					5116	-0.1	-0.3	0.0	-0.1	-0.3	9.79
					5048	-0.1	-0.3	0.0	-0.1	-0.3	9.55

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	77.15
	81	-0.0	-0.0	0.0	-0.0	-0.0	83.01
	5115	0.0	0.0	0.0	0.0	-0.0	70.45
	5116	-0.0	-0.0	0.0	0.0	-0.0	42.20
	5048	-0.1	-0.0	0.0	-0.0	-0.1	81.75
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	77.15
	81	-0.0	-0.0	0.0	-0.0	-0.0	83.01
	5115	0.0	0.0	0.0	0.0	-0.0	70.45
	5116	-0.0	-0.0	0.0	0.0	-0.0	42.20
	5048	-0.1	-0.0	0.0	-0.0	-0.1	81.75

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	81	-0.0	0.0
	5115	-0.0	0.0
	5116	-0.0	0.0
	5048	-0.0	0.0
Min	Cent	-0.0	0.0
	81	-0.0	0.0
	5115	-0.0	0.0
	5116	-0.0	0.0
	5048	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4381	3	2	S1 HL-~1	Max	Cent	0.0	0.8	-0.1	0.8	-0.0	-79.82
					3744	0.1	0.8	-0.1	0.8	0.1	-78.83
					4432	0.1	0.8	-0.1	0.8	0.1	-78.89
					4476	-0.1	0.8	-0.1	0.8	-0.1	-80.67
					3824	-0.1	0.8	-0.1	0.8	-0.1	-80.62

Min	Cent	0.0	0.8	-0.1	0.8	-0.0	-79.82
	3744	0.1	0.8	-0.1	0.8	0.1	-78.83
	4432	0.1	0.8	-0.1	0.8	0.1	-78.89
	4476	-0.1	0.8	-0.1	0.8	-0.1	-80.67
	3824	-0.1	0.8	-0.1	0.8	-0.1	-80.62

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-0.42
	3744	0.1	0.0	0.0	0.1	0.0	1.75
	4432	0.0	0.0	-0.0	0.0	0.0	-0.64
	4476	0.0	-0.0	-0.0	0.0	-0.0	-15.51
	3824	0.0	0.0	-0.0	0.0	0.0	-1.22
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-0.42
	3744	0.1	0.0	0.0	0.1	0.0	1.75
	4432	0.0	0.0	-0.0	0.0	0.0	-0.64
	4476	0.0	-0.0	-0.0	0.0	-0.0	-15.51
	3824	0.0	0.0	-0.0	0.0	0.0	-1.22

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3744	0.0	-0.0
	4432	0.0	0.0
	4476	0.0	0.0
	3824	0.0	-0.0
Min	Cent	0.0	0.0
	3744	0.0	-0.0
	4432	0.0	0.0
	4476	0.0	0.0
	3824	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4382	3	2	S1 HL-~1	Max	Cent	0.0	0.8	-0.2	0.9	-0.1	-74.00
					4432	0.1	0.8	-0.2	0.9	0.0	-72.60
					1621	0.1	0.8	-0.2	0.9	0.0	-72.44
					1614	-0.1	0.8	-0.2	0.9	-0.1	-75.21
					4476	-0.1	0.8	-0.2	0.9	-0.1	-75.33
				Min	Cent	0.0	0.8	-0.2	0.9	-0.1	-74.00
					4432	0.1	0.8	-0.2	0.9	0.0	-72.60
					1621	0.1	0.8	-0.2	0.9	0.0	-72.44
					1614	-0.1	0.8	-0.2	0.9	-0.1	-75.21
					4476	-0.1	0.8	-0.2	0.9	-0.1	-75.33

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-62.70
	4432	0.0	0.0	-0.0	0.0	0.0	-2.46
	1621	-0.0	-0.0	-0.0	-0.0	-0.0	-77.68
	1614	-0.1	-0.0	-0.0	-0.0	-0.1	-81.31
	4476	0.0	-0.0	-0.0	0.0	-0.0	-24.49
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-62.70
	4432	0.0	0.0	-0.0	0.0	0.0	-2.46
	1621	-0.0	-0.0	-0.0	-0.0	-0.0	-77.68
	1614	-0.1	-0.0	-0.0	-0.0	-0.1	-81.31
	4476	0.0	-0.0	-0.0	0.0	-0.0	-24.49

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4432	0.0	0.0
	1621	0.0	0.0
	1614	0.0	0.0
	4476	0.0	0.0
Min	Cent	0.0	0.0
	4432	0.0	0.0
	1621	0.0	0.0
	1614	0.0	0.0
	4476	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4383	3	2	S1 HL-~1	Max	Cent	0.0	0.8	0.1	0.8	0.0	85.85
					1621	0.1	0.8	0.1	0.8	0.1	85.27
					5117	0.1	0.8	0.1	0.9	0.1	85.49

```
                     5118      -0.1        0.8        0.1        0.9       -0.1      86.30
                     1614      -0.1        0.8        0.1        0.8       -0.1      86.15
                Min  Cent       0.0        0.8        0.1        0.8        0.0      85.85
                     1621       0.1        0.8        0.1        0.8        0.1      85.27
                     5117       0.1        0.8        0.1        0.9        0.1      85.49
                     5118      -0.1        0.8        0.1        0.9       -0.1      86.30
                     1614      -0.1        0.8        0.1        0.8       -0.1      86.15

                     NODE       Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                Max  Cent      -0.0       -0.0       -0.0       -0.0       -0.0     -71.02
                     1621      -0.1       -0.0       -0.0       -0.0       -0.1     -84.48
                     5117      -0.0       -0.0       -0.0        0.0       -0.0     -18.91
                     5118       0.0       -0.0       -0.0        0.0       -0.0     -34.96
                     1614      -0.0       -0.0       -0.0       -0.0       -0.0     -77.71
                Min  Cent      -0.0       -0.0       -0.0       -0.0       -0.0     -71.02
                     1621      -0.1       -0.0       -0.0       -0.0       -0.1     -84.48
                     5117      -0.0       -0.0       -0.0        0.0       -0.0     -18.91
                     5118       0.0       -0.0       -0.0        0.0       -0.0     -34.96
                     1614      -0.0       -0.0       -0.0       -0.0       -0.0     -77.71

                     NODE       Vxx        Vyy
                ---- ------ ---------- ----------
                Max  Cent      -0.0       -0.0
                     1621      -0.0        0.0
                     5117      -0.0       -0.0
                     5118      -0.0       -0.0
                     1614      -0.0        0.0
                Min  Cent      -0.0       -0.0
                     1621      -0.0        0.0
                     5117      -0.0       -0.0
                     5118      -0.0       -0.0
                     1614      -0.0        0.0

  ELEM   MAT    SEC        LC        NODE       Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4407      3      2 S1 HL-~1 Max  Cent       0.0        1.2       -0.2        1.2       -0.0     -82.21
                                   3824       0.1        1.2       -0.2        1.2        0.0     -81.97
                                   4476       0.1        1.2       -0.2        1.2        0.0     -81.76
                                   4367      -0.1        1.2       -0.2        1.2       -0.1     -82.43
                                   3739      -0.1        1.2       -0.2        1.2       -0.1     -82.61
                              Min  Cent       0.0        1.2       -0.2        1.2       -0.0     -82.21
                                   3824       0.1        1.2       -0.2        1.2        0.0     -81.97
                                   4476       0.1        1.2       -0.2        1.2        0.0     -81.76
                                   4367      -0.1        1.2       -0.2        1.2       -0.1     -82.43
                                   3739      -0.1        1.2       -0.2        1.2       -0.1     -82.61

                                   NODE       Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                              ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                              Max  Cent       0.0       -0.0       -0.0        0.0       -0.0     -12.79
                                   3824       0.0        0.0       -0.0        0.0        0.0      -4.27
                                   4476       0.0       -0.0       -0.0        0.0       -0.0     -31.56
                                   4367      -0.0       -0.0       -0.0       -0.0       -0.0     -24.65
                                   3739       0.0       -0.0       -0.0        0.0       -0.0      -2.66
                              Min  Cent       0.0       -0.0       -0.0        0.0       -0.0     -12.79
                                   3824       0.0        0.0       -0.0        0.0        0.0      -4.27
                                   4476       0.0       -0.0       -0.0        0.0       -0.0     -31.56
                                   4367      -0.0       -0.0       -0.0       -0.0       -0.0     -24.65
                                   3739       0.0       -0.0       -0.0        0.0       -0.0      -2.66

                                   NODE       Vxx        Vyy
                              ---- ------ ---------- ----------
                              Max  Cent       0.0        0.0
                                   3824       0.0        0.0
                                   4476       0.0        0.0
                                   4367       0.0        0.0
                                   3739       0.0        0.0
                              Min  Cent       0.0        0.0
                                   3824       0.0        0.0
                                   4476       0.0        0.0
                                   4367       0.0        0.0
                                   3739       0.0        0.0

  ELEM   MAT    SEC        LC        NODE       Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4408      3      2 S1 HL-~1 Max  Cent       0.0        1.2       -0.3        1.3       -0.0     -78.34
```

	NODE						
	4476	0.1	1.2	-0.3	1.2	-0.0	-77.96
	1614	0.1	1.2	-0.3	1.3	-0.0	-78.18
	63	-0.0	1.2	-0.3	1.3	-0.1	-78.69
	4367	-0.0	1.2	-0.3	1.2	-0.1	-78.49
Min	Cent	0.0	1.2	-0.3	1.3	-0.0	-78.34
	4476	0.1	1.2	-0.3	1.2	-0.0	-77.96
	1614	0.1	1.2	-0.3	1.3	-0.0	-78.18
	63	-0.0	1.2	-0.3	1.3	-0.1	-78.69
	4367	-0.0	1.2	-0.3	1.2	-0.1	-78.49

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-46.42
	4476	0.0	-0.0	-0.0	0.0	-0.0	-34.68
	1614	-0.1	-0.0	-0.0	-0.0	-0.1	-79.73
	63	0.0	-0.0	-0.0	0.0	-0.0	-11.49
	4367	-0.0	-0.0	-0.0	-0.0	-0.0	-27.45
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-46.42
	4476	0.0	-0.0	-0.0	0.0	-0.0	-34.68
	1614	-0.1	-0.0	-0.0	-0.0	-0.1	-79.73
	63	0.0	-0.0	-0.0	0.0	-0.0	-11.49
	4367	-0.0	-0.0	-0.0	-0.0	-0.0	-27.45

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4476	0.0	0.0
	1614	0.0	0.0
	63	-0.0	0.0
	4367	-0.0	0.0
Min	Cent	0.0	0.0
	4476	0.0	0.0
	1614	0.0	0.0
	63	-0.0	0.0
	4367	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4409	3	2	S1 HL-~1	Max	Cent	-0.0	1.2	0.1	1.2	-0.0	86.81
					1614	0.1	1.2	0.1	1.2	0.0	86.66
					5118	0.1	1.2	0.1	1.2	0.0	86.64
					5119	-0.1	1.2	0.1	1.2	-0.1	86.95
					63	-0.1	1.2	0.1	1.2	-0.1	86.97
				Min	Cent	-0.0	1.2	0.1	1.2	-0.0	86.81
					1614	0.1	1.2	0.1	1.2	0.0	86.66
					5118	0.1	1.2	0.1	1.2	0.0	86.64
					5119	-0.1	1.2	0.1	1.2	-0.1	86.95
					63	-0.1	1.2	0.1	1.2	-0.1	86.97

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-69.00
	1614	-0.0	-0.0	-0.0	-0.0	-0.0	-80.29
	5118	-0.0	-0.0	-0.0	0.0	-0.0	-28.09
	5119	0.0	-0.0	-0.0	0.0	-0.0	-14.69
	63	-0.1	-0.0	-0.0	-0.0	-0.1	-84.53
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-69.00
	1614	-0.0	-0.0	-0.0	-0.0	-0.0	-80.29
	5118	-0.0	-0.0	-0.0	0.0	-0.0	-28.09
	5119	0.0	-0.0	-0.0	0.0	-0.0	-14.69
	63	-0.1	-0.0	-0.0	-0.0	-0.1	-84.53

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	1614	-0.0	0.0
	5118	-0.0	0.0
	5119	-0.0	0.0
	63	-0.0	0.0
Min	Cent	-0.0	0.0
	1614	-0.0	0.0
	5118	-0.0	0.0
	5119	-0.0	0.0
	63	-0.0	0.0

ELEM	MAT	SEC	LC	NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE

```
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4433      3      2 S1 HL-~1  Max   Cent        0.0        1.8       -0.2        1.8       -0.0     -84.54
                                     3739        0.1        1.8       -0.2        1.8        0.1     -84.24
                                     4367        0.1        1.8       -0.2        1.8        0.1     -84.07
                                     4844       -0.1        1.8       -0.2        1.8       -0.1     -84.80
                                     4817       -0.1        1.8       -0.2        1.8       -0.1     -84.93
                               Min   Cent        0.0        1.8       -0.2        1.8       -0.0     -84.54
                                     3739        0.1        1.8       -0.2        1.8        0.1     -84.24
                                     4367        0.1        1.8       -0.2        1.8        0.1     -84.07
                                     4844       -0.1        1.8       -0.2        1.8       -0.1     -84.80
                                     4817       -0.1        1.8       -0.2        1.8       -0.1     -84.93

                                     NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                              ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent        0.0       -0.0        0.0        0.0       -0.0       8.03
                                     3739        0.0       -0.0        0.0        0.0       -0.0       1.60
                                     4367       -0.0       -0.0        0.0       -0.0       -0.0      29.24
                                     4844        0.0        0.0        0.0        0.0        0.0       8.92
                                     4817        0.1        0.0        0.0        0.1        0.0       1.28
                               Min   Cent        0.0       -0.0        0.0        0.0       -0.0       8.03
                                     3739        0.0       -0.0        0.0        0.0       -0.0       1.60
                                     4367       -0.0       -0.0        0.0       -0.0       -0.0      29.24
                                     4844        0.0        0.0        0.0        0.0        0.0       8.92
                                     4817        0.1        0.0        0.0        0.1        0.0       1.28

                                     NODE        Vxx        Vyy
                              ---- ------ ---------- ----------
                               Max   Cent        0.0       -0.0
                                     3739        0.0       -0.0
                                     4367        0.0       -0.0
                                     4844        0.0       -0.0
                                     4817        0.0       -0.0
                               Min   Cent        0.0       -0.0
                                     3739        0.0       -0.0
                                     4367        0.0       -0.0
                                     4844        0.0       -0.0
                                     4817        0.0       -0.0

  ELEM    MAT    SEC       LC        NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  4434      3      2 S1 HL-~1  Max   Cent       -0.0        1.7       -0.3        1.8       -0.1     -79.73
                                     4367        0.1        1.8       -0.3        1.8        0.1     -79.07
                                       63        0.1        1.7       -0.3        1.8        0.1     -78.58
                                     4784       -0.2        1.7       -0.3        1.8       -0.2     -80.32
                                     4844       -0.2        1.8       -0.3        1.8       -0.2     -80.68
                               Min   Cent       -0.0        1.7       -0.3        1.8       -0.1     -79.73
                                     4367        0.1        1.8       -0.3        1.8        0.1     -79.07
                                       63        0.1        1.7       -0.3        1.8        0.1     -78.58
                                     4784       -0.2        1.7       -0.3        1.8       -0.2     -80.32
                                     4844       -0.2        1.8       -0.3        1.8       -0.2     -80.68

                                     NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                              ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent       -0.0       -0.0        0.0       -0.0       -0.0      72.46
                                     4367       -0.0       -0.0        0.0       -0.0       -0.0      34.14
                                       63        0.0       -0.0        0.0        0.0       -0.0       9.40
                                     4784       -0.2       -0.1        0.0       -0.1       -0.2      88.04
                                     4844        0.0        0.0        0.0        0.0        0.0      12.88
                               Min   Cent       -0.0       -0.0        0.0       -0.0       -0.0      72.46
                                     4367       -0.0       -0.0        0.0       -0.0       -0.0      34.14
                                       63        0.0       -0.0        0.0        0.0       -0.0       9.40
                                     4784       -0.2       -0.1        0.0       -0.1       -0.2      88.04
                                     4844        0.0        0.0        0.0        0.0        0.0      12.88

                                     NODE        Vxx        Vyy
                              ---- ------ ---------- ----------
                               Max   Cent        0.0       -0.0
                                     4367       -0.0       -0.0
                                       63       -0.0       -0.0
                                     4784        0.0       -0.0
                                     4844        0.0       -0.0
                               Min   Cent        0.0       -0.0
                                     4367       -0.0       -0.0
                                       63       -0.0       -0.0
                                     4784        0.0       -0.0
                                     4844        0.0       -0.0
```

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4435	3	2	S1 HL-~1	Max	Cent	-0.0	1.7	0.1	1.7	-0.0	87.59
					63	0.1	1.7	0.1	1.7	0.1	87.48
					5119	0.1	1.6	0.1	1.7	0.1	87.41
					5120	-0.1	1.6	0.1	1.7	-0.1	87.69
					4784	-0.1	1.7	0.1	1.7	-0.1	87.74
				Min	Cent	-0.0	1.7	0.1	1.7	-0.0	87.59
					63	0.1	1.7	0.1	1.7	0.1	87.48
					5119	0.1	1.6	0.1	1.7	0.1	87.41
					5120	-0.1	1.6	0.1	1.7	-0.1	87.69
					4784	-0.1	1.7	0.1	1.7	-0.1	87.74

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	79.56
	63	-0.1	-0.0	-0.0	-0.0	-0.1	-89.09
	5119	0.0	-0.0	0.0	0.0	-0.0	1.08
	5120	-0.0	-0.0	0.0	0.0	-0.0	20.61
	4784	-0.0	-0.0	0.0	-0.0	-0.0	80.72
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	79.56
	63	-0.1	-0.0	-0.0	-0.0	-0.1	-89.09
	5119	0.0	-0.0	0.0	0.0	-0.0	1.08
	5120	-0.0	-0.0	0.0	0.0	-0.0	20.61
	4784	-0.0	-0.0	0.0	-0.0	-0.0	80.72

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	63	-0.0	-0.0
	5119	-0.0	-0.0
	5120	-0.0	-0.0
	4784	-0.0	-0.0
Min	Cent	-0.0	-0.0
	63	-0.0	-0.0
	5119	-0.0	-0.0
	5120	-0.0	-0.0
	4784	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4459	3	2	S1 HL-~1	Max	Cent	0.2	2.5	-0.0	2.5	0.2	-89.92
					4817	0.1	2.5	-0.0	2.5	0.1	-89.92
					4844	0.1	2.6	-0.0	2.6	0.1	-89.92
					4356	0.2	2.6	-0.0	2.6	0.2	-89.91
					3728	0.2	2.5	-0.0	2.5	0.2	-89.91
				Min	Cent	0.2	2.5	-0.0	2.5	0.2	-89.92
					4817	0.1	2.5	-0.0	2.5	0.1	-89.92
					4844	0.1	2.6	-0.0	2.6	0.1	-89.92
					4356	0.2	2.6	-0.0	2.6	0.2	-89.91
					3728	0.2	2.5	-0.0	2.5	0.2	-89.91

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	-0.0	0.0	-0.0	-13.41
	4817	0.1	0.0	-0.0	0.1	0.0	-2.85
	4844	0.0	0.0	-0.0	0.0	-0.0	-14.36
	4356	-0.1	-0.1	-0.0	-0.1	-0.1	-64.28
	3728	-0.0	-0.1	-0.0	-0.0	-0.1	-2.90
Min	Cent	0.0	-0.0	-0.0	0.0	-0.0	-13.41
	4817	0.1	0.0	-0.0	0.1	0.0	-2.85
	4844	0.0	0.0	-0.0	0.0	-0.0	-14.36
	4356	-0.1	-0.1	-0.0	-0.1	-0.1	-64.28
	3728	-0.0	-0.1	-0.0	-0.0	-0.1	-2.90

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4817	0.0	0.0
	4844	0.0	0.0
	4356	0.0	0.0
	3728	0.0	0.0
Min	Cent	0.0	0.0
	4817	0.0	0.0
	4844	0.0	0.0
	4356	0.0	0.0

	3728	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4460	3	2	S1 HL-~1	Max	Cent	0.1	2.6	-0.1	2.6	0.1	-87.42
					4844	0.1	2.6	-0.1	2.6	0.1	-87.37
					4784	0.1	2.7	-0.1	2.7	0.1	-87.47
					35	0.1	2.7	-0.1	2.7	0.1	-87.46
					4356	0.1	2.6	-0.1	2.6	0.1	-87.36
				Min	Cent	0.1	2.6	-0.1	2.6	0.1	-87.42
					4844	0.1	2.6	-0.1	2.6	0.1	-87.37
					4784	0.1	2.7	-0.1	2.7	0.1	-87.47
					35	0.1	2.7	-0.1	2.7	0.1	-87.46
					4356	0.1	2.6	-0.1	2.6	0.1	-87.36

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.1	-0.0	-0.0	0.1	-0.0	-6.36
	4844	0.0	0.0	-0.0	0.0	-0.0	-17.09
	4784	-0.2	-0.1	0.0	-0.1	-0.2	89.36
	35	0.6	0.1	0.0	0.6	0.1	0.05
	4356	-0.1	-0.1	-0.0	-0.1	-0.1	-60.20
Min	Cent	0.1	-0.0	-0.0	0.1	-0.0	-6.36
	4844	0.0	0.0	-0.0	0.0	-0.0	-17.09
	4784	-0.2	-0.1	0.0	-0.1	-0.2	89.36
	35	0.6	0.1	0.0	0.6	0.1	0.05
	4356	-0.1	-0.1	-0.0	-0.1	-0.1	-60.20

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4844	0.0	0.0
	4784	0.0	0.0
	35	-0.1	0.0
	4356	-0.1	0.0
Min	Cent	-0.0	0.0
	4844	0.0	0.0
	4784	0.0	0.0
	35	-0.1	0.0
	4356	-0.1	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4461	3	2	S1 HL-~1	Max	Cent	0.0	2.6	0.1	2.6	0.0	87.12
					4784	0.2	2.6	0.1	2.6	0.2	87.02
					5120	0.2	2.5	0.1	2.5	0.2	86.90
					5121	-0.1	2.5	0.1	2.5	-0.1	87.22
					35	-0.1	2.6	0.1	2.6	-0.1	87.32
				Min	Cent	0.0	2.6	0.1	2.6	0.0	87.12
					4784	0.2	2.6	0.1	2.6	0.2	87.02
					5120	0.2	2.5	0.1	2.5	0.2	86.90
					5121	-0.1	2.5	0.1	2.5	-0.1	87.22
					35	-0.1	2.6	0.1	2.6	-0.1	87.32

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	39.39
	4784	-0.0	-0.0	0.0	-0.0	-0.0	55.47
	5120	0.0	0.0	0.0	0.0	-0.0	43.96
	5121	-0.0	-0.1	0.0	0.0	-0.1	10.79
	35	-0.1	-0.1	0.0	-0.1	-0.1	66.08
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	39.39
	4784	-0.0	-0.0	0.0	-0.0	-0.0	55.47
	5120	0.0	0.0	0.0	0.0	-0.0	43.96
	5121	-0.0	-0.1	0.0	0.0	-0.1	10.79
	35	-0.1	-0.1	0.0	-0.1	-0.1	66.08

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4784	-0.0	0.0
	5120	-0.0	0.0
	5121	-0.0	0.0
	35	-0.0	0.0
Min	Cent	-0.0	0.0
	4784	-0.0	0.0

NODE	Vxx	Vyy
5120	-0.0	0.0
5121	-0.0	0.0
35	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4485	3	2	S1 HL-~1	Max	Cent	0.2	2.5	0.0	2.5	0.2	89.92
					3728	0.2	2.5	0.0	2.5	0.2	89.91
					4356	0.2	2.6	0.0	2.6	0.2	89.92
					4918	0.1	2.6	0.0	2.6	0.1	89.92
					4888	0.1	2.5	0.0	2.5	0.1	89.92
				Min	Cent	0.2	2.5	0.0	2.5	0.2	89.92
					3728	0.2	2.5	0.0	2.5	0.2	89.91
					4356	0.2	2.6	0.0	2.6	0.2	89.92
					4918	0.1	2.6	0.0	2.6	0.1	89.92
					4888	0.1	2.5	0.0	2.5	0.1	89.92

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	0.0	0.0	-0.0	13.50
	3728	-0.0	-0.1	0.0	-0.0	-0.1	2.97
	4356	-0.1	-0.1	0.0	-0.1	-0.1	64.20
	4918	0.0	0.0	0.0	0.0	-0.0	14.43
	4888	0.1	0.0	0.0	0.1	0.0	2.91
Min	Cent	0.0	-0.0	0.0	0.0	-0.0	13.50
	3728	-0.0	-0.1	0.0	-0.0	-0.1	2.97
	4356	-0.1	-0.1	0.0	-0.1	-0.1	64.20
	4918	0.0	0.0	0.0	0.0	-0.0	14.43
	4888	0.1	0.0	0.0	0.1	0.0	2.91

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3728	0.0	-0.0
	4356	0.0	-0.0
	4918	0.0	-0.0
	4888	0.0	-0.0
Min	Cent	0.0	-0.0
	3728	0.0	-0.0
	4356	0.0	-0.0
	4918	0.0	-0.0
	4888	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4486	3	2	S1 HL-~1	Max	Cent	0.1	2.6	0.1	2.6	0.1	87.42
					4356	0.1	2.6	0.1	2.6	0.1	87.36
					35	0.1	2.7	0.1	2.7	0.1	87.46
					4852	0.1	2.7	0.1	2.7	0.1	87.47
					4918	0.1	2.6	0.1	2.6	0.1	87.37
				Min	Cent	0.1	2.6	0.1	2.6	0.1	87.42
					4356	0.1	2.6	0.1	2.6	0.1	87.36
					35	0.1	2.7	0.1	2.7	0.1	87.46
					4852	0.1	2.7	0.1	2.7	0.1	87.47
					4918	0.1	2.6	0.1	2.6	0.1	87.37

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.1	-0.0	0.0	0.1	-0.0	6.39
	4356	-0.1	-0.1	0.0	-0.1	-0.1	60.15
	35	0.6	0.1	-0.0	0.6	0.1	-0.04
	4852	-0.2	-0.1	-0.0	-0.1	-0.2	-89.38
	4918	0.0	0.0	0.0	0.0	-0.0	17.15
Min	Cent	0.1	-0.0	0.0	0.1	-0.0	6.39
	4356	-0.1	-0.1	0.0	-0.1	-0.1	60.15
	35	0.6	0.1	-0.0	0.6	0.1	-0.04
	4852	-0.2	-0.1	-0.0	-0.1	-0.2	-89.38
	4918	0.0	0.0	0.0	0.0	-0.0	17.15

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	4356	-0.1	-0.0
	35	-0.1	-0.0
	4852	0.0	-0.0
	4918	0.0	-0.0

	NODE	Vxx	Vyy
Min	Cent	-0.0	-0.0
	4356	-0.1	-0.0
	35	-0.1	-0.0
	4852	0.0	-0.0
	4918	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4487	3	2	S1 HL-~1	Max	Cent	0.0	2.6	-0.1	2.6	0.0	-87.12
					35	-0.1	2.6	-0.1	2.6	-0.1	-87.32
					5121	-0.1	2.5	-0.1	2.5	-0.1	-87.22
					5122	0.2	2.5	-0.1	2.5	0.2	-86.89
					4852	0.2	2.6	-0.1	2.6	0.2	-87.01
				Min	Cent	0.0	2.6	-0.1	2.6	0.0	-87.12
					35	-0.1	2.6	-0.1	2.6	-0.1	-87.32
					5121	-0.1	2.5	-0.1	2.5	-0.1	-87.22
					5122	0.2	2.5	-0.1	2.5	0.2	-86.89
					4852	0.2	2.6	-0.1	2.6	0.2	-87.01

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-39.38
	35	-0.1	-0.1	-0.0	-0.1	-0.1	-66.15
	5121	-0.0	-0.1	-0.0	0.0	-0.1	-10.75
	5122	0.0	0.0	-0.0	0.0	-0.0	-43.97
	4852	-0.0	-0.0	-0.0	-0.0	-0.0	-55.51
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-39.38
	35	-0.1	-0.1	-0.0	-0.1	-0.1	-66.15
	5121	-0.0	-0.1	-0.0	0.0	-0.1	-10.75
	5122	0.0	0.0	-0.0	0.0	-0.0	-43.97
	4852	-0.0	-0.0	-0.0	-0.0	-0.0	-55.51

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	35	-0.0	-0.0
	5121	-0.0	-0.0
	5122	-0.0	-0.0
	4852	-0.0	-0.0
Min	Cent	-0.0	-0.0
	35	-0.0	-0.0
	5121	-0.0	-0.0
	5122	-0.0	-0.0
	4852	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4511	3	2	S1 HL-~1	Max	Cent	0.0	1.8	0.2	1.8	-0.0	84.54
					4888	-0.1	1.8	0.2	1.8	-0.1	84.93
					4918	-0.1	1.8	0.2	1.8	-0.1	84.81
					4364	0.1	1.8	0.2	1.8	0.1	84.08
					3736	0.1	1.8	0.2	1.8	0.1	84.24
				Min	Cent	0.0	1.8	0.2	1.8	-0.0	84.54
					4888	-0.1	1.8	0.2	1.8	-0.1	84.93
					4918	-0.1	1.8	0.2	1.8	-0.1	84.81
					4364	0.1	1.8	0.2	1.8	0.1	84.08
					3736	0.1	1.8	0.2	1.8	0.1	84.24

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	-0.0	0.0	-0.0	-7.95
	4888	0.1	0.0	-0.0	0.1	0.0	-1.22
	4918	0.0	0.0	-0.0	0.0	0.0	-8.84
	4364	-0.0	-0.0	-0.0	-0.0	-0.0	-29.12
	3736	0.0	-0.0	-0.0	0.0	-0.0	-1.50
Min	Cent	0.0	-0.0	-0.0	0.0	-0.0	-7.95
	4888	0.1	0.0	-0.0	0.1	0.0	-1.22
	4918	0.0	0.0	-0.0	0.0	0.0	-8.84
	4364	-0.0	-0.0	-0.0	-0.0	-0.0	-29.12
	3736	0.0	-0.0	-0.0	0.0	-0.0	-1.50

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4888	0.0	0.0
	4918	0.0	0.0

	4364	0.0	0.0
	3736	0.0	0.0
Min	Cent	0.0	0.0
	4888	0.0	0.0
	4918	0.0	0.0
	4364	0.0	0.0
	3736	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4512	3	2	S1 HL-~1	Max	Cent	-0.0	1.7	0.3	1.8	-0.1	79.74
					4918	-0.2	1.8	0.3	1.8	-0.2	80.68
					4852	-0.2	1.7	0.3	1.8	-0.2	80.33
					55	0.1	1.7	0.3	1.8	0.1	78.58
					4364	0.1	1.8	0.3	1.8	0.1	79.07
				Min	Cent	-0.0	1.7	0.3	1.8	-0.1	79.74
					4918	-0.2	1.8	0.3	1.8	-0.2	80.68
					4852	-0.2	1.7	0.3	1.8	-0.2	80.33
					55	0.1	1.7	0.3	1.8	0.1	78.58
					4364	0.1	1.8	0.3	1.8	0.1	79.07

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-72.55
	4918	0.0	0.0	-0.0	0.0	0.0	-12.81
	4852	-0.2	-0.1	-0.0	-0.1	-0.2	-88.06
	55	0.0	-0.0	-0.0	0.0	-0.0	-9.26
	4364	-0.0	-0.0	-0.0	-0.0	-0.0	-34.07
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-72.55
	4918	0.0	0.0	-0.0	0.0	0.0	-12.81
	4852	-0.2	-0.1	-0.0	-0.1	-0.2	-88.06
	55	0.0	-0.0	-0.0	0.0	-0.0	-9.26
	4364	-0.0	-0.0	-0.0	-0.0	-0.0	-34.07

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4918	0.0	0.0
	4852	0.0	0.0
	55	-0.0	0.0
	4364	-0.0	0.0
Min	Cent	0.0	0.0
	4918	0.0	0.0
	4852	0.0	0.0
	55	-0.0	0.0
	4364	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4513	3	2	S1 HL-~1	Max	Cent	-0.0	1.7	-0.1	1.7	-0.0	-87.59
					4852	-0.1	1.7	-0.1	1.7	-0.1	-87.74
					5122	-0.1	1.6	-0.1	1.7	-0.1	-87.69
					5123	0.1	1.6	-0.1	1.7	0.1	-87.41
					55	0.1	1.7	-0.1	1.7	0.1	-87.48
				Min	Cent	-0.0	1.7	-0.1	1.7	-0.0	-87.59
					4852	-0.1	1.7	-0.1	1.7	-0.1	-87.74
					5122	-0.1	1.6	-0.1	1.7	-0.1	-87.69
					5123	0.1	1.6	-0.1	1.7	0.1	-87.41
					55	0.1	1.7	-0.1	1.7	0.1	-87.48

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-80.01
	4852	-0.0	-0.0	-0.0	-0.0	-0.0	-80.90
	5122	-0.0	-0.0	-0.0	0.0	-0.0	-20.39
	5123	0.0	-0.0	-0.0	0.0	-0.0	-0.85
	55	-0.1	-0.0	0.0	-0.0	-0.1	88.99
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-80.01
	4852	-0.0	-0.0	-0.0	-0.0	-0.0	-80.90
	5122	-0.0	-0.0	-0.0	0.0	-0.0	-20.39
	5123	0.0	-0.0	-0.0	0.0	-0.0	-0.85
	55	-0.1	-0.0	0.0	-0.0	-0.1	88.99

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0

				4852	-0.0	0.0
				5122	-0.0	0.0
				5123	-0.0	0.0
				55	-0.0	0.0
			Min	Cent	-0.0	0.0
				4852	-0.0	0.0
				5122	-0.0	0.0
				5123	-0.0	0.0
				55	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4537	3	2	S1 HL-~1	Max	Cent	0.0	1.2	0.2	1.2	-0.0	82.21
					3736	-0.1	1.2	0.2	1.2	-0.1	82.61
					4364	-0.1	1.2	0.2	1.2	-0.1	82.44
					4470	0.1	1.2	0.2	1.2	0.0	81.76
					3818	0.1	1.2	0.2	1.2	0.0	81.97
				Min	Cent	0.0	1.2	0.2	1.2	-0.0	82.21
					3736	-0.1	1.2	0.2	1.2	-0.1	82.61
					4364	-0.1	1.2	0.2	1.2	-0.1	82.44
					4470	0.1	1.2	0.2	1.2	0.0	81.76
					3818	0.1	1.2	0.2	1.2	0.0	81.97

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	0.0	0.0	-0.0	12.90
	3736	0.0	-0.0	0.0	0.0	-0.0	2.75
	4364	-0.0	-0.0	0.0	-0.0	-0.0	24.76
	4470	0.0	-0.0	0.0	0.0	-0.0	31.65
	3818	0.0	0.0	0.0	0.0	0.0	4.35
Min	Cent	0.0	-0.0	0.0	0.0	-0.0	12.90
	3736	0.0	-0.0	0.0	0.0	-0.0	2.75
	4364	-0.0	-0.0	0.0	-0.0	-0.0	24.76
	4470	0.0	-0.0	0.0	0.0	-0.0	31.65
	3818	0.0	0.0	0.0	0.0	0.0	4.35

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3736	0.0	-0.0
	4364	0.0	-0.0
	4470	0.0	-0.0
	3818	0.0	-0.0
Min	Cent	0.0	-0.0
	3736	0.0	-0.0
	4364	0.0	-0.0
	4470	0.0	-0.0
	3818	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4538	3	2	S1 HL-~1	Max	Cent	0.0	1.2	0.3	1.3	-0.0	78.34
					4364	-0.0	1.2	0.3	1.2	-0.1	78.49
					55	-0.0	1.2	0.3	1.3	-0.1	78.70
					2299	0.1	1.2	0.3	1.3	-0.0	78.19
					4470	0.1	1.2	0.3	1.2	-0.0	77.96
				Min	Cent	0.0	1.2	0.3	1.3	-0.0	78.34
					4364	-0.0	1.2	0.3	1.2	-0.1	78.49
					55	-0.0	1.2	0.3	1.3	-0.1	78.70
					2299	0.1	1.2	0.3	1.3	-0.0	78.19
					4470	0.1	1.2	0.3	1.2	-0.0	77.96

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	46.42
	4364	-0.0	-0.0	0.0	-0.0	-0.0	27.55
	55	0.0	-0.0	0.0	0.0	-0.0	11.61
	2299	-0.1	-0.0	0.0	-0.0	-0.1	79.67
	4470	0.0	-0.0	0.0	0.0	-0.0	34.73
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	46.42
	4364	-0.0	-0.0	0.0	-0.0	-0.0	27.55
	55	0.0	-0.0	0.0	0.0	-0.0	11.61
	2299	-0.1	-0.0	0.0	-0.0	-0.1	79.67
	4470	0.0	-0.0	0.0	0.0	-0.0	34.73

NODE	Vxx	Vyy

		NODE	Vxx	Vyy
	Max	Cent	0.0	-0.0
		4364	-0.0	-0.0
		55	-0.0	-0.0
		2299	0.0	-0.0
		4470	0.0	-0.0
	Min	Cent	0.0	-0.0
		4364	-0.0	-0.0
		55	-0.0	-0.0
		2299	0.0	-0.0
		4470	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4539	3	2	S1 HL-~1	Max	Cent	-0.0	1.2	-0.1	1.2	-0.0	-86.81
					55	-0.1	1.2	-0.1	1.2	-0.1	-86.97
					5123	-0.1	1.2	-0.1	1.2	-0.1	-86.95
					5124	0.1	1.2	-0.1	1.2	0.0	-86.64
					2299	0.1	1.2	-0.1	1.2	0.0	-86.66
				Min	Cent	-0.0	1.2	-0.1	1.2	-0.0	-86.81
					55	-0.1	1.2	-0.1	1.2	-0.1	-86.97
					5123	-0.1	1.2	-0.1	1.2	-0.1	-86.95
					5124	0.1	1.2	-0.1	1.2	0.0	-86.64
					2299	0.1	1.2	-0.1	1.2	0.0	-86.66

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	68.84
	55	-0.1	-0.0	0.0	-0.0	-0.1	84.42
	5123	0.0	-0.0	0.0	0.0	-0.0	14.92
	5124	-0.0	-0.0	0.0	0.0	-0.0	28.22
	2299	-0.0	-0.0	0.0	-0.0	-0.0	80.20
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	68.84
	55	-0.1	-0.0	0.0	-0.0	-0.1	84.42
	5123	0.0	-0.0	0.0	0.0	-0.0	14.92
	5124	-0.0	-0.0	0.0	0.0	-0.0	28.22
	2299	-0.0	-0.0	0.0	-0.0	-0.0	80.20

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	55	-0.0	-0.0
	5123	-0.0	-0.0
	5124	-0.0	-0.0
	2299	-0.0	-0.0
Min	Cent	-0.0	-0.0
	55	-0.0	-0.0
	5123	-0.0	-0.0
	5124	-0.0	-0.0
	2299	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4563	3	2	S1 HL-~1	Max	Cent	0.0	0.8	0.1	0.8	-0.0	79.83
					3818	-0.1	0.8	0.1	0.8	-0.1	80.62
					4470	-0.1	0.8	0.1	0.8	-0.1	80.67
					4433	0.1	0.8	0.1	0.8	0.1	78.90
					3776	0.1	0.8	0.1	0.8	0.1	78.83
				Min	Cent	0.0	0.8	0.1	0.8	-0.0	79.83
					3818	-0.1	0.8	0.1	0.8	-0.1	80.62
					4470	-0.1	0.8	0.1	0.8	-0.1	80.67
					4433	0.1	0.8	0.1	0.8	0.1	78.90
					3776	0.1	0.8	0.1	0.8	0.1	78.83

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	0.52
	3818	0.0	0.0	0.0	0.0	0.0	1.30
	4470	0.0	-0.0	0.0	0.0	-0.0	15.77
	4433	0.0	0.0	0.0	0.0	0.0	0.76
	3776	0.1	0.0	-0.0	0.1	0.0	-1.69
Min	Cent	0.0	0.0	0.0	0.0	0.0	0.52
	3818	0.0	0.0	0.0	0.0	0.0	1.30
	4470	0.0	-0.0	0.0	0.0	-0.0	15.77
	4433	0.0	0.0	0.0	0.0	0.0	0.76
	3776	0.1	0.0	-0.0	0.1	0.0	-1.69

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3818	0.0	0.0
	4470	0.0	-0.0
	4433	0.0	-0.0
	3776	0.0	0.0
Min	Cent	0.0	-0.0
	3818	0.0	0.0
	4470	0.0	-0.0
	4433	0.0	-0.0
	3776	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4564	3	2	S1 HL-~1	Max	Cent	0.0	0.8	0.2	0.9	-0.1	74.00
					4470	-0.1	0.8	0.2	0.9	-0.1	75.33
					2299	-0.1	0.8	0.2	0.9	-0.1	75.22
					2493	0.1	0.8	0.2	0.9	0.0	72.45
					4433	0.1	0.8	0.2	0.9	0.0	72.60
				Min	Cent	0.0	0.8	0.2	0.9	-0.1	74.00
					4470	-0.1	0.8	0.2	0.9	-0.1	75.33
					2299	-0.1	0.8	0.2	0.9	-0.1	75.22
					2493	0.1	0.8	0.2	0.9	0.0	72.45
					4433	0.1	0.8	0.2	0.9	0.0	72.60

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	62.53
	4470	0.0	-0.0	0.0	0.0	-0.0	24.64
	2299	-0.1	-0.0	0.0	-0.0	-0.1	81.25
	2493	-0.0	-0.0	0.0	-0.0	-0.0	77.48
	4433	0.0	0.0	0.0	0.0	0.0	2.57
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	62.53
	4470	0.0	-0.0	0.0	0.0	-0.0	24.64
	2299	-0.1	-0.0	0.0	-0.0	-0.1	81.25
	2493	-0.0	-0.0	0.0	-0.0	-0.0	77.48
	4433	0.0	0.0	0.0	0.0	0.0	2.57

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4470	0.0	-0.0
	2299	0.0	-0.0
	2493	0.0	-0.0
	4433	0.0	-0.0
Min	Cent	0.0	-0.0
	4470	0.0	-0.0
	2299	0.0	-0.0
	2493	0.0	-0.0
	4433	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4565	3	2	S1 HL-~1	Max	Cent	0.0	0.8	-0.1	0.8	0.0	-85.85
					2299	-0.1	0.8	-0.1	0.8	-0.1	-86.15
					5124	-0.1	0.8	-0.1	0.9	-0.1	-86.30
					5125	0.1	0.8	-0.1	0.9	0.1	-85.49
					2493	0.1	0.8	-0.1	0.8	0.1	-85.27
				Min	Cent	0.0	0.8	-0.1	0.8	0.0	-85.85
					2299	-0.1	0.8	-0.1	0.8	-0.1	-86.15
					5124	-0.1	0.8	-0.1	0.9	-0.1	-86.30
					5125	0.1	0.8	-0.1	0.9	0.1	-85.49
					2493	0.1	0.8	-0.1	0.8	0.1	-85.27

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	70.89
	2299	-0.0	-0.0	0.0	-0.0	-0.0	77.63
	5124	0.0	-0.0	0.0	0.0	-0.0	35.05
	5125	-0.0	-0.0	0.0	0.0	-0.0	19.12
	2493	-0.1	-0.0	0.0	-0.0	-0.1	84.41
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	70.89
	2299	-0.0	-0.0	0.0	-0.0	-0.0	77.63
	5124	0.0	-0.0	0.0	0.0	-0.0	35.05

ELEM	MAT	SEC	LC		NODE						
					5125	-0.0	-0.0	0.0	0.0	-0.0	19.12
					2493	-0.1	-0.0	0.0	-0.0	-0.1	84.41

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2299	-0.0	-0.0
	5124	-0.0	0.0
	5125	-0.0	0.0
	2493	-0.0	-0.0
Min	Cent	-0.0	0.0
	2299	-0.0	-0.0
	5124	-0.0	0.0
	5125	-0.0	0.0
	2493	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4589	3	2	S1 HL-~1	Max	Cent	-0.0	0.2	0.1	0.2	-0.1	66.01
					3776	-0.1	0.2	0.1	0.2	-0.1	71.21
					4433	-0.1	0.2	0.1	0.2	-0.1	71.05
					4992	0.1	0.2	0.1	0.3	0.0	58.35
					4991	0.1	0.2	0.1	0.3	0.0	58.70
				Min	Cent	-0.0	0.2	0.1	0.2	-0.1	66.01
					3776	-0.1	0.2	0.1	0.2	-0.1	71.21
					4433	-0.1	0.2	0.1	0.2	-0.1	71.05
					4992	0.1	0.2	0.1	0.3	0.0	58.35
					4991	0.1	0.2	0.1	0.3	0.0	58.70

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-0.92
	3776	0.1	0.0	0.0	0.1	0.0	1.04
	4433	0.0	0.0	-0.0	0.0	0.0	-1.11
	4992	-0.0	0.0	-0.0	0.0	-0.0	-54.27
	4991	0.1	0.0	-0.0	0.1	0.0	-2.50
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-0.92
	3776	0.1	0.0	0.0	0.1	0.0	1.04
	4433	0.0	0.0	-0.0	0.0	0.0	-1.11
	4992	-0.0	0.0	-0.0	0.0	-0.0	-54.27
	4991	0.1	0.0	-0.0	0.1	0.0	-2.50

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3776	0.0	-0.0
	4433	0.0	-0.0
	4992	0.0	-0.0
	4991	0.0	-0.0
Min	Cent	0.0	-0.0
	3776	0.0	-0.0
	4433	0.0	-0.0
	4992	0.0	-0.0
	4991	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4590	3	2	S1 HL-~1	Max	Cent	-0.0	0.2	0.2	0.3	-0.1	58.23
					4433	-0.1	0.2	0.2	0.3	-0.2	62.34
					2493	-0.1	0.2	0.2	0.3	-0.2	62.41
					4993	0.1	0.2	0.2	0.3	-0.1	53.44
					4992	0.1	0.2	0.2	0.3	-0.1	53.34
				Min	Cent	-0.0	0.2	0.2	0.3	-0.1	58.23
					4433	-0.1	0.2	0.2	0.3	-0.2	62.34
					2493	-0.1	0.2	0.2	0.3	-0.2	62.41
					4993	0.1	0.2	0.2	0.3	-0.1	53.44
					4992	0.1	0.2	0.2	0.3	-0.1	53.34

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-71.14
	4433	0.0	0.0	-0.0	0.0	0.0	-2.48
	2493	-0.0	-0.0	-0.0	-0.0	-0.0	-79.16
	4993	-0.1	-0.0	-0.0	-0.0	-0.1	-82.87
	4992	-0.0	0.0	-0.0	0.0	-0.0	-49.64
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-71.14

4433	0.0	0.0	-0.0	0.0	0.0	-2.48
2493	-0.0	-0.0	-0.0	-0.0	-0.0	-79.16
4993	-0.1	-0.0	-0.0	-0.0	-0.1	-82.87
4992	-0.0	0.0	-0.0	0.0	-0.0	-49.64

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4433	0.0	-0.0
	2493	0.0	-0.0
	4993	0.0	-0.0
	4992	0.0	-0.0
Min	Cent	0.0	-0.0
	4433	0.0	-0.0
	2493	0.0	-0.0
	4993	0.0	-0.0
	4992	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4591	3	2	S1 HL-~1	Max	Cent	-0.0	0.2	-0.1	0.2	-0.0	-73.60
					2493	-0.1	0.2	-0.1	0.2	-0.1	-77.21
					5125	-0.1	0.2	-0.1	0.2	-0.1	-77.50
					5126	0.1	0.2	-0.1	0.2	0.0	-67.71
					4993	0.1	0.2	-0.1	0.2	0.0	-66.92
				Min	Cent	-0.0	0.2	-0.1	0.2	-0.0	-73.60
					2493	-0.1	0.2	-0.1	0.2	-0.1	-77.21
					5125	-0.1	0.2	-0.1	0.2	-0.1	-77.50
					5126	0.1	0.2	-0.1	0.2	0.0	-67.71
					4993	0.1	0.2	-0.1	0.2	0.0	-66.92

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-74.80
	2493	-0.1	-0.0	-0.0	-0.0	-0.1	-85.05
	5125	0.0	-0.0	-0.0	0.0	-0.0	-20.84
	5126	0.0	0.0	-0.0	0.0	-0.0	-50.08
	4993	-0.1	-0.0	-0.0	-0.0	-0.1	-81.11
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-74.80
	2493	-0.1	-0.0	-0.0	-0.0	-0.1	-85.05
	5125	0.0	-0.0	-0.0	0.0	-0.0	-20.84
	5126	0.0	0.0	-0.0	0.0	-0.0	-50.08
	4993	-0.1	-0.0	-0.0	-0.0	-0.1	-81.11

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2493	-0.0	-0.0
	5125	-0.0	-0.0
	5126	-0.0	-0.0
	4993	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2493	-0.0	-0.0
	5125	-0.0	-0.0
	5126	-0.0	-0.0
	4993	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4615	3	2	S1 HL-~1	Max	Cent	0.0	-0.6	0.1	0.0	-0.7	9.02
					3771	-0.1	-0.6	0.1	-0.1	-0.7	10.23
					4399	-0.1	-0.6	0.1	-0.1	-0.7	10.12
					4561	0.1	-0.6	0.1	0.1	-0.7	8.06
					3864	0.1	-0.6	0.1	0.1	-0.6	8.13
				Min	Cent	0.0	-0.6	0.1	0.0	-0.7	9.02
					3771	-0.1	-0.6	0.1	-0.1	-0.7	10.23
					4399	-0.1	-0.6	0.1	-0.1	-0.7	10.12
					4561	0.1	-0.6	0.1	0.1	-0.7	8.06
					3864	0.1	-0.6	0.1	0.1	-0.6	8.13

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	13.82
	3771	-0.0	-0.0	-0.0	-0.0	-0.0	-18.74
	4399	0.0	0.0	0.0	0.0	0.0	19.51
	4561	0.0	0.0	0.0	0.0	0.0	66.19

	3864	0.1	0.0	0.0	0.1	0.0	1.68
Min	Cent	0.0	0.0	0.0	0.0	0.0	13.82
	3771	-0.0	-0.0	-0.0	-0.0	-0.0	-18.74
	4399	0.0	0.0	0.0	0.0	0.0	19.51
	4561	0.0	0.0	0.0	0.0	0.0	66.19
	3864	0.1	0.0	0.0	0.1	0.0	1.68

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3771	-0.0	-0.0
	4399	-0.0	-0.0
	4561	0.0	-0.0
	3864	0.0	-0.0
Min	Cent	0.0	-0.0
	3771	-0.0	-0.0
	4399	-0.0	-0.0
	4561	0.0	-0.0
	3864	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4616	3	2	S1 HL-~1	Max	Cent	0.0	-0.6	0.2	0.1	-0.7	14.18
					4399	-0.1	-0.6	0.2	-0.0	-0.7	15.78
					1905	-0.1	-0.6	0.2	-0.0	-0.7	15.96
					705	0.1	-0.6	0.2	0.1	-0.7	12.86
					4561	0.1	-0.6	0.2	0.1	-0.7	12.73
				Min	Cent	0.0	-0.6	0.2	0.1	-0.7	14.18
					4399	-0.1	-0.6	0.2	-0.0	-0.7	15.78
					1905	-0.1	-0.6	0.2	-0.0	-0.7	15.96
					705	0.1	-0.6	0.2	0.1	-0.7	12.86
					4561	0.1	-0.6	0.2	0.1	-0.7	12.73

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	78.66
	4399	0.0	0.0	0.0	0.0	0.0	19.31
	1905	-0.0	-0.0	0.0	-0.0	-0.0	87.47
	705	-0.1	-0.0	0.0	-0.0	-0.1	85.52
	4561	0.0	0.0	0.0	0.0	0.0	63.12
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	78.66
	4399	0.0	0.0	0.0	0.0	0.0	19.31
	1905	-0.0	-0.0	0.0	-0.0	-0.0	87.47
	705	-0.1	-0.0	0.0	-0.0	-0.1	85.52
	4561	0.0	0.0	0.0	0.0	0.0	63.12

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4399	0.0	-0.0
	1905	0.0	-0.0
	705	0.0	-0.0
	4561	0.0	-0.0
Min	Cent	0.0	-0.0
	4399	0.0	-0.0
	1905	0.0	-0.0
	705	0.0	-0.0
	4561	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4617	3	2	S1 HL-~1	Max	Cent	0.0	-0.6	-0.0	0.0	-0.6	-4.12
					1905	-0.0	-0.6	-0.0	-0.0	-0.6	-4.48
					5127	-0.0	-0.6	-0.0	-0.0	-0.6	-4.64
					5128	0.1	-0.6	-0.0	0.1	-0.6	-3.81
					705	0.1	-0.6	-0.0	0.1	-0.6	-3.70
				Min	Cent	0.0	-0.6	-0.0	0.0	-0.6	-4.12
					1905	-0.0	-0.6	-0.0	-0.0	-0.6	-4.48
					5127	-0.0	-0.6	-0.0	-0.0	-0.6	-4.64
					5128	0.1	-0.6	-0.0	0.1	-0.6	-3.81
					705	0.1	-0.6	-0.0	0.1	-0.6	-3.70

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	83.94
	1905	-0.0	-0.0	0.0	-0.0	-0.0	87.88

	5127	0.0	0.0	0.0	0.0	0.0	84.82
	5128	-0.0	0.0	0.0	0.0	-0.0	68.67
	705	-0.1	-0.0	0.0	-0.0	-0.1	86.84
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	83.94
	1905	-0.0	-0.0	0.0	-0.0	-0.0	87.88
	5127	0.0	0.0	0.0	0.0	0.0	84.82
	5128	-0.0	0.0	0.0	0.0	-0.0	68.67
	705	-0.1	-0.0	0.0	-0.0	-0.1	86.84

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	1905	-0.0	-0.0
	5127	-0.0	0.0
	5128	-0.0	0.0
	705	-0.0	-0.0
Min	Cent	-0.0	0.0
	1905	-0.0	-0.0
	5127	-0.0	0.0
	5128	-0.0	0.0
	705	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4641	3	2	S1 HL-~1	Max	Cent	-0.0	-1.1	0.1	0.0	-1.1	5.62
					3864	-0.1	-1.1	0.1	-0.0	-1.1	5.82
					4561	-0.1	-1.1	0.1	-0.0	-1.1	5.97
					4410	0.0	-1.1	0.1	0.1	-1.1	5.43
					3782	0.0	-1.1	0.1	0.1	-1.1	5.31
				Min	Cent	-0.0	-1.1	0.1	0.0	-1.1	5.62
					3864	-0.1	-1.1	0.1	-0.0	-1.1	5.82
					4561	-0.1	-1.1	0.1	-0.0	-1.1	5.97
					4410	0.0	-1.1	0.1	0.1	-1.1	5.43
					3782	0.0	-1.1	0.1	0.1	-1.1	5.31

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-29.18
	3864	0.1	0.0	-0.0	0.1	0.0	-3.14
	4561	0.0	0.0	-0.0	0.0	0.0	-62.24
	4410	0.0	0.0	-0.0	0.0	0.0	-51.04
	3782	-0.0	0.0	-0.0	0.0	-0.0	-79.08
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-29.18
	3864	0.1	0.0	-0.0	0.1	0.0	-3.14
	4561	0.0	0.0	-0.0	0.0	0.0	-62.24
	4410	0.0	0.0	-0.0	0.0	0.0	-51.04
	3782	-0.0	0.0	-0.0	0.0	-0.0	-79.08

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3864	0.0	0.0
	4561	0.0	-0.0
	4410	-0.0	-0.0
	3782	-0.0	0.0
Min	Cent	0.0	0.0
	3864	0.0	0.0
	4561	0.0	-0.0
	4410	-0.0	-0.0
	3782	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4642	3	2	S1 HL-~1	Max	Cent	-0.0	-1.1	0.1	0.0	-1.1	7.28
					4561	-0.0	-1.1	0.1	-0.0	-1.1	7.53
					705	-0.0	-1.1	0.1	-0.0	-1.1	7.48
					2089	0.0	-1.1	0.1	0.0	-1.1	7.04
					4410	0.0	-1.1	0.1	0.0	-1.1	7.08
				Min	Cent	-0.0	-1.1	0.1	0.0	-1.1	7.28
					4561	-0.0	-1.1	0.1	-0.0	-1.1	7.53
					705	-0.0	-1.1	0.1	-0.0	-1.1	7.48
					2089	0.0	-1.1	0.1	0.0	-1.1	7.04
					4410	0.0	-1.1	0.1	0.0	-1.1	7.08

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE

ELEM	MAT	SEC	LC		NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
				Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-78.74
					4561	0.0	0.0	-0.0	0.0	0.0	-61.89
					705	-0.1	-0.0	-0.0	-0.0	-0.1	-85.59
					2089	-0.0	0.0	-0.0	0.0	-0.0	-83.46
					4410	0.0	0.0	-0.0	0.0	0.0	-51.18
				Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-78.74
					4561	0.0	0.0	-0.0	0.0	0.0	-61.89
					705	-0.1	-0.0	-0.0	-0.0	-0.1	-85.59
					2089	-0.0	0.0	-0.0	0.0	-0.0	-83.46
					4410	0.0	0.0	-0.0	0.0	0.0	-51.18

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4561	0.0	-0.0
	705	0.0	-0.0
	2089	0.0	-0.0
	4410	0.0	-0.0
Min	Cent	0.0	-0.0
	4561	0.0	-0.0
	705	0.0	-0.0
	2089	0.0	-0.0
	4410	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4643	3	2	S1 HL-~1	Max	Cent	-0.0	-1.1	-0.0	-0.0	-1.1	-1.18
					705	-0.1	-1.1	-0.0	-0.1	-1.1	-1.23
					5128	-0.1	-1.1	-0.0	-0.1	-1.1	-1.26
					5129	0.0	-1.1	-0.0	0.0	-1.1	-1.13
					2089	0.0	-1.1	-0.0	0.0	-1.1	-1.11
				Min	Cent	-0.0	-1.1	-0.0	-0.0	-1.1	-1.18
					705	-0.1	-1.1	-0.0	-0.1	-1.1	-1.23
					5128	-0.1	-1.1	-0.0	-0.1	-1.1	-1.26
					5129	0.0	-1.1	-0.0	0.0	-1.1	-1.13
					2089	0.0	-1.1	-0.0	0.0	-1.1	-1.11

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-81.16
	705	-0.1	-0.0	-0.0	-0.0	-0.1	-85.66
	5128	0.0	0.0	-0.0	0.0	-0.0	-65.75
	5129	0.0	0.0	-0.0	0.0	-0.0	-76.14
	2089	-0.0	-0.0	-0.0	-0.0	-0.0	-84.90
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-81.16
	705	-0.1	-0.0	-0.0	-0.0	-0.1	-85.66
	5128	0.0	0.0	-0.0	0.0	-0.0	-65.75
	5129	0.0	0.0	-0.0	0.0	-0.0	-76.14
	2089	-0.0	-0.0	-0.0	-0.0	-0.0	-84.90

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	705	-0.0	-0.0
	5128	-0.0	-0.0
	5129	-0.0	-0.0
	2089	-0.0	-0.0
Min	Cent	-0.0	-0.0
	705	-0.0	-0.0
	5128	-0.0	-0.0
	5129	-0.0	-0.0
	2089	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4667	3	2	S1 HL-~1	Max	Cent	-0.0	-1.4	0.1	-0.0	-1.4	4.42
					3782	-0.0	-1.4	0.1	-0.0	-1.4	4.50
					4410	-0.0	-1.4	0.1	-0.0	-1.4	4.49
					4560	0.0	-1.4	0.1	0.0	-1.4	4.34
					3869	0.0	-1.4	0.1	0.0	-1.4	4.34
				Min	Cent	-0.0	-1.4	0.1	-0.0	-1.4	4.42
					3782	-0.0	-1.4	0.1	-0.0	-1.4	4.50
					4410	-0.0	-1.4	0.1	-0.0	-1.4	4.49
					4560	0.0	-1.4	0.1	0.0	-1.4	4.34
					3869	0.0	-1.4	0.1	0.0	-1.4	4.34

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	44.41
	3782	-0.0	0.0	-0.0	0.0	-0.0	-89.27
	4410	0.0	0.0	0.0	0.0	0.0	54.84
	4560	-0.0	0.0	0.0	0.0	-0.0	83.39
	3869	0.1	0.0	0.0	0.1	0.0	0.80
Min	Cent	0.0	0.0	0.0	0.0	0.0	44.41
	3782	-0.0	0.0	-0.0	0.0	-0.0	-89.27
	4410	0.0	0.0	0.0	0.0	0.0	54.84
	4560	-0.0	0.0	0.0	0.0	-0.0	83.39
	3869	0.1	0.0	0.0	0.1	0.0	0.80

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3782	-0.0	-0.0
	4410	-0.0	-0.0
	4560	0.0	-0.0
	3869	0.0	-0.0
Min	Cent	0.0	-0.0
	3782	-0.0	-0.0
	4410	-0.0	-0.0
	4560	0.0	-0.0
	3869	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4668	3	2	S1 HL-~1	Max	Cent	-0.0	-1.4	0.1	-0.0	-1.4	5.82
					4410	-0.1	-1.4	0.1	-0.0	-1.4	5.96
					2089	-0.1	-1.4	0.1	-0.0	-1.4	6.08
					704	0.0	-1.4	0.1	0.0	-1.4	5.68
					4560	0.0	-1.4	0.1	0.0	-1.4	5.58
				Min	Cent	-0.0	-1.4	0.1	-0.0	-1.4	5.82
					4410	-0.1	-1.4	0.1	-0.0	-1.4	5.96
					2089	-0.1	-1.4	0.1	-0.0	-1.4	6.08
					704	0.0	-1.4	0.1	0.0	-1.4	5.68
					4560	0.0	-1.4	0.1	0.0	-1.4	5.58

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	86.19
	4410	0.0	0.0	0.0	0.0	0.0	59.83
	2089	-0.0	0.0	0.0	0.0	-0.0	89.23
	704	-0.1	-0.0	0.0	-0.0	-0.1	88.77
	4560	-0.0	0.0	0.0	0.0	-0.0	84.06
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	86.19
	4410	0.0	0.0	0.0	0.0	0.0	59.83
	2089	-0.0	0.0	0.0	0.0	-0.0	89.23
	704	-0.1	-0.0	0.0	-0.0	-0.1	88.77
	4560	-0.0	0.0	0.0	0.0	-0.0	84.06

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4410	0.0	-0.0
	2089	0.0	-0.0
	704	0.0	-0.0
	4560	0.0	-0.0
Min	Cent	0.0	-0.0
	4410	0.0	-0.0
	2089	0.0	-0.0
	704	0.0	-0.0
	4560	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4669	3	2	S1 HL-~1	Max	Cent	-0.0	-1.3	-0.0	-0.0	-1.3	-0.77
					2089	-0.0	-1.3	-0.0	-0.0	-1.3	-0.78
					5129	-0.0	-1.3	-0.0	-0.0	-1.3	-0.79
					5130	0.0	-1.3	-0.0	0.0	-1.3	-0.75
					704	0.0	-1.3	-0.0	0.0	-1.3	-0.75
				Min	Cent	-0.0	-1.3	-0.0	-0.0	-1.3	-0.77
					2089	-0.0	-1.3	-0.0	-0.0	-1.3	-0.78
					5129	-0.0	-1.3	-0.0	-0.0	-1.3	-0.79
					5130	0.0	-1.3	-0.0	0.0	-1.3	-0.75

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
					704	0.0	-1.3	-0.0	0.0	-1.3	-0.75

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	89.47
	2089	-0.0	-0.0	-0.0	-0.0	-0.0	-89.77
	5129	-0.0	0.0	-0.0	0.0	-0.0	-88.32
	5130	0.0	0.0	0.0	0.0	0.0	87.40
	704	-0.1	-0.0	0.0	-0.0	-0.1	89.01
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	89.47
	2089	-0.0	-0.0	-0.0	-0.0	-0.0	-89.77
	5129	-0.0	0.0	-0.0	0.0	-0.0	-88.32
	5130	0.0	0.0	0.0	0.0	0.0	87.40
	704	-0.1	-0.0	0.0	-0.0	-0.1	89.01

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2089	-0.0	-0.0
	5129	-0.0	-0.0
	5130	-0.0	-0.0
	704	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2089	-0.0	-0.0
	5129	-0.0	-0.0
	5130	-0.0	-0.0
	704	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4693	3	2	S1 HL-~1	Max	Cent	0.0	-1.4	0.2	0.0	-1.4	7.19
					3869	0.0	-1.4	0.2	0.0	-1.4	7.07
					4560	0.0	-1.3	0.2	0.0	-1.3	7.39
					4416	0.0	-1.3	0.2	0.1	-1.3	7.30
					3788	0.0	-1.4	0.2	0.1	-1.4	6.99
				Min	Cent	0.0	-1.4	0.2	0.0	-1.4	7.19
					3869	0.0	-1.4	0.2	0.0	-1.4	7.07
					4560	0.0	-1.3	0.2	0.0	-1.3	7.39
					4416	0.0	-1.3	0.2	0.1	-1.3	7.30
					3788	0.0	-1.4	0.2	0.1	-1.4	6.99

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-59.14
	3869	0.1	0.0	-0.0	0.1	0.0	-1.44
	4560	-0.0	0.0	-0.0	0.0	-0.0	-83.30
	4416	0.0	0.0	-0.0	0.0	0.0	-74.02
	3788	-0.0	0.0	-0.0	0.0	-0.0	-89.64
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-59.14
	3869	0.1	0.0	-0.0	0.1	0.0	-1.44
	4560	-0.0	0.0	-0.0	0.0	-0.0	-83.30
	4416	0.0	0.0	-0.0	0.0	0.0	-74.02
	3788	-0.0	0.0	-0.0	0.0	-0.0	-89.64

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3869	0.0	0.0
	4560	0.0	0.0
	4416	-0.0	0.0
	3788	-0.0	0.0
Min	Cent	0.0	0.0
	3869	0.0	0.0
	4560	0.0	0.0
	4416	-0.0	0.0
	3788	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4694	3	2	S1 HL-~1	Max	Cent	-0.0	-1.3	0.1	0.0	-1.4	6.20
					4560	0.0	-1.3	0.1	0.1	-1.4	6.03
					704	0.0	-1.3	0.1	0.1	-1.4	6.00
					2193	-0.0	-1.3	0.1	-0.0	-1.4	6.37
					4416	-0.0	-1.3	0.1	-0.0	-1.4	6.41
				Min	Cent	-0.0	-1.3	0.1	0.0	-1.4	6.20
					4560	0.0	-1.3	0.1	0.1	-1.4	6.03

704	0.0	-1.3	0.1	0.1	-1.4	6.00
2193	-0.0	-1.3	0.1	-0.0	-1.4	6.37
4416	-0.0	-1.3	0.1	-0.0	-1.4	6.41

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-86.81
	4560	-0.0	0.0	-0.0	0.0	-0.0	-83.62
	704	-0.1	-0.0	-0.0	-0.0	-0.1	-88.45
	2193	-0.0	0.0	-0.0	0.0	-0.0	-88.92
	4416	0.0	0.0	-0.0	0.0	0.0	-76.76
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-86.81
	4560	-0.0	0.0	-0.0	0.0	-0.0	-83.62
	704	-0.1	-0.0	-0.0	-0.0	-0.1	-88.45
	2193	-0.0	0.0	-0.0	0.0	-0.0	-88.92
	4416	0.0	0.0	-0.0	0.0	0.0	-76.76

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4560	0.0	0.0
	704	0.0	0.0
	2193	0.0	0.0
	4416	0.0	0.0
Min	Cent	0.0	0.0
	4560	0.0	0.0
	704	0.0	0.0
	2193	0.0	0.0
	4416	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4695	3	2	S1 HL-~1	Max	Cent	-0.0	-1.3	0.0	-0.0	-1.3	0.73
					704	0.0	-1.3	0.0	0.0	-1.3	0.69
					5130	0.0	-1.3	0.0	0.0	-1.3	0.71
					5131	-0.1	-1.3	0.0	-0.1	-1.3	0.77
					2193	-0.1	-1.3	0.0	-0.1	-1.3	0.74
				Min	Cent	-0.0	-1.3	0.0	-0.0	-1.3	0.73
					704	0.0	-1.3	0.0	0.0	-1.3	0.69
					5130	0.0	-1.3	0.0	0.0	-1.3	0.71
					5131	-0.1	-1.3	0.0	-0.1	-1.3	0.77
					2193	-0.1	-1.3	0.0	-0.1	-1.3	0.74

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-87.07
	704	-0.1	0.0	-0.0	0.0	-0.1	-88.22
	5130	-0.0	0.0	-0.0	0.0	-0.0	-83.68
	5131	0.0	0.0	-0.0	0.0	0.0	-89.95
	2193	-0.0	0.0	-0.0	0.0	-0.0	-89.85
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-87.07
	704	-0.1	0.0	-0.0	0.0	-0.1	-88.22
	5130	-0.0	0.0	-0.0	0.0	-0.0	-83.68
	5131	0.0	0.0	-0.0	0.0	0.0	-89.95
	2193	-0.0	0.0	-0.0	0.0	-0.0	-89.85

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	704	-0.0	0.0
	5130	-0.0	-0.0
	5131	-0.0	-0.0
	2193	-0.0	0.0
Min	Cent	-0.0	-0.0
	704	-0.0	0.0
	5130	-0.0	-0.0
	5131	-0.0	-0.0
	2193	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4719	3	2	S1 HL-~1	Max	Cent	-0.0	-1.3	0.2	0.0	-1.3	8.82
					3788	0.1	-1.4	0.2	0.1	-1.4	8.12
					4416	0.1	-1.2	0.2	0.1	-1.3	8.80
					4559	-0.1	-1.2	0.2	-0.0	-1.3	9.64
					3874	-0.1	-1.4	0.2	-0.0	-1.4	8.83

Min	Cent	-0.0	-1.3	0.2	0.0	-1.3	8.82
	3788	0.1	-1.4	0.2	0.1	-1.4	8.12
	4416	0.1	-1.2	0.2	0.1	-1.3	8.80
	4559	-0.1	-1.2	0.2	-0.0	-1.3	9.64
	3874	-0.1	-1.4	0.2	-0.0	-1.4	8.83

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	37.80
	3788	-0.0	0.0	0.0	0.0	-0.0	84.26
	4416	0.0	0.0	0.0	0.0	0.0	58.64
	4559	0.0	0.0	0.0	0.0	0.0	54.48
	3874	0.1	0.0	0.0	0.1	0.0	7.50
Min	Cent	0.0	0.0	0.0	0.0	0.0	37.80
	3788	-0.0	0.0	0.0	0.0	-0.0	84.26
	4416	0.0	0.0	0.0	0.0	0.0	58.64
	4559	0.0	0.0	0.0	0.0	0.0	54.48
	3874	0.1	0.0	0.0	0.1	0.0	7.50

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3788	-0.0	-0.0
	4416	-0.0	-0.0
	4559	0.0	-0.0
	3874	0.0	-0.0
Min	Cent	0.0	-0.0
	3788	-0.0	-0.0
	4416	-0.0	-0.0
	4559	0.0	-0.0
	3874	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4720	3	2	S1 HL-~1	Max	Cent	0.0	-1.2	0.2	0.1	-1.2	10.27
					4416	0.0	-1.2	0.2	0.0	-1.3	9.82
					2193	0.0	-1.1	0.2	0.0	-1.1	10.89
					703	0.0	-1.1	0.2	0.1	-1.1	10.76
					4559	0.0	-1.2	0.2	0.1	-1.3	9.71
				Min	Cent	0.0	-1.2	0.2	0.1	-1.2	10.27
					4416	0.0	-1.2	0.2	0.0	-1.3	9.82
					2193	0.0	-1.1	0.2	0.0	-1.1	10.89
					703	0.0	-1.1	0.2	0.1	-1.1	10.76
					4559	0.0	-1.2	0.2	0.1	-1.3	9.71

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	74.06
	4416	0.0	0.0	0.0	0.0	0.0	58.68
	2193	-0.0	0.0	0.0	0.0	-0.0	84.00
	703	-0.0	0.0	0.0	0.0	-0.0	77.23
	4559	0.0	0.0	0.0	0.0	0.0	53.32
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	74.06
	4416	0.0	0.0	0.0	0.0	0.0	58.68
	2193	-0.0	0.0	0.0	0.0	-0.0	84.00
	703	-0.0	0.0	0.0	0.0	-0.0	77.23
	4559	0.0	0.0	0.0	0.0	0.0	53.32

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4416	0.0	-0.0
	2193	0.0	-0.0
	703	0.0	-0.0
	4559	0.0	-0.0
Min	Cent	0.0	-0.0
	4416	0.0	-0.0
	2193	0.0	-0.0
	703	0.0	-0.0
	4559	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4721	3	2	S1 HL-~1	Max	Cent	0.0	-1.0	0.0	0.1	-1.0	1.69
					2193	0.0	-1.1	0.0	0.0	-1.1	1.61
					5131	0.0	-1.0	0.0	0.0	-1.0	1.83

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
					5132	0.1	-1.0	0.0	0.1	-1.0	1.76
					703	0.1	-1.1	0.0	0.1	-1.1	1.56
				Min	Cent	0.0	-1.0	0.0	0.1	-1.0	1.69
					2193	0.0	-1.1	0.0	0.0	-1.1	1.61
					5131	0.0	-1.0	0.0	0.0	-1.0	1.83
					5132	0.1	-1.0	0.0	0.1	-1.0	1.76
					703	0.1	-1.1	0.0	0.1	-1.1	1.56

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	79.92
	2193	-0.0	0.0	0.0	0.0	-0.0	84.78
	5131	-0.0	0.0	0.0	0.0	-0.0	75.14
	5132	0.0	0.0	0.0	0.0	-0.0	68.73
	703	-0.1	0.0	0.0	0.0	-0.1	80.27
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	79.92
	2193	-0.0	0.0	0.0	0.0	-0.0	84.78
	5131	-0.0	0.0	0.0	0.0	-0.0	75.14
	5132	0.0	0.0	0.0	0.0	-0.0	68.73
	703	-0.1	0.0	0.0	0.0	-0.1	80.27

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2193	-0.0	-0.0
	5131	-0.0	-0.0
	5132	-0.0	-0.0
	703	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2193	-0.0	-0.0
	5131	-0.0	-0.0
	5132	-0.0	-0.0
	703	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4745	3	2	S1 HL-~1	Max	Cent	-0.2	-1.4	-0.4	-0.1	-1.5	-15.03
					3874	-0.1	-1.2	-0.4	0.0	-1.3	-16.11
					4559	-0.1	-1.6	-0.4	-0.0	-1.7	-12.70
					4422	-0.3	-1.6	-0.4	-0.2	-1.7	-14.08
					3794	-0.3	-1.2	-0.4	-0.1	-1.3	-18.28
				Min	Cent	-0.2	-1.4	-0.4	-0.1	-1.5	-15.03
					3874	-0.1	-1.2	-0.4	0.0	-1.3	-16.11
					4559	-0.1	-1.6	-0.4	-0.0	-1.7	-12.70
					4422	-0.3	-1.6	-0.4	-0.2	-1.7	-14.08
					3794	-0.3	-1.2	-0.4	-0.1	-1.3	-18.28

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	41.00
	3874	0.1	0.0	0.0	0.1	0.0	12.99
	4559	0.0	0.0	0.0	0.0	0.0	49.59
	4422	0.0	0.0	0.0	0.1	0.0	47.92
	3794	0.0	0.0	0.0	0.0	-0.0	49.17
Min	Cent	0.0	0.0	0.0	0.0	0.0	41.00
	3874	0.1	0.0	0.0	0.1	0.0	12.99
	4559	0.0	0.0	0.0	0.0	0.0	49.59
	4422	0.0	0.0	0.0	0.1	0.0	47.92
	3794	0.0	0.0	0.0	0.0	-0.0	49.17

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3874	0.0	0.0
	4559	0.0	-0.0
	4422	-0.0	-0.0
	3794	-0.0	0.0
Min	Cent	0.0	-0.0
	3874	0.0	0.0
	4559	0.0	-0.0
	4422	-0.0	-0.0
	3794	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4746	3	2	S1 HL-~1	Max	Cent	-0.1	-1.7	-0.3	0.0	-1.7	-10.74

					NODE						
					4559	-0.1	-1.5	-0.3	-0.1	-1.6	-12.00
					703	-0.1	-1.8	-0.3	-0.1	-1.8	-10.46
					2301	0.0	-1.8	-0.3	0.1	-1.8	-9.71
					4422	0.0	-1.5	-0.3	0.1	-1.6	-11.04
				Min	Cent	-0.1	-1.7	-0.3	0.0	-1.7	-10.74
					4559	-0.1	-1.5	-0.3	-0.1	-1.6	-12.00
					703	-0.1	-1.8	-0.3	-0.1	-1.8	-10.46
					2301	0.0	-1.8	-0.3	0.1	-1.8	-9.71
					4422	0.0	-1.5	-0.3	0.1	-1.6	-11.04

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	65.25
	4559	0.0	0.0	0.0	0.0	0.0	48.74
	703	-0.0	0.0	0.0	0.0	-0.0	76.14
	2301	-0.0	0.0	0.0	0.0	-0.1	70.21
	4422	0.0	0.0	0.0	0.1	0.0	48.29
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	65.25
	4559	0.0	0.0	0.0	0.0	0.0	48.74
	703	-0.0	0.0	0.0	0.0	-0.0	76.14
	2301	-0.0	0.0	0.0	0.0	-0.1	70.21
	4422	0.0	0.0	0.0	0.1	0.0	48.29

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4559	0.0	-0.0
	703	0.0	-0.0
	2301	0.0	-0.0
	4422	0.0	-0.0
Min	Cent	0.0	-0.0
	4559	0.0	-0.0
	703	0.0	-0.0
	2301	0.0	-0.0
	4422	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4747	3	2	S1 HL-~1	Max	Cent	-0.0	-1.8	-0.1	0.0	-1.8	-4.05
					703	-0.2	-1.8	-0.1	-0.2	-1.8	-4.62
					5132	-0.2	-1.9	-0.1	-0.2	-1.9	-4.28
					5133	0.2	-1.9	-0.1	0.2	-1.9	-3.60
					2301	0.2	-1.8	-0.1	0.2	-1.8	-3.84
				Min	Cent	-0.0	-1.8	-0.1	0.0	-1.8	-4.05
					703	-0.2	-1.8	-0.1	-0.2	-1.8	-4.62
					5132	-0.2	-1.9	-0.1	-0.2	-1.9	-4.28
					5133	0.2	-1.9	-0.1	0.2	-1.9	-3.60
					2301	0.2	-1.8	-0.1	0.2	-1.8	-3.84

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	70.70
	703	-0.1	-0.0	0.0	-0.0	-0.1	76.56
	5132	-0.0	0.0	0.0	0.0	-0.0	55.77
	5133	0.0	0.0	0.0	0.1	-0.0	66.92
	2301	-0.0	0.0	0.0	0.0	-0.0	70.41
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	70.70
	703	-0.1	-0.0	0.0	-0.0	-0.1	76.56
	5132	-0.0	0.0	0.0	0.0	-0.0	55.77
	5133	0.0	0.0	0.0	0.1	-0.0	66.92
	2301	-0.0	0.0	0.0	0.0	-0.0	70.41

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	703	-0.0	-0.0
	5132	-0.0	-0.0
	5133	-0.0	-0.0
	2301	-0.0	-0.0
Min	Cent	-0.0	-0.0
	703	-0.0	-0.0
	5132	-0.0	-0.0
	5133	-0.0	-0.0
	2301	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE

4771	3	2	S1 HL-~1	Max	Cent	-0.2	-1.1	-0.3	-0.1	-1.2	-15.91
					3794	-0.2	-0.8	-0.3	-0.1	-0.9	-20.27
					4422	-0.2	-1.4	-0.3	-0.1	-1.4	-12.16
					4452	-0.3	-1.4	-0.3	-0.2	-1.4	-12.98
					3812	-0.3	-0.8	-0.3	-0.1	-0.9	-22.35
				Min	Cent	-0.2	-1.1	-0.3	-0.1	-1.2	-15.91
					3794	-0.2	-0.8	-0.3	-0.1	-0.9	-20.27
					4422	-0.2	-1.4	-0.3	-0.1	-1.4	-12.16
					4452	-0.3	-1.4	-0.3	-0.2	-1.4	-12.98
					3812	-0.3	-0.8	-0.3	-0.1	-0.9	-22.35

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.1	0.1	-0.1	46.46
	3794	0.0	0.0	0.1	0.1	-0.1	47.16
	4422	0.0	0.1	0.1	0.1	-0.0	48.79
	4452	-0.1	-0.0	0.1	0.0	-0.1	55.41
	3812	0.1	0.0	0.1	0.1	-0.0	35.19
Min	Cent	0.0	0.0	0.1	0.1	-0.1	46.46
	3794	0.0	0.0	0.1	0.1	-0.1	47.16
	4422	0.0	0.1	0.1	0.1	-0.0	48.79
	4452	-0.1	-0.0	0.1	0.0	-0.1	55.41
	3812	0.1	0.0	0.1	0.1	-0.0	35.19

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3794	-0.0	0.0
	4422	-0.0	0.0
	4452	0.0	0.0
	3812	0.0	0.0
Min	Cent	0.0	0.0
	3794	-0.0	0.0
	4422	-0.0	0.0
	4452	0.0	0.0
	3812	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4772	3	2	S1 HL-~1	Max	Cent	-0.1	-1.5	-0.5	0.1	-1.7	-17.34
					4422	0.1	-1.3	-0.5	0.2	-1.5	-17.74
					2301	0.1	-1.7	-0.5	0.2	-1.8	-14.72
					2139	-0.2	-1.7	-0.5	-0.1	-1.8	-16.97
					4452	-0.2	-1.3	-0.5	-0.0	-1.5	-20.91
				Min	Cent	-0.1	-1.5	-0.5	0.1	-1.7	-17.34
					4422	0.1	-1.3	-0.5	0.2	-1.5	-17.74
					2301	0.1	-1.7	-0.5	0.2	-1.8	-14.72
					2139	-0.2	-1.7	-0.5	-0.1	-1.8	-16.97
					4452	-0.2	-1.3	-0.5	-0.0	-1.5	-20.91

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.1	-0.0	0.1	0.0	-0.1	62.09
	4422	0.0	0.1	0.1	0.1	-0.0	49.61
	2301	-0.0	0.0	0.0	0.1	-0.1	64.30
	2139	-0.2	-0.1	0.1	-0.1	-0.2	71.71
	4452	-0.1	-0.0	0.1	0.0	-0.1	56.46
Min	Cent	-0.1	-0.0	0.1	0.0	-0.1	62.09
	4422	0.0	0.1	0.1	0.1	-0.0	49.61
	2301	-0.0	0.0	0.0	0.1	-0.1	64.30
	2139	-0.2	-0.1	0.1	-0.1	-0.2	71.71
	4452	-0.1	-0.0	0.1	0.0	-0.1	56.46

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4422	0.0	0.0
	2301	0.0	0.0
	2139	0.0	0.0
	4452	0.0	0.0
Min	Cent	0.0	0.0
	4422	0.0	0.0
	2301	0.0	0.0
	2139	0.0	0.0
	4452	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4773	3	2	S1 HL-~1	Max	Cent	-0.0	-1.9	0.3	-0.0	-2.0	8.35
					2301	0.1	-1.7	0.3	0.2	-1.7	8.78
					5133	0.1	-2.2	0.3	0.2	-2.2	6.87
					5134	-0.2	-2.2	0.3	-0.2	-2.2	7.96
					2139	-0.2	-1.7	0.3	-0.2	-1.7	10.61
				Min	Cent	-0.0	-1.9	0.3	-0.0	-2.0	8.35
					2301	0.1	-1.7	0.3	0.2	-1.7	8.78
					5133	0.1	-2.2	0.3	0.2	-2.2	6.87
					5134	-0.2	-2.2	0.3	-0.2	-2.2	7.96
					2139	-0.2	-1.7	0.3	-0.2	-1.7	10.61

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.1	0.1	-0.1	53.12
	2301	-0.0	0.0	0.0	0.1	-0.1	63.13
	5133	0.0	0.1	0.0	0.1	-0.0	60.49
	5134	-0.0	-0.0	0.1	0.1	-0.1	43.46
	2139	-0.0	-0.0	0.1	0.0	-0.1	45.77
Min	Cent	-0.0	0.0	0.1	0.1	-0.1	53.12
	2301	-0.0	0.0	0.0	0.1	-0.1	63.13
	5133	0.0	0.1	0.0	0.1	-0.0	60.49
	5134	-0.0	-0.0	0.1	0.1	-0.1	43.46
	2139	-0.0	-0.0	0.1	0.0	-0.1	45.77

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2301	-0.0	0.0
	5133	-0.0	0.0
	5134	-0.0	0.0
	2139	-0.0	0.0
Min	Cent	-0.0	0.0
	2301	-0.0	0.0
	5133	-0.0	0.0
	5134	-0.0	0.0
	2139	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4797	3	2	S1 HL-~1	Max	Cent	0.1	-0.4	-0.4	0.3	-0.6	-27.83
					3812	-0.0	-0.3	-0.4	0.2	-0.6	-35.38
					4452	-0.0	-0.4	-0.4	0.2	-0.7	-31.40
					4517	0.3	-0.4	-0.4	0.5	-0.6	-22.26
					3841	0.3	-0.3	-0.4	0.5	-0.5	-24.77
				Min	Cent	0.1	-0.4	-0.4	0.3	-0.6	-27.83
					3812	-0.0	-0.3	-0.4	0.2	-0.6	-35.38
					4452	-0.0	-0.4	-0.4	0.2	-0.7	-31.40
					4517	0.3	-0.4	-0.4	0.5	-0.6	-22.26
					3841	0.3	-0.3	-0.4	0.5	-0.5	-24.77

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	0.1	0.1	-0.1	42.32
	3812	0.1	0.0	0.1	0.1	-0.0	33.10
	4452	-0.1	-0.0	0.1	0.0	-0.1	56.94
	4517	-0.1	0.0	0.1	0.1	-0.1	54.21
	3841	0.1	0.0	0.1	0.1	-0.0	27.36
Min	Cent	0.0	-0.0	0.1	0.1	-0.1	42.32
	3812	0.1	0.0	0.1	0.1	-0.0	33.10
	4452	-0.1	-0.0	0.1	0.0	-0.1	56.94
	4517	-0.1	0.0	0.1	0.1	-0.1	54.21
	3841	0.1	0.0	0.1	0.1	-0.0	27.36

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3812	0.0	0.0
	4452	0.0	-0.0
	4517	0.0	-0.0
	3841	0.0	0.0
Min	Cent	0.0	0.0
	3812	0.0	0.0
	4452	0.0	-0.0
	4517	0.0	-0.0

					NODE		
					3841	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4798	3	2	S1 HL-~1	Max	Cent	0.0	-0.5	-0.6	0.4	-0.8	-33.81
					4452	0.1	-0.5	-0.6	0.5	-0.8	-32.24
					2139	0.1	-0.5	-0.6	0.5	-0.8	-32.34
					1492	-0.1	-0.5	-0.6	0.4	-0.9	-35.47
					4517	-0.1	-0.5	-0.6	0.4	-0.9	-35.35
				Min	Cent	0.0	-0.5	-0.6	0.4	-0.8	-33.81
					4452	0.1	-0.5	-0.6	0.5	-0.8	-32.24
					2139	0.1	-0.5	-0.6	0.5	-0.8	-32.34
					1492	-0.1	-0.5	-0.6	0.4	-0.9	-35.47
					4517	-0.1	-0.5	-0.6	0.4	-0.9	-35.35

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.1	-0.0	0.1	0.0	-0.2	62.20
	4452	-0.1	-0.0	0.1	0.0	-0.1	56.73
	2139	-0.2	-0.1	0.1	-0.1	-0.3	68.31
	1492	-0.2	-0.0	0.1	0.0	-0.2	65.29
	4517	-0.0	0.0	0.1	0.1	-0.1	53.38
Min	Cent	-0.1	-0.0	0.1	0.0	-0.2	62.20
	4452	-0.1	-0.0	0.1	0.0	-0.1	56.73
	2139	-0.2	-0.1	0.1	-0.1	-0.3	68.31
	1492	-0.2	-0.0	0.1	0.0	-0.2	65.29
	4517	-0.0	0.0	0.1	0.1	-0.1	53.38

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4452	0.0	-0.0
	2139	0.0	-0.0
	1492	0.0	-0.0
	4517	0.0	-0.0
Min	Cent	0.0	-0.0
	4452	0.0	-0.0
	2139	0.0	-0.0
	1492	0.0	-0.0
	4517	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
4799	3	2	S1 HL-~1	Max	Cent	0.0	-0.6	0.2	0.1	-0.6	17.51
					2139	0.2	-0.5	0.2	0.3	-0.5	15.18
					5134	0.2	-0.6	0.2	0.2	-0.7	12.32
					5135	-0.2	-0.6	0.2	-0.1	-0.7	20.55
					1492	-0.2	-0.5	0.2	-0.1	-0.6	28.04
				Min	Cent	0.0	-0.6	0.2	0.1	-0.6	17.51
					2139	0.2	-0.5	0.2	0.3	-0.5	15.18
					5134	0.2	-0.6	0.2	0.2	-0.7	12.32
					5135	-0.2	-0.6	0.2	-0.1	-0.7	20.55
					1492	-0.2	-0.5	0.2	-0.1	-0.6	28.04

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.1	-0.0	0.1	0.0	-0.1	54.67
	2139	-0.0	-0.0	0.1	0.1	-0.1	43.45
	5134	0.0	0.0	0.1	0.1	-0.1	46.44
	5135	-0.0	0.0	0.1	0.1	-0.1	47.62
	1492	-0.2	-0.0	0.1	0.0	-0.2	71.02
Min	Cent	-0.1	-0.0	0.1	0.0	-0.1	54.67
	2139	-0.0	-0.0	0.1	0.1	-0.1	43.45
	5134	0.0	0.0	0.1	0.1	-0.1	46.44
	5135	-0.0	0.0	0.1	0.1	-0.1	47.62
	1492	-0.2	-0.0	0.1	0.0	-0.2	71.02

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2139	-0.0	-0.0
	5134	-0.0	-0.0
	5135	-0.0	-0.0
	1492	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2139	-0.0	-0.0

```
                                 5134       -0.0        -0.0
                                 5135       -0.0        -0.0
                                 1492       -0.0        -0.0

 ELEM    MAT    SEC        LC          NODE        Fxx         Fyy         Fxy        Fmax        Fmin       ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5112      3      3 S1 HL-~1  Max   Cent       -0.1         1.3        -0.2         1.3        -0.1      -81.75
                                     1153        0.2         1.0        -0.2         1.1         0.2      -76.69
                                     1493        0.2         1.6        -0.2         1.6         0.2      -81.88
                                     1599       -0.3         1.6        -0.2         1.6        -0.3      -84.07
                                     1982       -0.3         1.0        -0.2         1.0        -0.3      -81.62
                               Min   Cent       -0.1         1.3        -0.2         1.3        -0.1      -81.75
                                     1153        0.2         1.0        -0.2         1.1         0.2      -76.69
                                     1493        0.2         1.6        -0.2         1.6         0.2      -81.88
                                     1599       -0.3         1.6        -0.2         1.6        -0.3      -84.07
                                     1982       -0.3         1.0        -0.2         1.0        -0.3      -81.62

                                     NODE        Mxx         Myy         Mxy        Mmax        Mmin       ANGLE
                               ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent        0.0         0.0        -0.2         0.2        -0.1      -44.08
                                     1153        0.0         0.0        -0.2         0.2        -0.1      -47.13
                                     1493        0.2         0.1        -0.2         0.3        -0.1      -34.01
                                     1599       -0.1        -0.0        -0.1         0.1        -0.2      -55.86
                                     1982       -0.0        -0.0        -0.1         0.1        -0.1      -41.25
                               Min   Cent        0.0         0.0        -0.2         0.2        -0.1      -44.08
                                     1153        0.0         0.0        -0.2         0.2        -0.1      -47.13
                                     1493        0.2         0.1        -0.2         0.3        -0.1      -34.01
                                     1599       -0.1        -0.0        -0.1         0.1        -0.2      -55.86
                                     1982       -0.0        -0.0        -0.1         0.1        -0.1      -41.25

                                     NODE        Vxx         Vyy
                               ---- ------ ---------- ----------
                               Max   Cent       -0.0         0.0
                                     1153       -0.0         0.0
                                     1493       -0.0        -0.0
                                     1599        0.0        -0.0
                                     1982        0.0         0.0
                               Min   Cent       -0.0         0.0
                                     1153       -0.0         0.0
                                     1493       -0.0        -0.0
                                     1599        0.0        -0.0
                                     1982        0.0         0.0

 ELEM    MAT    SEC        LC          NODE        Fxx         Fyy         Fxy        Fmax        Fmin       ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5113      3      3 S1 HL-~1  Max   Cent       -0.1         1.7         0.3         1.7        -0.1       80.94
                                     1493        0.3         1.6         0.3         1.6         0.2       78.23
                                     2509        0.3         1.8         0.3         1.8         0.2       79.63
                                     1926       -0.4         1.8         0.3         1.8        -0.4       82.65
                                     1599       -0.4         1.6         0.3         1.6        -0.4       81.96
                               Min   Cent       -0.1         1.7         0.3         1.7        -0.1       80.94
                                     1493        0.3         1.6         0.3         1.6         0.2       78.23
                                     2509        0.3         1.8         0.3         1.8         0.2       79.63
                                     1926       -0.4         1.8         0.3         1.8        -0.4       82.65
                                     1599       -0.4         1.6         0.3         1.6        -0.4       81.96

                                     NODE        Mxx         Myy         Mxy        Mmax        Mmin       ANGLE
                               ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent       -0.0         0.0        -0.2         0.1        -0.2      -48.40
                                     1493       -0.2        -0.1        -0.2         0.0        -0.3      -57.03
                                     2509       -0.0        -0.0        -0.2         0.1        -0.2      -43.42
                                     1926        0.0         0.1        -0.1         0.2        -0.1      -52.90
                                     1599        0.1         0.1        -0.1         0.2        -0.1      -38.89
                               Min   Cent       -0.0         0.0        -0.2         0.1        -0.2      -48.40
                                     1493       -0.2        -0.1        -0.2         0.0        -0.3      -57.03
                                     2509       -0.0        -0.0        -0.2         0.1        -0.2      -43.42
                                     1926        0.0         0.1        -0.1         0.2        -0.1      -52.90
                                     1599        0.1         0.1        -0.1         0.2        -0.1      -38.89

                                     NODE        Vxx         Vyy
                               ---- ------ ---------- ----------
                               Max   Cent       -0.0        -0.0
                                     1493       -0.0        -0.0
                                     2509       -0.0        -0.0
                                     1926        0.0        -0.0
                                     1599        0.0        -0.0
```

	NODE		
Min	Cent	-0.0	-0.0
	1493	-0.0	-0.0
	2509	-0.0	-0.0
	1926	0.0	-0.0
	1599	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5114	3	3	S1 HL-~1	Max	Cent	0.1	3.1	-0.1	3.1	0.1	-88.21
					1982	0.2	2.7	-0.1	2.7	0.2	-87.75
					1599	0.2	3.6	-0.1	3.6	0.2	-88.37
					1809	-0.1	3.6	-0.1	3.6	-0.1	-88.51
					2628	-0.1	2.7	-0.1	2.7	-0.1	-88.01
				Min	Cent	0.1	3.1	-0.1	3.1	0.1	-88.21
					1982	0.2	2.7	-0.1	2.7	0.2	-87.75
					1599	0.2	3.6	-0.1	3.6	0.2	-88.37
					1809	-0.1	3.6	-0.1	3.6	-0.1	-88.51
					2628	-0.1	2.7	-0.1	2.7	-0.1	-88.01

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-73.91
	1982	-0.0	-0.0	-0.0	0.0	-0.1	-35.50
	1599	-0.1	-0.0	-0.0	-0.0	-0.1	-73.01
	1809	-0.0	0.0	0.0	0.0	-0.0	82.08
	2628	0.0	0.0	0.0	0.0	0.0	85.33
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-73.91
	1982	-0.0	-0.0	-0.0	0.0	-0.1	-35.50
	1599	-0.1	-0.0	-0.0	-0.0	-0.1	-73.01
	1809	-0.0	0.0	0.0	0.0	-0.0	82.08
	2628	0.0	0.0	0.0	0.0	0.0	85.33

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	1982	0.0	-0.0
	1599	0.0	-0.0
	1809	0.0	-0.0
	2628	0.0	-0.0
Min	Cent	0.0	-0.0
	1982	0.0	-0.0
	1599	0.0	-0.0
	1809	0.0	-0.0
	2628	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5115	3	3	S1 HL-~1	Max	Cent	0.1	4.1	0.1	4.1	0.1	87.90
					1599	0.3	3.6	0.1	3.6	0.3	87.37
					1926	0.3	4.7	0.1	4.7	0.3	88.03
					1015	-0.2	4.7	0.1	4.7	-0.2	88.25
					1809	-0.2	3.6	0.1	3.6	-0.2	87.75
				Min	Cent	0.1	4.1	0.1	4.1	0.1	87.90
					1599	0.3	3.6	0.1	3.6	0.3	87.37
					1926	0.3	4.7	0.1	4.7	0.3	88.03
					1015	-0.2	4.7	0.1	4.7	-0.2	88.25
					1809	-0.2	3.6	0.1	3.6	-0.2	87.75

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-58.99
	1599	0.1	0.1	-0.0	0.1	0.0	-22.81
	1926	0.0	0.1	-0.0	0.1	-0.0	-67.79
	1015	-0.0	-0.0	-0.0	-0.0	-0.0	-26.39
	1809	-0.0	0.0	0.0	0.0	-0.0	88.83
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-58.99
	1599	0.1	0.1	-0.0	0.1	0.0	-22.81
	1926	0.0	0.1	-0.0	0.1	-0.0	-67.79
	1015	-0.0	-0.0	-0.0	-0.0	-0.0	-26.39
	1809	-0.0	0.0	0.0	0.0	-0.0	88.83

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1599	0.0	-0.0
	1926	0.0	0.0

	1015	-0.0	0.0
	1809	-0.0	-0.0
Min	Cent	0.0	0.0
	1599	0.0	-0.0
	1926	0.0	0.0
	1015	-0.0	0.0
	1809	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5116	3	3	S1 HL-~1	Max	Cent	0.1	4.1	-0.0	4.1	0.1	-89.53
					2628	0.2	3.8	-0.0	3.8	0.2	-89.47
					1809	0.2	4.4	-0.0	4.4	0.2	-89.55
					712	-0.1	4.4	-0.0	4.4	-0.1	-89.58
					3540	-0.1	3.8	-0.0	3.8	-0.1	-89.52
				Min	Cent	0.1	4.1	-0.0	4.1	0.1	-89.53
					2628	0.2	3.8	-0.0	3.8	0.2	-89.47
					1809	0.2	4.4	-0.0	4.4	0.2	-89.55
					712	-0.1	4.4	-0.0	4.4	-0.1	-89.58
					3540	-0.1	3.8	-0.0	3.8	-0.1	-89.52

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-79.01
	2628	-0.0	0.0	-0.0	0.0	-0.0	-82.85
	1809	-0.0	0.0	-0.0	0.0	-0.0	-85.77
	712	0.0	0.0	-0.0	0.0	0.0	-76.33
	3540	-0.0	0.0	-0.0	0.0	-0.0	-75.12
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-79.01
	2628	-0.0	0.0	-0.0	0.0	-0.0	-82.85
	1809	-0.0	0.0	-0.0	0.0	-0.0	-85.77
	712	0.0	0.0	-0.0	0.0	0.0	-76.33
	3540	-0.0	0.0	-0.0	0.0	-0.0	-75.12

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	2628	0.0	0.0
	1809	0.0	0.0
	712	-0.0	0.0
	3540	-0.0	0.0
Min	Cent	0.0	0.0
	2628	0.0	0.0
	1809	0.0	0.0
	712	-0.0	0.0
	3540	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5117	3	3	S1 HL-~1	Max	Cent	0.0	4.7	-0.0	4.7	0.0	-89.66
					1809	-0.1	4.4	-0.0	4.4	-0.1	-89.65
					1015	-0.1	4.9	-0.0	4.9	-0.1	-89.68
					3552	0.1	4.9	-0.0	4.9	0.1	-89.67
					712	0.1	4.4	-0.0	4.4	0.1	-89.64
				Min	Cent	0.0	4.7	-0.0	4.7	0.0	-89.66
					1809	-0.1	4.4	-0.0	4.4	-0.1	-89.65
					1015	-0.1	4.9	-0.0	4.9	-0.1	-89.68
					3552	0.1	4.9	-0.0	4.9	0.1	-89.67
					712	0.1	4.4	-0.0	4.4	0.1	-89.64

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	85.85
	1809	-0.0	0.0	-0.0	0.0	-0.0	-84.66
	1015	0.0	0.0	-0.0	0.0	0.0	-83.39
	3552	-0.0	0.0	-0.0	0.0	-0.0	-78.84
	712	-0.0	0.0	-0.0	0.0	-0.0	-84.60
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	85.85
	1809	-0.0	0.0	-0.0	0.0	-0.0	-84.66
	1015	0.0	0.0	-0.0	0.0	0.0	-83.39
	3552	-0.0	0.0	-0.0	0.0	-0.0	-78.84
	712	-0.0	0.0	-0.0	0.0	-0.0	-84.60

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0

					NODE		
					1809	-0.0	0.0
					1015	-0.0	0.0
					3552	-0.0	0.0
					712	-0.0	0.0
				Min	Cent	-0.0	0.0
					1809	-0.0	0.0
					1015	-0.0	0.0
					3552	-0.0	0.0
					712	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5118	3	3	S1 HL-~1	Max	Cent	0.0	4.2	0.0	4.2	0.0	89.62
					3540	-0.1	4.4	0.0	4.4	-0.1	89.65
					712	-0.1	3.9	0.0	3.9	-0.1	89.62
					1705	0.2	3.9	0.0	3.9	0.2	89.59
					2580	0.2	4.4	0.0	4.4	0.2	89.63
				Min	Cent	0.0	4.2	0.0	4.2	0.0	89.62
					3540	-0.1	4.4	0.0	4.4	-0.1	89.65
					712	-0.1	3.9	0.0	3.9	-0.1	89.62
					1705	0.2	3.9	0.0	3.9	0.2	89.59
					2580	0.2	4.4	0.0	4.4	0.2	89.63

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-51.75
	3540	0.0	0.0	-0.0	0.0	-0.0	-58.62
	712	0.0	0.0	-0.0	0.0	-0.0	-50.95
	1705	-0.0	0.0	-0.0	0.0	-0.0	-58.53
	2580	-0.0	-0.0	-0.0	0.0	-0.0	-44.60
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-51.75
	3540	0.0	0.0	-0.0	0.0	-0.0	-58.62
	712	0.0	0.0	-0.0	0.0	-0.0	-50.95
	1705	-0.0	0.0	-0.0	0.0	-0.0	-58.53
	2580	-0.0	-0.0	-0.0	0.0	-0.0	-44.60

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	3540	-0.0	0.0
	712	-0.0	-0.0
	1705	0.0	-0.0
	2580	0.0	0.0
Min	Cent	0.0	0.0
	3540	-0.0	0.0
	712	-0.0	-0.0
	1705	0.0	-0.0
	2580	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5119	3	3	S1 HL-~1	Max	Cent	-0.0	3.8	-0.0	3.8	-0.0	-89.28
					712	-0.2	3.9	-0.0	3.9	-0.2	-89.32
					3552	-0.2	3.7	-0.0	3.7	-0.2	-89.28
					1207	0.1	3.7	-0.0	3.7	0.1	-89.22
					1705	0.1	3.9	-0.0	3.9	0.1	-89.28
				Min	Cent	-0.0	3.8	-0.0	3.8	-0.0	-89.28
					712	-0.2	3.9	-0.0	3.9	-0.2	-89.32
					3552	-0.2	3.7	-0.0	3.7	-0.2	-89.28
					1207	0.1	3.7	-0.0	3.7	0.1	-89.22
					1705	0.1	3.9	-0.0	3.9	0.1	-89.28

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-53.53
	712	-0.0	0.0	-0.0	0.0	-0.0	-54.56
	3552	-0.0	0.0	-0.0	0.0	-0.0	-49.87
	1207	0.0	0.0	-0.0	0.0	-0.0	-56.35
	1705	-0.0	0.0	-0.0	0.0	-0.0	-55.95
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-53.53
	712	-0.0	0.0	-0.0	0.0	-0.0	-54.56
	3552	-0.0	0.0	-0.0	0.0	-0.0	-49.87
	1207	0.0	0.0	-0.0	0.0	-0.0	-56.35
	1705	-0.0	0.0	-0.0	0.0	-0.0	-55.95

NODE	Vxx	Vyy

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	712	-0.0	-0.0
	3552	-0.0	-0.0
	1207	-0.0	-0.0
	1705	-0.0	-0.0
Min	Cent	-0.0	-0.0
	712	-0.0	-0.0
	3552	-0.0	-0.0
	1207	-0.0	-0.0
	1705	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5120	3	3	S1 HL-~1	Max	Cent	0.0	3.7	0.0	3.7	0.0	89.85
					2580	0.0	3.8	0.0	3.8	0.0	89.85
					1705	0.0	3.6	0.0	3.6	0.0	89.84
					713	0.0	3.6	0.0	3.6	0.0	89.84
					3541	0.0	3.8	0.0	3.8	0.0	89.85
				Min	Cent	0.0	3.7	0.0	3.7	0.0	89.85
					2580	0.0	3.8	0.0	3.8	0.0	89.85
					1705	0.0	3.6	0.0	3.6	0.0	89.84
					713	0.0	3.6	0.0	3.6	0.0	89.84
					3541	0.0	3.8	0.0	3.8	0.0	89.85

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-67.01
	2580	0.0	0.0	-0.0	0.0	0.0	-73.16
	1705	-0.0	0.0	-0.0	0.0	-0.0	-76.10
	713	-0.0	0.0	-0.0	0.0	-0.0	-73.89
	3541	-0.0	0.0	-0.0	0.0	-0.0	-63.12
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-67.01
	2580	0.0	0.0	-0.0	0.0	0.0	-73.16
	1705	-0.0	0.0	-0.0	0.0	-0.0	-76.10
	713	-0.0	0.0	-0.0	0.0	-0.0	-73.89
	3541	-0.0	0.0	-0.0	0.0	-0.0	-63.12

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	2580	0.0	0.0
	1705	0.0	-0.0
	713	0.0	-0.0
	3541	0.0	0.0
Min	Cent	0.0	0.0
	2580	0.0	0.0
	1705	0.0	-0.0
	713	0.0	-0.0
	3541	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5121	3	3	S1 HL-~1	Max	Cent	0.0	3.4	0.0	3.4	0.0	89.81
					1705	-0.0	3.6	0.0	3.6	-0.0	89.82
					1207	-0.0	3.3	0.0	3.3	-0.0	89.80
					3553	0.0	3.3	0.0	3.3	0.0	89.80
					713	0.0	3.6	0.0	3.6	0.0	89.81
				Min	Cent	0.0	3.4	0.0	3.4	0.0	89.81
					1705	-0.0	3.6	0.0	3.6	-0.0	89.82
					1207	-0.0	3.3	0.0	3.3	-0.0	89.80
					3553	0.0	3.3	0.0	3.3	0.0	89.80
					713	0.0	3.6	0.0	3.6	0.0	89.81

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-73.31
	1705	-0.0	0.0	-0.0	0.0	-0.0	-69.40
	1207	0.0	0.0	-0.0	0.0	-0.0	-68.10
	3553	-0.0	0.0	-0.0	0.0	-0.0	-72.86
	713	-0.0	0.0	-0.0	0.0	-0.0	-75.93
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-73.31
	1705	-0.0	0.0	-0.0	0.0	-0.0	-69.40
	1207	0.0	0.0	-0.0	0.0	-0.0	-68.10
	3553	-0.0	0.0	-0.0	0.0	-0.0	-72.86
	713	-0.0	0.0	-0.0	0.0	-0.0	-75.93

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	1705	-0.0	-0.0
	1207	-0.0	0.0
	3553	-0.0	0.0
	713	-0.0	-0.0
Min	Cent	-0.0	0.0
	1705	-0.0	-0.0
	1207	-0.0	0.0
	3553	-0.0	0.0
	713	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5122	3	3	S1 HL-~1	Max	Cent	0.0	3.1	0.0	3.1	0.0	89.28
					3541	-0.2	3.1	0.0	3.1	-0.2	89.32
					713	-0.2	3.1	0.0	3.1	-0.2	89.32
					96	0.2	3.1	0.0	3.1	0.2	89.23
					2524	0.2	3.1	0.0	3.1	0.2	89.24
				Min	Cent	0.0	3.1	0.0	3.1	0.0	89.28
					3541	-0.2	3.1	0.0	3.1	-0.2	89.32
					713	-0.2	3.1	0.0	3.1	-0.2	89.32
					96	0.2	3.1	0.0	3.1	0.2	89.23
					2524	0.2	3.1	0.0	3.1	0.2	89.24

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	64.57
	3541	-0.0	0.0	0.0	0.0	-0.0	58.59
	713	-0.0	0.0	0.0	0.0	-0.0	67.63
	96	-0.0	0.0	0.0	0.0	-0.0	70.86
	2524	0.0	0.0	0.0	0.0	-0.0	67.52
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	64.57
	3541	-0.0	0.0	0.0	0.0	-0.0	58.59
	713	-0.0	0.0	0.0	0.0	-0.0	67.63
	96	-0.0	0.0	0.0	0.0	-0.0	70.86
	2524	0.0	0.0	0.0	0.0	-0.0	67.52

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3541	0.0	-0.0
	713	0.0	-0.0
	96	0.0	-0.0
	2524	0.0	-0.0
Min	Cent	0.0	-0.0
	3541	0.0	-0.0
	713	0.0	-0.0
	96	0.0	-0.0
	2524	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5123	3	3	S1 HL-~1	Max	Cent	0.0	3.1	-0.0	3.1	0.0	-89.34
					713	-0.1	3.1	-0.0	3.1	-0.1	-89.36
					3553	-0.1	3.1	-0.0	3.1	-0.1	-89.37
					1013	0.1	3.1	-0.0	3.1	0.1	-89.33
					96	0.1	3.1	-0.0	3.1	0.1	-89.32
				Min	Cent	0.0	3.1	-0.0	3.1	0.0	-89.34
					713	-0.1	3.1	-0.0	3.1	-0.1	-89.36
					3553	-0.1	3.1	-0.0	3.1	-0.1	-89.37
					1013	0.1	3.1	-0.0	3.1	0.1	-89.33
					96	0.1	3.1	-0.0	3.1	0.1	-89.32

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	61.74
	713	-0.0	0.0	0.0	0.0	-0.0	68.32
	3553	0.0	0.0	0.0	0.0	-0.0	71.56
	1013	-0.0	0.0	0.0	0.0	-0.0	53.49
	96	-0.0	0.0	0.0	0.0	-0.0	68.73
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	61.74
	713	-0.0	0.0	0.0	0.0	-0.0	68.32
	3553	0.0	0.0	0.0	0.0	-0.0	71.56

```
                             1013       -0.0        0.0        0.0        0.0       -0.0      53.49
                               96       -0.0        0.0        0.0        0.0       -0.0      68.73

                             NODE        Vxx        Vyy
                        ---- ------ ---------- ----------
                         Max   Cent       -0.0        0.0
                              713       -0.0       -0.0
                             3553       -0.0        0.0
                             1013       -0.0        0.0
                               96       -0.0       -0.0
                         Min   Cent       -0.0        0.0
                              713       -0.0       -0.0
                             3553       -0.0        0.0
                             1013       -0.0        0.0
                               96       -0.0       -0.0

  ELEM    MAT    SEC        LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5124      3      3 S1 HL-~1  Max   Cent        0.0        2.3        0.0        2.3        0.0      89.37
                             2524       -0.0        2.2        0.0        2.2       -0.0      89.38
                               96       -0.0        2.3        0.0        2.3       -0.0      89.41
                              714        0.1        2.3        0.0        2.3        0.1      89.36
                             3542        0.1        2.2        0.0        2.2        0.1      89.34
                         Min   Cent        0.0        2.3        0.0        2.3        0.0      89.37
                             2524       -0.0        2.2        0.0        2.2       -0.0      89.38
                               96       -0.0        2.3        0.0        2.3       -0.0      89.41
                              714        0.1        2.3        0.0        2.3        0.1      89.36
                             3542        0.1        2.2        0.0        2.2        0.1      89.34

                             NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                        ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                         Max   Cent       -0.0        0.0       -0.0        0.0       -0.0     -75.50
                             2524       -0.0        0.0       -0.0        0.0       -0.0     -79.63
                               96       -0.0        0.0       -0.0        0.0       -0.0     -82.63
                              714       -0.0        0.0       -0.0        0.0       -0.0     -80.51
                             3542        0.0        0.0       -0.0        0.0       -0.0     -70.64
                         Min   Cent       -0.0        0.0       -0.0        0.0       -0.0     -75.50
                             2524       -0.0        0.0       -0.0        0.0       -0.0     -79.63
                               96       -0.0        0.0       -0.0        0.0       -0.0     -82.63
                              714       -0.0        0.0       -0.0        0.0       -0.0     -80.51
                             3542        0.0        0.0       -0.0        0.0       -0.0     -70.64

                             NODE        Vxx        Vyy
                        ---- ------ ---------- ----------
                         Max   Cent        0.0        0.0
                             2524        0.0        0.0
                               96        0.0        0.0
                              714        0.0        0.0
                             3542        0.0        0.0
                         Min   Cent        0.0        0.0
                             2524        0.0        0.0
                               96        0.0        0.0
                              714        0.0        0.0
                             3542        0.0        0.0

  ELEM    MAT    SEC        LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5125      3      3 S1 HL-~1  Max   Cent        0.0        2.3       -0.0        2.3        0.0     -89.46
                               96       -0.1        2.3       -0.0        2.3       -0.1     -89.48
                             1013       -0.1        2.4       -0.0        2.4       -0.1     -89.49
                             3554        0.1        2.4       -0.0        2.4        0.1     -89.43
                              714        0.1        2.3       -0.0        2.3        0.1     -89.42
                         Min   Cent        0.0        2.3       -0.0        2.3        0.0     -89.46
                               96       -0.1        2.3       -0.0        2.3       -0.1     -89.48
                             1013       -0.1        2.4       -0.0        2.4       -0.1     -89.49
                             3554        0.1        2.4       -0.0        2.4        0.1     -89.43
                              714        0.1        2.3       -0.0        2.3        0.1     -89.42

                             NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                        ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                         Max   Cent       -0.0        0.0       -0.0        0.0       -0.0     -79.50
                               96       -0.0        0.0       -0.0        0.0       -0.0     -82.45
                             1013        0.0        0.0       -0.0        0.0       -0.0     -76.76
                             3554       -0.0        0.0       -0.0        0.0       -0.0     -78.66
                              714       -0.0        0.0       -0.0        0.0       -0.0     -80.17
                         Min   Cent       -0.0        0.0       -0.0        0.0       -0.0     -79.50
```

```
                                     96        -0.0         0.0        -0.0         0.0        -0.0      -82.45
                                   1013         0.0         0.0        -0.0         0.0        -0.0      -76.76
                                   3554        -0.0         0.0        -0.0         0.0        -0.0      -78.66
                                    714        -0.0         0.0        -0.0         0.0        -0.0      -80.17

                                   NODE         Vxx         Vyy
                             ---- ------ ---------- ----------
                              Max  Cent        -0.0         0.0
                                     96        -0.0         0.0
                                   1013        -0.0         0.0
                                   3554        -0.0         0.0
                                    714        -0.0         0.0
                              Min  Cent        -0.0         0.0
                                     96        -0.0         0.0
                                   1013        -0.0         0.0
                                   3554        -0.0         0.0
                                    714        -0.0         0.0

  ELEM    MAT    SEC       LC      NODE         Fxx         Fyy         Fxy        Fmax        Fmin       ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5126      3      3 S1 HL-~1 Max  Cent        -0.0         1.3         0.0         1.3        -0.0       87.92
                                   3542        -0.2         1.3         0.0         1.3        -0.2       88.15
                                    714        -0.2         1.3         0.0         1.3        -0.2       88.14
                                     82         0.1         1.3         0.0         1.3         0.1       87.62
                                   2476         0.1         1.3         0.0         1.3         0.1       87.63
                              Min  Cent        -0.0         1.3         0.0         1.3        -0.0       87.92
                                   3542        -0.2         1.3         0.0         1.3        -0.2       88.15
                                    714        -0.2         1.3         0.0         1.3        -0.2       88.14
                                     82         0.1         1.3         0.0         1.3         0.1       87.62
                                   2476         0.1         1.3         0.0         1.3         0.1       87.63

                                   NODE         Mxx         Myy         Mxy        Mmax        Mmin       ANGLE
                             ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                              Max  Cent        -0.0         0.0         0.0         0.0        -0.0       63.50
                                   3542        -0.0         0.0         0.0         0.0        -0.0       57.84
                                    714        -0.0         0.0         0.0         0.0        -0.0       70.34
                                     82        -0.0         0.0         0.0         0.0        -0.0       69.95
                                   2476        -0.0         0.0         0.0         0.0        -0.0       62.89
                              Min  Cent        -0.0         0.0         0.0         0.0        -0.0       63.50
                                   3542        -0.0         0.0         0.0         0.0        -0.0       57.84
                                    714        -0.0         0.0         0.0         0.0        -0.0       70.34
                                     82        -0.0         0.0         0.0         0.0        -0.0       69.95
                                   2476        -0.0         0.0         0.0         0.0        -0.0       62.89

                                   NODE         Vxx         Vyy
                             ---- ------ ---------- ----------
                              Max  Cent         0.0         0.0
                                   3542         0.0        -0.0
                                    714         0.0         0.0
                                     82         0.0         0.0
                                   2476         0.0        -0.0
                              Min  Cent         0.0         0.0
                                   3542         0.0        -0.0
                                    714         0.0         0.0
                                     82         0.0         0.0
                                   2476         0.0        -0.0

  ELEM    MAT    SEC       LC      NODE         Fxx         Fyy         Fxy        Fmax        Fmin       ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5127      3      3 S1 HL-~1 Max  Cent        -0.0         1.3        -0.1         1.3        -0.0      -87.59
                                    714        -0.2         1.3        -0.1         1.3        -0.2      -87.78
                                   3554        -0.2         1.3        -0.1         1.3        -0.2      -87.83
                                   1206         0.1         1.3        -0.1         1.3         0.1      -87.37
                                     82         0.1         1.3        -0.1         1.3         0.1      -87.28
                              Min  Cent        -0.0         1.3        -0.1         1.3        -0.0      -87.59
                                    714        -0.2         1.3        -0.1         1.3        -0.2      -87.78
                                   3554        -0.2         1.3        -0.1         1.3        -0.2      -87.83
                                   1206         0.1         1.3        -0.1         1.3         0.1      -87.37
                                     82         0.1         1.3        -0.1         1.3         0.1      -87.28

                                   NODE         Mxx         Myy         Mxy        Mmax        Mmin       ANGLE
                             ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                              Max  Cent        -0.0         0.0         0.0         0.0        -0.0       62.10
                                    714        -0.0         0.0         0.0         0.0        -0.0       67.84
                                   3554         0.0         0.0         0.0         0.0        -0.0       69.10
                                   1206        -0.0        -0.0         0.0         0.0        -0.0       46.10
```

ELEM	MAT	SEC	LC		NODE						
					82	-0.0	0.0	0.0	0.0	-0.0	71.87
				Min	Cent	-0.0	0.0	0.0	0.0	-0.0	62.10
					714	-0.0	0.0	0.0	0.0	-0.0	67.84
					3554	0.0	0.0	0.0	0.0	-0.0	69.10
					1206	-0.0	-0.0	0.0	0.0	-0.0	46.10
					82	-0.0	0.0	0.0	0.0	-0.0	71.87

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	714	-0.0	0.0
	3554	-0.0	0.0
	1206	-0.0	0.0
	82	-0.0	0.0
Min	Cent	-0.0	0.0
	714	-0.0	0.0
	3554	-0.0	0.0
	1206	-0.0	0.0
	82	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5128	3	3	S1 HL-~1	Max	Cent	0.0	0.6	0.0	0.6	0.0	86.36
					2476	-0.1	0.6	0.0	0.6	-0.1	87.02
					82	-0.1	0.6	0.0	0.6	-0.1	87.04
					5063	0.2	0.6	0.0	0.6	0.2	85.34
					5076	0.2	0.6	0.0	0.6	0.2	85.27
				Min	Cent	0.0	0.6	0.0	0.6	0.0	86.36
					2476	-0.1	0.6	0.0	0.6	-0.1	87.02
					82	-0.1	0.6	0.0	0.6	-0.1	87.04
					5063	0.2	0.6	0.0	0.6	0.2	85.34
					5076	0.2	0.6	0.0	0.6	0.2	85.27

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-55.63
	2476	0.0	0.0	-0.0	0.0	0.0	-70.74
	82	-0.0	0.0	-0.0	0.0	-0.0	-70.10
	5063	-0.0	0.0	-0.0	0.0	-0.0	-51.01
	5076	-0.0	-0.0	-0.0	0.0	-0.0	-31.37
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-55.63
	2476	0.0	0.0	-0.0	0.0	0.0	-70.74
	82	-0.0	0.0	-0.0	0.0	-0.0	-70.10
	5063	-0.0	0.0	-0.0	0.0	-0.0	-51.01
	5076	-0.0	-0.0	-0.0	0.0	-0.0	-31.37

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	2476	0.0	0.0
	82	0.0	0.0
	5063	0.0	0.0
	5076	0.0	0.0
Min	Cent	0.0	0.0
	2476	0.0	0.0
	82	0.0	0.0
	5063	0.0	0.0
	5076	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5129	3	3	S1 HL-~1	Max	Cent	0.0	0.5	-0.0	0.5	0.0	-86.79
					82	-0.1	0.6	-0.0	0.6	-0.1	-87.64
					1206	-0.1	0.5	-0.0	0.5	-0.1	-87.31
					5077	0.2	0.5	-0.0	0.5	0.2	-84.96
					5063	0.2	0.6	-0.0	0.6	0.2	-86.01
				Min	Cent	0.0	0.5	-0.0	0.5	0.0	-86.79
					82	-0.1	0.6	-0.0	0.6	-0.1	-87.64
					1206	-0.1	0.5	-0.0	0.5	-0.1	-87.31
					5077	0.2	0.5	-0.0	0.5	0.2	-84.96
					5063	0.2	0.6	-0.0	0.6	0.2	-86.01

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-59.95
	82	-0.0	0.0	-0.0	0.0	-0.0	-72.73

	1206	-0.0	-0.0	-0.0	0.0	-0.0	-42.83
	5077	0.0	0.0	-0.0	0.0	0.0	-64.08
	5063	-0.0	0.0	-0.0	0.0	-0.0	-57.96
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-59.95
	82	-0.0	0.0	-0.0	0.0	-0.0	-72.73
	1206	-0.0	-0.0	-0.0	0.0	-0.0	-42.83
	5077	0.0	0.0	-0.0	0.0	0.0	-64.08
	5063	-0.0	0.0	-0.0	0.0	-0.0	-57.96

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	82	-0.0	0.0
	1206	-0.0	-0.0
	5077	-0.0	-0.0
	5063	-0.0	0.0
Min	Cent	-0.0	-0.0
	82	-0.0	0.0
	1206	-0.0	-0.0
	5077	-0.0	-0.0
	5063	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5130	3	4	S1 HL-~1	Max	Cent	-0.0	-2.0	0.1	-0.0	-2.0	2.33
					1862	-0.3	-2.0	0.1	-0.3	-2.0	2.59
					2485	-0.3	-2.0	0.1	-0.3	-2.0	2.68
					2242	0.2	-2.0	0.1	0.2	-2.0	2.13
					2458	0.2	-2.0	0.1	0.2	-2.0	2.07
				Min	Cent	-0.0	-2.0	0.1	-0.0	-2.0	2.33
					1862	-0.3	-2.0	0.1	-0.3	-2.0	2.59
					2485	-0.3	-2.0	0.1	-0.3	-2.0	2.68
					2242	0.2	-2.0	0.1	0.2	-2.0	2.13
					2458	0.2	-2.0	0.1	0.2	-2.0	2.07

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	36.84
	1862	-0.0	-0.0	0.0	0.0	-0.0	27.99
	2485	-0.0	-0.0	0.0	-0.0	-0.0	46.23
	2242	-0.0	-0.0	0.0	0.0	-0.0	36.89
	2458	0.0	-0.0	0.0	0.0	-0.0	34.29
Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	36.84
	1862	-0.0	-0.0	0.0	0.0	-0.0	27.99
	2485	-0.0	-0.0	0.0	-0.0	-0.0	46.23
	2242	-0.0	-0.0	0.0	0.0	-0.0	36.89
	2458	0.0	-0.0	0.0	0.0	-0.0	34.29

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1862	0.0	-0.0
	2485	0.0	0.0
	2242	0.0	0.0
	2458	0.0	-0.0
Min	Cent	0.0	0.0
	1862	0.0	-0.0
	2485	0.0	0.0
	2242	0.0	0.0
	2458	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5131	3	4	S1 HL-~1	Max	Cent	-0.1	-2.0	-0.1	-0.0	-2.0	-2.62
					2485	-0.3	-2.0	-0.1	-0.3	-2.0	-3.00
					1087	-0.3	-2.0	-0.1	-0.3	-2.0	-2.92
					1615	0.2	-2.0	-0.1	0.2	-2.0	-2.33
					2242	0.2	-2.0	-0.1	0.2	-2.0	-2.38
				Min	Cent	-0.1	-2.0	-0.1	-0.0	-2.0	-2.62
					2485	-0.3	-2.0	-0.1	-0.3	-2.0	-3.00
					1087	-0.3	-2.0	-0.1	-0.3	-2.0	-2.92
					1615	0.2	-2.0	-0.1	0.2	-2.0	-2.33
					2242	0.2	-2.0	-0.1	0.2	-2.0	-2.38

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE

		NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
	Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	35.41
		2485	-0.0	-0.0	0.0	0.0	-0.0	35.76
		1087	0.0	-0.0	0.0	0.0	-0.0	41.18
		1615	-0.0	-0.0	0.0	0.0	-0.0	28.58
		2242	-0.0	-0.0	0.0	0.0	-0.0	35.30
	Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	35.41
		2485	-0.0	-0.0	0.0	0.0	-0.0	35.76
		1087	0.0	-0.0	0.0	0.0	-0.0	41.18
		1615	-0.0	-0.0	0.0	0.0	-0.0	28.58
		2242	-0.0	-0.0	0.0	0.0	-0.0	35.30

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2485	-0.0	0.0
	1087	-0.0	0.0
	1615	-0.0	0.0
	2242	-0.0	0.0
Min	Cent	-0.0	0.0
	2485	-0.0	0.0
	1087	-0.0	0.0
	1615	-0.0	0.0
	2242	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5132	3	4	S1 HL-~1	Max	Cent	-0.0	-3.0	0.1	-0.0	-3.0	1.54
					2458	-0.1	-2.9	0.1	-0.1	-2.9	1.64
					2242	-0.1	-3.1	0.1	-0.1	-3.1	1.54
					64	0.1	-3.1	0.1	0.1	-3.1	1.44
					2404	0.1	-2.9	0.1	0.1	-2.9	1.53
				Min	Cent	-0.0	-3.0	0.1	-0.0	-3.0	1.54
					2458	-0.1	-2.9	0.1	-0.1	-2.9	1.64
					2242	-0.1	-3.1	0.1	-0.1	-3.1	1.54
					64	0.1	-3.1	0.1	0.1	-3.1	1.44
					2404	0.1	-2.9	0.1	0.1	-2.9	1.53

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	0.0	0.0	-0.0	16.44
	2458	-0.0	-0.0	0.0	0.0	-0.0	23.90
	2242	-0.0	-0.0	0.0	-0.0	-0.0	33.64
	64	0.0	-0.0	0.0	0.0	-0.1	11.39
	2404	-0.0	-0.1	0.0	0.0	-0.1	12.76
Min	Cent	0.0	-0.0	0.0	0.0	-0.0	16.44
	2458	-0.0	-0.0	0.0	0.0	-0.0	23.90
	2242	-0.0	-0.0	0.0	-0.0	-0.0	33.64
	64	0.0	-0.0	0.0	0.0	-0.1	11.39
	2404	-0.0	-0.1	0.0	0.0	-0.1	12.76

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2458	0.0	0.0
	2242	0.0	0.0
	64	-0.0	0.0
	2404	-0.0	0.0
Min	Cent	-0.0	0.0
	2458	0.0	0.0
	2242	0.0	0.0
	64	-0.0	0.0
	2404	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5133	3	4	S1 HL-~1	Max	Cent	0.0	-3.1	-0.1	0.0	-3.1	-1.67
					2242	-0.2	-3.1	-0.1	-0.2	-3.1	-1.76
					1615	-0.2	-3.0	-0.1	-0.2	-3.1	-1.77
					2725	0.2	-3.0	-0.1	0.2	-3.1	-1.58
					64	0.2	-3.1	-0.1	0.2	-3.1	-1.58
				Min	Cent	0.0	-3.1	-0.1	0.0	-3.1	-1.67
					2242	-0.2	-3.1	-0.1	-0.2	-3.1	-1.76
					1615	-0.2	-3.0	-0.1	-0.2	-3.1	-1.77
					2725	0.2	-3.0	-0.1	0.2	-3.1	-1.58
					64	0.2	-3.1	-0.1	0.2	-3.1	-1.58

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.1	24.65
	2242	-0.0	-0.0	0.0	0.0	-0.0	33.72
	1615	0.0	-0.0	0.0	0.0	-0.0	32.72
	2725	-0.0	-0.1	0.0	0.0	-0.1	16.31
	64	-0.0	-0.1	0.0	-0.0	-0.1	21.28
Min	Cent	-0.0	-0.0	0.0	0.0	-0.1	24.65
	2242	-0.0	-0.0	0.0	0.0	-0.0	33.72
	1615	0.0	-0.0	0.0	0.0	-0.0	32.72
	2725	-0.0	-0.1	0.0	0.0	-0.1	16.31
	64	-0.0	-0.1	0.0	-0.0	-0.1	21.28

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2242	-0.0	0.0
	1615	-0.0	0.0
	2725	-0.0	0.0
	64	-0.0	0.0
Min	Cent	-0.0	0.0
	2242	-0.0	0.0
	1615	-0.0	0.0
	2725	-0.0	0.0
	64	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5134	3	4	S1 HL-~1	Max	Cent	0.0	-4.2	0.1	0.0	-4.2	1.45
					2404	-0.3	-4.2	0.1	-0.3	-4.2	1.57
					64	-0.3	-4.2	0.1	-0.3	-4.2	1.57
					4785	0.3	-4.2	0.1	0.3	-4.2	1.35
					4799	0.3	-4.2	0.1	0.3	-4.2	1.35
				Min	Cent	0.0	-4.2	0.1	0.0	-4.2	1.45
					2404	-0.3	-4.2	0.1	-0.3	-4.2	1.57
					64	-0.3	-4.2	0.1	-0.3	-4.2	1.57
					4785	0.3	-4.2	0.1	0.3	-4.2	1.35
					4799	0.3	-4.2	0.1	0.3	-4.2	1.35

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.1	34.55
	2404	-0.0	-0.1	0.0	0.0	-0.1	18.81
	64	0.0	-0.0	0.0	0.0	-0.0	11.66
	4785	-0.2	-0.1	0.0	-0.1	-0.2	81.54
	4799	0.0	-0.0	0.0	0.0	-0.0	32.76
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.1	34.55
	2404	-0.0	-0.1	0.0	0.0	-0.1	18.81
	64	0.0	-0.0	0.0	0.0	-0.0	11.66
	4785	-0.2	-0.1	0.0	-0.1	-0.2	81.54
	4799	0.0	-0.0	0.0	0.0	-0.0	32.76

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	2404	-0.0	-0.0
	64	-0.0	-0.0
	4785	0.0	-0.0
	4799	0.0	-0.0
Min	Cent	0.0	-0.0
	2404	-0.0	-0.0
	64	-0.0	-0.0
	4785	0.0	-0.0
	4799	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5135	3	4	S1 HL-~1	Max	Cent	0.0	-4.3	-0.1	0.0	-4.3	-1.31
					64	-0.2	-4.2	-0.1	-0.2	-4.2	-1.40
					2725	-0.2	-4.3	-0.1	-0.2	-4.3	-1.36
					4795	0.3	-4.3	-0.1	0.3	-4.3	-1.23
					4785	0.3	-4.2	-0.1	0.3	-4.2	-1.26
				Min	Cent	0.0	-4.3	-0.1	0.0	-4.3	-1.31
					64	-0.2	-4.2	-0.1	-0.2	-4.2	-1.40
					2725	-0.2	-4.3	-0.1	-0.2	-4.3	-1.36
					4795	0.3	-4.3	-0.1	0.3	-4.3	-1.23

	NODE					
	4785	0.3	-4.2	-0.1	0.3	-4.2	-1.26

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	17.31
	64	-0.0	-0.1	0.0	-0.0	-0.1	17.07
	2725	0.0	-0.1	0.0	0.0	-0.1	12.66
	4795	-0.0	-0.0	0.0	0.0	-0.0	26.09
	4785	0.0	-0.0	0.0	0.0	-0.0	21.64
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	17.31
	64	-0.0	-0.1	0.0	-0.0	-0.1	17.07
	2725	0.0	-0.1	0.0	0.0	-0.1	12.66
	4795	-0.0	-0.0	0.0	0.0	-0.0	26.09
	4785	0.0	-0.0	0.0	0.0	-0.0	21.64

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	64	-0.0	-0.0
	2725	-0.0	-0.0
	4795	0.0	-0.0
	4785	0.0	-0.0
Min	Cent	-0.0	-0.0
	64	-0.0	-0.0
	2725	-0.0	-0.0
	4795	0.0	-0.0
	4785	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5136	3	4	S1 HL-~1	Max	Cent	-0.1	-6.1	0.1	-0.1	-6.1	0.96
					4799	-0.2	-6.1	0.1	-0.2	-6.1	0.98
					4785	-0.2	-6.1	0.1	-0.2	-6.1	0.98
					36	0.1	-6.1	0.1	0.1	-6.1	0.94
					2300	0.1	-6.1	0.1	0.1	-6.1	0.94
				Min	Cent	-0.1	-6.1	0.1	-0.1	-6.1	0.96
					4799	-0.2	-6.1	0.1	-0.2	-6.1	0.98
					4785	-0.2	-6.1	0.1	-0.2	-6.1	0.98
					36	0.1	-6.1	0.1	0.1	-6.1	0.94
					2300	0.1	-6.1	0.1	0.1	-6.1	0.94

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.1	-0.1	0.0	0.1	-0.1	1.87
	4799	-0.0	-0.0	0.0	-0.0	-0.0	3.78
	4785	-0.2	-0.1	0.0	-0.1	-0.2	79.56
	36	0.6	0.0	0.0	0.6	0.0	1.19
	2300	0.0	-0.2	-0.0	0.0	-0.2	-1.63
Min	Cent	0.1	-0.1	0.0	0.1	-0.1	1.87
	4799	-0.0	-0.0	0.0	-0.0	-0.0	3.78
	4785	-0.2	-0.1	0.0	-0.1	-0.2	79.56
	36	0.6	0.0	0.0	0.6	0.0	1.19
	2300	0.0	-0.2	-0.0	0.0	-0.2	-1.63

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4799	0.0	0.0
	4785	0.0	0.0
	36	-0.1	0.0
	2300	-0.1	0.0
Min	Cent	-0.0	0.0
	4799	0.0	0.0
	4785	0.0	0.0
	36	-0.1	0.0
	2300	-0.1	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5137	3	4	S1 HL-~1	Max	Cent	-0.1	-6.0	-0.1	-0.1	-6.0	-0.89
					4785	-0.3	-6.1	-0.1	-0.3	-6.1	-0.91
					4795	-0.3	-6.0	-0.1	-0.3	-6.0	-0.93
					2613	0.1	-6.0	-0.1	0.1	-6.0	-0.87
					36	0.1	-6.1	-0.1	0.1	-6.1	-0.85
				Min	Cent	-0.1	-6.0	-0.1	-0.1	-6.0	-0.89
					4785	-0.3	-6.1	-0.1	-0.3	-6.1	-0.91

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
					4795	-0.3	-6.0	-0.1	-0.3	-6.0	-0.93
					2613	0.1	-6.0	-0.1	0.1	-6.0	-0.87
					36	0.1	-6.1	-0.1	0.1	-6.1	-0.85

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.1	0.0	0.0	-0.1	19.18
	4785	0.0	-0.0	0.0	0.0	-0.0	33.31
	4795	0.0	-0.0	0.0	0.0	-0.0	41.37
	2613	-0.0	-0.2	0.0	0.0	-0.2	8.14
	36	-0.0	-0.2	0.0	-0.0	-0.2	10.40
Min	Cent	-0.0	-0.1	0.0	0.0	-0.1	19.18
	4785	0.0	-0.0	0.0	0.0	-0.0	33.31
	4795	0.0	-0.0	0.0	0.0	-0.0	41.37
	2613	-0.0	-0.2	0.0	0.0	-0.2	8.14
	36	-0.0	-0.2	0.0	-0.0	-0.2	10.40

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4785	0.0	0.0
	4795	0.0	0.0
	2613	-0.0	0.0
	36	-0.0	0.0
Min	Cent	-0.0	0.0
	4785	0.0	0.0
	4795	0.0	0.0
	2613	-0.0	0.0
	36	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5138	3	4	S1 HL-~1	Max	Cent	-0.1	-6.1	-0.1	-0.1	-6.1	-0.96
					2300	0.1	-6.1	-0.1	0.1	-6.1	-0.94
					36	0.1	-6.1	-0.1	0.1	-6.1	-0.94
					4853	-0.2	-6.1	-0.1	-0.2	-6.1	-0.99
					4873	-0.2	-6.1	-0.1	-0.2	-6.1	-0.98
				Min	Cent	-0.1	-6.1	-0.1	-0.1	-6.1	-0.96
					2300	0.1	-6.1	-0.1	0.1	-6.1	-0.94
					36	0.1	-6.1	-0.1	0.1	-6.1	-0.94
					4853	-0.2	-6.1	-0.1	-0.2	-6.1	-0.99
					4873	-0.2	-6.1	-0.1	-0.2	-6.1	-0.98

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.1	-0.1	-0.0	0.1	-0.1	-1.80
	2300	-0.0	-0.2	0.0	0.0	-0.2	1.68
	36	0.6	0.0	-0.0	0.6	0.0	-1.17
	4853	-0.2	-0.1	-0.0	-0.1	-0.2	-79.66
	4873	-0.0	-0.0	-0.0	-0.0	-0.0	-3.31
Min	Cent	0.1	-0.1	-0.0	0.1	-0.1	-1.80
	2300	-0.0	-0.2	0.0	0.0	-0.2	1.68
	36	0.6	0.0	-0.0	0.6	0.0	-1.17
	4853	-0.2	-0.1	-0.0	-0.1	-0.2	-79.66
	4873	-0.0	-0.0	-0.0	-0.0	-0.0	-3.31

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2300	-0.1	-0.0
	36	-0.1	-0.0
	4853	0.0	-0.0
	4873	0.0	-0.0
Min	Cent	-0.0	-0.0
	2300	-0.1	-0.0
	36	-0.1	-0.0
	4853	0.0	-0.0
	4873	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5139	3	4	S1 HL-~1	Max	Cent	-0.1	-6.0	0.1	-0.1	-6.0	0.89
					36	0.1	-6.1	0.1	0.1	-6.1	0.85
					2613	0.1	-6.0	0.1	0.1	-6.0	0.87
					4866	-0.3	-6.0	0.1	-0.3	-6.0	0.93
					4853	-0.3	-6.1	0.1	-0.3	-6.1	0.91

Min	Cent	-0.1	-6.0	0.1	-0.1	-6.0	0.89
	36	0.1	-6.1	0.1	0.1	-6.1	0.85
	2613	0.1	-6.0	0.1	0.1	-6.0	0.87
	4866	-0.3	-6.0	0.1	-0.3	-6.0	0.93
	4853	-0.3	-6.1	0.1	-0.3	-6.1	0.91

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.1	-0.0	0.0	-0.1	-19.11
	36	-0.0	-0.2	-0.0	-0.0	-0.2	-10.34
	2613	-0.0	-0.2	-0.0	0.0	-0.2	-8.09
	4866	0.0	-0.0	-0.0	0.0	-0.0	-41.36
	4853	0.0	-0.0	-0.0	0.0	-0.0	-33.25
Min	Cent	-0.0	-0.1	-0.0	0.0	-0.1	-19.11
	36	-0.0	-0.2	-0.0	-0.0	-0.2	-10.34
	2613	-0.0	-0.2	-0.0	0.0	-0.2	-8.09
	4866	0.0	-0.0	-0.0	0.0	-0.0	-41.36
	4853	0.0	-0.0	-0.0	0.0	-0.0	-33.25

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	36	-0.0	-0.0
	2613	-0.0	-0.0
	4866	0.0	-0.0
	4853	0.0	-0.0
Min	Cent	-0.0	-0.0
	36	-0.0	-0.0
	2613	-0.0	-0.0
	4866	0.0	-0.0
	4853	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5140	3	4	S1 HL-~1	Max	Cent	0.0	-4.2	-0.1	0.0	-4.2	-1.45
					4873	0.3	-4.2	-0.1	0.3	-4.2	-1.35
					4853	0.3	-4.2	-0.1	0.3	-4.2	-1.35
					56	-0.3	-4.2	-0.1	-0.3	-4.2	-1.56
					2372	-0.3	-4.2	-0.1	-0.3	-4.2	-1.56
				Min	Cent	0.0	-4.2	-0.1	0.0	-4.2	-1.45
					4873	0.3	-4.2	-0.1	0.3	-4.2	-1.35
					4853	0.3	-4.2	-0.1	0.3	-4.2	-1.35
					56	-0.3	-4.2	-0.1	-0.3	-4.2	-1.56
					2372	-0.3	-4.2	-0.1	-0.3	-4.2	-1.56

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.1	-34.46
	4873	0.0	-0.0	-0.0	0.0	-0.0	-32.64
	4853	-0.2	-0.1	-0.0	-0.1	-0.2	-81.64
	56	0.0	-0.0	-0.0	0.0	-0.0	-11.56
	2372	-0.0	-0.1	-0.0	0.0	-0.1	-18.72
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.1	-34.46
	4873	0.0	-0.0	-0.0	0.0	-0.0	-32.64
	4853	-0.2	-0.1	-0.0	-0.1	-0.2	-81.64
	56	0.0	-0.0	-0.0	0.0	-0.0	-11.56
	2372	-0.0	-0.1	-0.0	0.0	-0.1	-18.72

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4873	0.0	0.0
	4853	0.0	0.0
	56	-0.0	0.0
	2372	-0.0	0.0
Min	Cent	0.0	0.0
	4873	0.0	0.0
	4853	0.0	0.0
	56	-0.0	0.0
	2372	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5141	3	4	S1 HL-~1	Max	Cent	0.0	-4.3	0.1	0.0	-4.3	1.30
					4853	0.3	-4.2	0.1	0.3	-4.2	1.25
					4866	0.3	-4.3	0.1	0.3	-4.3	1.22

```
                     2693       -0.2       -4.3        0.1       -0.2       -4.3       1.36
                       56       -0.2       -4.2        0.1       -0.2       -4.2       1.40
                Min  Cent        0.0       -4.3        0.1        0.0       -4.3       1.30
                     4853        0.3       -4.2        0.1        0.3       -4.2       1.25
                     4866        0.3       -4.3        0.1        0.3       -4.3       1.22
                     2693       -0.2       -4.3        0.1       -0.2       -4.3       1.36
                       56       -0.2       -4.2        0.1       -0.2       -4.2       1.40

                     NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                Max  Cent       -0.0       -0.0       -0.0       -0.0       -0.0     -17.13
                     4853        0.0       -0.0       -0.0        0.0       -0.0     -21.44
                     4866       -0.0       -0.0       -0.0        0.0       -0.0     -25.90
                     2693        0.0       -0.1       -0.0        0.0       -0.1     -12.53
                       56       -0.0       -0.1       -0.0       -0.0       -0.1     -16.91
                Min  Cent       -0.0       -0.0       -0.0       -0.0       -0.0     -17.13
                     4853        0.0       -0.0       -0.0        0.0       -0.0     -21.44
                     4866       -0.0       -0.0       -0.0        0.0       -0.0     -25.90
                     2693        0.0       -0.1       -0.0        0.0       -0.1     -12.53
                       56       -0.0       -0.1       -0.0       -0.0       -0.1     -16.91

                     NODE        Vxx        Vyy
                ---- ------ ---------- ----------
                Max  Cent       -0.0        0.0
                     4853        0.0        0.0
                     4866        0.0        0.0
                     2693       -0.0        0.0
                       56       -0.0        0.0
                Min  Cent       -0.0        0.0
                     4853        0.0        0.0
                     4866        0.0        0.0
                     2693       -0.0        0.0
                       56       -0.0        0.0


  ELEM    MAT    SEC        LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5142      3      4 S1 HL-~1  Max  Cent       -0.0       -3.0       -0.1       -0.0       -3.0      -1.54
                                    2372        0.1       -2.9       -0.1        0.1       -2.9      -1.54
                                      56        0.1       -3.1       -0.1        0.1       -3.1      -1.45
                                    2190       -0.1       -3.1       -0.1       -0.1       -3.1      -1.55
                                    2402       -0.1       -2.9       -0.1       -0.1       -2.9      -1.65
                               Min  Cent       -0.0       -3.0       -0.1       -0.0       -3.0      -1.54
                                    2372        0.1       -2.9       -0.1        0.1       -2.9      -1.54
                                      56        0.1       -3.1       -0.1        0.1       -3.1      -1.45
                                    2190       -0.1       -3.1       -0.1       -0.1       -3.1      -1.55
                                    2402       -0.1       -2.9       -0.1       -0.1       -2.9      -1.65

                                    NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                               ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max  Cent        0.0       -0.0       -0.0        0.0       -0.0     -16.27
                                    2372       -0.0       -0.1       -0.0        0.0       -0.1     -12.63
                                      56        0.0       -0.0       -0.0        0.0       -0.1     -11.31
                                    2190       -0.0       -0.0       -0.0       -0.0       -0.0     -33.51
                                    2402       -0.0       -0.0       -0.0        0.0       -0.0     -23.72
                               Min  Cent        0.0       -0.0       -0.0        0.0       -0.0     -16.27
                                    2372       -0.0       -0.1       -0.0        0.0       -0.1     -12.63
                                      56        0.0       -0.0       -0.0        0.0       -0.1     -11.31
                                    2190       -0.0       -0.0       -0.0       -0.0       -0.0     -33.51
                                    2402       -0.0       -0.0       -0.0        0.0       -0.0     -23.72

                                    NODE        Vxx        Vyy
                               ---- ------ ---------- ----------
                               Max  Cent       -0.0       -0.0
                                    2372       -0.0       -0.0
                                      56       -0.0       -0.0
                                    2190        0.0       -0.0
                                    2402        0.0       -0.0
                               Min  Cent       -0.0       -0.0
                                    2372       -0.0       -0.0
                                      56       -0.0       -0.0
                                    2190        0.0       -0.0
                                    2402        0.0       -0.0

  ELEM    MAT    SEC        LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5143      3      4 S1 HL-~1  Max  Cent        0.0       -3.1        0.1        0.0       -3.1       1.67
```

	56	0.2	-3.1	0.1	0.2	-3.1	1.58
	2693	0.2	-3.0	0.1	0.2	-3.1	1.59
	2298	-0.2	-3.0	0.1	-0.2	-3.1	1.77
	2190	-0.2	-3.1	0.1	-0.2	-3.1	1.77
Min	Cent	0.0	-3.1	0.1	0.0	-3.1	1.67
	56	0.2	-3.1	0.1	0.2	-3.1	1.58
	2693	0.2	-3.0	0.1	0.2	-3.1	1.59
	2298	-0.2	-3.0	0.1	-0.2	-3.1	1.77
	2190	-0.2	-3.1	0.1	-0.2	-3.1	1.77

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.1	-24.54
	56	-0.0	-0.1	-0.0	-0.0	-0.1	-21.16
	2693	-0.0	-0.1	-0.0	0.0	-0.1	-16.20
	2298	0.0	-0.0	-0.0	0.0	-0.0	-32.63
	2190	-0.0	-0.0	-0.0	0.0	-0.0	-33.62
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.1	-24.54
	56	-0.0	-0.1	-0.0	-0.0	-0.1	-21.16
	2693	-0.0	-0.1	-0.0	0.0	-0.1	-16.20
	2298	0.0	-0.0	-0.0	0.0	-0.0	-32.63
	2190	-0.0	-0.0	-0.0	0.0	-0.0	-33.62

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	56	-0.0	-0.0
	2693	-0.0	-0.0
	2298	-0.0	-0.0
	2190	-0.0	-0.0
Min	Cent	-0.0	-0.0
	56	-0.0	-0.0
	2693	-0.0	-0.0
	2298	-0.0	-0.0
	2190	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5144	3	4	S1 HL-~1	Max	Cent	-0.0	-2.0	-0.1	-0.0	-2.0	-2.33
					2402	0.2	-2.0	-0.1	0.2	-2.0	-2.07
					2190	0.2	-2.0	-0.1	0.2	-2.0	-2.12
					2501	-0.3	-2.0	-0.1	-0.3	-2.0	-2.68
					1870	-0.3	-2.0	-0.1	-0.3	-2.0	-2.59
				Min	Cent	-0.0	-2.0	-0.1	-0.0	-2.0	-2.33
					2402	0.2	-2.0	-0.1	0.2	-2.0	-2.07
					2190	0.2	-2.0	-0.1	0.2	-2.0	-2.12
					2501	-0.3	-2.0	-0.1	-0.3	-2.0	-2.68
					1870	-0.3	-2.0	-0.1	-0.3	-2.0	-2.59

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-36.78
	2402	0.0	-0.0	-0.0	0.0	-0.0	-34.21
	2190	-0.0	-0.0	-0.0	0.0	-0.0	-36.84
	2501	-0.0	-0.0	-0.0	-0.0	-0.0	-46.24
	1870	-0.0	-0.0	-0.0	0.0	-0.0	-27.86
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-36.78
	2402	0.0	-0.0	-0.0	0.0	-0.0	-34.21
	2190	-0.0	-0.0	-0.0	0.0	-0.0	-36.84
	2501	-0.0	-0.0	-0.0	-0.0	-0.0	-46.24
	1870	-0.0	-0.0	-0.0	0.0	-0.0	-27.86

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	2402	0.0	0.0
	2190	0.0	-0.0
	2501	0.0	-0.0
	1870	0.0	0.0
Min	Cent	0.0	-0.0
	2402	0.0	0.0
	2190	0.0	-0.0
	2501	0.0	-0.0
	1870	0.0	0.0

ELEM	MAT	SEC	LC	NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE

5145	3	4	S1 HL-~1	Max	Cent	-0.1	-2.0	0.1	-0.0	-2.0	2.62
					2190	0.2	-2.0	0.1	0.2	-2.0	2.38
					2298	0.2	-2.0	0.1	0.2	-2.0	2.33
					1121	-0.3	-2.0	0.1	-0.3	-2.0	2.92
					2501	-0.3	-2.0	0.1	-0.3	-2.0	3.00
				Min	Cent	-0.1	-2.0	0.1	-0.0	-2.0	2.62
					2190	0.2	-2.0	0.1	0.2	-2.0	2.38
					2298	0.2	-2.0	0.1	0.2	-2.0	2.33
					1121	-0.3	-2.0	0.1	-0.3	-2.0	2.92
					2501	-0.3	-2.0	0.1	-0.3	-2.0	3.00

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-35.35
	2190	-0.0	-0.0	-0.0	0.0	-0.0	-35.23
	2298	-0.0	-0.0	-0.0	0.0	-0.0	-28.48
	1121	0.0	-0.0	-0.0	0.0	-0.0	-41.15
	2501	-0.0	-0.0	-0.0	0.0	-0.0	-35.68
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-35.35
	2190	-0.0	-0.0	-0.0	0.0	-0.0	-35.23
	2298	-0.0	-0.0	-0.0	0.0	-0.0	-28.48
	1121	0.0	-0.0	-0.0	0.0	-0.0	-41.15
	2501	-0.0	-0.0	-0.0	0.0	-0.0	-35.68

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2190	-0.0	-0.0
	2298	-0.0	-0.0
	1121	-0.0	-0.0
	2501	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2190	-0.0	-0.0
	2298	-0.0	-0.0
	1121	-0.0	-0.0
	2501	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5146	3	4	S1 HL-~1	Max	Cent	0.0	-0.5	-0.1	0.0	-0.5	-8.68
					1870	0.2	-0.5	-0.1	0.2	-0.5	-6.59
					2501	0.2	-0.5	-0.1	0.2	-0.5	-6.45
					5008	-0.1	-0.5	-0.1	-0.1	-0.5	-12.60
					5021	-0.1	-0.5	-0.1	-0.1	-0.5	-13.09
				Min	Cent	0.0	-0.5	-0.1	0.0	-0.5	-8.68
					1870	0.2	-0.5	-0.1	0.2	-0.5	-6.59
					2501	0.2	-0.5	-0.1	0.2	-0.5	-6.45
					5008	-0.1	-0.5	-0.1	-0.1	-0.5	-12.60
					5021	-0.1	-0.5	-0.1	-0.1	-0.5	-13.09

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	43.59
	1870	-0.0	-0.0	0.0	0.0	-0.0	16.91
	2501	-0.0	-0.0	0.0	-0.0	-0.0	47.15
	5008	-0.0	0.0	0.0	0.0	-0.0	54.79
	5021	0.0	0.0	0.0	0.0	-0.0	52.66
Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	43.59
	1870	-0.0	-0.0	0.0	0.0	-0.0	16.91
	2501	-0.0	-0.0	0.0	-0.0	-0.0	47.15
	5008	-0.0	0.0	0.0	0.0	-0.0	54.79
	5021	0.0	0.0	0.0	0.0	-0.0	52.66

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	1870	0.0	-0.0
	2501	0.0	-0.0
	5008	0.0	-0.0
	5021	0.0	-0.0
Min	Cent	0.0	-0.0
	1870	0.0	-0.0
	2501	0.0	-0.0
	5008	0.0	-0.0
	5021	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5147	3	4	S1 HL-~1	Max	Cent	0.0	-0.4	0.1	0.0	-0.5	8.26
					2501	0.2	-0.5	0.1	0.2	-0.5	6.06
					1121	0.2	-0.4	0.1	0.2	-0.4	6.44
					5022	-0.1	-0.4	0.1	-0.1	-0.4	12.80
					5008	-0.1	-0.5	0.1	-0.1	-0.5	11.42
				Min	Cent	0.0	-0.4	0.1	0.0	-0.5	8.26
					2501	0.2	-0.5	0.1	0.2	-0.5	6.06
					1121	0.2	-0.4	0.1	0.2	-0.4	6.44
					5022	-0.1	-0.4	0.1	-0.1	-0.4	12.80
					5008	-0.1	-0.5	0.1	-0.1	-0.5	11.42

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	43.39
	2501	-0.0	-0.0	0.0	0.0	-0.0	23.63
	1121	0.0	-0.0	0.0	0.0	-0.0	30.29
	5022	-0.0	-0.0	0.0	0.0	-0.0	42.27
	5008	-0.0	-0.0	0.0	0.0	-0.0	63.04
Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	43.39
	2501	-0.0	-0.0	0.0	0.0	-0.0	23.63
	1121	0.0	-0.0	0.0	0.0	-0.0	30.29
	5022	-0.0	-0.0	0.0	0.0	-0.0	42.27
	5008	-0.0	-0.0	0.0	0.0	-0.0	63.04

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2501	-0.0	-0.0
	1121	-0.0	-0.0
	5022	-0.0	-0.0
	5008	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2501	-0.0	-0.0
	1121	-0.0	-0.0
	5022	-0.0	-0.0
	5008	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5148	3	3	S1 HL-~1	Max	Cent	-0.0	1.3	-0.0	1.3	-0.0	-87.92
					2684	0.1	1.3	-0.0	1.3	0.1	-87.63
					1913	0.1	1.3	-0.0	1.3	0.1	-87.62
					717	-0.2	1.3	-0.0	1.3	-0.2	-88.14
					3545	-0.2	1.3	-0.0	1.3	-0.2	-88.15
				Min	Cent	-0.0	1.3	-0.0	1.3	-0.0	-87.92
					2684	0.1	1.3	-0.0	1.3	0.1	-87.63
					1913	0.1	1.3	-0.0	1.3	0.1	-87.62
					717	-0.2	1.3	-0.0	1.3	-0.2	-88.14
					3545	-0.2	1.3	-0.0	1.3	-0.2	-88.15

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-63.69
	2684	-0.0	0.0	-0.0	0.0	-0.0	-62.98
	1913	-0.0	0.0	-0.0	0.0	-0.0	-70.16
	717	-0.0	0.0	-0.0	0.0	-0.0	-70.48
	3545	-0.0	0.0	-0.0	0.0	-0.0	-58.05
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-63.69
	2684	-0.0	0.0	-0.0	0.0	-0.0	-62.98
	1913	-0.0	0.0	-0.0	0.0	-0.0	-70.16
	717	-0.0	0.0	-0.0	0.0	-0.0	-70.48
	3545	-0.0	0.0	-0.0	0.0	-0.0	-58.05

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	2684	0.0	0.0
	1913	0.0	-0.0
	717	0.0	-0.0
	3545	0.0	0.0
Min	Cent	0.0	-0.0
	2684	0.0	0.0
	1913	0.0	-0.0
	717	0.0	-0.0

NODE	Vxx	Vyy
3545	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5149	3	3	S1 HL-~1	Max	Cent	-0.0	1.3	0.1	1.3	-0.0	87.59
					1913	0.1	1.3	0.1	1.3	0.1	87.28
					1208	0.1	1.3	0.1	1.3	0.1	87.37
					3557	-0.2	1.3	0.1	1.3	-0.2	87.84
					717	-0.2	1.3	0.1	1.3	-0.2	87.78
				Min	Cent	-0.0	1.3	0.1	1.3	-0.0	87.59
					1913	0.1	1.3	0.1	1.3	0.1	87.28
					1208	0.1	1.3	0.1	1.3	0.1	87.37
					3557	-0.2	1.3	0.1	1.3	-0.2	87.84
					717	-0.2	1.3	0.1	1.3	-0.2	87.78

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-62.23
	1913	-0.0	0.0	-0.0	0.0	-0.0	-72.06
	1208	-0.0	-0.0	-0.0	0.0	-0.0	-46.13
	3557	0.0	0.0	-0.0	0.0	-0.0	-69.26
	717	-0.0	0.0	-0.0	0.0	-0.0	-68.01
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-62.23
	1913	-0.0	0.0	-0.0	0.0	-0.0	-72.06
	1208	-0.0	-0.0	-0.0	0.0	-0.0	-46.13
	3557	0.0	0.0	-0.0	0.0	-0.0	-69.26
	717	-0.0	0.0	-0.0	0.0	-0.0	-68.01

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	1913	-0.0	-0.0
	1208	-0.0	-0.0
	3557	-0.0	-0.0
	717	-0.0	-0.0
Min	Cent	-0.0	-0.0
	1913	-0.0	-0.0
	1208	-0.0	-0.0
	3557	-0.0	-0.0
	717	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5150	3	3	S1 HL-~1	Max	Cent	0.0	2.3	-0.0	2.3	0.0	-89.37
					3545	0.1	2.2	-0.0	2.2	0.1	-89.34
					717	0.1	2.3	-0.0	2.3	0.1	-89.37
					2097	-0.0	2.3	-0.0	2.3	-0.0	-89.41
					1662	-0.0	2.2	-0.0	2.2	-0.0	-89.38
				Min	Cent	0.0	2.3	-0.0	2.3	0.0	-89.37
					3545	0.1	2.2	-0.0	2.2	0.1	-89.34
					717	0.1	2.3	-0.0	2.3	0.1	-89.37
					2097	-0.0	2.3	-0.0	2.3	-0.0	-89.41
					1662	-0.0	2.2	-0.0	2.2	-0.0	-89.38

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	75.43
	3545	0.0	0.0	0.0	0.0	-0.0	70.54
	717	-0.0	0.0	0.0	0.0	-0.0	80.45
	2097	-0.0	0.0	0.0	0.0	-0.0	82.63
	1662	-0.0	0.0	0.0	0.0	-0.0	79.62
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	75.43
	3545	0.0	0.0	0.0	0.0	-0.0	70.54
	717	-0.0	0.0	0.0	0.0	-0.0	80.45
	2097	-0.0	0.0	0.0	0.0	-0.0	82.63
	1662	-0.0	0.0	0.0	0.0	-0.0	79.62

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3545	0.0	-0.0
	717	0.0	-0.0
	2097	0.0	-0.0
	1662	0.0	-0.0
Min	Cent	0.0	-0.0
	3545	0.0	-0.0

				717	0.0	-0.0
				2097	0.0	-0.0
				1662	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5151	3	3	S1 HL-~1	Max	Cent	0.0	2.3	0.0	2.3	0.0	89.46
					717	0.1	2.3	0.0	2.3	0.1	89.42
					3557	0.1	2.4	0.0	2.4	0.1	89.43
					1148	-0.1	2.4	0.0	2.4	-0.1	89.49
					2097	-0.1	2.3	0.0	2.3	-0.1	89.48
				Min	Cent	0.0	2.3	0.0	2.3	0.0	89.46
					717	0.1	2.3	0.0	2.3	0.1	89.42
					3557	0.1	2.4	0.0	2.4	0.1	89.43
					1148	-0.1	2.4	0.0	2.4	-0.1	89.49
					2097	-0.1	2.3	0.0	2.3	-0.1	89.48

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	79.50
	717	-0.0	0.0	0.0	0.0	-0.0	80.12
	3557	-0.0	0.0	0.0	0.0	-0.0	78.56
	1148	0.0	0.0	0.0	0.0	-0.0	76.75
	2097	-0.0	0.0	0.0	0.0	-0.0	82.43
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	79.50
	717	-0.0	0.0	0.0	0.0	-0.0	80.12
	3557	-0.0	0.0	0.0	0.0	-0.0	78.56
	1148	0.0	0.0	0.0	0.0	-0.0	76.75
	2097	-0.0	0.0	0.0	0.0	-0.0	82.43

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	717	-0.0	-0.0
	3557	-0.0	-0.0
	1148	-0.0	-0.0
	2097	-0.0	-0.0
Min	Cent	-0.0	-0.0
	717	-0.0	-0.0
	3557	-0.0	-0.0
	1148	-0.0	-0.0
	2097	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5152	3	3	S1 HL-~1	Max	Cent	0.0	3.1	-0.0	3.1	0.0	-89.28
					1662	0.2	3.1	-0.0	3.1	0.2	-89.24
					2097	0.2	3.1	-0.0	3.1	0.2	-89.23
					716	-0.2	3.1	-0.0	3.1	-0.2	-89.31
					3544	-0.2	3.1	-0.0	3.1	-0.2	-89.32
				Min	Cent	0.0	3.1	-0.0	3.1	0.0	-89.28
					1662	0.2	3.1	-0.0	3.1	0.2	-89.24
					2097	0.2	3.1	-0.0	3.1	0.2	-89.23
					716	-0.2	3.1	-0.0	3.1	-0.2	-89.31
					3544	-0.2	3.1	-0.0	3.1	-0.2	-89.32

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-64.64
	1662	0.0	0.0	-0.0	0.0	-0.0	-67.54
	2097	-0.0	0.0	-0.0	0.0	-0.0	-70.94
	716	-0.0	0.0	-0.0	0.0	-0.0	-67.67
	3544	-0.0	0.0	-0.0	0.0	-0.0	-58.67
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-64.64
	1662	0.0	0.0	-0.0	0.0	-0.0	-67.54
	2097	-0.0	0.0	-0.0	0.0	-0.0	-70.94
	716	-0.0	0.0	-0.0	0.0	-0.0	-67.67
	3544	-0.0	0.0	-0.0	0.0	-0.0	-58.67

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1662	0.0	0.0
	2097	0.0	0.0
	716	0.0	0.0
	3544	0.0	0.0

	NODE		
Min	Cent	0.0	0.0
	1662	0.0	0.0
	2097	0.0	0.0
	716	0.0	0.0
	3544	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5153	3	3	S1 HL-~1	Max	Cent	0.0	3.1	0.0	3.1	0.0	89.35
					2097	0.1	3.1	0.0	3.1	0.1	89.32
					1148	0.1	3.1	0.0	3.1	0.1	89.33
					3556	-0.1	3.1	0.0	3.1	-0.1	89.37
					716	-0.1	3.1	0.0	3.1	-0.1	89.36
				Min	Cent	0.0	3.1	0.0	3.1	0.0	89.35
					2097	0.1	3.1	0.0	3.1	0.1	89.32
					1148	0.1	3.1	0.0	3.1	0.1	89.33
					3556	-0.1	3.1	0.0	3.1	-0.1	89.37
					716	-0.1	3.1	0.0	3.1	-0.1	89.36

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-61.78
	2097	-0.0	0.0	-0.0	0.0	-0.0	-68.78
	1148	-0.0	0.0	-0.0	0.0	-0.0	-53.52
	3556	0.0	0.0	-0.0	0.0	-0.0	-71.62
	716	-0.0	0.0	-0.0	0.0	-0.0	-68.39
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-61.78
	2097	-0.0	0.0	-0.0	0.0	-0.0	-68.78
	1148	-0.0	0.0	-0.0	0.0	-0.0	-53.52
	3556	0.0	0.0	-0.0	0.0	-0.0	-71.62
	716	-0.0	0.0	-0.0	0.0	-0.0	-68.39

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2097	-0.0	0.0
	1148	-0.0	-0.0
	3556	-0.0	-0.0
	716	-0.0	0.0
Min	Cent	-0.0	-0.0
	2097	-0.0	0.0
	1148	-0.0	-0.0
	3556	-0.0	-0.0
	716	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5154	3	3	S1 HL-~1	Max	Cent	0.0	3.7	-0.0	3.7	0.0	-89.85
					3544	0.0	3.8	-0.0	3.8	0.0	-89.85
					716	0.0	3.6	-0.0	3.6	0.0	-89.84
					2201	0.0	3.6	-0.0	3.6	0.0	-89.84
					1718	0.0	3.8	-0.0	3.8	0.0	-89.85
				Min	Cent	0.0	3.7	-0.0	3.7	0.0	-89.85
					3544	0.0	3.8	-0.0	3.8	0.0	-89.85
					716	0.0	3.6	-0.0	3.6	0.0	-89.84
					2201	0.0	3.6	-0.0	3.6	0.0	-89.84
					1718	0.0	3.8	-0.0	3.8	0.0	-89.85

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	66.97
	3544	-0.0	0.0	0.0	0.0	-0.0	63.06
	716	-0.0	0.0	0.0	0.0	-0.0	73.84
	2201	-0.0	0.0	0.0	0.0	-0.0	76.10
	1718	0.0	0.0	0.0	0.0	0.0	73.14
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	66.97
	3544	-0.0	0.0	0.0	0.0	-0.0	63.06
	716	-0.0	0.0	0.0	0.0	-0.0	73.84
	2201	-0.0	0.0	0.0	0.0	-0.0	76.10
	1718	0.0	0.0	0.0	0.0	0.0	73.14

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	3544	0.0	-0.0
	716	0.0	0.0

					NODE		
					2201	0.0	0.0
					1718	0.0	-0.0
				Min	Cent	0.0	-0.0
					3544	0.0	-0.0
					716	0.0	0.0
					2201	0.0	0.0
					1718	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5155	3	3	S1 HL-~1	Max	Cent	0.0	3.4	-0.0	3.4	0.0	-89.81
					716	0.0	3.6	-0.0	3.6	0.0	-89.81
					3556	0.0	3.2	-0.0	3.2	0.0	-89.80
					1332	-0.0	3.2	-0.0	3.2	-0.0	-89.80
					2201	-0.0	3.6	-0.0	3.6	-0.0	-89.82
				Min	Cent	0.0	3.4	-0.0	3.4	0.0	-89.81
					716	0.0	3.6	-0.0	3.6	0.0	-89.81
					3556	0.0	3.2	-0.0	3.2	0.0	-89.80
					1332	-0.0	3.2	-0.0	3.2	-0.0	-89.80
					2201	-0.0	3.6	-0.0	3.6	-0.0	-89.82

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	73.28
	716	-0.0	0.0	0.0	0.0	-0.0	75.90
	3556	-0.0	0.0	0.0	0.0	-0.0	72.80
	1332	0.0	0.0	0.0	0.0	-0.0	68.09
	2201	-0.0	0.0	0.0	0.0	-0.0	69.36
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	73.28
	716	-0.0	0.0	0.0	0.0	-0.0	75.90
	3556	-0.0	0.0	0.0	0.0	-0.0	72.80
	1332	0.0	0.0	0.0	0.0	-0.0	68.09
	2201	-0.0	0.0	0.0	0.0	-0.0	69.36

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	716	-0.0	0.0
	3556	-0.0	-0.0
	1332	-0.0	-0.0
	2201	-0.0	0.0
Min	Cent	-0.0	-0.0
	716	-0.0	0.0
	3556	-0.0	-0.0
	1332	-0.0	-0.0
	2201	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5156	3	3	S1 HL-~1	Max	Cent	0.0	4.2	-0.0	4.2	0.0	-89.62
					1718	0.2	4.4	-0.0	4.4	0.2	-89.63
					2201	0.2	3.9	-0.0	3.9	0.2	-89.59
					715	-0.1	3.9	-0.0	3.9	-0.1	-89.62
					3543	-0.1	4.4	-0.0	4.4	-0.1	-89.65
				Min	Cent	0.0	4.2	-0.0	4.2	0.0	-89.62
					1718	0.2	4.4	-0.0	4.4	0.2	-89.63
					2201	0.2	3.9	-0.0	3.9	0.2	-89.59
					715	-0.1	3.9	-0.0	3.9	-0.1	-89.62
					3543	-0.1	4.4	-0.0	4.4	-0.1	-89.65

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	51.70
	1718	-0.0	-0.0	0.0	0.0	-0.0	44.53
	2201	-0.0	0.0	0.0	0.0	-0.0	58.47
	715	0.0	0.0	0.0	0.0	-0.0	50.88
	3543	0.0	0.0	0.0	0.0	-0.0	58.59
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	51.70
	1718	-0.0	-0.0	0.0	0.0	-0.0	44.53
	2201	-0.0	0.0	0.0	0.0	-0.0	58.47
	715	0.0	0.0	0.0	0.0	-0.0	50.88
	3543	0.0	0.0	0.0	0.0	-0.0	58.59

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0

				1718	0.0	-0.0
				2201	0.0	0.0
				715	-0.0	0.0
				3543	-0.0	-0.0
			Min	Cent	0.0	-0.0
				1718	0.0	-0.0
				2201	0.0	0.0
				715	-0.0	0.0
				3543	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5157	3	3	S1 HL-~1	Max	Cent	-0.0	3.8	0.0	3.8	-0.0	89.27
					2201	0.1	3.9	0.0	3.9	0.1	89.27
					1332	0.1	3.7	0.0	3.7	0.1	89.22
					3555	-0.2	3.7	0.0	3.7	-0.2	89.27
					715	-0.2	3.9	0.0	3.9	-0.2	89.32
				Min	Cent	-0.0	3.8	0.0	3.8	-0.0	89.27
					2201	0.1	3.9	0.0	3.9	0.1	89.27
					1332	0.1	3.7	0.0	3.7	0.1	89.22
					3555	-0.2	3.7	0.0	3.7	-0.2	89.27
					715	-0.2	3.9	0.0	3.9	-0.2	89.32

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	53.46
	2201	-0.0	0.0	0.0	0.0	-0.0	55.84
	1332	0.0	0.0	0.0	0.0	-0.0	56.30
	3555	-0.0	0.0	0.0	0.0	-0.0	49.80
	715	-0.0	0.0	0.0	0.0	-0.0	54.53
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	53.46
	2201	-0.0	0.0	0.0	0.0	-0.0	55.84
	1332	0.0	0.0	0.0	0.0	-0.0	56.30
	3555	-0.0	0.0	0.0	0.0	-0.0	49.80
	715	-0.0	0.0	0.0	0.0	-0.0	54.53

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2201	-0.0	0.0
	1332	-0.0	0.0
	3555	-0.0	0.0
	715	-0.0	0.0
Min	Cent	-0.0	0.0
	2201	-0.0	0.0
	1332	-0.0	0.0
	3555	-0.0	0.0
	715	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5158	3	3	S1 HL-~1	Max	Cent	0.1	4.1	0.0	4.1	0.1	89.53
					3543	-0.1	3.8	0.0	3.8	-0.1	89.51
					715	-0.1	4.4	0.0	4.4	-0.1	89.58
					2309	0.2	4.4	0.0	4.4	0.2	89.55
					1766	0.2	3.8	0.0	3.8	0.2	89.47
				Min	Cent	0.1	4.1	0.0	4.1	0.1	89.53
					3543	-0.1	3.8	0.0	3.8	-0.1	89.51
					715	-0.1	4.4	0.0	4.4	-0.1	89.58
					2309	0.2	4.4	0.0	4.4	0.2	89.55
					1766	0.2	3.8	0.0	3.8	0.2	89.47

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	79.19
	3543	-0.0	0.0	0.0	0.0	-0.0	75.34
	715	0.0	0.0	0.0	0.0	0.0	76.50
	2309	-0.0	0.0	0.0	0.0	-0.0	85.89
	1766	-0.0	0.0	0.0	0.0	-0.0	83.00
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	79.19
	3543	-0.0	0.0	0.0	0.0	-0.0	75.34
	715	0.0	0.0	0.0	0.0	0.0	76.50
	2309	-0.0	0.0	0.0	0.0	-0.0	85.89
	1766	-0.0	0.0	0.0	0.0	-0.0	83.00

NODE	Vxx	Vyy

Max	Cent	0.0	-0.0
	3543	-0.0	-0.0
	715	-0.0	-0.0
	2309	0.0	-0.0
	1766	0.0	-0.0
Min	Cent	0.0	-0.0
	3543	-0.0	-0.0
	715	-0.0	-0.0
	2309	0.0	-0.0
	1766	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5159	3	3	S1 HL-~1	Max	Cent	0.0	4.7	0.0	4.7	0.0	89.66
					715	0.1	4.4	0.0	4.4	0.1	89.63
					3555	0.1	4.9	0.0	4.9	0.1	89.67
					1152	-0.1	4.9	0.0	4.9	-0.1	89.68
					2309	-0.1	4.4	0.0	4.4	-0.1	89.65
				Min	Cent	0.0	4.7	0.0	4.7	0.0	89.66
					715	0.1	4.4	0.0	4.4	0.1	89.63
					3555	0.1	4.9	0.0	4.9	0.1	89.67
					1152	-0.1	4.9	0.0	4.9	-0.1	89.68
					2309	-0.1	4.4	0.0	4.4	-0.1	89.65

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-85.68
	715	-0.0	0.0	0.0	0.0	-0.0	84.76
	3555	-0.0	0.0	0.0	0.0	-0.0	79.15
	1152	0.0	0.0	0.0	0.0	0.0	83.56
	2309	-0.0	0.0	0.0	0.0	-0.0	84.80
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-85.68
	715	-0.0	0.0	0.0	0.0	-0.0	84.76
	3555	-0.0	0.0	0.0	0.0	-0.0	79.15
	1152	0.0	0.0	0.0	0.0	0.0	83.56
	2309	-0.0	0.0	0.0	0.0	-0.0	84.80

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	715	-0.0	-0.0
	3555	-0.0	-0.0
	1152	-0.0	-0.0
	2309	-0.0	-0.0
Min	Cent	-0.0	-0.0
	715	-0.0	-0.0
	3555	-0.0	-0.0
	1152	-0.0	-0.0
	2309	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5160	3	3	S1 HL-~1	Max	Cent	0.1	3.1	0.1	3.1	0.1	88.21
					1766	-0.1	2.6	0.1	2.7	-0.1	88.01
					2309	-0.1	3.6	0.1	3.6	-0.1	88.52
					2030	0.2	3.6	0.1	3.6	0.2	88.38
					2138	0.2	2.6	0.1	2.7	0.2	87.75
				Min	Cent	0.1	3.1	0.1	3.1	0.1	88.21
					1766	-0.1	2.6	0.1	2.7	-0.1	88.01
					2309	-0.1	3.6	0.1	3.6	-0.1	88.52
					2030	0.2	3.6	0.1	3.6	0.2	88.38
					2138	0.2	2.6	0.1	2.7	0.2	87.75

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	74.20
	1766	0.0	0.0	-0.0	0.0	0.0	-85.01
	2309	-0.0	0.0	-0.0	0.0	-0.0	-81.84
	2030	-0.1	-0.0	0.0	-0.0	-0.1	73.10
	2138	-0.0	-0.0	0.0	0.0	-0.1	35.41
Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	74.20
	1766	0.0	0.0	-0.0	0.0	0.0	-85.01
	2309	-0.0	0.0	-0.0	0.0	-0.0	-81.84
	2030	-0.1	-0.0	0.0	-0.0	-0.1	73.10
	2138	-0.0	-0.0	0.0	0.0	-0.1	35.41

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1766	0.0	0.0
	2309	0.0	0.0
	2030	0.0	0.0
	2138	0.0	0.0
Min	Cent	0.0	0.0
	1766	0.0	0.0
	2309	0.0	0.0
	2030	0.0	0.0
	2138	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5161	3	3	S1 HL-~1	Max	Cent	0.1	4.1	-0.1	4.1	0.1	-87.90
					2309	-0.2	3.6	-0.1	3.6	-0.2	-87.75
					1152	-0.2	4.7	-0.1	4.7	-0.2	-88.25
					2086	0.3	4.7	-0.1	4.7	0.3	-88.03
					2030	0.3	3.6	-0.1	3.6	0.3	-87.36
				Min	Cent	0.1	4.1	-0.1	4.1	0.1	-87.90
					2309	-0.2	3.6	-0.1	3.6	-0.2	-87.75
					1152	-0.2	4.7	-0.1	4.7	-0.2	-88.25
					2086	0.3	4.7	-0.1	4.7	0.3	-88.03
					2030	0.3	3.6	-0.1	3.6	0.3	-87.36

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	59.29
	2309	-0.0	0.0	-0.0	0.0	-0.0	-88.54
	1152	-0.0	-0.0	0.0	-0.0	-0.0	25.31
	2086	0.0	0.1	0.0	0.1	-0.0	67.89
	2030	0.1	0.1	0.0	0.1	0.0	22.72
Min	Cent	0.0	0.0	0.0	0.0	0.0	59.29
	2309	-0.0	0.0	-0.0	0.0	-0.0	-88.54
	1152	-0.0	-0.0	0.0	-0.0	-0.0	25.31
	2086	0.0	0.1	0.0	0.1	-0.0	67.89
	2030	0.1	0.1	0.0	0.1	0.0	22.72

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	2309	-0.0	0.0
	1152	-0.0	-0.0
	2086	0.0	-0.0
	2030	0.0	0.0
Min	Cent	0.0	-0.0
	2309	-0.0	0.0
	1152	-0.0	-0.0
	2086	0.0	-0.0
	2030	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5162	3	3	S1 HL-~1	Max	Cent	-0.1	1.3	0.2	1.3	-0.1	81.76
					2138	-0.3	1.0	0.2	1.0	-0.3	81.61
					2030	-0.3	1.6	0.2	1.6	-0.3	84.07
					1384	0.2	1.6	0.2	1.6	0.2	81.89
					1177	0.2	1.0	0.2	1.1	0.2	76.68
				Min	Cent	-0.1	1.3	0.2	1.3	-0.1	81.76
					2138	-0.3	1.0	0.2	1.0	-0.3	81.61
					2030	-0.3	1.6	0.2	1.6	-0.3	84.07
					1384	0.2	1.6	0.2	1.6	0.2	81.89
					1177	0.2	1.0	0.2	1.1	0.2	76.68

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.2	0.2	-0.1	44.08
	2138	-0.0	-0.0	0.1	0.1	-0.1	41.24
	2030	-0.1	-0.0	0.1	0.1	-0.2	55.86
	1384	0.2	0.1	0.2	0.3	-0.1	34.01
	1177	0.0	0.0	0.2	0.2	-0.1	47.14
Min	Cent	0.0	0.0	0.2	0.2	-0.1	44.08
	2138	-0.0	-0.0	0.1	0.1	-0.1	41.24
	2030	-0.1	-0.0	0.1	0.1	-0.2	55.86

	NODE						
	1384	0.2	0.1	0.2	0.3	-0.1	34.01
	1177	0.0	0.0	0.2	0.2	-0.1	47.14

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2138	0.0	-0.0
	2030	0.0	0.0
	1384	-0.0	0.0
	1177	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2138	0.0	-0.0
	2030	0.0	0.0
	1384	-0.0	0.0
	1177	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5163	3	3	S1 HL-~1	Max	Cent	-0.1	1.7	-0.3	1.7	-0.1	-80.93
					2030	-0.4	1.6	-0.3	1.6	-0.4	-81.95
					2086	-0.4	1.8	-0.3	1.8	-0.4	-82.66
					2517	0.3	1.8	-0.3	1.8	0.2	-79.63
					1384	0.3	1.6	-0.3	1.6	0.2	-78.21
				Min	Cent	-0.1	1.7	-0.3	1.7	-0.1	-80.93
					2030	-0.4	1.6	-0.3	1.6	-0.4	-81.95
					2086	-0.4	1.8	-0.3	1.8	-0.4	-82.66
					2517	0.3	1.8	-0.3	1.8	0.2	-79.63
					1384	0.3	1.6	-0.3	1.6	0.2	-78.21

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.2	0.1	-0.2	48.40
	2030	0.1	0.1	0.1	0.2	-0.0	38.88
	2086	0.0	0.1	0.1	0.2	-0.1	52.91
	2517	-0.0	-0.0	0.2	0.1	-0.2	43.42
	1384	-0.2	-0.1	0.2	0.0	-0.3	57.03
Min	Cent	-0.0	0.0	0.2	0.1	-0.2	48.40
	2030	0.1	0.1	0.1	0.2	-0.0	38.88
	2086	0.0	0.1	0.1	0.2	-0.1	52.91
	2517	-0.0	-0.0	0.2	0.1	-0.2	43.42
	1384	-0.2	-0.1	0.2	0.0	-0.3	57.03

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2030	0.0	0.0
	2086	0.0	0.0
	2517	-0.0	0.0
	1384	-0.0	0.0
Min	Cent	-0.0	0.0
	2030	0.0	0.0
	2086	0.0	0.0
	2517	-0.0	0.0
	1384	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5476	3	1	S1 HL-~1	Max	Cent	-0.4	0.0	1.1	0.9	-1.3	50.19
					1383	-1.0	-0.4	1.1	0.5	-1.8	52.67
					691	-1.0	0.4	1.1	1.0	-1.6	61.03
					4934	0.2	0.4	1.1	1.4	-0.8	47.62
					2087	0.2	-0.4	1.1	1.0	-1.2	37.70
				Min	Cent	-0.4	0.0	1.1	0.9	-1.3	50.19
					1383	-1.0	-0.4	1.1	0.5	-1.8	52.67
					691	-1.0	0.4	1.1	1.0	-1.6	61.03
					4934	0.2	0.4	1.1	1.4	-0.8	47.62
					2087	0.2	-0.4	1.1	1.0	-1.2	37.70

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.2	-0.0	0.0	-0.0	-0.2	84.10
	1383	0.1	0.1	-0.0	0.1	0.1	-67.67
	691	-0.9	-0.2	0.1	-0.2	-0.9	84.54
	4934	0.2	0.0	0.1	0.3	-0.0	13.86
	2087	-0.2	-0.1	-0.0	-0.1	-0.2	-82.71
Min	Cent	-0.2	-0.0	0.0	-0.0	-0.2	84.10

1383	0.1	0.1	-0.0	0.1	0.1	-67.67
691	-0.9	-0.2	0.1	-0.2	-0.9	84.54
4934	0.2	0.0	0.1	0.3	-0.0	13.86
2087	-0.2	-0.1	-0.0	-0.1	-0.2	-82.71

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1383	0.1	0.0
	691	0.1	0.0
	4934	-0.0	0.0
	2087	-0.0	0.0
Min	Cent	0.0	0.0
	1383	0.1	0.0
	691	0.1	0.0
	4934	-0.0	0.0
	2087	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5477	3	1	S1 HL-~1	Max	Cent	-1.5	0.3	1.2	0.9	-2.1	63.46
					691	-3.7	0.1	1.2	0.4	-4.0	73.75
					1493	-3.7	0.6	1.2	0.9	-4.0	75.32
					1599	0.7	0.6	1.2	1.8	-0.6	43.10
					4934	0.7	0.1	1.2	1.6	-0.8	37.35
				Min	Cent	-1.5	0.3	1.2	0.9	-2.1	63.46
					691	-3.7	0.1	1.2	0.4	-4.0	73.75
					1493	-3.7	0.6	1.2	0.9	-4.0	75.32
					1599	0.7	0.6	1.2	1.8	-0.6	43.10
					4934	0.7	0.1	1.2	1.6	-0.8	37.35

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.2	0.1	-0.0	0.2	0.1	-13.12
	691	1.4	0.5	0.1	1.4	0.5	3.21
	1493	-0.4	-0.2	-0.0	-0.2	-0.5	-78.49
	1599	0.3	0.1	-0.1	0.3	0.1	-24.64
	4934	-0.3	-0.2	0.0	-0.2	-0.3	85.73
Min	Cent	0.2	0.1	-0.0	0.2	0.1	-13.12
	691	1.4	0.5	0.1	1.4	0.5	3.21
	1493	-0.4	-0.2	-0.0	-0.2	-0.5	-78.49
	1599	0.3	0.1	-0.1	0.3	0.1	-24.64
	4934	-0.3	-0.2	0.0	-0.2	-0.3	85.73

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	691	0.1	0.0
	1493	0.1	-0.0
	1599	-0.0	-0.0
	4934	-0.0	0.0
Min	Cent	0.0	0.0
	691	0.1	0.0
	1493	0.1	-0.0
	1599	-0.0	-0.0
	4934	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5478	3	1	S1 HL-~1	Max	Cent	-0.0	-0.3	1.3	1.1	-1.5	41.52
					2087	0.1	-0.9	1.3	1.0	-1.8	34.25
					4934	0.1	0.3	1.3	1.5	-1.1	47.12
					729	-0.1	0.3	1.3	1.4	-1.2	49.25
					1801	-0.1	-0.9	1.3	0.8	-1.9	36.16
				Min	Cent	-0.0	-0.3	1.3	1.1	-1.5	41.52
					2087	0.1	-0.9	1.3	1.0	-1.8	34.25
					4934	0.1	0.3	1.3	1.5	-1.1	47.12
					729	-0.1	0.3	1.3	1.4	-1.2	49.25
					1801	-0.1	-0.9	1.3	0.8	-1.9	36.16

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	0.0	0.0	-0.0	15.14
	2087	-0.2	-0.1	0.0	-0.1	-0.2	88.17
	4934	0.3	0.0	-0.0	0.3	0.0	-0.42
	729	-0.0	0.0	-0.0	0.0	-0.0	-82.38

	1801	-0.0	0.0	0.0	0.0	-0.0	83.09
Min	Cent	0.0	-0.0	0.0	0.0	-0.0	15.14
	2087	-0.2	-0.1	0.0	-0.1	-0.2	88.17
	4934	0.3	0.0	-0.0	0.3	0.0	-0.42
	729	-0.0	0.0	-0.0	0.0	-0.0	-82.38
	1801	-0.0	0.0	0.0	0.0	-0.0	83.09

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2087	-0.0	-0.0
	4934	-0.0	-0.0
	729	0.0	-0.0
	1801	0.0	-0.0
Min	Cent	-0.0	-0.0
	2087	-0.0	-0.0
	4934	-0.0	-0.0
	729	0.0	-0.0
	1801	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5479	3	1	S1 HL-~1	Max	Cent	0.4	1.4	0.9	1.9	-0.1	59.28
					4934	1.0	0.4	0.9	1.7	-0.2	35.35
					1599	1.0	2.3	0.9	2.8	0.6	63.13
					1809	-0.2	2.3	0.9	2.6	-0.5	72.60
					729	-0.2	0.4	0.9	1.0	-0.9	54.78
				Min	Cent	0.4	1.4	0.9	1.9	-0.1	59.28
					4934	1.0	0.4	0.9	1.7	-0.2	35.35
					1599	1.0	2.3	0.9	2.8	0.6	63.13
					1809	-0.2	2.3	0.9	2.6	-0.5	72.60
					729	-0.2	0.4	0.9	1.0	-0.9	54.78

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	47.68
	4934	-0.3	-0.1	-0.0	-0.1	-0.3	-89.40
	1599	0.3	0.1	0.0	0.3	0.1	2.40
	1809	-0.0	-0.0	0.0	0.0	-0.0	32.53
	729	0.0	0.0	0.0	0.0	0.0	38.61
Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	47.68
	4934	-0.3	-0.1	-0.0	-0.1	-0.3	-89.40
	1599	0.3	0.1	0.0	0.3	0.1	2.40
	1809	-0.0	-0.0	0.0	0.0	-0.0	32.53
	729	0.0	0.0	0.0	0.0	0.0	38.61

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	4934	-0.0	-0.0
	1599	-0.0	0.0
	1809	0.0	0.0
	729	0.0	-0.0
Min	Cent	-0.0	-0.0
	4934	-0.0	-0.0
	1599	-0.0	0.0
	1809	0.0	0.0
	729	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5480	3	1	S1 HL-~1	Max	Cent	-0.0	-0.0	-0.0	0.0	-0.1	-43.60
					1801	-0.0	-1.0	-0.0	-0.0	-1.0	-2.21
					729	-0.0	0.9	-0.0	0.9	-0.0	-87.71
					2699	-0.0	0.9	-0.0	0.9	-0.0	-87.77
					700	-0.0	-1.0	-0.0	-0.0	-1.0	-2.27
				Min	Cent	-0.0	-0.0	-0.0	0.0	-0.1	-43.60
					1801	-0.0	-1.0	-0.0	-0.0	-1.0	-2.21
					729	-0.0	0.9	-0.0	0.9	-0.0	-87.71
					2699	-0.0	0.9	-0.0	0.9	-0.0	-87.77
					700	-0.0	-1.0	-0.0	-0.0	-1.0	-2.27

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-69.88
	1801	-0.0	-0.0	-0.0	-0.0	-0.0	-83.54

	729	-0.0	-0.0	-0.0	-0.0	-0.0	-86.68
	2699	-0.0	-0.0	-0.0	-0.0	-0.0	-82.36
	700	0.0	0.0	-0.0	0.0	0.0	-11.05
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-69.88
	1801	-0.0	-0.0	-0.0	-0.0	-0.0	-83.54
	729	-0.0	-0.0	-0.0	-0.0	-0.0	-86.68
	2699	-0.0	-0.0	-0.0	-0.0	-0.0	-82.36
	700	0.0	0.0	-0.0	0.0	0.0	-11.05

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1801	0.0	0.0
	729	0.0	-0.0
	2699	0.0	-0.0
	700	0.0	0.0
Min	Cent	0.0	0.0
	1801	0.0	0.0
	729	0.0	-0.0
	2699	0.0	-0.0
	700	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5481	3	1	S1 HL-~1	Max	Cent	-0.0	1.8	-0.1	1.8	-0.0	-88.25
					729	-0.1	0.9	-0.1	0.9	-0.1	-86.78
					1809	-0.1	2.8	-0.1	2.8	-0.1	-88.85
					712	0.0	2.8	-0.1	2.8	0.0	-88.80
					2699	0.0	0.9	-0.1	0.9	0.0	-86.31
				Min	Cent	-0.0	1.8	-0.1	1.8	-0.0	-88.25
					729	-0.1	0.9	-0.1	0.9	-0.1	-86.78
					1809	-0.1	2.8	-0.1	2.8	-0.1	-88.85
					712	0.0	2.8	-0.1	2.8	0.0	-88.80
					2699	0.0	0.9	-0.1	0.9	0.0	-86.31

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-2.42
	729	0.0	0.0	-0.0	0.0	0.0	-2.40
	1809	-0.0	-0.0	-0.0	-0.0	-0.0	-18.02
	712	-0.0	-0.0	-0.0	-0.0	-0.0	-81.09
	2699	0.1	0.0	-0.0	0.1	0.0	-1.97
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-2.42
	729	0.0	0.0	-0.0	0.0	0.0	-2.40
	1809	-0.0	-0.0	-0.0	-0.0	-0.0	-18.02
	712	-0.0	-0.0	-0.0	-0.0	-0.0	-81.09
	2699	0.1	0.0	-0.0	0.1	0.0	-1.97

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	729	0.0	-0.0
	1809	0.0	-0.0
	712	0.0	-0.0
	2699	0.0	-0.0
Min	Cent	0.0	-0.0
	729	0.0	-0.0
	1809	0.0	-0.0
	712	0.0	-0.0
	2699	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5482	3	1	S1 HL-~1	Max	Cent	0.0	0.1	-0.1	0.2	-0.1	-57.94
					700	0.0	-0.6	-0.1	0.0	-0.6	-10.78
					2699	0.0	0.9	-0.1	0.9	-0.0	-82.12
					727	0.0	0.9	-0.1	0.9	0.0	-82.03
					1697	0.0	-0.6	-0.1	0.0	-0.6	-10.63
				Min	Cent	0.0	0.1	-0.1	0.2	-0.1	-57.94
					700	0.0	-0.6	-0.1	0.0	-0.6	-10.78
					2699	0.0	0.9	-0.1	0.9	-0.0	-82.12
					727	0.0	0.9	-0.1	0.9	0.0	-82.03
					1697	0.0	-0.6	-0.1	0.0	-0.6	-10.63

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE

Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-53.02
	700	0.0	0.0	-0.0	0.0	0.0	-8.38
	2699	-0.0	-0.0	-0.0	-0.0	-0.0	-85.58
	727	-0.0	0.0	-0.0	0.0	-0.0	-66.60
	1697	0.0	0.0	-0.0	0.0	0.0	-13.46
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-53.02
	700	0.0	0.0	-0.0	0.0	0.0	-8.38
	2699	-0.0	-0.0	-0.0	-0.0	-0.0	-85.58
	727	-0.0	0.0	-0.0	0.0	-0.0	-66.60
	1697	0.0	0.0	-0.0	0.0	0.0	-13.46

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	700	0.0	0.0
	2699	0.0	0.0
	727	0.0	0.0
	1697	0.0	0.0
Min	Cent	0.0	0.0
	700	0.0	0.0
	2699	0.0	0.0
	727	0.0	0.0
	1697	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5483	3	1	S1 HL-~1	Max	Cent	0.0	1.7	-0.1	1.7	0.0	-85.84
					2699	-0.0	0.9	-0.1	0.9	-0.0	-82.46
					712	-0.0	2.5	-0.1	2.5	-0.0	-87.23
					1705	0.1	2.5	-0.1	2.5	0.1	-87.13
					727	0.1	0.9	-0.1	0.9	0.1	-81.72
				Min	Cent	0.0	1.7	-0.1	1.7	0.0	-85.84
					2699	-0.0	0.9	-0.1	0.9	-0.0	-82.46
					712	-0.0	2.5	-0.1	2.5	-0.0	-87.23
					1705	0.1	2.5	-0.1	2.5	0.1	-87.13
					727	0.1	0.9	-0.1	0.9	0.1	-81.72

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-21.36
	2699	0.1	0.0	-0.0	0.1	0.0	-2.73
	712	-0.0	-0.0	-0.0	-0.0	-0.0	-59.92
	1705	0.0	0.0	-0.0	0.0	-0.0	-38.01
	727	-0.0	-0.0	-0.0	0.0	-0.0	-63.00
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-21.36
	2699	0.1	0.0	-0.0	0.1	0.0	-2.73
	712	-0.0	-0.0	-0.0	-0.0	-0.0	-59.92
	1705	0.0	0.0	-0.0	0.0	-0.0	-38.01
	727	-0.0	-0.0	-0.0	0.0	-0.0	-63.00

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	2699	0.0	0.0
	712	0.0	-0.0
	1705	-0.0	-0.0
	727	-0.0	0.0
Min	Cent	0.0	-0.0
	2699	0.0	0.0
	712	0.0	-0.0
	1705	-0.0	-0.0
	727	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5484	3	1	S1 HL-~1	Max	Cent	-0.0	-0.0	-0.1	0.1	-0.1	-46.86
					1697	-0.0	-0.7	-0.1	-0.0	-0.8	-8.08
					727	-0.0	0.7	-0.1	0.8	-0.0	-82.32
					2707	-0.0	0.7	-0.1	0.8	-0.0	-82.20
					701	-0.0	-0.7	-0.1	0.0	-0.8	-7.95
				Min	Cent	-0.0	-0.0	-0.1	0.1	-0.1	-46.86
					1697	-0.0	-0.7	-0.1	-0.0	-0.8	-8.08
					727	-0.0	0.7	-0.1	0.8	-0.0	-82.32
					2707	-0.0	0.7	-0.1	0.8	-0.0	-82.20
					701	-0.0	-0.7	-0.1	0.0	-0.8	-7.95

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-18.18
	1697	0.0	0.0	-0.0	0.0	0.0	-15.37
	727	-0.0	-0.0	-0.0	-0.0	-0.0	-25.00
	2707	0.0	0.0	0.0	0.0	0.0	3.43
	701	-0.0	-0.0	0.0	-0.0	-0.0	86.14
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-18.18
	1697	0.0	0.0	-0.0	0.0	0.0	-15.37
	727	-0.0	-0.0	-0.0	-0.0	-0.0	-25.00
	2707	0.0	0.0	0.0	0.0	0.0	3.43
	701	-0.0	-0.0	0.0	-0.0	-0.0	86.14

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	1697	0.0	0.0
	727	0.0	-0.0
	2707	-0.0	-0.0
	701	-0.0	0.0
Min	Cent	-0.0	-0.0
	1697	0.0	0.0
	727	0.0	-0.0
	2707	-0.0	-0.0
	701	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5485	3	1	S1 HL-~1	Max	Cent	0.0	1.5	-0.1	1.5	0.0	-87.97
					727	0.0	0.8	-0.1	0.8	0.0	-85.96
					1705	0.0	2.2	-0.1	2.2	0.0	-88.64
					713	0.0	2.2	-0.1	2.2	0.0	-88.65
					2707	0.0	0.8	-0.1	0.8	0.0	-86.02
				Min	Cent	0.0	1.5	-0.1	1.5	0.0	-87.97
					727	0.0	0.8	-0.1	0.8	0.0	-85.96
					1705	0.0	2.2	-0.1	2.2	0.0	-88.64
					713	0.0	2.2	-0.1	2.2	0.0	-88.65
					2707	0.0	0.8	-0.1	0.8	0.0	-86.02

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	89.63
	727	-0.0	-0.0	-0.0	-0.0	-0.0	-81.40
	1705	0.0	0.0	-0.0	0.0	0.0	-22.26
	713	0.0	0.0	-0.0	0.0	0.0	-16.78
	2707	-0.0	-0.0	-0.0	-0.0	-0.0	-89.58
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	89.63
	727	-0.0	-0.0	-0.0	-0.0	-0.0	-81.40
	1705	0.0	0.0	-0.0	0.0	0.0	-22.26
	713	0.0	0.0	-0.0	0.0	0.0	-16.78
	2707	-0.0	-0.0	-0.0	-0.0	-0.0	-89.58

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	727	-0.0	-0.0
	1705	-0.0	0.0
	713	-0.0	0.0
	2707	-0.0	-0.0
Min	Cent	-0.0	-0.0
	727	-0.0	-0.0
	1705	-0.0	0.0
	713	-0.0	0.0
	2707	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5486	3	1	S1 HL-~1	Max	Cent	-0.0	-0.1	-0.2	0.1	-0.2	-39.41
					701	-0.0	-0.8	-0.2	0.0	-0.8	-12.68
					2707	-0.0	0.6	-0.2	0.6	-0.1	-75.57
					725	0.0	0.6	-0.2	0.6	-0.0	-74.88
					95	0.0	-0.8	-0.2	0.0	-0.8	-12.17
				Min	Cent	-0.0	-0.1	-0.2	0.1	-0.2	-39.41
					701	-0.0	-0.8	-0.2	0.0	-0.8	-12.68
					2707	-0.0	0.6	-0.2	0.6	-0.1	-75.57
					725	0.0	0.6	-0.2	0.6	-0.0	-74.88

	95	0.0	-0.8	-0.2	0.0	-0.8	-12.17

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	-0.0	0.0	-0.0	-4.98
	701	-0.0	-0.0	0.0	-0.0	-0.0	83.58
	2707	0.0	0.0	0.0	0.0	0.0	1.89
	725	-0.0	-0.0	-0.0	-0.0	-0.0	-85.57
	95	0.0	0.0	-0.0	0.0	0.0	-2.15
Min	Cent	0.0	-0.0	-0.0	0.0	-0.0	-4.98
	701	-0.0	-0.0	0.0	-0.0	-0.0	83.58
	2707	0.0	0.0	0.0	0.0	0.0	1.89
	725	-0.0	-0.0	-0.0	-0.0	-0.0	-85.57
	95	0.0	0.0	-0.0	0.0	0.0	-2.15

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	701	-0.0	0.0
	2707	-0.0	-0.0
	725	0.0	-0.0
	95	0.0	0.0
Min	Cent	-0.0	-0.0
	701	-0.0	0.0
	2707	-0.0	-0.0
	725	0.0	-0.0
	95	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5487	3	1	S1 HL-~1	Max	Cent	0.0	1.3	-0.1	1.3	-0.0	-83.60
					2707	-0.1	0.6	-0.1	0.6	-0.1	-78.32
					713	-0.1	1.9	-0.1	1.9	-0.1	-85.93
					96	0.1	1.9	-0.1	1.9	0.1	-85.62
					725	0.1	0.6	-0.1	0.6	0.0	-75.55
				Min	Cent	0.0	1.3	-0.1	1.3	-0.0	-83.60
					2707	-0.1	0.6	-0.1	0.6	-0.1	-78.32
					713	-0.1	1.9	-0.1	1.9	-0.1	-85.93
					96	0.1	1.9	-0.1	1.9	0.1	-85.62
					725	0.1	0.6	-0.1	0.6	0.0	-75.55

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	66.59
	2707	-0.0	-0.0	-0.0	-0.0	-0.0	-87.50
	713	0.0	0.0	0.0	0.0	0.0	22.38
	96	-0.0	-0.0	0.0	0.0	-0.0	45.90
	725	0.0	0.0	0.0	0.0	0.0	17.85
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	66.59
	2707	-0.0	-0.0	-0.0	-0.0	-0.0	-87.50
	713	0.0	0.0	0.0	0.0	0.0	22.38
	96	-0.0	-0.0	0.0	0.0	-0.0	45.90
	725	0.0	0.0	0.0	0.0	0.0	17.85

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2707	-0.0	-0.0
	713	-0.0	0.0
	96	0.0	0.0
	725	0.0	-0.0
Min	Cent	-0.0	-0.0
	2707	-0.0	-0.0
	713	-0.0	0.0
	96	0.0	0.0
	725	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5488	3	1	S1 HL-~1	Max	Cent	-0.0	-0.1	-0.2	0.2	-0.3	-39.18
					95	-0.0	-0.6	-0.2	0.1	-0.7	-17.52
					725	-0.0	0.4	-0.2	0.5	-0.1	-67.05
					2715	-0.0	0.4	-0.2	0.5	-0.1	-67.70
					702	-0.0	-0.6	-0.2	0.0	-0.7	-17.95
				Min	Cent	-0.0	-0.1	-0.2	0.2	-0.3	-39.18
					95	-0.0	-0.6	-0.2	0.1	-0.7	-17.52

	NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
	725	-0.0	0.4	-0.2	0.5	-0.1	-67.05
	2715	-0.0	0.4	-0.2	0.5	-0.1	-67.70
	702	-0.0	-0.6	-0.2	0.0	-0.7	-17.95

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	63.95
	95	0.0	0.0	-0.0	0.0	0.0	-3.80
	725	-0.0	-0.0	-0.0	-0.0	-0.0	-88.69
	2715	0.0	0.0	0.0	0.0	0.0	53.01
	702	0.0	-0.0	0.0	0.0	-0.0	35.68
Min	Cent	0.0	0.0	0.0	0.0	0.0	63.95
	95	0.0	0.0	-0.0	0.0	0.0	-3.80
	725	-0.0	-0.0	-0.0	-0.0	-0.0	-88.69
	2715	0.0	0.0	0.0	0.0	0.0	53.01
	702	0.0	-0.0	0.0	0.0	-0.0	35.68

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	95	0.0	0.0
	725	0.0	-0.0
	2715	-0.0	-0.0
	702	-0.0	0.0
Min	Cent	0.0	-0.0
	95	0.0	0.0
	725	0.0	-0.0
	2715	-0.0	-0.0
	702	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5489	3	1	S1 HL-~1	Max	Cent	0.0	0.9	-0.2	1.0	-0.0	-80.11
					725	-0.0	0.4	-0.2	0.5	-0.1	-71.33
					96	-0.0	1.4	-0.2	1.5	-0.0	-83.67
					714	0.0	1.4	-0.2	1.5	0.0	-83.38
					2715	0.0	0.4	-0.2	0.5	-0.0	-68.97
				Min	Cent	0.0	0.9	-0.2	1.0	-0.0	-80.11
					725	-0.0	0.4	-0.2	0.5	-0.1	-71.33
					96	-0.0	1.4	-0.2	1.5	-0.0	-83.67
					714	0.0	1.4	-0.2	1.5	0.0	-83.38
					2715	0.0	0.4	-0.2	0.5	-0.0	-68.97

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	82.18
	725	0.0	0.0	0.0	0.0	-0.0	12.33
	96	-0.0	-0.0	0.0	-0.0	-0.0	61.08
	714	0.0	0.0	-0.0	0.0	0.0	-24.82
	2715	-0.0	-0.0	-0.0	-0.0	-0.0	-87.43
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	82.18
	725	0.0	0.0	0.0	0.0	-0.0	12.33
	96	-0.0	-0.0	0.0	-0.0	-0.0	61.08
	714	0.0	0.0	-0.0	0.0	0.0	-24.82
	2715	-0.0	-0.0	-0.0	-0.0	-0.0	-87.43

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	725	0.0	-0.0
	96	0.0	0.0
	714	-0.0	0.0
	2715	-0.0	-0.0
Min	Cent	-0.0	-0.0
	725	0.0	-0.0
	96	0.0	0.0
	714	-0.0	0.0
	2715	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5490	3	1	S1 HL-~1	Max	Cent	-0.0	-0.1	-0.3	0.3	-0.3	-42.80
					702	-0.0	-0.4	-0.3	0.2	-0.5	-29.74
					2715	-0.0	0.2	-0.3	0.4	-0.2	-56.60
					723	-0.0	0.2	-0.3	0.4	-0.2	-56.77
					81	-0.0	-0.4	-0.3	0.2	-0.5	-29.89

Min	Cent	-0.0	-0.1	-0.3	0.3	-0.3	-42.80
	702	-0.0	-0.4	-0.3	0.2	-0.5	-29.74
	2715	-0.0	0.2	-0.3	0.4	-0.2	-56.60
	723	-0.0	0.2	-0.3	0.4	-0.2	-56.77
	81	-0.0	-0.4	-0.3	0.2	-0.5	-29.89

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	-0.0	0.0	-0.0	-32.03
	702	0.0	0.0	0.0	0.0	-0.0	36.01
	2715	0.0	-0.0	0.0	0.0	-0.0	5.76
	723	-0.0	0.0	-0.0	0.0	-0.0	-76.57
	81	0.0	0.0	-0.0	0.0	0.0	-20.36
Min	Cent	0.0	-0.0	-0.0	0.0	-0.0	-32.03
	702	0.0	0.0	0.0	0.0	-0.0	36.01
	2715	0.0	-0.0	0.0	0.0	-0.0	5.76
	723	-0.0	0.0	-0.0	0.0	-0.0	-76.57
	81	0.0	0.0	-0.0	0.0	0.0	-20.36

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	702	-0.0	0.0
	2715	-0.0	-0.0
	723	0.0	-0.0
	81	0.0	0.0
Min	Cent	0.0	-0.0
	702	-0.0	0.0
	2715	-0.0	-0.0
	723	0.0	-0.0
	81	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5491	3	1	S1 HL-~1	Max	Cent	-0.0	0.5	-0.2	0.6	-0.1	-69.30
					2715	-0.1	0.2	-0.2	0.4	-0.2	-61.95
					714	-0.1	0.8	-0.2	0.9	-0.1	-75.91
					82	0.1	0.8	-0.2	0.9	-0.0	-73.98
					723	0.1	0.2	-0.2	0.4	-0.1	-55.95
				Min	Cent	-0.0	0.5	-0.2	0.6	-0.1	-69.30
					2715	-0.1	0.2	-0.2	0.4	-0.2	-61.95
					714	-0.1	0.8	-0.2	0.9	-0.1	-75.91
					82	0.1	0.8	-0.2	0.9	-0.0	-73.98
					723	0.1	0.2	-0.2	0.4	-0.1	-55.95

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	63.49
	2715	-0.0	-0.0	-0.0	-0.0	-0.0	-84.25
	714	0.0	0.0	-0.0	0.0	0.0	-2.39
	82	-0.0	-0.0	0.0	0.0	-0.0	53.42
	723	0.0	0.0	0.0	0.0	0.0	35.00
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	63.49
	2715	-0.0	-0.0	-0.0	-0.0	-0.0	-84.25
	714	0.0	0.0	-0.0	0.0	0.0	-2.39
	82	-0.0	-0.0	0.0	0.0	-0.0	53.42
	723	0.0	0.0	0.0	0.0	0.0	35.00

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2715	-0.0	-0.0
	714	-0.0	0.0
	82	0.0	0.0
	723	0.0	-0.0
Min	Cent	-0.0	-0.0
	2715	-0.0	-0.0
	714	-0.0	0.0
	82	0.0	0.0
	723	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5492	3	1	S1 HL-~1	Max	Cent	-0.0	-0.0	-0.3	0.3	-0.4	-44.16
					81	-0.0	-0.2	-0.3	0.3	-0.4	-38.82
					723	-0.0	0.1	-0.3	0.4	-0.3	-48.74

```
                       5062       -0.0        0.1       -0.3        0.4       -0.3     -49.56
                       5048       -0.0       -0.2       -0.3        0.3       -0.4     -39.62
                  Min  Cent       -0.0       -0.0       -0.3        0.3       -0.4     -44.16
                         81       -0.0       -0.2       -0.3        0.3       -0.4     -38.82
                        723       -0.0        0.1       -0.3        0.4       -0.3     -48.74
                       5062       -0.0        0.1       -0.3        0.4       -0.3     -49.56
                       5048       -0.0       -0.2       -0.3        0.3       -0.4     -39.62

                       NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                  ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                  Max  Cent        0.0        0.0       -0.0        0.0       -0.0     -40.81
                         81        0.0        0.0       -0.0        0.0        0.0     -18.86
                        723       -0.0       -0.0       -0.0       -0.0       -0.0     -80.28
                       5062        0.0        0.0        0.0        0.0        0.0       0.91
                       5048       -0.0       -0.0       -0.0       -0.0       -0.0     -87.20
                  Min  Cent        0.0        0.0       -0.0        0.0       -0.0     -40.81
                         81        0.0        0.0       -0.0        0.0        0.0     -18.86
                        723       -0.0       -0.0       -0.0       -0.0       -0.0     -80.28
                       5062        0.0        0.0        0.0        0.0        0.0       0.91
                       5048       -0.0       -0.0       -0.0       -0.0       -0.0     -87.20

                       NODE        Vxx        Vyy
                  ---- ------ ---------- ----------
                  Max  Cent       -0.0       -0.0
                         81        0.0        0.0
                        723        0.0       -0.0
                       5062       -0.0       -0.0
                       5048       -0.0        0.0
                  Min  Cent       -0.0       -0.0
                         81        0.0        0.0
                        723        0.0       -0.0
                       5062       -0.0       -0.0
                       5048       -0.0        0.0

  ELEM    MAT    SEC         LC        NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5493      3      1 S1 HL--~1  Max  Cent        0.0        0.2       -0.3        0.4       -0.2     -55.09
                        723       -0.0        0.1       -0.3        0.3       -0.3     -51.21
                         82       -0.0        0.4       -0.3        0.5       -0.2     -62.27
                       5063        0.1        0.4       -0.3        0.5       -0.1     -58.62
                       5062        0.1        0.1       -0.3        0.4       -0.2     -46.33
                  Min  Cent        0.0        0.2       -0.3        0.4       -0.2     -55.09
                        723       -0.0        0.1       -0.3        0.3       -0.3     -51.21
                         82       -0.0        0.4       -0.3        0.5       -0.2     -62.27
                       5063        0.1        0.4       -0.3        0.5       -0.1     -58.62
                       5062        0.1        0.1       -0.3        0.4       -0.2     -46.33

                       NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                  ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                  Max  Cent       -0.0       -0.0        0.0        0.0       -0.0      61.44
                        723        0.0       -0.0        0.0        0.0       -0.0      15.82
                         82       -0.0        0.0        0.0        0.0       -0.0      87.67
                       5063       -0.0       -0.0       -0.0       -0.0       -0.0     -84.95
                       5062        0.0        0.0        0.0        0.0        0.0      70.39
                  Min  Cent       -0.0       -0.0        0.0        0.0       -0.0      61.44
                        723        0.0       -0.0        0.0        0.0       -0.0      15.82
                         82       -0.0        0.0        0.0        0.0       -0.0      87.67
                       5063       -0.0       -0.0       -0.0       -0.0       -0.0     -84.95
                       5062        0.0        0.0        0.0        0.0        0.0      70.39

                       NODE        Vxx        Vyy
                  ---- ------ ---------- ----------
                  Max  Cent        0.0       -0.0
                        723        0.0       -0.0
                         82        0.0        0.0
                       5063        0.0        0.0
                       5062        0.0       -0.0
                  Min  Cent        0.0       -0.0
                        723        0.0       -0.0
                         82        0.0        0.0
                       5063        0.0        0.0
                       5062        0.0       -0.0

  ELEM    MAT    SEC         LC        NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5494      3      1 S1 HL--~1  Max  Cent       -0.0        0.2       -0.4        0.5       -0.4     -50.61
```

	1621	0.0	0.4	-0.4	0.7	-0.3	-58.00
	2723	0.0	-0.1	-0.4	0.4	-0.5	-40.58
	4952	-0.0	-0.1	-0.4	0.4	-0.5	-42.41
	1614	-0.0	0.4	-0.4	0.7	-0.3	-59.46
Min	Cent	-0.0	0.2	-0.4	0.5	-0.4	-50.61
	1621	0.0	0.4	-0.4	0.7	-0.3	-58.00
	2723	0.0	-0.1	-0.4	0.4	-0.5	-40.58
	4952	-0.0	-0.1	-0.4	0.4	-0.5	-42.41
	1614	-0.0	0.4	-0.4	0.7	-0.3	-59.46

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-47.48
	1621	0.0	0.0	-0.0	0.0	0.0	-4.01
	2723	-0.1	-0.0	0.0	-0.0	-0.1	89.21
	4952	0.0	0.0	-0.0	0.0	0.0	-7.67
	1614	-0.0	-0.0	-0.0	-0.0	-0.0	-72.68
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-47.48
	1621	0.0	0.0	-0.0	0.0	0.0	-4.01
	2723	-0.1	-0.0	0.0	-0.0	-0.1	89.21
	4952	0.0	0.0	-0.0	0.0	0.0	-7.67
	1614	-0.0	-0.0	-0.0	-0.0	-0.0	-72.68

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	1621	0.0	0.0
	2723	0.0	-0.0
	4952	-0.0	-0.0
	1614	-0.0	0.0
Min	Cent	0.0	-0.0
	1621	0.0	0.0
	2723	0.0	-0.0
	4952	-0.0	-0.0
	1614	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5495	3	1	S1 HL-~1	Max	Cent	-0.0	-0.4	-0.4	0.2	-0.7	-31.61
					2723	-0.1	-0.1	-0.4	0.3	-0.5	-42.63
					2485	-0.1	-0.7	-0.4	0.1	-0.9	-25.67
					2242	0.0	-0.7	-0.4	0.2	-0.9	-23.59
					4952	0.0	-0.1	-0.4	0.4	-0.4	-39.08
				Min	Cent	-0.0	-0.4	-0.4	0.2	-0.7	-31.61
					2723	-0.1	-0.1	-0.4	0.3	-0.5	-42.63
					2485	-0.1	-0.7	-0.4	0.1	-0.9	-25.67
					2242	0.0	-0.7	-0.4	0.2	-0.9	-23.59
					4952	0.0	-0.1	-0.4	0.4	-0.4	-39.08

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	52.50
	2723	-0.0	-0.0	0.0	-0.0	-0.0	46.54
	2485	0.0	0.0	0.0	0.0	0.0	1.05
	2242	0.0	-0.0	0.0	0.0	-0.0	25.30
	4952	-0.0	0.0	0.0	0.0	-0.0	79.37
Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	52.50
	2723	-0.0	-0.0	0.0	-0.0	-0.0	46.54
	2485	0.0	0.0	0.0	0.0	0.0	1.05
	2242	0.0	-0.0	0.0	0.0	-0.0	25.30
	4952	-0.0	0.0	0.0	0.0	-0.0	79.37

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	2723	-0.0	-0.0
	2485	-0.0	0.0
	2242	-0.0	0.0
	4952	-0.0	-0.0
Min	Cent	-0.0	-0.0
	2723	-0.0	-0.0
	2485	-0.0	0.0
	2242	-0.0	0.0
	4952	-0.0	-0.0

ELEM	MAT	SEC	LC	NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE

5496	3	1	S1 HL-~1	Max	Cent	0.0	0.3	-0.5	0.6	-0.3	-52.75
					1614	-0.0	0.7	-0.5	0.9	-0.2	-63.47
					4952	-0.0	-0.2	-0.5	0.4	-0.6	-40.59
					721	0.0	-0.2	-0.5	0.4	-0.5	-39.41
					63	0.0	0.7	-0.5	0.9	-0.2	-62.68
				Min	Cent	0.0	0.3	-0.5	0.6	-0.3	-52.75
					1614	-0.0	0.7	-0.5	0.9	-0.2	-63.47
					4952	-0.0	-0.2	-0.5	0.4	-0.6	-40.59
					721	0.0	-0.2	-0.5	0.4	-0.5	-39.41
					63	0.0	0.7	-0.5	0.9	-0.2	-62.68

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	73.48
	1614	-0.0	-0.0	0.0	-0.0	-0.0	73.46
	4952	0.0	0.0	-0.0	0.0	0.0	-12.83
	721	-0.1	-0.0	-0.0	-0.0	-0.1	-87.18
	63	0.1	0.0	0.0	0.1	0.0	6.88
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	73.48
	1614	-0.0	-0.0	0.0	-0.0	-0.0	73.46
	4952	0.0	0.0	-0.0	0.0	0.0	-12.83
	721	-0.1	-0.0	-0.0	-0.0	-0.1	-87.18
	63	0.1	0.0	0.0	0.1	0.0	6.88

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1614	-0.0	0.0
	4952	-0.0	0.0
	721	0.0	0.0
	63	0.0	0.0
Min	Cent	0.0	0.0
	1614	-0.0	0.0
	4952	-0.0	0.0
	721	0.0	0.0
	63	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5497	3	1	S1 HL-~1	Max	Cent	-0.0	-0.6	-0.5	0.2	-0.9	-28.37
					4952	-0.0	-0.2	-0.5	0.4	-0.6	-40.31
					2242	-0.0	-1.1	-0.5	0.1	-1.3	-19.91
					64	-0.1	-1.1	-0.5	0.1	-1.3	-20.54
					721	-0.1	-0.2	-0.5	0.3	-0.6	-41.78
				Min	Cent	-0.0	-0.6	-0.5	0.2	-0.9	-28.37
					4952	-0.0	-0.2	-0.5	0.4	-0.6	-40.31
					2242	-0.0	-1.1	-0.5	0.1	-1.3	-19.91
					64	-0.1	-1.1	-0.5	0.1	-1.3	-20.54
					721	-0.1	-0.2	-0.5	0.3	-0.6	-41.78

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	15.88
	4952	-0.0	-0.0	-0.0	-0.0	-0.0	-75.84
	2242	0.0	0.0	0.0	0.0	-0.0	39.38
	64	-0.1	-0.0	0.0	-0.0	-0.1	83.75
	721	0.1	0.0	-0.0	0.1	0.0	-3.57
Min	Cent	0.0	0.0	0.0	0.0	0.0	15.88
	4952	-0.0	-0.0	-0.0	-0.0	-0.0	-75.84
	2242	0.0	0.0	0.0	0.0	-0.0	39.38
	64	-0.1	-0.0	0.0	-0.0	-0.1	83.75
	721	0.1	0.0	-0.0	0.1	0.0	-3.57

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4952	-0.0	0.0
	2242	-0.0	0.0
	64	0.0	0.0
	721	0.0	0.0
Min	Cent	0.0	0.0
	4952	-0.0	0.0
	2242	-0.0	0.0
	64	0.0	0.0
	721	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5498	3	1	S1 HL-~1	Max	Cent	-0.0	0.3	-0.5	0.7	-0.4	-52.98
					63	0.0	0.9	-0.5	1.2	-0.2	-65.14
					721	0.0	-0.4	-0.5	0.4	-0.7	-34.96
					4806	-0.1	-0.4	-0.5	0.3	-0.8	-37.31
					4784	-0.1	0.9	-0.5	1.2	-0.3	-66.58
				Min	Cent	-0.0	0.3	-0.5	0.7	-0.4	-52.98
					63	0.0	0.9	-0.5	1.2	-0.2	-65.14
					721	0.0	-0.4	-0.5	0.4	-0.7	-34.96
					4806	-0.1	-0.4	-0.5	0.3	-0.8	-37.31
					4784	-0.1	0.9	-0.5	1.2	-0.3	-66.58

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-9.09
	63	0.1	0.0	-0.0	0.1	0.0	-8.45
	721	-0.1	-0.0	0.0	-0.0	-0.1	85.29
	4806	0.4	0.1	0.0	0.4	0.1	1.65
	4784	-0.2	-0.1	-0.0	-0.1	-0.2	-86.76
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-9.09
	63	0.1	0.0	-0.0	0.1	0.0	-8.45
	721	-0.1	-0.0	0.0	-0.0	-0.1	85.29
	4806	0.4	0.1	0.0	0.4	0.1	1.65
	4784	-0.2	-0.1	-0.0	-0.1	-0.2	-86.76

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	63	0.0	-0.0
	721	0.0	-0.0
	4806	-0.0	-0.0
	4784	-0.0	-0.0
Min	Cent	-0.0	-0.0
	63	0.0	-0.0
	721	0.0	-0.0
	4806	-0.0	-0.0
	4784	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5499	3	1	S1 HL-~1	Max	Cent	0.1	-0.9	-0.4	0.3	-1.1	-20.70
					721	-0.1	-0.3	-0.4	0.2	-0.7	-39.68
					64	-0.1	-1.5	-0.4	-0.0	-1.6	-16.99
					4785	0.4	-1.5	-0.4	0.5	-1.6	-12.84
					4806	0.4	-0.3	-0.4	0.6	-0.5	-25.94
				Min	Cent	0.1	-0.9	-0.4	0.3	-1.1	-20.70
					721	-0.1	-0.3	-0.4	0.2	-0.7	-39.68
					64	-0.1	-1.5	-0.4	-0.0	-1.6	-16.99
					4785	0.4	-1.5	-0.4	0.5	-1.6	-12.84
					4806	0.4	-0.3	-0.4	0.6	-0.5	-25.94

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-81.33
	721	0.1	0.0	0.0	0.1	0.0	4.63
	64	-0.1	-0.0	-0.0	-0.0	-0.1	-81.62
	4785	0.2	0.1	-0.0	0.2	0.1	-2.96
	4806	-0.4	-0.1	0.0	-0.1	-0.4	88.31
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-81.33
	721	0.1	0.0	0.0	0.1	0.0	4.63
	64	-0.1	-0.0	-0.0	-0.0	-0.1	-81.62
	4785	0.2	0.1	-0.0	0.2	0.1	-2.96
	4806	-0.4	-0.1	0.0	-0.1	-0.4	88.31

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	721	0.0	-0.0
	64	0.0	0.0
	4785	-0.0	0.0
	4806	-0.0	-0.0
Min	Cent	-0.0	-0.0
	721	0.0	-0.0
	64	0.0	0.0
	4785	-0.0	0.0

```
                                    4806       -0.0       -0.0

  ELEM   MAT    SEC        LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5500      3      1 S1 HL-~1  Max   Cent       -0.0        0.6       -0.5        0.9       -0.3     -59.85
                                    4784        0.0        1.4       -0.5        1.6       -0.2     -71.74
                                    4806        0.0       -0.3       -0.5        0.4       -0.7     -36.29
                                     693       -0.1       -0.3       -0.5        0.3       -0.7     -39.07
                                      35       -0.1        1.4       -0.5        1.6       -0.3     -72.74
                               Min   Cent       -0.0        0.6       -0.5        0.9       -0.3     -59.85
                                    4784        0.0        1.4       -0.5        1.6       -0.2     -71.74
                                    4806        0.0       -0.3       -0.5        0.4       -0.7     -36.29
                                     693       -0.1       -0.3       -0.5        0.3       -0.7     -39.07
                                      35       -0.1        1.4       -0.5        1.6       -0.3     -72.74

                                    NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                               ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent       -0.1       -0.0        0.0       -0.0       -0.1      82.40
                                    4784       -0.2       -0.1        0.0       -0.0       -0.2      78.93
                                    4806        0.4        0.1       -0.0        0.4        0.1      -5.71
                                     693       -1.3       -0.4       -0.0       -0.4       -1.3     -88.42
                                      35        0.6        0.2        0.0        0.6        0.2       3.27
                               Min   Cent       -0.1       -0.0        0.0       -0.0       -0.1      82.40
                                    4784       -0.2       -0.1        0.0       -0.0       -0.2      78.93
                                    4806        0.4        0.1       -0.0        0.4        0.1      -5.71
                                     693       -1.3       -0.4       -0.0       -0.4       -1.3     -88.42
                                      35        0.6        0.2        0.0        0.6        0.2       3.27

                                    NODE        Vxx        Vyy
                               ---- ------ ---------- ----------
                               Max   Cent        0.0        0.0
                                    4784       -0.0        0.0
                                    4806       -0.0        0.0
                                     693        0.1        0.0
                                      35        0.1        0.0
                               Min   Cent        0.0        0.0
                                    4784       -0.0        0.0
                                    4806       -0.0        0.0
                                     693        0.1        0.0
                                      35        0.1        0.0

  ELEM   MAT    SEC        LC       NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5501      3      1 S1 HL-~1  Max   Cent       -0.5       -1.4       -0.6       -0.2       -1.6     -25.42
                                    4806        0.2       -0.4       -0.6        0.6       -0.8     -29.28
                                    4785        0.2       -2.3       -0.6        0.4       -2.4     -11.81
                                      36       -1.2       -2.3       -0.6       -0.9       -2.5     -22.25
                                     693       -1.2       -0.4       -0.6       -0.1       -1.5     -61.65
                               Min   Cent       -0.5       -1.4       -0.6       -0.2       -1.6     -25.42
                                    4806        0.2       -0.4       -0.6        0.6       -0.8     -29.28
                                    4785        0.2       -2.3       -0.6        0.4       -2.4     -11.81
                                      36       -1.2       -2.3       -0.6       -0.9       -2.5     -22.25
                                     693       -1.2       -0.4       -0.6       -0.1       -1.5     -61.65

                                    NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                               ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent        0.1        0.0        0.0        0.1        0.0       7.62
                                    4806       -0.4       -0.1       -0.0       -0.1       -0.4     -84.34
                                    4785        0.2        0.1        0.0        0.2        0.1      10.76
                                      36       -0.6       -0.2        0.0       -0.2       -0.7      86.82
                                     693        1.3        0.4       -0.0        1.3        0.4      -1.56
                               Min   Cent        0.1        0.0        0.0        0.1        0.0       7.62
                                    4806       -0.4       -0.1       -0.0       -0.1       -0.4     -84.34
                                    4785        0.2        0.1        0.0        0.2        0.1      10.76
                                      36       -0.6       -0.2        0.0       -0.2       -0.7      86.82
                                     693        1.3        0.4       -0.0        1.3        0.4      -1.56

                                    NODE        Vxx        Vyy
                               ---- ------ ---------- ----------
                               Max   Cent        0.0        0.0
                                    4806       -0.0        0.0
                                    4785       -0.0        0.0
                                      36        0.1        0.0
                                     693        0.1        0.0
                               Min   Cent        0.0        0.0
                                    4806       -0.0        0.0
```

```
                              4785       -0.0        0.0
                                36        0.1        0.0
                               693        0.1        0.0

  ELEM    MAT    SEC        LC        NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5502      3      1 S1 HL-~1  Max   Cent       -0.0        0.6        0.5        0.9       -0.3      59.85
                                       35       -0.1        1.4        0.5        1.6       -0.3      72.74
                                      693       -0.1       -0.3        0.5        0.3       -0.7      39.07
                                     4881        0.0       -0.3        0.5        0.4       -0.7      36.29
                                     4852        0.0        1.4        0.5        1.6       -0.2      71.74
                               Min   Cent       -0.0        0.6        0.5        0.9       -0.3      59.85
                                       35       -0.1        1.4        0.5        1.6       -0.3      72.74
                                      693       -0.1       -0.3        0.5        0.3       -0.7      39.07
                                     4881        0.0       -0.3        0.5        0.4       -0.7      36.29
                                     4852        0.0        1.4        0.5        1.6       -0.2      71.74

                                     NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                              ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent       -0.1       -0.0       -0.0       -0.0       -0.1     -82.40
                                       35        0.6        0.2       -0.0        0.6        0.2      -3.27
                                      693       -1.3       -0.4        0.0       -0.4       -1.3      88.42
                                     4881        0.4        0.1        0.0        0.4        0.1       5.72
                                     4852       -0.2       -0.1       -0.0       -0.0       -0.2     -78.93
                               Min   Cent       -0.1       -0.0       -0.0       -0.0       -0.1     -82.40
                                       35        0.6        0.2       -0.0        0.6        0.2      -3.27
                                      693       -1.3       -0.4        0.0       -0.4       -1.3      88.42
                                     4881        0.4        0.1        0.0        0.4        0.1       5.72
                                     4852       -0.2       -0.1       -0.0       -0.0       -0.2     -78.93

                                     NODE        Vxx        Vyy
                              ---- ------ ---------- ----------
                               Max   Cent        0.0       -0.0
                                       35        0.1       -0.0
                                      693        0.1       -0.0
                                     4881       -0.0       -0.0
                                     4852       -0.0       -0.0
                               Min   Cent        0.0       -0.0
                                       35        0.1       -0.0
                                      693        0.1       -0.0
                                     4881       -0.0       -0.0
                                     4852       -0.0       -0.0

  ELEM    MAT    SEC        LC        NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5503      3      1 S1 HL-~1  Max   Cent       -0.5       -1.4        0.6       -0.2       -1.6      25.42
                                      693       -1.2       -0.4        0.6       -0.1       -1.5      61.65
                                       36       -1.2       -2.3        0.6       -0.9       -2.5      22.26
                                     4853        0.2       -2.3        0.6        0.4       -2.4      11.82
                                     4881        0.2       -0.4        0.6        0.6       -0.8      29.27
                               Min   Cent       -0.5       -1.4        0.6       -0.2       -1.6      25.42
                                      693       -1.2       -0.4        0.6       -0.1       -1.5      61.65
                                       36       -1.2       -2.3        0.6       -0.9       -2.5      22.26
                                     4853        0.2       -2.3        0.6        0.4       -2.4      11.82
                                     4881        0.2       -0.4        0.6        0.6       -0.8      29.27

                                     NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                              ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                               Max   Cent        0.1        0.0       -0.0        0.1        0.0      -7.61
                                      693        1.3        0.4        0.0        1.3        0.4       1.56
                                       36       -0.6       -0.2       -0.0       -0.2       -0.7     -86.82
                                     4853        0.2        0.1       -0.0        0.2        0.1     -10.76
                                     4881       -0.4       -0.1        0.0       -0.1       -0.4      84.34
                               Min   Cent        0.1        0.0       -0.0        0.1        0.0      -7.61
                                      693        1.3        0.4        0.0        1.3        0.4       1.56
                                       36       -0.6       -0.2       -0.0       -0.2       -0.7     -86.82
                                     4853        0.2        0.1       -0.0        0.2        0.1     -10.76
                                     4881       -0.4       -0.1        0.0       -0.1       -0.4      84.34

                                     NODE        Vxx        Vyy
                              ---- ------ ---------- ----------
                               Max   Cent        0.0       -0.0
                                      693        0.1       -0.0
                                       36        0.1       -0.0
                                     4853       -0.0       -0.0
                                     4881       -0.0       -0.0
```

	NODE		
Min	Cent	0.0	-0.0
	693	0.1	-0.0
	36	0.1	-0.0
	4853	-0.0	-0.0
	4881	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5504	3	1	S1 HL-~1	Max	Cent	-0.0	0.3	0.5	0.7	-0.4	52.99
					4852	-0.1	0.9	0.5	1.2	-0.3	66.58
					4881	-0.1	-0.4	0.5	0.3	-0.8	37.31
					719	0.0	-0.4	0.5	0.4	-0.7	34.97
					55	0.0	0.9	0.5	1.2	-0.2	65.14
				Min	Cent	-0.0	0.3	0.5	0.7	-0.4	52.99
					4852	-0.1	0.9	0.5	1.2	-0.3	66.58
					4881	-0.1	-0.4	0.5	0.3	-0.8	37.31
					719	0.0	-0.4	0.5	0.4	-0.7	34.97
					55	0.0	0.9	0.5	1.2	-0.2	65.14

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	9.11
	4852	-0.2	-0.1	0.0	-0.1	-0.2	86.75
	4881	0.4	0.1	-0.0	0.4	0.1	-1.65
	719	-0.1	-0.0	-0.0	-0.0	-0.1	-85.29
	55	0.1	0.0	0.0	0.1	0.0	8.46
Min	Cent	0.0	0.0	0.0	0.0	0.0	9.11
	4852	-0.2	-0.1	0.0	-0.1	-0.2	86.75
	4881	0.4	0.1	-0.0	0.4	0.1	-1.65
	719	-0.1	-0.0	-0.0	-0.0	-0.1	-85.29
	55	0.1	0.0	0.0	0.1	0.0	8.46

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4852	-0.0	0.0
	4881	-0.0	0.0
	719	0.0	0.0
	55	0.0	0.0
Min	Cent	-0.0	0.0
	4852	-0.0	0.0
	4881	-0.0	0.0
	719	0.0	0.0
	55	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5505	3	1	S1 HL-~1	Max	Cent	0.1	-0.9	0.4	0.3	-1.1	20.71
					4881	0.4	-0.3	0.4	0.6	-0.5	25.95
					4853	0.4	-1.5	0.4	0.5	-1.6	12.84
					56	-0.1	-1.5	0.4	-0.0	-1.6	17.00
					719	-0.1	-0.3	0.4	0.2	-0.7	39.69
				Min	Cent	0.1	-0.9	0.4	0.3	-1.1	20.71
					4881	0.4	-0.3	0.4	0.6	-0.5	25.95
					4853	0.4	-1.5	0.4	0.5	-1.6	12.84
					56	-0.1	-1.5	0.4	-0.0	-1.6	17.00
					719	-0.1	-0.3	0.4	0.2	-0.7	39.69

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	81.31
	4881	-0.4	-0.1	-0.0	-0.1	-0.4	-88.31
	4853	0.2	0.1	0.0	0.2	0.1	2.96
	56	-0.1	-0.0	0.0	-0.0	-0.1	81.61
	719	0.1	0.0	-0.0	0.1	0.0	-4.63
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	81.31
	4881	-0.4	-0.1	-0.0	-0.1	-0.4	-88.31
	4853	0.2	0.1	0.0	0.2	0.1	2.96
	56	-0.1	-0.0	0.0	-0.0	-0.1	81.61
	719	0.1	0.0	-0.0	0.1	0.0	-4.63

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4881	-0.0	0.0
	4853	-0.0	-0.0

	56	0.0	-0.0
	719	0.0	0.0
Min	Cent	-0.0	0.0
	4881	-0.0	0.0
	4853	-0.0	-0.0
	56	0.0	-0.0
	719	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5506	3	1	S1 HL-~1	Max	Cent	0.0	0.3	0.5	0.6	-0.3	52.75
					55	0.0	0.7	0.5	0.9	-0.2	62.69
					719	0.0	-0.2	0.5	0.4	-0.5	39.41
					4946	-0.0	-0.2	0.5	0.4	-0.5	40.59
					2299	-0.0	0.7	0.5	0.9	-0.2	63.48
				Min	Cent	0.0	0.3	0.5	0.6	-0.3	52.75
					55	0.0	0.7	0.5	0.9	-0.2	62.69
					719	0.0	-0.2	0.5	0.4	-0.5	39.41
					4946	-0.0	-0.2	0.5	0.4	-0.5	40.59
					2299	-0.0	0.7	0.5	0.9	-0.2	63.48

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-73.52
	55	0.1	0.0	-0.0	0.1	0.0	-6.87
	719	-0.1	-0.0	0.0	-0.0	-0.1	87.18
	4946	0.0	0.0	0.0	0.0	0.0	12.85
	2299	-0.0	-0.0	-0.0	-0.0	-0.0	-73.49
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-73.52
	55	0.1	0.0	-0.0	0.1	0.0	-6.87
	719	-0.1	-0.0	0.0	-0.0	-0.1	87.18
	4946	0.0	0.0	0.0	0.0	0.0	12.85
	2299	-0.0	-0.0	-0.0	-0.0	-0.0	-73.49

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	55	0.0	-0.0
	719	0.0	-0.0
	4946	-0.0	-0.0
	2299	-0.0	-0.0
Min	Cent	0.0	-0.0
	55	0.0	-0.0
	719	0.0	-0.0
	4946	-0.0	-0.0
	2299	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5507	3	1	S1 HL-~1	Max	Cent	-0.0	-0.6	0.5	0.2	-0.9	28.38
					719	-0.1	-0.2	0.5	0.3	-0.6	41.79
					56	-0.1	-1.1	0.5	0.1	-1.3	20.55
					2190	-0.0	-1.1	0.5	0.1	-1.3	19.92
					4946	-0.0	-0.2	0.5	0.4	-0.6	40.31
				Min	Cent	-0.0	-0.6	0.5	0.2	-0.9	28.38
					719	-0.1	-0.2	0.5	0.3	-0.6	41.79
					56	-0.1	-1.1	0.5	0.1	-1.3	20.55
					2190	-0.0	-1.1	0.5	0.1	-1.3	19.92
					4946	-0.0	-0.2	0.5	0.4	-0.6	40.31

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-15.84
	719	0.1	0.0	0.0	0.1	0.0	3.58
	56	-0.1	-0.0	-0.0	-0.0	-0.1	-83.76
	2190	0.0	0.0	-0.0	0.0	-0.0	-39.37
	4946	-0.0	-0.0	0.0	-0.0	-0.0	75.83
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-15.84
	719	0.1	0.0	0.0	0.1	0.0	3.58
	56	-0.1	-0.0	-0.0	-0.0	-0.1	-83.76
	2190	0.0	0.0	-0.0	0.0	-0.0	-39.37
	4946	-0.0	-0.0	0.0	-0.0	-0.0	75.83

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0

	NODE		
	719	0.0	-0.0
	56	0.0	-0.0
	2190	-0.0	-0.0
	4946	-0.0	-0.0
Min	Cent	0.0	-0.0
	719	0.0	-0.0
	56	0.0	-0.0
	2190	-0.0	-0.0
	4946	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5508	3	1	S1 HL-~1	Max	Cent	-0.0	0.2	0.4	0.5	-0.4	50.62
					2299	-0.0	0.4	0.4	0.7	-0.3	59.46
					4946	-0.0	-0.1	0.4	0.4	-0.5	42.42
					690	0.0	-0.1	0.4	0.4	-0.5	40.59
					2493	0.0	0.4	0.4	0.7	-0.3	58.00
				Min	Cent	-0.0	0.2	0.4	0.5	-0.4	50.62
					2299	-0.0	0.4	0.4	0.7	-0.3	59.46
					4946	-0.0	-0.1	0.4	0.4	-0.5	42.42
					690	0.0	-0.1	0.4	0.4	-0.5	40.59
					2493	0.0	0.4	0.4	0.7	-0.3	58.00

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	0.0	-0.0	47.48
	2299	-0.0	-0.0	0.0	-0.0	-0.0	72.65
	4946	0.0	0.0	0.0	0.0	0.0	7.69
	690	-0.1	-0.0	-0.0	-0.0	-0.1	-89.22
	2493	0.0	0.0	0.0	0.0	0.0	4.02
Min	Cent	-0.0	-0.0	0.0	0.0	-0.0	47.48
	2299	-0.0	-0.0	0.0	-0.0	-0.0	72.65
	4946	0.0	0.0	0.0	0.0	0.0	7.69
	690	-0.1	-0.0	-0.0	-0.0	-0.1	-89.22
	2493	0.0	0.0	0.0	0.0	0.0	4.02

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	2299	-0.0	-0.0
	4946	-0.0	0.0
	690	0.0	0.0
	2493	0.0	-0.0
Min	Cent	0.0	0.0
	2299	-0.0	-0.0
	4946	-0.0	0.0
	690	0.0	0.0
	2493	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5509	3	1	S1 HL-~1	Max	Cent	-0.0	-0.4	0.4	0.2	-0.7	31.62
					4946	0.0	-0.1	0.4	0.4	-0.4	39.09
					2190	0.0	-0.7	0.4	0.2	-0.9	23.60
					2501	-0.1	-0.7	0.4	0.1	-0.9	25.68
					690	-0.1	-0.1	0.4	0.3	-0.5	42.64
				Min	Cent	-0.0	-0.4	0.4	0.2	-0.7	31.62
					4946	0.0	-0.1	0.4	0.4	-0.4	39.09
					2190	0.0	-0.7	0.4	0.2	-0.9	23.60
					2501	-0.1	-0.7	0.4	0.1	-0.9	25.68
					690	-0.1	-0.1	0.4	0.3	-0.5	42.64

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-52.50
	4946	-0.0	0.0	-0.0	0.0	-0.0	-79.39
	2190	0.0	-0.0	-0.0	0.0	-0.0	-25.25
	2501	0.0	0.0	-0.0	0.0	0.0	-0.99
	690	-0.0	-0.0	-0.0	-0.0	-0.0	-46.09
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-52.50
	4946	-0.0	0.0	-0.0	0.0	-0.0	-79.39
	2190	0.0	-0.0	-0.0	0.0	-0.0	-25.25
	2501	0.0	0.0	-0.0	0.0	0.0	-0.99
	690	-0.0	-0.0	-0.0	-0.0	-0.0	-46.09

	NODE	Vxx	Vyy

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4946	-0.0	0.0
	2190	-0.0	-0.0
	2501	-0.0	-0.0
	690	-0.0	0.0
Min	Cent	-0.0	0.0
	4946	-0.0	0.0
	2190	-0.0	-0.0
	2501	-0.0	-0.0
	690	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5510	3	1	S1 HL-~1	Max	Cent	-0.0	0.0	0.4	0.4	-0.4	46.90
					2493	-0.0	0.1	0.4	0.4	-0.3	49.79
					690	-0.0	-0.0	0.4	0.4	-0.4	44.68
					5007	-0.0	-0.0	0.4	0.4	-0.4	43.97
					4993	-0.0	0.1	0.4	0.4	-0.3	49.10
				Min	Cent	-0.0	0.0	0.4	0.4	-0.4	46.90
					2493	-0.0	0.1	0.4	0.4	-0.3	49.79
					690	-0.0	-0.0	0.4	0.4	-0.4	44.68
					5007	-0.0	-0.0	0.4	0.4	-0.4	43.97
					4993	-0.0	0.1	0.4	0.4	-0.3	49.10

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-67.67
	2493	0.0	0.0	-0.0	0.0	0.0	-6.42
	690	-0.1	-0.0	-0.0	-0.0	-0.1	-87.19
	5007	0.0	0.0	-0.0	0.0	0.0	-0.18
	4993	-0.0	-0.0	-0.0	-0.0	-0.0	-84.50
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-67.67
	2493	0.0	0.0	-0.0	0.0	0.0	-6.42
	690	-0.1	-0.0	-0.0	-0.0	-0.1	-87.19
	5007	0.0	0.0	-0.0	0.0	0.0	-0.18
	4993	-0.0	-0.0	-0.0	-0.0	-0.0	-84.50

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	2493	0.0	-0.0
	690	0.0	0.0
	5007	-0.0	0.0
	4993	-0.0	-0.0
Min	Cent	0.0	-0.0
	2493	0.0	-0.0
	690	0.0	0.0
	5007	-0.0	0.0
	4993	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5511	3	1	S1 HL-~1	Max	Cent	0.0	-0.1	0.3	0.3	-0.4	40.80
					690	0.0	-0.0	0.3	0.3	-0.3	42.20
					2501	0.0	-0.2	0.3	0.3	-0.4	36.51
					5008	-0.0	-0.2	0.3	0.2	-0.4	39.41
					5007	-0.0	-0.0	0.3	0.3	-0.4	45.28
				Min	Cent	0.0	-0.1	0.3	0.3	-0.4	40.80
					690	0.0	-0.0	0.3	0.3	-0.3	42.20
					2501	0.0	-0.2	0.3	0.3	-0.4	36.51
					5008	-0.0	-0.2	0.3	0.2	-0.4	39.41
					5007	-0.0	-0.0	0.3	0.3	-0.4	45.28

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	60.22
	690	-0.0	-0.0	0.0	-0.0	-0.0	77.70
	2501	0.0	0.0	0.0	0.0	0.0	9.40
	5008	-0.0	-0.0	0.0	-0.0	-0.0	88.85
	5007	-0.0	0.0	0.0	0.0	-0.0	46.88
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	60.22
	690	-0.0	-0.0	0.0	-0.0	-0.0	77.70
	2501	0.0	0.0	0.0	0.0	0.0	9.40
	5008	-0.0	-0.0	0.0	-0.0	-0.0	88.85
	5007	-0.0	0.0	0.0	0.0	-0.0	46.88

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	690	-0.0	0.0
	2501	-0.0	-0.0
	5008	0.0	-0.0
	5007	0.0	0.0
Min	Cent	-0.0	-0.0
	690	-0.0	0.0
	2501	-0.0	-0.0
	5008	0.0	-0.0
	5007	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5512	3	1	S1 HL-~1	Max	Cent	-0.0	-0.1	0.3	0.3	-0.3	42.80
					1905	-0.0	-0.4	0.3	0.2	-0.5	29.88
					731	-0.0	0.2	0.3	0.4	-0.2	56.77
					689	-0.0	0.2	0.3	0.4	-0.2	56.61
					705	-0.0	-0.4	0.3	0.2	-0.5	29.73
				Min	Cent	-0.0	-0.1	0.3	0.3	-0.3	42.80
					1905	-0.0	-0.4	0.3	0.2	-0.5	29.88
					731	-0.0	0.2	0.3	0.4	-0.2	56.77
					689	-0.0	0.2	0.3	0.4	-0.2	56.61
					705	-0.0	-0.4	0.3	0.2	-0.5	29.73

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	0.0	0.0	-0.0	32.27
	1905	0.0	0.0	0.0	0.0	0.0	20.53
	731	-0.0	0.0	0.0	0.0	-0.0	76.48
	689	0.0	-0.0	-0.0	0.0	-0.0	-5.83
	705	0.0	0.0	-0.0	0.0	-0.0	-35.35
Min	Cent	0.0	-0.0	0.0	0.0	-0.0	32.27
	1905	0.0	0.0	0.0	0.0	0.0	20.53
	731	-0.0	0.0	0.0	0.0	-0.0	76.48
	689	0.0	-0.0	-0.0	0.0	-0.0	-5.83
	705	0.0	0.0	-0.0	0.0	-0.0	-35.35

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1905	0.0	-0.0
	731	0.0	0.0
	689	-0.0	0.0
	705	-0.0	-0.0
Min	Cent	0.0	0.0
	1905	0.0	-0.0
	731	0.0	0.0
	689	-0.0	0.0
	705	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5513	3	1	S1 HL-~1	Max	Cent	-0.0	0.5	0.2	0.6	-0.1	69.32
					731	0.1	0.2	0.2	0.4	-0.1	55.96
					1913	0.1	0.8	0.2	0.9	-0.0	73.99
					717	-0.1	0.8	0.2	0.9	-0.1	75.92
					689	-0.1	0.2	0.2	0.4	-0.2	61.96
				Min	Cent	-0.0	0.5	0.2	0.6	-0.1	69.32
					731	0.1	0.2	0.2	0.4	-0.1	55.96
					1913	0.1	0.8	0.2	0.9	-0.0	73.99
					717	-0.1	0.8	0.2	0.9	-0.1	75.92
					689	-0.1	0.2	0.2	0.4	-0.2	61.96

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-63.43
	731	0.0	0.0	-0.0	0.0	0.0	-35.53
	1913	-0.0	-0.0	-0.0	0.0	-0.0	-53.31
	717	0.0	0.0	0.0	0.0	0.0	2.69
	689	-0.0	-0.0	0.0	-0.0	-0.0	84.15
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-63.43
	731	0.0	0.0	-0.0	0.0	0.0	-35.53
	1913	-0.0	-0.0	-0.0	0.0	-0.0	-53.31

717	0.0	0.0	0.0	0.0	0.0	2.69
689	-0.0	-0.0	0.0	-0.0	-0.0	84.15

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	731	0.0	0.0
	1913	0.0	-0.0
	717	-0.0	-0.0
	689	-0.0	0.0
Min	Cent	-0.0	0.0
	731	0.0	0.0
	1913	0.0	-0.0
	717	-0.0	-0.0
	689	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5514	3	1	S1 HL-~1	Max	Cent	-0.0	-0.1	0.2	0.2	-0.3	39.18
					705	-0.0	-0.6	0.2	0.0	-0.7	17.95
					689	-0.0	0.4	0.2	0.5	-0.1	67.71
					733	-0.0	0.4	0.2	0.5	-0.1	67.06
					2089	-0.0	-0.6	0.2	0.1	-0.7	17.51
				Min	Cent	-0.0	-0.1	0.2	0.2	-0.3	39.18
					705	-0.0	-0.6	0.2	0.0	-0.7	17.95
					689	-0.0	0.4	0.2	0.5	-0.1	67.71
					733	-0.0	0.4	0.2	0.5	-0.1	67.06
					2089	-0.0	-0.6	0.2	0.1	-0.7	17.51

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-65.43
	705	0.0	-0.0	-0.0	0.0	-0.0	-35.26
	689	0.0	0.0	-0.0	0.0	0.0	-53.99
	733	-0.0	-0.0	0.0	-0.0	-0.0	88.58
	2089	0.0	0.0	0.0	0.0	0.0	3.87
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-65.43
	705	0.0	-0.0	-0.0	0.0	-0.0	-35.26
	689	0.0	0.0	-0.0	0.0	0.0	-53.99
	733	-0.0	-0.0	0.0	-0.0	-0.0	88.58
	2089	0.0	0.0	0.0	0.0	0.0	3.87

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	705	-0.0	-0.0
	689	-0.0	0.0
	733	0.0	0.0
	2089	0.0	-0.0
Min	Cent	0.0	0.0
	705	-0.0	-0.0
	689	-0.0	0.0
	733	0.0	0.0
	2089	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5515	3	1	S1 HL-~1	Max	Cent	0.0	0.9	0.2	1.0	-0.0	80.12
					689	0.0	0.4	0.2	0.5	-0.0	68.98
					717	0.0	1.4	0.2	1.5	0.0	83.38
					2097	-0.0	1.4	0.2	1.5	-0.0	83.67
					733	-0.0	0.4	0.2	0.5	-0.1	71.34
				Min	Cent	0.0	0.9	0.2	1.0	-0.0	80.12
					689	0.0	0.4	0.2	0.5	-0.0	68.98
					717	0.0	1.4	0.2	1.5	0.0	83.38
					2097	-0.0	1.4	0.2	1.5	-0.0	83.67
					733	-0.0	0.4	0.2	0.5	-0.1	71.34

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-82.16
	689	-0.0	-0.0	0.0	-0.0	-0.0	87.39
	717	0.0	0.0	0.0	0.0	0.0	24.96
	2097	-0.0	-0.0	-0.0	-0.0	-0.0	-60.62
	733	0.0	0.0	-0.0	0.0	-0.0	-12.38
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-82.16

689	-0.0	-0.0	0.0	-0.0	-0.0	87.39
717	0.0	0.0	0.0	0.0	0.0	24.96
2097	-0.0	-0.0	-0.0	-0.0	-0.0	-60.62
733	0.0	0.0	-0.0	0.0	-0.0	-12.38

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	689	-0.0	0.0
	717	-0.0	-0.0
	2097	0.0	-0.0
	733	0.0	0.0
Min	Cent	-0.0	0.0
	689	-0.0	0.0
	717	-0.0	-0.0
	2097	0.0	-0.0
	733	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5516	3	1	S1 HL-~1	Max	Cent	-0.0	-0.1	0.2	0.1	-0.2	39.41
					2089	0.0	-0.8	0.2	0.0	-0.8	12.17
					733	0.0	0.6	0.2	0.6	-0.0	74.88
					688	-0.0	0.6	0.2	0.6	-0.1	75.57
					704	-0.0	-0.8	0.2	0.0	-0.8	12.68
				Min	Cent	-0.0	-0.1	0.2	0.1	-0.2	39.41
					2089	0.0	-0.8	0.2	0.0	-0.8	12.17
					733	0.0	0.6	0.2	0.6	-0.0	74.88
					688	-0.0	0.6	0.2	0.6	-0.1	75.57
					704	-0.0	-0.8	0.2	0.0	-0.8	12.68

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	0.0	0.0	-0.0	5.30
	2089	0.0	0.0	0.0	0.0	0.0	2.24
	733	-0.0	-0.0	0.0	-0.0	-0.0	85.55
	688	0.0	0.0	-0.0	0.0	0.0	-1.92
	704	-0.0	-0.0	-0.0	-0.0	-0.0	-83.59
Min	Cent	0.0	-0.0	0.0	0.0	-0.0	5.30
	2089	0.0	0.0	0.0	0.0	0.0	2.24
	733	-0.0	-0.0	0.0	-0.0	-0.0	85.55
	688	0.0	0.0	-0.0	0.0	0.0	-1.92
	704	-0.0	-0.0	-0.0	-0.0	-0.0	-83.59

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2089	0.0	-0.0
	733	0.0	0.0
	688	-0.0	0.0
	704	-0.0	-0.0
Min	Cent	-0.0	0.0
	2089	0.0	-0.0
	733	0.0	0.0
	688	-0.0	0.0
	704	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5517	3	1	S1 HL-~1	Max	Cent	0.0	1.3	0.1	1.3	-0.0	83.60
					733	0.1	0.6	0.1	0.6	0.0	75.55
					2097	0.1	1.9	0.1	1.9	0.1	85.62
					716	-0.1	1.9	0.1	1.9	-0.1	85.93
					688	-0.1	0.6	0.1	0.6	-0.1	78.32
				Min	Cent	0.0	1.3	0.1	1.3	-0.0	83.60
					733	0.1	0.6	0.1	0.6	0.0	75.55
					2097	0.1	1.9	0.1	1.9	0.1	85.62
					716	-0.1	1.9	0.1	1.9	-0.1	85.93
					688	-0.1	0.6	0.1	0.6	-0.1	78.32

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-66.50
	733	0.0	0.0	-0.0	0.0	0.0	-18.22
	2097	-0.0	-0.0	-0.0	0.0	-0.0	-45.65
	716	0.0	0.0	-0.0	0.0	0.0	-22.68

```
                                        688       -0.0       -0.0        0.0       -0.0       -0.0      87.49
                                  Min  Cent       -0.0       -0.0       -0.0       -0.0       -0.0     -66.50
                                        733        0.0        0.0       -0.0        0.0        0.0     -18.22
                                       2097       -0.0       -0.0       -0.0        0.0       -0.0     -45.65
                                        716        0.0        0.0       -0.0        0.0        0.0     -22.68
                                        688       -0.0       -0.0        0.0       -0.0       -0.0      87.49

                                       NODE        Vxx        Vyy
                                 ---- ------ ---------- ----------
                                  Max  Cent       -0.0        0.0
                                        733        0.0        0.0
                                       2097        0.0       -0.0
                                        716       -0.0       -0.0
                                        688       -0.0        0.0
                                  Min  Cent       -0.0        0.0
                                        733        0.0        0.0
                                       2097        0.0       -0.0
                                        716       -0.0       -0.0
                                        688       -0.0        0.0

  ELEM    MAT    SEC         LC        NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5518      3      1 S1 HL-~1  Max  Cent       -0.0       -0.0        0.1        0.1       -0.1      46.87
                                        704       -0.0       -0.7        0.1        0.0       -0.8       7.95
                                        688       -0.0        0.7        0.1        0.8       -0.0      82.20
                                        735       -0.0        0.7        0.1        0.8       -0.0      82.32
                                       2193       -0.0       -0.7        0.1       -0.0       -0.8       8.08
                                  Min  Cent       -0.0       -0.0        0.1        0.1       -0.1      46.87
                                        704       -0.0       -0.7        0.1        0.0       -0.8       7.95
                                        688       -0.0        0.7        0.1        0.8       -0.0      82.20
                                        735       -0.0        0.7        0.1        0.8       -0.0      82.32
                                       2193       -0.0       -0.7        0.1       -0.0       -0.8       8.08

                                       NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                                 ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                                  Max  Cent        0.0        0.0        0.0        0.0        0.0      18.38
                                        704       -0.0       -0.0       -0.0       -0.0       -0.0     -86.11
                                        688        0.0        0.0       -0.0        0.0        0.0      -3.44
                                        735       -0.0       -0.0        0.0       -0.0       -0.0      23.86
                                       2193        0.0        0.0        0.0        0.0        0.0      15.64
                                  Min  Cent        0.0        0.0        0.0        0.0        0.0      18.38
                                        704       -0.0       -0.0       -0.0       -0.0       -0.0     -86.11
                                        688        0.0        0.0       -0.0        0.0        0.0      -3.44
                                        735       -0.0       -0.0        0.0       -0.0       -0.0      23.86
                                       2193        0.0        0.0        0.0        0.0        0.0      15.64

                                       NODE        Vxx        Vyy
                                 ---- ------ ---------- ----------
                                  Max  Cent       -0.0        0.0
                                        704       -0.0       -0.0
                                        688       -0.0        0.0
                                        735        0.0        0.0
                                       2193        0.0       -0.0
                                  Min  Cent       -0.0        0.0
                                        704       -0.0       -0.0
                                        688       -0.0        0.0
                                        735        0.0        0.0
                                       2193        0.0       -0.0

  ELEM    MAT    SEC         LC        NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5519      3      1 S1 HL-~1  Max  Cent        0.0        1.5        0.1        1.5        0.0      87.97
                                        688        0.0        0.8        0.1        0.8        0.0      86.02
                                        716        0.0        2.2        0.1        2.2        0.0      88.65
                                       2201        0.0        2.2        0.1        2.2        0.0      88.64
                                        735        0.0        0.8        0.1        0.8        0.0      85.96
                                  Min  Cent        0.0        1.5        0.1        1.5        0.0      87.97
                                        688        0.0        0.8        0.1        0.8        0.0      86.02
                                        716        0.0        2.2        0.1        2.2        0.0      88.65
                                       2201        0.0        2.2        0.1        2.2        0.0      88.64
                                        735        0.0        0.8        0.1        0.8        0.0      85.96

                                       NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                                 ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                                  Max  Cent       -0.0       -0.0       -0.0       -0.0       -0.0     -89.66
                                        688       -0.0       -0.0        0.0       -0.0       -0.0      89.56
```

```
                                    716        0.0        0.0        0.0        0.0        0.0      16.88
                                   2201        0.0        0.0        0.0        0.0        0.0      21.98
                                    735       -0.0       -0.0        0.0       -0.0       -0.0      81.56
                              Min  Cent       -0.0       -0.0       -0.0       -0.0       -0.0     -89.66
                                    688       -0.0       -0.0        0.0       -0.0       -0.0      89.56
                                    716        0.0        0.0        0.0        0.0        0.0      16.88
                                   2201        0.0        0.0        0.0        0.0        0.0      21.98
                                    735       -0.0       -0.0        0.0       -0.0       -0.0      81.56

                                   NODE        Vxx        Vyy
                             ---- ------ ---------- ----------
                              Max  Cent       -0.0        0.0
                                    688       -0.0        0.0
                                    716       -0.0       -0.0
                                   2201       -0.0       -0.0
                                    735       -0.0        0.0
                              Min  Cent       -0.0        0.0
                                    688       -0.0        0.0
                                    716       -0.0       -0.0
                                   2201       -0.0       -0.0
                                    735       -0.0        0.0

  ELEM    MAT    SEC        LC         NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5520      3      1 S1 HL-~1 Max  Cent        0.0        0.1        0.1        0.2       -0.1      57.94
                                   2193        0.0       -0.6        0.1        0.0       -0.6      10.64
                                    735        0.0        0.9        0.1        0.9        0.0      82.02
                                   1591        0.0        0.9        0.1        0.9       -0.0      82.11
                                    703        0.0       -0.6        0.1        0.0       -0.6      10.80
                              Min  Cent        0.0        0.1        0.1        0.2       -0.1      57.94
                                   2193        0.0       -0.6        0.1        0.0       -0.6      10.64
                                    735        0.0        0.9        0.1        0.9        0.0      82.02
                                   1591        0.0        0.9        0.1        0.9       -0.0      82.11
                                    703        0.0       -0.6        0.1        0.0       -0.6      10.80

                                   NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                             ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
                              Max  Cent       -0.0        0.0        0.0        0.0       -0.0      53.16
                                   2193        0.0        0.0        0.0        0.0        0.0      13.82
                                    735        0.0        0.0        0.0        0.0       -0.0      64.51
                                   1591       -0.0       -0.0        0.0       -0.0       -0.0      85.66
                                    703        0.0        0.0        0.0        0.0        0.0       8.33
                              Min  Cent       -0.0        0.0        0.0        0.0       -0.0      53.16
                                   2193        0.0        0.0        0.0        0.0        0.0      13.82
                                    735        0.0        0.0        0.0        0.0       -0.0      64.51
                                   1591       -0.0       -0.0        0.0       -0.0       -0.0      85.66
                                    703        0.0        0.0        0.0        0.0        0.0       8.33

                                   NODE        Vxx        Vyy
                             ---- ------ ---------- ----------
                              Max  Cent        0.0       -0.0
                                   2193        0.0       -0.0
                                    735        0.0       -0.0
                                   1591        0.0       -0.0
                                    703        0.0       -0.0
                              Min  Cent        0.0       -0.0
                                   2193        0.0       -0.0
                                    735        0.0       -0.0
                                   1591        0.0       -0.0
                                    703        0.0       -0.0

  ELEM    MAT    SEC        LC         NODE        Fxx        Fyy        Fxy       Fmax       Fmin      ANGLE
------ ------ ------ -------- ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
  5521      3      1 S1 HL-~1 Max  Cent        0.0        1.7        0.1        1.7        0.0      85.83
                                    735        0.1        0.9        0.1        0.9        0.1      81.71
                                   2201        0.1        2.5        0.1        2.5        0.1      87.13
                                    715       -0.0        2.5        0.1        2.5       -0.0      87.23
                                   1591       -0.0        0.9        0.1        0.9       -0.0      82.46
                              Min  Cent        0.0        1.7        0.1        1.7        0.0      85.83
                                    735        0.1        0.9        0.1        0.9        0.1      81.71
                                   2201        0.1        2.5        0.1        2.5        0.1      87.13
                                    715       -0.0        2.5        0.1        2.5       -0.0      87.23
                                   1591       -0.0        0.9        0.1        0.9       -0.0      82.46

                                   NODE        Mxx        Myy        Mxy       Mmax       Mmin      ANGLE
                             ---- ------ ---------- ---------- ---------- ---------- ---------- ----------
```

ELEM	MAT	SEC	LC		NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
				Max	Cent	0.0	0.0	0.0	0.0	0.0	21.32
					735	-0.0	-0.0	0.0	0.0	-0.0	63.45
					2201	0.0	0.0	0.0	0.0	-0.0	37.89
					715	-0.0	-0.0	0.0	-0.0	-0.0	60.03
					1591	0.1	0.0	0.0	0.1	0.0	2.70
				Min	Cent	0.0	0.0	0.0	0.0	0.0	21.32
					735	-0.0	-0.0	0.0	0.0	-0.0	63.45
					2201	0.0	0.0	0.0	0.0	-0.0	37.89
					715	-0.0	-0.0	0.0	-0.0	-0.0	60.03
					1591	0.1	0.0	0.0	0.1	0.0	2.70

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	735	-0.0	-0.0
	2201	-0.0	0.0
	715	0.0	0.0
	1591	0.0	-0.0
Min	Cent	0.0	0.0
	735	-0.0	-0.0
	2201	-0.0	0.0
	715	0.0	0.0
	1591	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5522	3	1	S1 HL-~1	Max	Cent	-0.0	-0.0	0.0	0.0	-0.1	43.59
					703	-0.0	-1.0	0.0	-0.0	-1.0	2.28
					1591	-0.0	0.9	0.0	0.9	-0.0	87.76
					737	-0.0	0.9	0.0	0.9	-0.0	87.70
					2301	-0.0	-1.0	0.0	-0.0	-1.0	2.22
				Min	Cent	-0.0	-0.0	0.0	0.0	-0.1	43.59
					703	-0.0	-1.0	0.0	-0.0	-1.0	2.28
					1591	-0.0	0.9	0.0	0.9	-0.0	87.76
					737	-0.0	0.9	0.0	0.9	-0.0	87.70
					2301	-0.0	-1.0	0.0	-0.0	-1.0	2.22

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	69.93
	703	0.0	0.0	0.0	0.0	0.0	10.93
	1591	-0.0	-0.0	0.0	-0.0	-0.0	82.46
	737	-0.0	-0.0	0.0	-0.0	-0.0	86.59
	2301	-0.0	-0.0	0.0	-0.0	-0.0	83.63
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	69.93
	703	0.0	0.0	0.0	0.0	0.0	10.93
	1591	-0.0	-0.0	0.0	-0.0	-0.0	82.46
	737	-0.0	-0.0	0.0	-0.0	-0.0	86.59
	2301	-0.0	-0.0	0.0	-0.0	-0.0	83.63

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	703	0.0	-0.0
	1591	0.0	0.0
	737	0.0	0.0
	2301	0.0	-0.0
Min	Cent	0.0	-0.0
	703	0.0	-0.0
	1591	0.0	0.0
	737	0.0	0.0
	2301	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5523	3	1	S1 HL-~1	Max	Cent	-0.0	1.8	0.1	1.8	-0.0	88.24
					1591	0.0	0.9	0.1	0.9	0.0	86.30
					715	0.0	2.8	0.1	2.8	0.0	88.79
					2309	-0.1	2.8	0.1	2.8	-0.1	88.85
					737	-0.1	0.9	0.1	0.9	-0.1	86.77
				Min	Cent	-0.0	1.8	0.1	1.8	-0.0	88.24
					1591	0.0	0.9	0.1	0.9	0.0	86.30
					715	0.0	2.8	0.1	2.8	0.0	88.79
					2309	-0.1	2.8	0.1	2.8	-0.1	88.85
					737	-0.1	0.9	0.1	0.9	-0.1	86.77

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	2.38
	1591	0.1	0.0	0.0	0.1	0.0	1.97
	715	-0.0	-0.0	0.0	-0.0	-0.0	81.31
	2309	-0.0	-0.0	0.0	-0.0	-0.0	15.59
	737	0.0	0.0	0.0	0.0	0.0	2.39
Min	Cent	0.0	0.0	0.0	0.0	0.0	2.38
	1591	0.1	0.0	0.0	0.1	0.0	1.97
	715	-0.0	-0.0	0.0	-0.0	-0.0	81.31
	2309	-0.0	-0.0	0.0	-0.0	-0.0	15.59
	737	0.0	0.0	0.0	0.0	0.0	2.39

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	1591	0.0	0.0
	715	0.0	0.0
	2309	0.0	0.0
	737	0.0	0.0
Min	Cent	0.0	0.0
	1591	0.0	0.0
	715	0.0	0.0
	2309	0.0	0.0
	737	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5524	3	1	S1 HL-~1	Max	Cent	-0.0	-0.3	-1.3	1.1	-1.5	-41.51
					2301	-0.1	-0.9	-1.3	0.8	-1.9	-36.16
					737	-0.1	0.3	-1.3	1.4	-1.2	-49.25
					4940	0.1	0.3	-1.3	1.5	-1.1	-47.12
					2139	0.1	-0.9	-1.3	1.0	-1.8	-34.25
				Min	Cent	-0.0	-0.3	-1.3	1.1	-1.5	-41.51
					2301	-0.1	-0.9	-1.3	0.8	-1.9	-36.16
					737	-0.1	0.3	-1.3	1.4	-1.2	-49.25
					4940	0.1	0.3	-1.3	1.5	-1.1	-47.12
					2139	0.1	-0.9	-1.3	1.0	-1.8	-34.25

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	-0.0	-0.0	0.0	-0.0	-15.28
	2301	-0.0	0.0	-0.0	0.0	-0.0	-83.12
	737	-0.0	0.0	0.0	0.0	-0.0	82.40
	4940	0.3	0.0	0.0	0.3	0.0	0.41
	2139	-0.2	-0.1	-0.0	-0.1	-0.2	-88.16
Min	Cent	0.0	-0.0	-0.0	0.0	-0.0	-15.28
	2301	-0.0	0.0	-0.0	0.0	-0.0	-83.12
	737	-0.0	0.0	0.0	0.0	-0.0	82.40
	4940	0.3	0.0	0.0	0.3	0.0	0.41
	2139	-0.2	-0.1	-0.0	-0.1	-0.2	-88.16

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	2301	0.0	0.0
	737	0.0	0.0
	4940	-0.0	0.0
	2139	-0.0	0.0
Min	Cent	-0.0	0.0
	2301	0.0	0.0
	737	0.0	0.0
	4940	-0.0	0.0
	2139	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5525	3	1	S1 HL-~1	Max	Cent	0.4	1.4	-0.9	1.9	-0.1	-59.28
					737	-0.2	0.4	-0.9	1.0	-0.9	-54.78
					2309	-0.2	2.4	-0.9	2.6	-0.5	-72.60
					2030	1.0	2.4	-0.9	2.8	0.6	-63.13
					4940	1.0	0.4	-0.9	1.7	-0.2	-35.35
				Min	Cent	0.4	1.4	-0.9	1.9	-0.1	-59.28
					737	-0.2	0.4	-0.9	1.0	-0.9	-54.78
					2309	-0.2	2.4	-0.9	2.6	-0.5	-72.60
					2030	1.0	2.4	-0.9	2.8	0.6	-63.13

	4940	1.0	0.4	-0.9	1.7	-0.2	-35.35

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-47.68
	737	0.0	0.0	-0.0	0.0	0.0	-39.15
	2309	-0.0	-0.0	-0.0	0.0	-0.0	-32.47
	2030	0.3	0.1	-0.0	0.3	0.1	-2.42
	4940	-0.3	-0.1	0.0	-0.1	-0.3	89.42
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-47.68
	737	0.0	0.0	-0.0	0.0	0.0	-39.15
	2309	-0.0	-0.0	-0.0	0.0	-0.0	-32.47
	2030	0.3	0.1	-0.0	0.3	0.1	-2.42
	4940	-0.3	-0.1	0.0	-0.1	-0.3	89.42

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	737	0.0	0.0
	2309	0.0	-0.0
	2030	-0.0	-0.0
	4940	-0.0	0.0
Min	Cent	-0.0	0.0
	737	0.0	0.0
	2309	0.0	-0.0
	2030	-0.0	-0.0
	4940	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5526	3	1	S1 HL-~1	Max	Cent	-0.4	0.0	-1.1	0.9	-1.3	-50.19
					2139	0.2	-0.4	-1.1	1.0	-1.2	-37.70
					4940	0.2	0.4	-1.1	1.4	-0.8	-47.62
					692	-1.0	0.4	-1.1	1.0	-1.6	-61.03
					1492	-1.0	-0.4	-1.1	0.5	-1.8	-52.67
				Min	Cent	-0.4	0.0	-1.1	0.9	-1.3	-50.19
					2139	0.2	-0.4	-1.1	1.0	-1.2	-37.70
					4940	0.2	0.4	-1.1	1.4	-0.8	-47.62
					692	-1.0	0.4	-1.1	1.0	-1.6	-61.03
					1492	-1.0	-0.4	-1.1	0.5	-1.8	-52.67

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.2	-0.0	-0.0	-0.0	-0.2	-84.09
	2139	-0.2	-0.1	0.0	-0.1	-0.2	82.72
	4940	0.2	0.0	-0.1	0.3	-0.0	-13.87
	692	-0.9	-0.2	-0.1	-0.2	-0.9	-84.54
	1492	0.1	0.1	0.0	0.1	0.1	67.90
Min	Cent	-0.2	-0.0	-0.0	-0.0	-0.2	-84.09
	2139	-0.2	-0.1	0.0	-0.1	-0.2	82.72
	4940	0.2	0.0	-0.1	0.3	-0.0	-13.87
	692	-0.9	-0.2	-0.1	-0.2	-0.9	-84.54
	1492	0.1	0.1	0.0	0.1	0.1	67.90

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	2139	-0.0	-0.0
	4940	-0.0	-0.0
	692	0.1	-0.0
	1492	0.1	-0.0
Min	Cent	0.0	-0.0
	2139	-0.0	-0.0
	4940	-0.0	-0.0
	692	0.1	-0.0
	1492	0.1	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
5527	3	1	S1 HL-~1	Max	Cent	-1.5	0.3	-1.2	0.9	-2.1	-63.46
					4940	0.7	0.1	-1.2	1.6	-0.8	-37.35
					2030	0.7	0.6	-1.2	1.8	-0.6	-43.10
					1384	-3.7	0.6	-1.2	0.9	-4.0	-75.31
					692	-3.7	0.1	-1.2	0.4	-4.0	-73.75
				Min	Cent	-1.5	0.3	-1.2	0.9	-2.1	-63.46
					4940	0.7	0.1	-1.2	1.6	-0.8	-37.35

				2030	0.7	0.6	-1.2	1.8	-0.6	-43.10
				1384	-3.7	0.6	-1.2	0.9	-4.0	-75.31
				692	-3.7	0.1	-1.2	0.4	-4.0	-73.75

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.2	0.1	0.0	0.2	0.1	13.10
	4940	-0.3	-0.2	-0.0	-0.2	-0.3	-85.71
	2030	0.3	0.1	0.1	0.3	0.1	24.63
	1384	-0.4	-0.2	0.0	-0.2	-0.5	78.49
	692	1.4	0.5	-0.1	1.4	0.5	-3.21
Min	Cent	0.2	0.1	0.0	0.2	0.1	13.10
	4940	-0.3	-0.2	-0.0	-0.2	-0.3	-85.71
	2030	0.3	0.1	0.1	0.3	0.1	24.63
	1384	-0.4	-0.2	0.0	-0.2	-0.5	78.49
	692	1.4	0.5	-0.1	1.4	0.5	-3.21

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4940	-0.0	-0.0
	2030	-0.0	0.0
	1384	0.1	0.0
	692	0.1	-0.0
Min	Cent	0.0	-0.0
	4940	-0.0	-0.0
	2030	-0.0	0.0
	1384	0.1	0.0
	692	0.1	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6079	3	2	S1 HL-~1	Max	Cent	-0.0	-0.3	0.1	0.0	-0.3	22.19
					4991	-0.1	-0.3	0.1	-0.0	-0.3	24.37
					4992	-0.1	-0.3	0.1	0.0	-0.3	25.97
					4399	0.0	-0.3	0.1	0.1	-0.3	20.31
					3771	0.0	-0.3	0.1	0.1	-0.3	19.22
				Min	Cent	-0.0	-0.3	0.1	0.0	-0.3	22.19
					4991	-0.1	-0.3	0.1	-0.0	-0.3	24.37
					4992	-0.1	-0.3	0.1	0.0	-0.3	25.97
					4399	0.0	-0.3	0.1	0.1	-0.3	20.31
					3771	0.0	-0.3	0.1	0.1	-0.3	19.22

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	-0.0	0.0	0.0	-31.83
	4991	0.1	0.0	-0.0	0.1	0.0	-9.00
	4992	-0.0	0.0	-0.0	0.0	-0.0	-48.26
	4399	0.0	0.0	-0.0	0.0	0.0	-42.28
	3771	-0.0	-0.0	-0.0	-0.0	-0.0	-43.58
Min	Cent	0.0	0.0	-0.0	0.0	0.0	-31.83
	4991	0.1	0.0	-0.0	0.1	0.0	-9.00
	4992	-0.0	0.0	-0.0	0.0	-0.0	-48.26
	4399	0.0	0.0	-0.0	0.0	0.0	-42.28
	3771	-0.0	-0.0	-0.0	-0.0	-0.0	-43.58

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	4991	0.0	0.0
	4992	0.0	-0.0
	4399	-0.0	-0.0
	3771	-0.0	0.0
Min	Cent	0.0	0.0
	4991	0.0	0.0
	4992	0.0	-0.0
	4399	-0.0	-0.0
	3771	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6080	3	2	S1 HL-~1	Max	Cent	-0.0	-0.3	0.2	0.1	-0.4	28.91
					4992	-0.1	-0.3	0.2	0.1	-0.4	32.33
					4993	-0.1	-0.3	0.2	0.1	-0.4	31.01
					1905	0.0	-0.3	0.2	0.1	-0.4	25.94
					4399	0.0	-0.3	0.2	0.1	-0.4	27.00

Min	Cent	-0.0	-0.3	0.2	0.1	-0.4	28.91
	4992	-0.1	-0.3	0.2	0.1	-0.4	32.33
	4993	-0.1	-0.3	0.2	0.1	-0.4	31.01
	1905	0.0	-0.3	0.2	0.1	-0.4	25.94
	4399	0.0	-0.3	0.2	0.1	-0.4	27.00

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-71.97
	4992	-0.0	0.0	-0.0	0.0	-0.0	-48.00
	4993	-0.1	-0.0	-0.0	-0.0	-0.1	-81.92
	1905	-0.0	-0.0	-0.0	-0.0	-0.0	-80.16
	4399	0.0	0.0	-0.0	0.0	0.0	-42.96
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-71.97
	4992	-0.0	0.0	-0.0	0.0	-0.0	-48.00
	4993	-0.1	-0.0	-0.0	-0.0	-0.1	-81.92
	1905	-0.0	-0.0	-0.0	-0.0	-0.0	-80.16
	4399	0.0	0.0	-0.0	0.0	0.0	-42.96

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	4992	0.0	-0.0
	4993	0.0	-0.0
	1905	0.0	-0.0
	4399	0.0	-0.0
Min	Cent	0.0	-0.0
	4992	0.0	-0.0
	4993	0.0	-0.0
	1905	0.0	-0.0
	4399	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6081	3	2	S1 HL-~1	Max	Cent	-0.0	-0.3	-0.0	-0.0	-0.3	-7.36
					4993	-0.1	-0.3	-0.0	-0.1	-0.3	-9.55
					5126	-0.1	-0.3	-0.0	-0.1	-0.3	-9.78
					5127	0.1	-0.3	-0.0	0.1	-0.3	-5.98
					1905	0.1	-0.3	-0.0	0.1	-0.3	-5.89
				Min	Cent	-0.0	-0.3	-0.0	-0.0	-0.3	-7.36
					4993	-0.1	-0.3	-0.0	-0.1	-0.3	-9.55
					5126	-0.1	-0.3	-0.0	-0.1	-0.3	-9.78
					5127	0.1	-0.3	-0.0	0.1	-0.3	-5.98
					1905	0.1	-0.3	-0.0	0.1	-0.3	-5.89

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-77.25
	4993	-0.1	-0.0	-0.0	-0.0	-0.1	-81.81
	5126	-0.0	-0.0	-0.0	0.0	-0.0	-42.17
	5127	0.0	0.0	-0.0	0.0	-0.0	-70.60
	1905	-0.0	-0.0	-0.0	-0.0	-0.0	-83.08
Min	Cent	-0.0	-0.0	-0.0	-0.0	-0.0	-77.25
	4993	-0.1	-0.0	-0.0	-0.0	-0.1	-81.81
	5126	-0.0	-0.0	-0.0	0.0	-0.0	-42.17
	5127	0.0	0.0	-0.0	0.0	-0.0	-70.60
	1905	-0.0	-0.0	-0.0	-0.0	-0.0	-83.08

	NODE	Vxx	Vyy
Max	Cent	-0.0	-0.0
	4993	-0.0	-0.0
	5126	-0.0	-0.0
	5127	-0.0	-0.0
	1905	-0.0	-0.0
Min	Cent	-0.0	-0.0
	4993	-0.0	-0.0
	5126	-0.0	-0.0
	5127	-0.0	-0.0
	1905	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6094	3	1	S1 HL-~1	Max	Cent	-0.0	-0.0	0.3	0.3	-0.4	44.16
					4993	-0.0	-0.2	0.3	0.3	-0.4	39.61
					5007	-0.0	0.1	0.3	0.4	-0.3	49.56

	731	-0.0	0.1	0.3	0.4	-0.3	48.75
	1905	-0.0	-0.2	0.3	0.3	-0.4	38.81
Min	Cent	-0.0	-0.0	0.3	0.3	-0.4	44.16
	4993	-0.0	-0.2	0.3	0.3	-0.4	39.61
	5007	-0.0	0.1	0.3	0.4	-0.3	49.56
	731	-0.0	0.1	0.3	0.4	-0.3	48.75
	1905	-0.0	-0.2	0.3	0.3	-0.4	38.81

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	-0.0	40.68
	4993	-0.0	-0.0	0.0	-0.0	-0.0	87.16
	5007	0.0	0.0	-0.0	0.0	0.0	-0.86
	731	-0.0	-0.0	0.0	-0.0	-0.0	79.93
	1905	0.0	0.0	0.0	0.0	0.0	19.01
Min	Cent	0.0	0.0	0.0	0.0	-0.0	40.68
	4993	-0.0	-0.0	0.0	-0.0	-0.0	87.16
	5007	0.0	0.0	-0.0	0.0	0.0	-0.86
	731	-0.0	-0.0	0.0	-0.0	-0.0	79.93
	1905	0.0	0.0	0.0	0.0	0.0	19.01

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	4993	-0.0	-0.0
	5007	-0.0	0.0
	731	0.0	0.0
	1905	0.0	-0.0
Min	Cent	-0.0	0.0
	4993	-0.0	-0.0
	5007	-0.0	0.0
	731	0.0	0.0
	1905	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6095	3	1	S1 HL-~1	Max	Cent	0.0	0.2	0.3	0.4	-0.2	55.10
					5007	0.1	0.1	0.3	0.4	-0.2	46.34
					5008	0.1	0.4	0.3	0.5	-0.1	58.63
					1913	-0.0	0.4	0.3	0.5	-0.2	62.29
					731	-0.0	0.1	0.3	0.3	-0.3	51.22
				Min	Cent	0.0	0.2	0.3	0.4	-0.2	55.10
					5007	0.1	0.1	0.3	0.4	-0.2	46.34
					5008	0.1	0.4	0.3	0.5	-0.1	58.63
					1913	-0.0	0.4	0.3	0.5	-0.2	62.29
					731	-0.0	0.1	0.3	0.3	-0.3	51.22

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-61.70
	5007	0.0	0.0	-0.0	0.0	0.0	-70.54
	5008	-0.0	-0.0	0.0	-0.0	-0.0	84.87
	1913	-0.0	0.0	-0.0	0.0	-0.0	-87.97
	731	0.0	-0.0	-0.0	0.0	-0.0	-15.80
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-61.70
	5007	0.0	0.0	-0.0	0.0	0.0	-70.54
	5008	-0.0	-0.0	0.0	-0.0	-0.0	84.87
	1913	-0.0	0.0	-0.0	0.0	-0.0	-87.97
	731	0.0	-0.0	-0.0	0.0	-0.0	-15.80

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	5007	0.0	0.0
	5008	0.0	-0.0
	1913	0.0	-0.0
	731	0.0	0.0
Min	Cent	0.0	0.0
	5007	0.0	0.0
	5008	0.0	-0.0
	1913	0.0	-0.0
	731	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6108	3	3	S1 HL-~1	Max	Cent	0.0	0.6	-0.0	0.6	0.0	-86.38

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
					5021	0.2	0.6	-0.0	0.6	0.2	-85.30
					5008	0.2	0.6	-0.0	0.6	0.2	-85.36
					1913	-0.1	0.6	-0.0	0.6	-0.1	-87.06
					2684	-0.1	0.6	-0.0	0.6	-0.1	-87.03
				Min	Cent	0.0	0.6	-0.0	0.6	0.0	-86.38
					5021	0.2	0.6	-0.0	0.6	0.2	-85.30
					5008	0.2	0.6	-0.0	0.6	0.2	-85.36
					1913	-0.1	0.6	-0.0	0.6	-0.1	-87.06
					2684	-0.1	0.6	-0.0	0.6	-0.1	-87.03

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	55.53
	5021	-0.0	-0.0	0.0	0.0	-0.0	31.38
	5008	-0.0	0.0	0.0	0.0	-0.0	50.93
	1913	-0.0	0.0	0.0	0.0	-0.0	69.96
	2684	0.0	0.0	0.0	0.0	0.0	70.73
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	55.53
	5021	-0.0	-0.0	0.0	0.0	-0.0	31.38
	5008	-0.0	0.0	0.0	0.0	-0.0	50.93
	1913	-0.0	0.0	0.0	0.0	-0.0	69.96
	2684	0.0	0.0	0.0	0.0	0.0	70.73

	NODE	Vxx	Vyy
Max	Cent	0.0	-0.0
	5021	0.0	-0.0
	5008	0.0	-0.0
	1913	0.0	-0.0
	2684	0.0	-0.0
Min	Cent	0.0	-0.0
	5021	0.0	-0.0
	5008	0.0	-0.0
	1913	0.0	-0.0
	2684	0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6109	3	3	S1 HL-~1	Max	Cent	0.0	0.5	0.0	0.5	0.0	86.81
					5008	0.2	0.6	0.0	0.6	0.2	86.04
					5022	0.2	0.5	0.0	0.5	0.2	85.00
					1208	-0.1	0.5	0.0	0.5	-0.1	87.33
					1913	-0.1	0.6	0.0	0.6	-0.1	87.66
				Min	Cent	0.0	0.5	0.0	0.5	0.0	86.81
					5008	0.2	0.6	0.0	0.6	0.2	86.04
					5022	0.2	0.5	0.0	0.5	0.2	85.00
					1208	-0.1	0.5	0.0	0.5	-0.1	87.33
					1913	-0.1	0.6	0.0	0.6	-0.1	87.66

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	0.0	0.0	-0.0	59.78
	5008	-0.0	0.0	0.0	0.0	-0.0	57.82
	5022	0.0	0.0	0.0	0.0	0.0	63.94
	1208	-0.0	-0.0	0.0	0.0	-0.0	42.82
	1913	-0.0	0.0	0.0	0.0	-0.0	72.50
Min	Cent	-0.0	0.0	0.0	0.0	-0.0	59.78
	5008	-0.0	0.0	0.0	0.0	-0.0	57.82
	5022	0.0	0.0	0.0	0.0	0.0	63.94
	1208	-0.0	-0.0	0.0	0.0	-0.0	42.82
	1913	-0.0	0.0	0.0	0.0	-0.0	72.50

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	5008	-0.0	-0.0
	5022	-0.0	0.0
	1208	-0.0	0.0
	1913	-0.0	-0.0
Min	Cent	-0.0	0.0
	5008	-0.0	-0.0
	5022	-0.0	0.0
	1208	-0.0	0.0
	1913	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE

6133	3	2	S1 HL-~1	Max	Cent	-0.0	0.2	-0.1	0.2	-0.1	-66.01
					5046	0.1	0.2	-0.1	0.3	0.0	-58.70
					5047	0.1	0.2	-0.1	0.3	0.0	-58.35
					4432	-0.1	0.2	-0.1	0.2	-0.1	-71.04
					3744	-0.1	0.2	-0.1	0.2	-0.1	-71.20
				Min	Cent	-0.0	0.2	-0.1	0.2	-0.1	-66.01
					5046	0.1	0.2	-0.1	0.3	0.0	-58.70
					5047	0.1	0.2	-0.1	0.3	0.0	-58.35
					4432	-0.1	0.2	-0.1	0.2	-0.1	-71.04
					3744	-0.1	0.2	-0.1	0.2	-0.1	-71.20

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	0.0	0.0	0.0	0.0	0.0	1.02
	5046	0.1	0.0	0.0	0.1	0.0	2.58
	5047	-0.0	0.0	0.0	0.0	-0.0	54.12
	4432	0.0	0.0	0.0	0.0	0.0	1.23
	3744	0.1	0.0	-0.0	0.1	0.0	-0.99
Min	Cent	0.0	0.0	0.0	0.0	0.0	1.02
	5046	0.1	0.0	0.0	0.1	0.0	2.58
	5047	-0.0	0.0	0.0	0.0	-0.0	54.12
	4432	0.0	0.0	0.0	0.0	0.0	1.23
	3744	0.1	0.0	-0.0	0.1	0.0	-0.99

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	5046	0.0	0.0
	5047	0.0	0.0
	4432	0.0	0.0
	3744	0.0	0.0
Min	Cent	0.0	0.0
	5046	0.0	0.0
	5047	0.0	0.0
	4432	0.0	0.0
	3744	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6134	3	2	S1 HL-~1	Max	Cent	-0.0	0.2	-0.2	0.3	-0.1	-58.23
					5047	0.1	0.2	-0.2	0.3	-0.1	-53.34
					5048	0.1	0.2	-0.2	0.3	-0.1	-53.44
					1621	-0.1	0.2	-0.2	0.3	-0.2	-62.41
					4432	-0.1	0.2	-0.2	0.3	-0.2	-62.33
				Min	Cent	-0.0	0.2	-0.2	0.3	-0.1	-58.23
					5047	0.1	0.2	-0.2	0.3	-0.1	-53.34
					5048	0.1	0.2	-0.2	0.3	-0.1	-53.44
					1621	-0.1	0.2	-0.2	0.3	-0.2	-62.41
					4432	-0.1	0.2	-0.2	0.3	-0.2	-62.33

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	70.96
	5047	-0.0	0.0	0.0	0.0	-0.0	49.60
	5048	-0.1	-0.0	0.0	-0.0	-0.1	82.82
	1621	-0.0	-0.0	0.0	-0.0	-0.0	78.95
	4432	0.0	0.0	0.0	0.0	0.0	2.60
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	70.96
	5047	-0.0	0.0	0.0	0.0	-0.0	49.60
	5048	-0.1	-0.0	0.0	-0.0	-0.1	82.82
	1621	-0.0	-0.0	0.0	-0.0	-0.0	78.95
	4432	0.0	0.0	0.0	0.0	0.0	2.60

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	5047	0.0	0.0
	5048	0.0	0.0
	1621	0.0	0.0
	4432	0.0	0.0
Min	Cent	0.0	0.0
	5047	0.0	0.0
	5048	0.0	0.0
	1621	0.0	0.0
	4432	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6135	3	2	S1 HL-~1	Max	Cent	-0.0	0.2	0.1	0.2	-0.0	73.61
					5048	0.1	0.2	0.1	0.2	0.0	66.93
					5116	0.1	0.2	0.1	0.2	0.0	67.72
					5117	-0.1	0.2	0.1	0.2	-0.1	77.50
					1621	-0.1	0.2	0.1	0.2	-0.1	77.21
				Min	Cent	-0.0	0.2	0.1	0.2	-0.0	73.61
					5048	0.1	0.2	0.1	0.2	0.0	66.93
					5116	0.1	0.2	0.1	0.2	0.0	67.72
					5117	-0.1	0.2	0.1	0.2	-0.1	77.50
					1621	-0.1	0.2	0.1	0.2	-0.1	77.21

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	74.69
	5048	-0.1	-0.0	0.0	-0.0	-0.1	81.05
	5116	0.0	0.0	0.0	0.0	-0.0	50.04
	5117	0.0	-0.0	0.0	0.0	-0.0	21.03
	1621	-0.1	-0.0	0.0	-0.0	-0.1	84.98
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	74.69
	5048	-0.1	-0.0	0.0	-0.0	-0.1	81.05
	5116	0.0	0.0	0.0	0.0	-0.0	50.04
	5117	0.0	-0.0	0.0	0.0	-0.0	21.03
	1621	-0.1	-0.0	0.0	-0.0	-0.1	84.98

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	5048	-0.0	0.0
	5116	-0.0	0.0
	5117	-0.0	0.0
	1621	-0.0	0.0
Min	Cent	-0.0	0.0
	5048	-0.0	0.0
	5116	-0.0	0.0
	5117	-0.0	0.0
	1621	-0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6148	3	1	S1 HL-~1	Max	Cent	-0.0	0.0	-0.4	0.4	-0.4	-46.90
					5048	-0.0	0.1	-0.4	0.4	-0.3	-49.10
					5062	-0.0	-0.0	-0.4	0.4	-0.4	-43.97
					2723	-0.0	-0.0	-0.4	0.4	-0.4	-44.68
					1621	-0.0	0.1	-0.4	0.4	-0.3	-49.79
				Min	Cent	-0.0	0.0	-0.4	0.4	-0.4	-46.90
					5048	-0.0	0.1	-0.4	0.4	-0.3	-49.10
					5062	-0.0	-0.0	-0.4	0.4	-0.4	-43.97
					2723	-0.0	-0.0	-0.4	0.4	-0.4	-44.68
					1621	-0.0	0.1	-0.4	0.4	-0.3	-49.79

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	0.0	-0.0	-0.0	67.57
	5048	-0.0	-0.0	0.0	-0.0	-0.0	84.46
	5062	0.0	0.0	0.0	0.0	0.0	0.23
	2723	-0.1	-0.0	0.0	-0.0	-0.1	87.17
	1621	0.0	0.0	0.0	0.0	0.0	6.43
Min	Cent	-0.0	-0.0	0.0	-0.0	-0.0	67.57
	5048	-0.0	-0.0	0.0	-0.0	-0.0	84.46
	5062	0.0	0.0	0.0	0.0	0.0	0.23
	2723	-0.1	-0.0	0.0	-0.0	-0.1	87.17
	1621	0.0	0.0	0.0	0.0	0.0	6.43

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	5048	-0.0	0.0
	5062	-0.0	-0.0
	2723	0.0	-0.0
	1621	0.0	0.0
Min	Cent	0.0	0.0
	5048	-0.0	0.0
	5062	-0.0	-0.0
	2723	0.0	-0.0

				1621	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6149	3	1	S1 HL-~1	Max	Cent	0.0	-0.1	-0.3	0.3	-0.4	-40.78
					5062	-0.0	-0.0	-0.3	0.3	-0.4	-45.27
					5063	-0.0	-0.2	-0.3	0.2	-0.4	-39.39
					2485	0.0	-0.2	-0.3	0.3	-0.4	-36.49
					2723	0.0	-0.0	-0.3	0.3	-0.3	-42.20
				Min	Cent	0.0	-0.1	-0.3	0.3	-0.4	-40.78
					5062	-0.0	-0.0	-0.3	0.3	-0.4	-45.27
					5063	-0.0	-0.2	-0.3	0.2	-0.4	-39.39
					2485	0.0	-0.2	-0.3	0.3	-0.4	-36.49
					2723	0.0	-0.0	-0.3	0.3	-0.3	-42.20

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	0.0	-0.0	0.0	-0.0	-60.25
	5062	-0.0	0.0	-0.0	0.0	-0.0	-46.70
	5063	-0.0	-0.0	-0.0	-0.0	-0.0	-88.88
	2485	0.0	0.0	-0.0	0.0	0.0	-9.35
	2723	-0.0	-0.0	-0.0	-0.0	-0.0	-77.77
Min	Cent	-0.0	0.0	-0.0	0.0	-0.0	-60.25
	5062	-0.0	0.0	-0.0	0.0	-0.0	-46.70
	5063	-0.0	-0.0	-0.0	-0.0	-0.0	-88.88
	2485	0.0	0.0	-0.0	0.0	0.0	-9.35
	2723	-0.0	-0.0	-0.0	-0.0	-0.0	-77.77

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	5062	0.0	-0.0
	5063	0.0	0.0
	2485	-0.0	0.0
	2723	-0.0	-0.0
Min	Cent	-0.0	0.0
	5062	0.0	-0.0
	5063	0.0	0.0
	2485	-0.0	0.0
	2723	-0.0	-0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6162	3	4	S1 HL-~1	Max	Cent	0.0	-0.5	0.1	0.0	-0.5	8.66
					5076	-0.1	-0.5	0.1	-0.1	-0.5	13.05
					5063	-0.1	-0.5	0.1	-0.1	-0.5	12.55
					2485	0.2	-0.5	0.1	0.2	-0.5	6.44
					1862	0.2	-0.5	0.1	0.2	-0.5	6.58
				Min	Cent	0.0	-0.5	0.1	0.0	-0.5	8.66
					5076	-0.1	-0.5	0.1	-0.1	-0.5	13.05
					5063	-0.1	-0.5	0.1	-0.1	-0.5	12.55
					2485	0.2	-0.5	0.1	0.2	-0.5	6.44
					1862	0.2	-0.5	0.1	0.2	-0.5	6.58

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-43.58
	5076	0.0	0.0	-0.0	0.0	-0.0	-52.79
	5063	-0.0	0.0	-0.0	0.0	-0.0	-54.92
	2485	-0.0	-0.0	-0.0	-0.0	-0.0	-47.17
	1862	-0.0	-0.0	-0.0	0.0	-0.0	-16.64
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-43.58
	5076	0.0	0.0	-0.0	0.0	-0.0	-52.79
	5063	-0.0	0.0	-0.0	0.0	-0.0	-54.92
	2485	-0.0	-0.0	-0.0	-0.0	-0.0	-47.17
	1862	-0.0	-0.0	-0.0	0.0	-0.0	-16.64

	NODE	Vxx	Vyy
Max	Cent	0.0	0.0
	5076	0.0	0.0
	5063	0.0	0.0
	2485	0.0	0.0
	1862	0.0	0.0
Min	Cent	0.0	0.0
	5076	0.0	0.0

5063	0.0	0.0
2485	0.0	0.0
1862	0.0	0.0

ELEM	MAT	SEC	LC		NODE	Fxx	Fyy	Fxy	Fmax	Fmin	ANGLE
6163	3	4	S1 HL-~1	Max	Cent	0.0	-0.4	-0.1	0.0	-0.5	-8.23
					5063	-0.1	-0.5	-0.1	-0.1	-0.5	-11.37
					5077	-0.1	-0.4	-0.1	-0.1	-0.4	-12.76
					1087	0.2	-0.4	-0.1	0.2	-0.4	-6.43
					2485	0.2	-0.5	-0.1	0.2	-0.5	-6.04
				Min	Cent	0.0	-0.4	-0.1	0.0	-0.5	-8.23
					5063	-0.1	-0.5	-0.1	-0.1	-0.5	-11.37
					5077	-0.1	-0.4	-0.1	-0.1	-0.4	-12.76
					1087	0.2	-0.4	-0.1	0.2	-0.4	-6.43
					2485	0.2	-0.5	-0.1	0.2	-0.5	-6.04

	NODE	Mxx	Myy	Mxy	Mmax	Mmin	ANGLE
Max	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-43.36
	5063	-0.0	-0.0	-0.0	0.0	-0.0	-63.20
	5077	-0.0	-0.0	-0.0	0.0	-0.0	-42.18
	1087	0.0	-0.0	-0.0	0.0	-0.0	-30.09
	2485	-0.0	-0.0	-0.0	0.0	-0.0	-23.33
Min	Cent	-0.0	-0.0	-0.0	0.0	-0.0	-43.36
	5063	-0.0	-0.0	-0.0	0.0	-0.0	-63.20
	5077	-0.0	-0.0	-0.0	0.0	-0.0	-42.18
	1087	0.0	-0.0	-0.0	0.0	-0.0	-30.09
	2485	-0.0	-0.0	-0.0	0.0	-0.0	-23.33

	NODE	Vxx	Vyy
Max	Cent	-0.0	0.0
	5063	-0.0	0.0
	5077	-0.0	0.0
	1087	-0.0	0.0
	2485	-0.0	0.0
Min	Cent	-0.0	0.0
	5063	-0.0	0.0
	5077	-0.0	0.0
	1087	-0.0	0.0
	2485	-0.0	0.0

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

SWING SPAN

ALLOWABLE WIND SPEED ANALYSIS OF TRUSS

Company: Close, Jensen, and Miller PC
Engineer: Danielle Coutu

Swing Truss - Fixed Moment Connections

Swing Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)
Cross Bracing	13.53 ksi	12.36 ksi	12.05 ksi	11.77 ksi
Main Members	13.53 ksi	10.34 ksi	-	-

Displacement (Strength III)	Allowable Wind Speed
0.36 in	125 mph
0.36 in	125 mph

25.5 ksi Steel

Swing Span - Proposed Widening (Fixed Moment Conncetions)

Swing Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)
Cross Bracing	16.42 ksi	15.58 ksi	15.29 ksi	15.04 ksi
Main Members	15.34 ksi	12.11 ksi	-	-

Displacement (Strength III)	Allowable Wind Speed
1.24 in	125 mph
1.24 in	125 mph

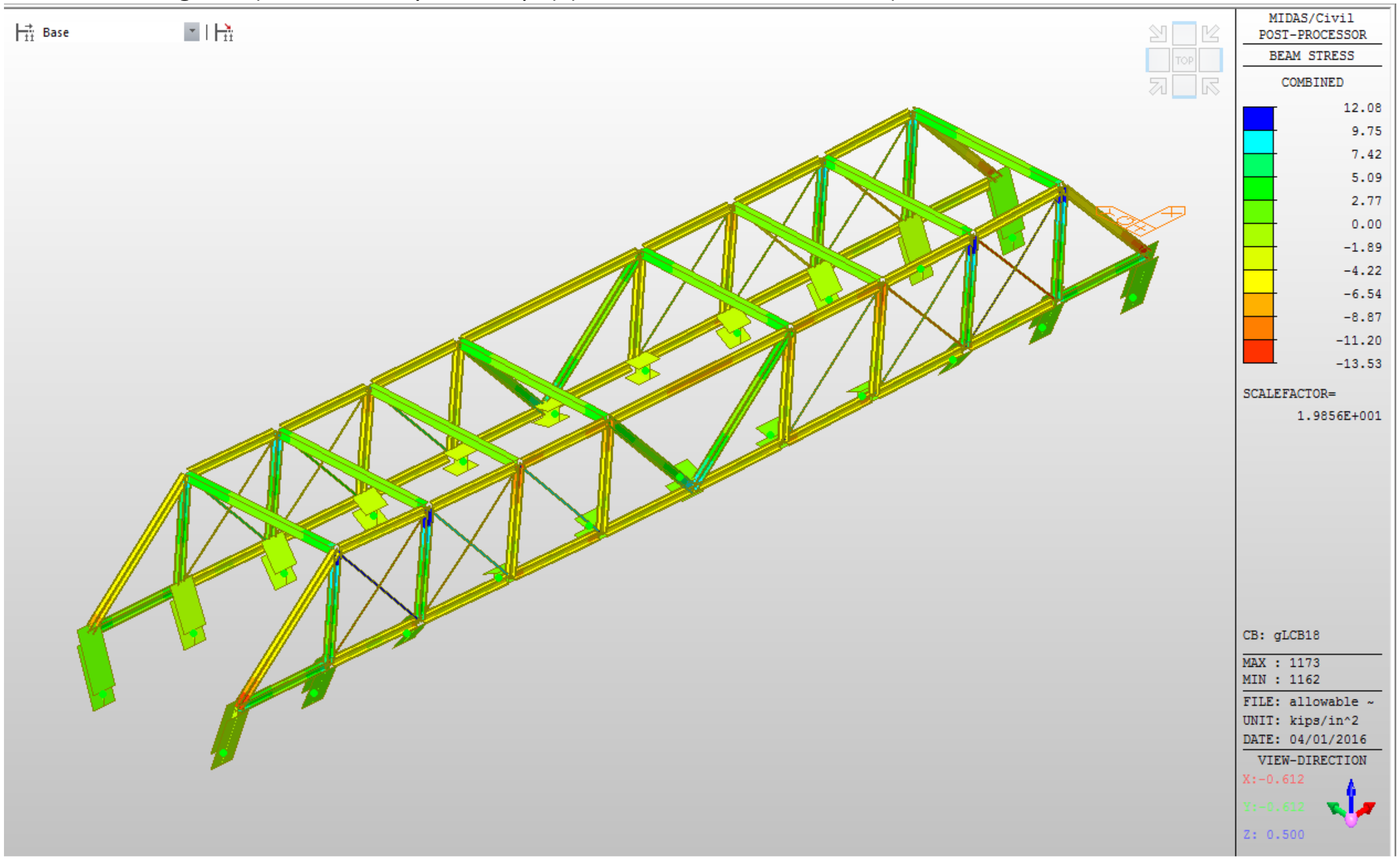
25.5 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ± Sbz ± Sax (Warping).

LRFD ANALYSIS

Swing Truss: Entire Truss

Stresses: Strength III (Wind Velocity= 125 mph) (Fixed Moment Connection)



Stress = 13.53 ksi
25.5 ksi Steel

Windward load = .08 ksf

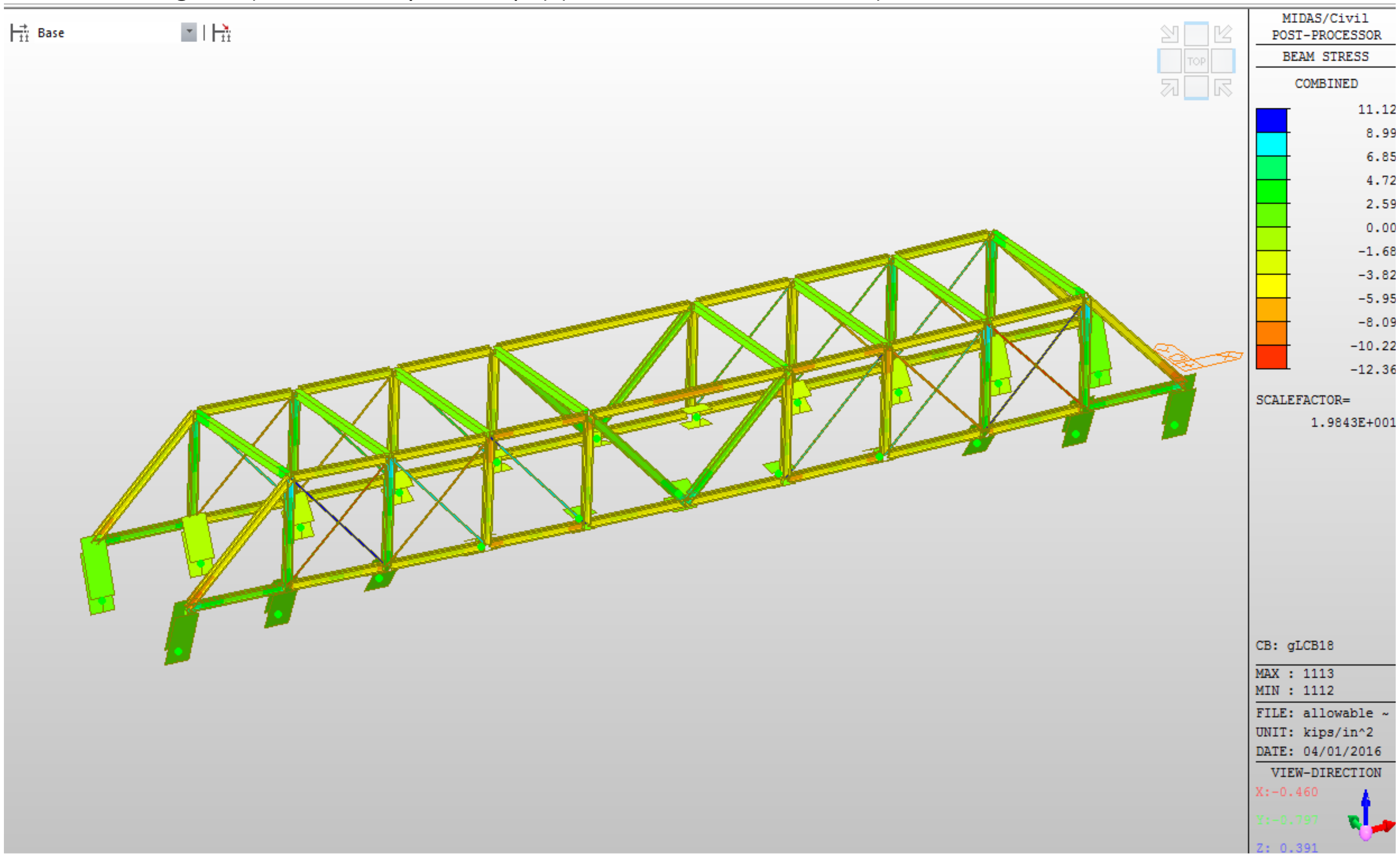
Leeward load = .04 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Truss: Entire Truss

Stresses: Strength III (Wind Velocity= 100 mph) (Fixed Moment Connection)



Stress = 12.36 ksi

25.5 ksi Steel

Windward load = .0512 ksf

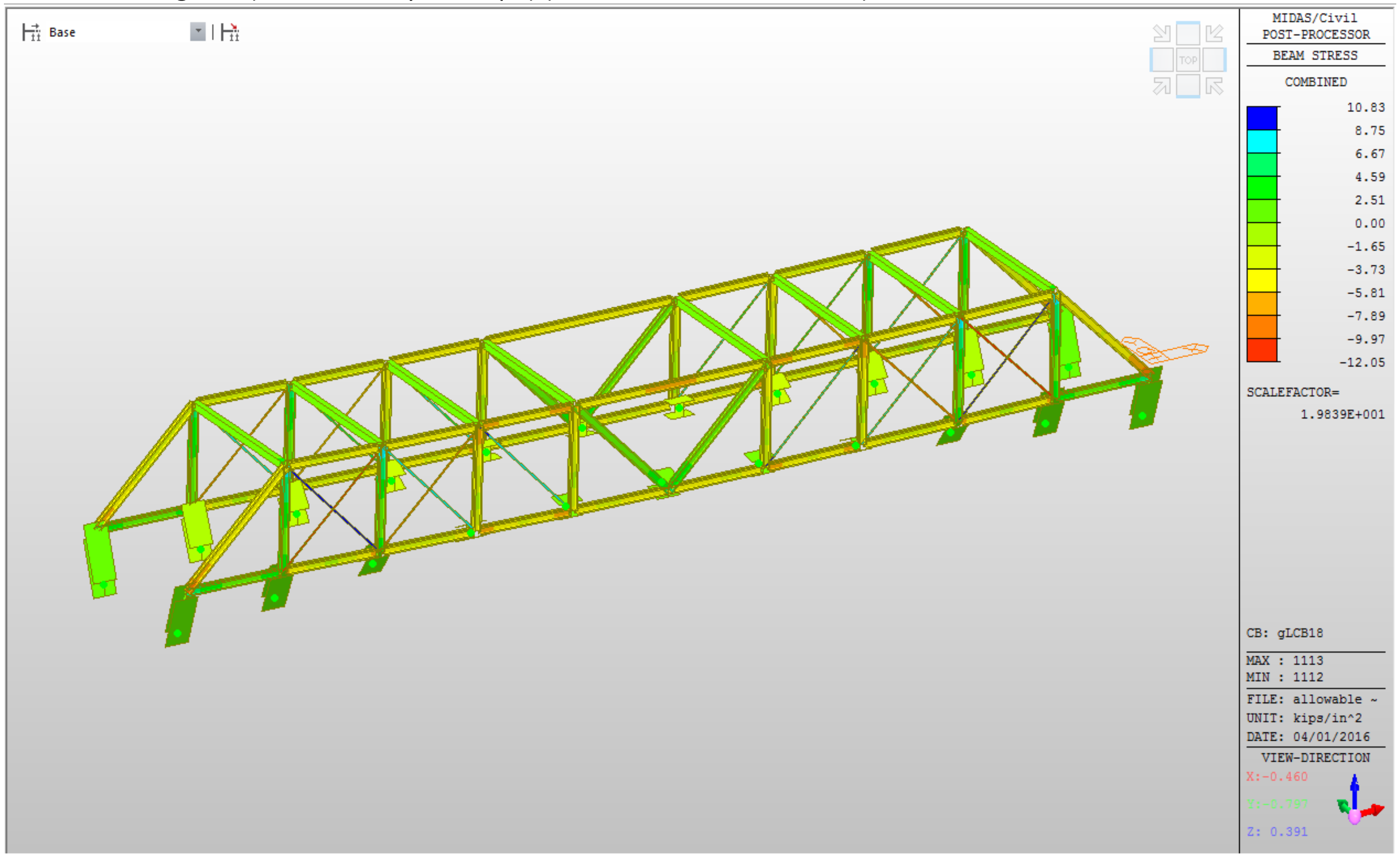
Leeward load = .0256 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Truss: Entire Truss

Stresses: Strength III (Wind Velocity= 90 mph) (Fixed Moment Connection)



Stress = 12.05 ksi 25.5 ksi Steel

Windward load = .0415 ksf

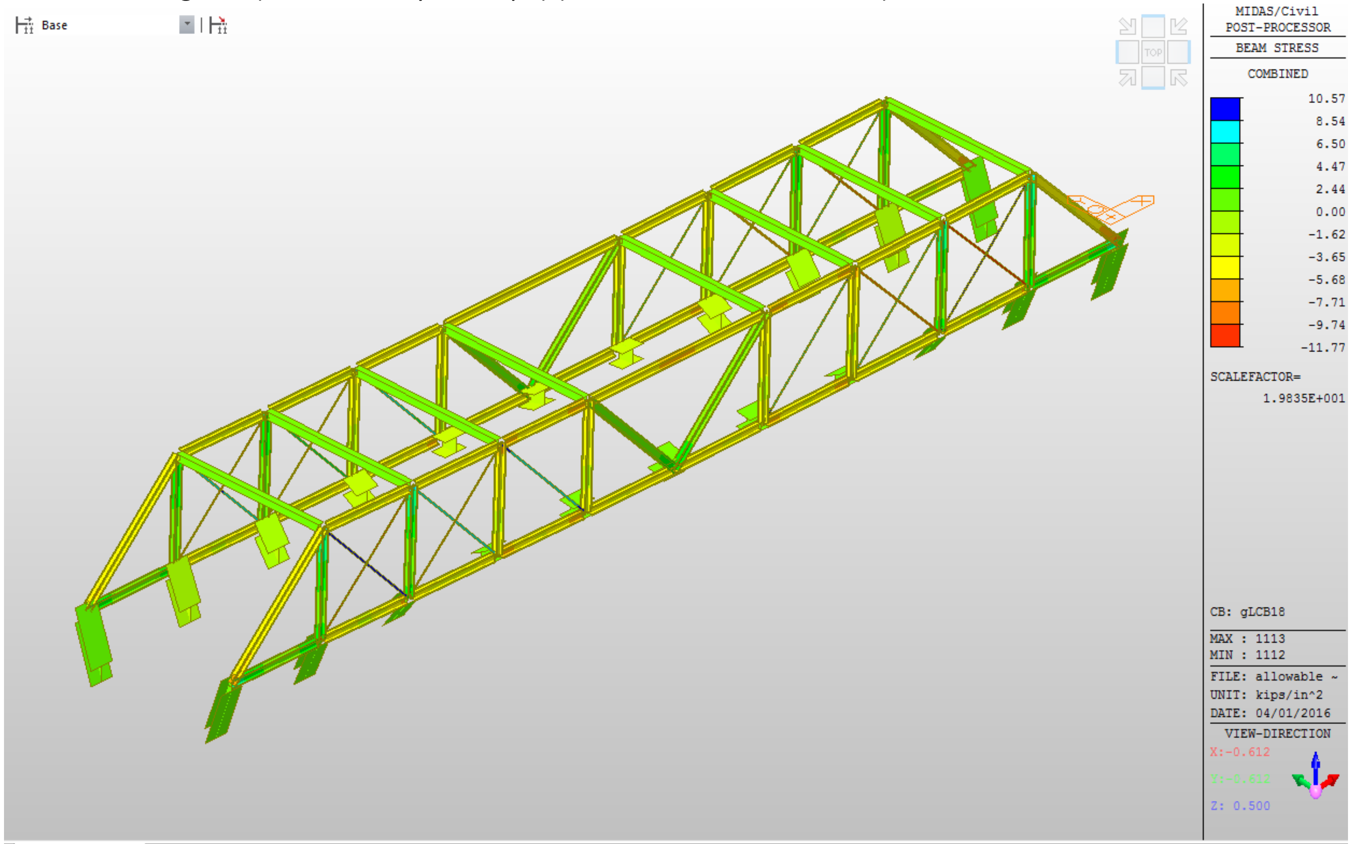
Leeward load = .0207 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Truss: Entire Truss

Stresses: Strength III (Wind Velocity= 80 mph) (Fixed Moment Connection)



Stress = 11.77 ksi

25.5 ksi Steel

Windward load = .0328 ksf

Leeward load = .0164 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

Design wind Velocity

Allowable stress = 12 ksi

wind speed = 125 mph

$P_z = (2.56 \times 10^{-6})(V)^2 K_z G C_D$ (AASHTO 3.8.1.2.1-1)

$V = 125$ mph (AASHTO Figure 3.8.1.2.1-1)

$K_z = 1.0$ (AASHTO Table C3.8.1.2.1-1)

category C

$G = 1.0$ (AASHTO Table 3.8.1.2.1-1)

windward

$C_D = 2.0$ (AASHTO Table 3.8.1.2.1-2)

leeward

$C_D = 1.0$ (AASHTO Table 3.8.1.2.1-2)

windward pressure

$P_D = (2.56 \times 10^{-6})(125)^2 (1.0)(1.0)(2) = .08$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-6})(125)^2 (1.0)(1.0)(1.0) = .04$ ksf

wind speed = 100 mph

$V = 100$ mph

windward pressure

$P_D = (2.56 \times 10^{-6})(100)^2 (1.0)(1.0)(2) = .0512$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-6})(100)^2 (1.0)(1.0)(1.0) = .0256$ ksf

Design wind velocity

wind speed = 90 mph

windward pressure

$P_D = (2.56 \times 10^{-4})(90)^2(1.0)(1.0)(2.0) = .0415$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-4})(90)^2(1.0)(1.0)(1.0) = .0207$ ksf

wind speed = 80 mph

windward pressure

$P_D = (2.56 \times 10^{-4})(80)^2(1.0)(1.0)(2.0) = .0328$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-4})(80)^2(1.0)(1.0)(1.0) = .0164$ ksf

wind speed = 70 mph

windward pressure

$P_D = (2.56 \times 10^{-4})(70)^2(1.0)(1.0)(2.0) = .025$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-4})(70)^2(1.0)(1.0)(1.0) = .0125$ ksf

- Ground Surface Roughness D: Flat, unobstructed areas and water surfaces; this category includes smooth mud flats, salt flats, and unbroken ice.

3.8.1.1.5—Wind Exposure Categories

The exposure category of the structure shall be determined as follows:

- Wind Exposure Category B: Wind Exposure Category B shall apply where the Ground Surface Roughness Category B, as defined in Article 3.8.1.1.4, prevails in the upwind direction for a distance greater than 1,500 ft for structures with a mean height of less than or equal to 33 ft, and for a distance greater than 2,600 ft or 20 times the height of the structure, whichever is greater, for structures with a mean height greater than 33 ft.
- Wind Exposure Category C: Wind Exposure Category C shall apply for all cases where Wind Exposure Categories B or D do not apply.
- Wind Exposure Category D: Wind Exposure Category D shall apply where the Ground Surface Roughness Category D, as defined in Article 3.8.1.1.4, prevails in the upwind direction for a distance greater than 5,000 ft or 20 times the height of the structure, whichever is greater. Wind Exposure Category D shall also apply where the structure is within a distance of 600 ft or 20 times the height of the structure, whichever is greater, from a Ground Surface Roughness Category D condition, even if Ground Surface Roughness Category B or C exist immediately upwind of the structure.

C3.8.1.1.5

Where Ground Surface Roughness Category D prevails in the upwind direction—except when Ground Surface Roughness Category B or C exist for a relatively short distance immediately upwind from the structure—the effect of the presence of Ground Surface Roughness Category B or C may not be significant. Ground Surface Roughness Category D is conservatively specified for these situations.

3.8.1.2—Wind Load on Structures: *WS*

3.8.1.2.1—General

The wind pressure shall be determined as:

$$P_Z = 2.56 \times 10^{-6} V^2 K_z G C_D \tag{3.8.1.2.1-1}$$

where:

P_Z = design wind pressure (ksf)
V = design 3-second gust wind speed specified in Table 3.8.1.1.2-1 (mph)
K_Z = pressure exposure and elevation coefficient to be taken equal to K_Z *(B)*, K_Z *(C)*, or K_Z *(D)* determined using Eqs. 3.8.1.2.1-2, 3.8.1.2.1-3, or 3.8.1.2.1-4, respectively, for Strength III and Service IV load combinations and to be taken as 1.0 for other load combinations

C3.8.1.2.1

The basis for the development of wind load provisions exists in Wassef (2014).

For structure heights less than 33 ft, the proximity to the ground surface causes turbulence for which the effect on wind pressure cannot be accurately determined. Therefore, no reduction in the value of K_Z is shown in Table C3.8.1.2.1-1 for structure heights less than 33 ft.

G = gust effect factor determined using a structure-specific study or as specified in Table 3.8.1.2.1-1 for Strength III and Service IV load combinations and 1.0 for other load combinations

C_D = drag coefficient determined using a structure-specific study or as specified in Table 3.8.1.2.1-2

Strength V and Service I load combinations are based on constant wind speeds that are not functionsp of the bridge type, bridge height, or the wind exposure category at the location of the bridge. Therefore, the pressure exposure and elevation coefficient, K_Z, is taken as 1.0 for these load combinations.

Unlike ASCE 7-10 (2010), which is based on power law wind profiles, these Specifications have always been based on logarithmic wind profiles. Therefore, logarithmic wind profiles were assumed in the development of Eqs. 3.8.1.2.1-2, 3.8.1.2.1-3, and 3.8.1.2.1-4.

The value of K_z at different elevations for different wind exposure categories are shown in Table C3.8.1.2.1-1.

The gust effect factor, G, is a function of the size and dynamic characteristics of the structure including bridge natural frequency and damping. The values specified in Table 3.8.1.2.1-1 are average values for sound barriers and typical bridge structures. For long-span arches, and cable-stayed and suspension bridges, the use of wind tunnel testing to determine a project-specific gust effect factor is warranted.

The 0.85 gust effect factor specified for sound barriers in Table 3.8.1.2.1-1 is consistent with the gust effect factor in ASCE 7-10 (2010) for walls and implies that wind gusts are not likely to engulf the entire barrier. However, the loaded area required to produce the maximum wind load on a sound barrier panel and the panel's vertical supports, if used, is relatively small. A higher gust effect factor may be justifiable because wind gusts may engulf the entire panel.

Table C3.8.1.2.1-1—Pressure Exposure and Elevation Coefficients, K_Z

Structure Height, Z (ft)	Wind Exposure Category B	Wind Exposure Category C	Wind Exposure Category D
≤33	0.71	1.00	1.15
40	0.75	1.05	1.20
50	0.81	1.10	1.25
60	0.85	1.14	1.29
70	0.89	1.18	1.32
80	0.92	1.21	1.35
90	0.95	1.24	1.38
100	0.98	1.27	1.41
120	1.03	1.32	1.45
140	1.07	1.36	1.49
160	1.11	1.40	1.52
180	1.15	1.43	1.55
200	1.18	1.46	1.58
250	1.24	1.52	1.63
300	1.30	1.57	1.68

When the wind speed, K_Z, and G specified for Strength V and Service I load combinations are substituted in Eq. 3.8.1.2.1-1, the resulting wind pressure on bridge structures, P_Z, becomes a multiple of the drag coefficient, C_D, for the structure being considered. The wind pressure in these cases may be calculated using Table C3.8.1.2.1-2.

Table C3.8.1.2.1-2—Wind Pressure on the Bridge Structures for Strength V and Service I Load Combinations

Load Combination	Wind Pressure on the Structure, P_Z, for the Specified Wind Speed (ksf)
Strength V	0.0163 C_D
Service I	0.0125 C_D

The pressure exposure and elevation coefficient, K_Z, for Strength III and Service IV load combinations shall be determined as follows:

$$K_Z(B) = \frac{\left[2.5\ln\left(\frac{Z}{0.9834}\right)+6.87\right]^2}{345.6} \qquad (3.8.1.2.1\text{-}2)$$

$$K_Z(C) = \frac{\left[2.5\ln\left(\frac{Z}{0.0984}\right)+7.35\right]^2}{478.4} \qquad (3.8.1.2.1\text{-}3)$$

$$K_Z(D) = \frac{\left[2.5\ln\left(\frac{Z}{0.0164}\right)+7.65\right]^2}{616.1} \qquad (3.8.1.2.1\text{-}4)$$

where:

K_Z (B), K_Z (C), and K_Z (D) are K_Z for wind exposure Category B, C, and D, respectively.

The structure height, Z, used in determining the pressure exposure and elevation coefficient, K_z, shall be taken as:

- For bridge superstructures: The average height of the top of the superstructure above the surrounding ground or water surface.

In the case of a long multi-span bridge with large variation in the ground surface elevation under the bridge, such as a bridge crossing a valley, the structure height, Z, may be varied from a span to span. For each span, the structure height, Z, may be taken as the largest value in the span.

- For bridge substructures not extending above the elevation of the superstructure: Unless otherwise approved by the Owner, the height used in determining the wind pressure on the superstructure.

Determining the wind pressure on substructures not extending above the elevation of the superstructure using the structure height used to determine the wind pressure on the superstructure results in slightly conservative values for most substructures. For

- For bridge substructures extending above the elevation of the superstructure: Unless otherwise approved by the Owner, the height of the top of the substructure.

- For ground-mounted sound barriers: The height of the top of the sound barrier above the lower surrounding ground surface.

- For structure- or traffic-barrier-mounted sound barriers: The height of the top of the sound barrier above the low ground or water surface surrounding the support structure.

In no case shall the structure height, Z, used in calculating K_Z be taken less than 33 ft.

extremely tall substructures, using a different height, including varying the height used for different segments of the substructure, may be allowed with the approval of the Owner.

Substructures extending above the elevation of the superstructure are typically associated with cable-stayed bridges and suspension bridges. Wind loads on such structures are typically determined using a structure-specific wind tunnel test.

Where the sound barrier is constructed directly atop an embankment, the height of the sound barrier should be measured from the lower ground surface surrounding the embankment.

Table 3.8.1.2.1-1—Gust Effect Factor, *G*

Structure Type	Gust Effect Factor, G
Sound Barriers	0.85
All other structures	1.00

Table 3.8.1.2.1-2—Drag Coefficient, C_D

Component		Drag Coefficient, C_D Windward	Leeward
I-Girder and Box-Girder Bridge Superstructures		1.3	N/A
Trusses, Columns, and Arches	Sharp-Edged Member	2.0	1.0
	Round Member	1.0	0.5
Bridge Substructure		1.6	N/A
Sound Barriers		1.2	N/A

The term "columns" in Table 3.8.1.2.1-2 refers to columns in superstructures such as spandrel columns in arches.

3.8.1.2.2—Loads on the Superstructure

In the general case of wind analysis, the wind load shall be determined as specified in Article 3.8.1.1 and the wind direction shall be varied. The wind loads shall be taken as the algebraic transverse and longitudinal components of the wind load. The wind direction for design shall be that which produces the maximum force effect in the component under investigation. The transverse and longitudinal components of the wind load shall be applied simultaneously.

C3.8.1.2.2

For superstructure components, the wind load on different members should be calculated separately and used in designing the members themselves. For trusses, the wind loads from different members and from the flooring system are transferred to the top and bottom planes of wind bracing and are used in designing the wind bracing system, including the end portals and cross-frames.

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>FIXED SPAN – EXISTING STRUCTURE ANALYSIS</u>

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>FIXED SPAN – RATING RESULTS</u>

Bridge 01349 - Midas load Rating

	Minimum Rating Factor		
Loading	Strength I Flexure	Strength I Shear	Service II
HL-93 Inventory	1.696	4.458	3.6995
HL-93 Operating	2.199	5.7789	4.8094
HS-20	3.585	6.3236	5.5603
H-20	6.011	9.3539	7.8005
CT-L3S2	4.644	10.6277	6.9014
CT-L73.0	4.577	8.1266	5.0541
CT-L3S2 + 0.2 klf Lane Load	4.379	10.5021	6.7527

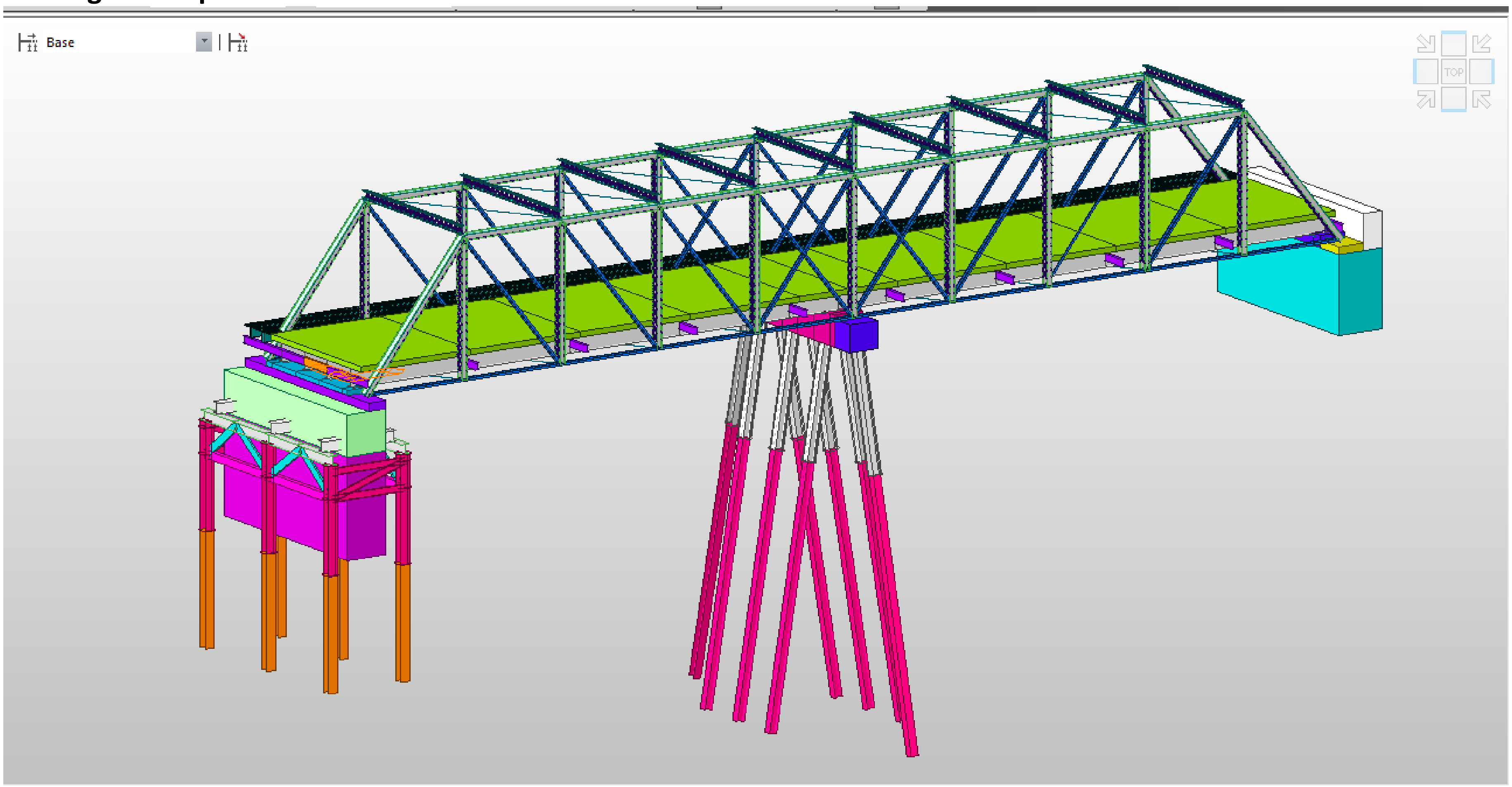
Fixed Span - Strees and Displacement

	Midas Civil 2016 V2.1		
	Displacement (in)	Stress (ksi)	Limit State
Live Load Only			
HL-93	0.88	16.74	Unfactored
HS-20	0.54	12.12	Unfactored
H-20	0.33	7.87	Unfactored
CT-L3S2	0.41	9.33	Unfactored
CT-L73.0	0.58	13.38	Unfactored
Superstructure			
HL-93 Inventory	2.22	28.88	Strength I
HL-93 Operating	1.87	25.26	Strength I
HS-20	1.64	20.95	Strength I
H-20	1.26	17.77	Strength I
CT-L3S2	1.23	18.95	Strength I
CT-L73.0	1.44	19.26	Strength I
CT-L3S2 + Lane Load	1.34	20.36	Strength I
Main Girders			
HL-93 Inventory	2.22	28.88	Strength I
HL-93 Operating	1.87	25.26	Strength I
HS-20	1.64	20.95	Strength I
H-20	1.26	17.77	Strength I
CT-L3S2	1.23	18.95	Strength I
CT-L73.0	1.44	19.26	Strength I
CT-L3S2 + Lane Load	1.34	20.36	Strength I

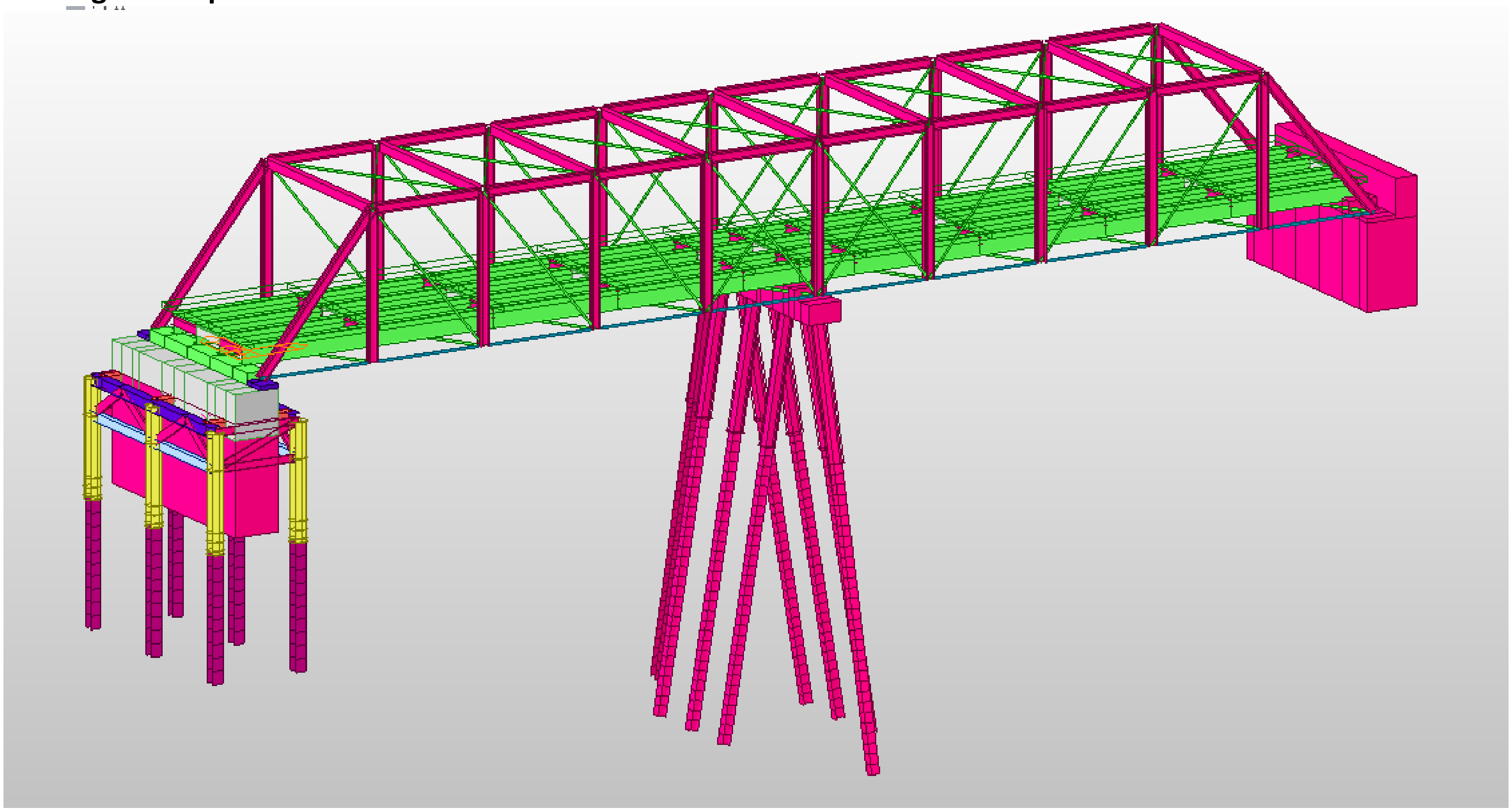
Fixed Span - Rating Factor Results

	Midas Civil 2016 V2.1	
	Rating Factor	Limit State
HL-93 Inv.		
Girder 1	1.32776	Strength I
Girder 2	1.41137	Strength I
Girder 3	1.41699	Strength I
Girder 4	1.36748	Strength I
HL-93 Oper.		
Girder 1	1.72122	Strength I
Girder 2	1.82939	Strength I
Girder 3	1.83667	Strength I
Girder 4	1.77257	Strength I
HS-20		
Girder 1	1.86047	Strength I
Girder 2	1.93039	Strength I
Girder 3	1.93807	Strength I
Girder 4	1.88140	Strength I
H-20		
Girder 1	2.77778	Strength I
Girder 2	2.82970	Strength I
Girder 3	2.84096	Strength I
Girder 4	2.80972	Strength I
CT-L3S2		
Girder 1	3.18421	Strength I
Girder 2	3.31162	Strength I
Girder 3	3.32481	Strength I
Girder 4	3.22010	Strength I
CT-L73.0		
Girder 1	2.29203	Strength I
Girder 2	2.39631	Strength I
Girder 3	2.40584	Strength I
Girder 4	2.31805	Strength I
CT-L3S2 + Lane Load		
Girder 1	3.18421	Strength I
Girder 2	3.31162	Strength I
Girder 3	3.32481	Strength I
Girder 4	3.22010	Strength I

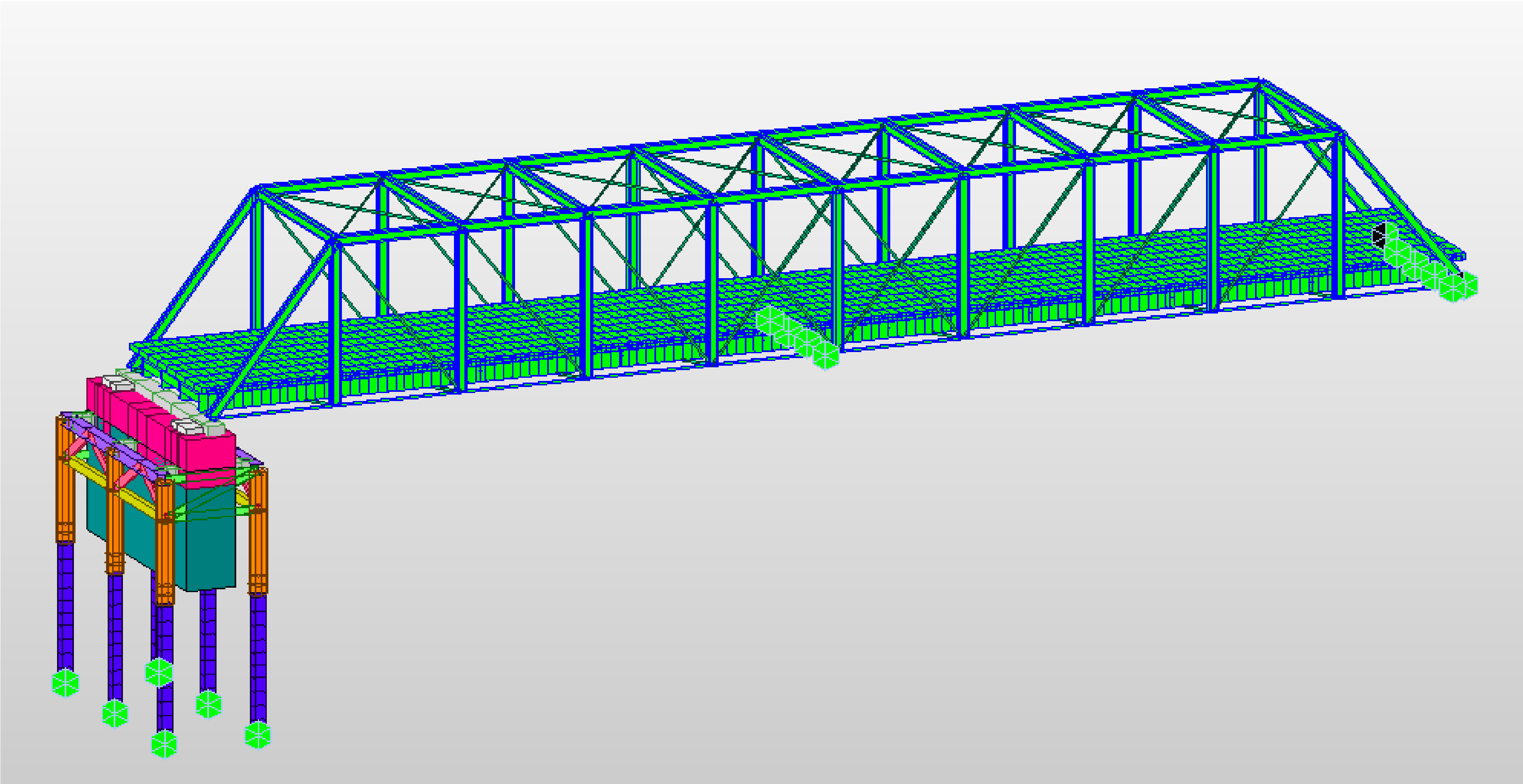
Existing Fixed Span



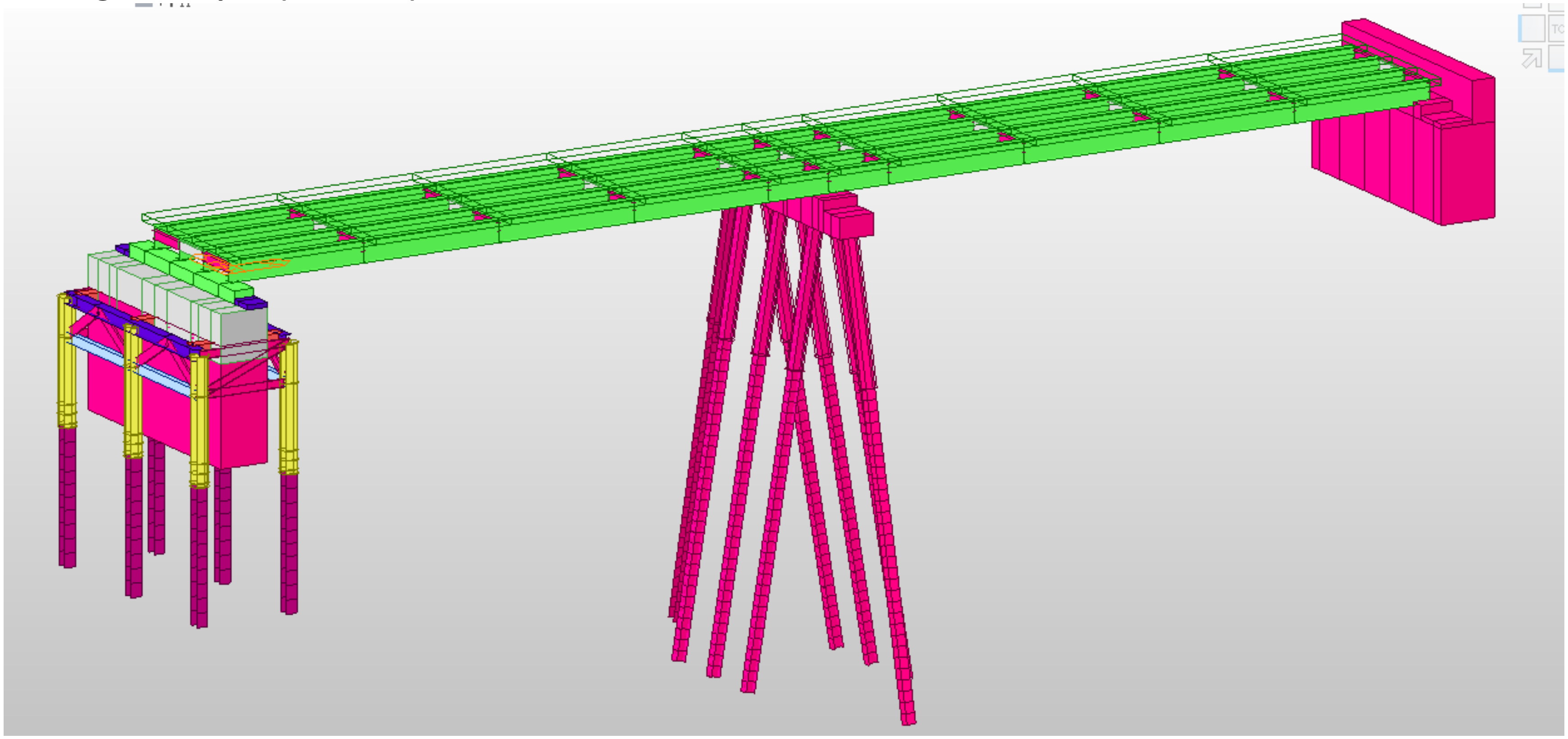
Existing Fixed Span



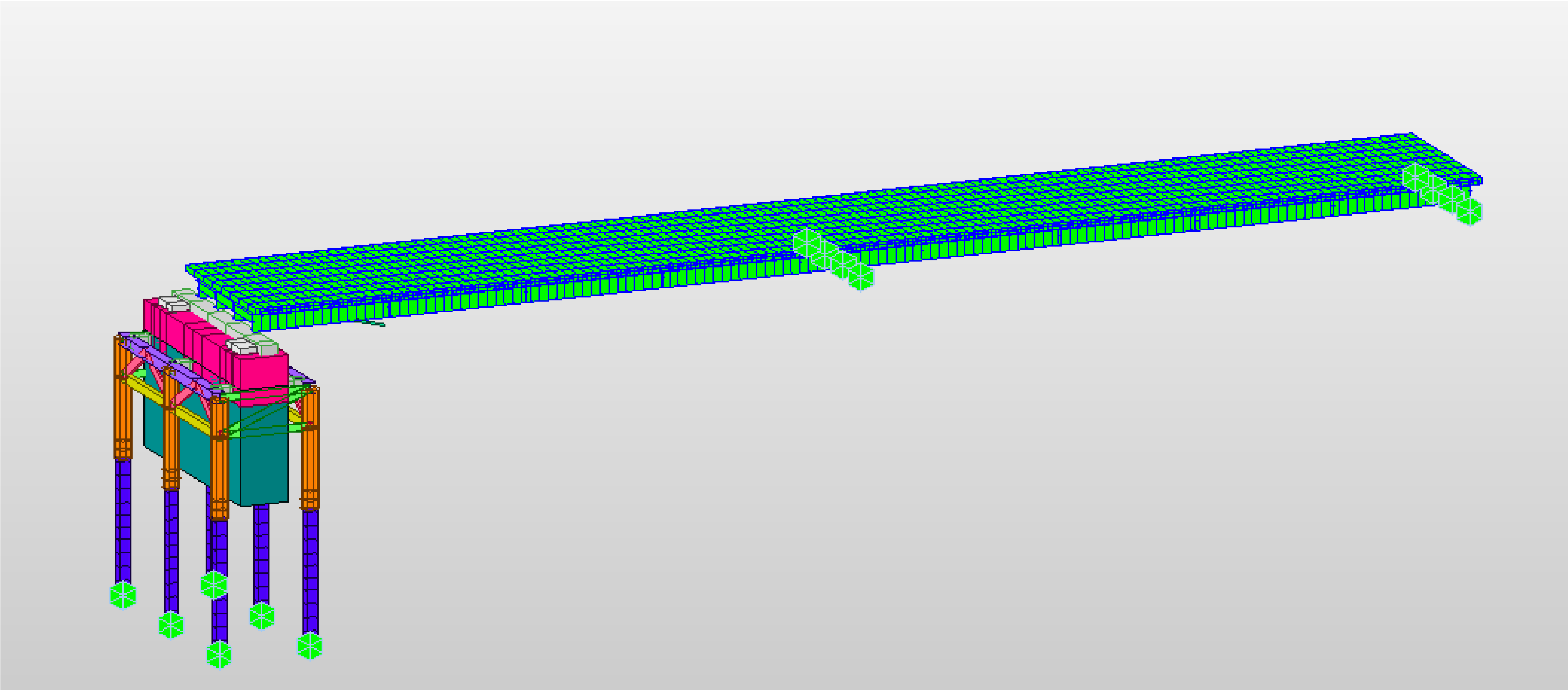
Existing Fixed Span



Existing Fixed Span (No Truss)



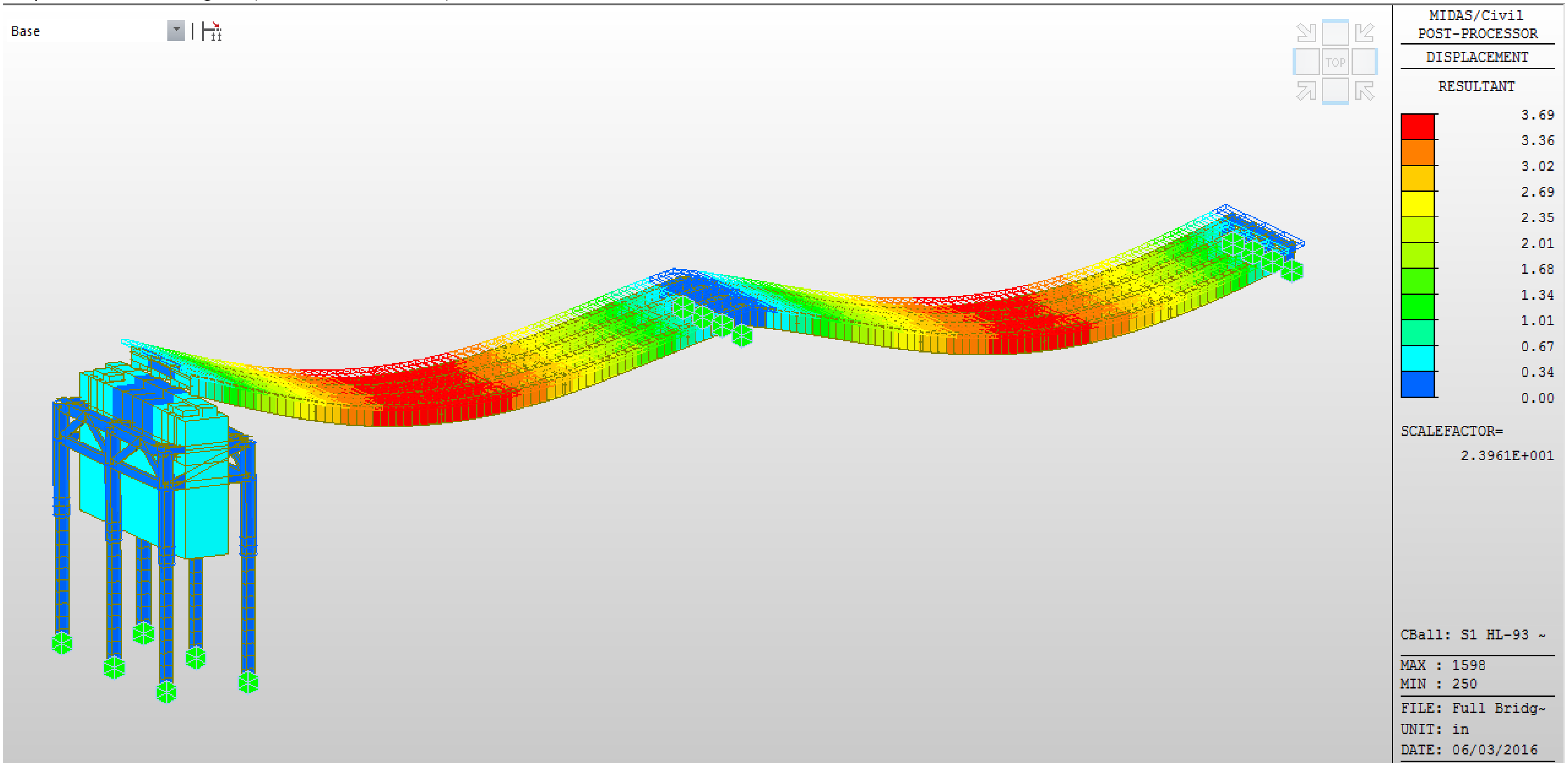
Existing Fixed Span (No Truss)



LRFD ANALYSIS

Fixed Span

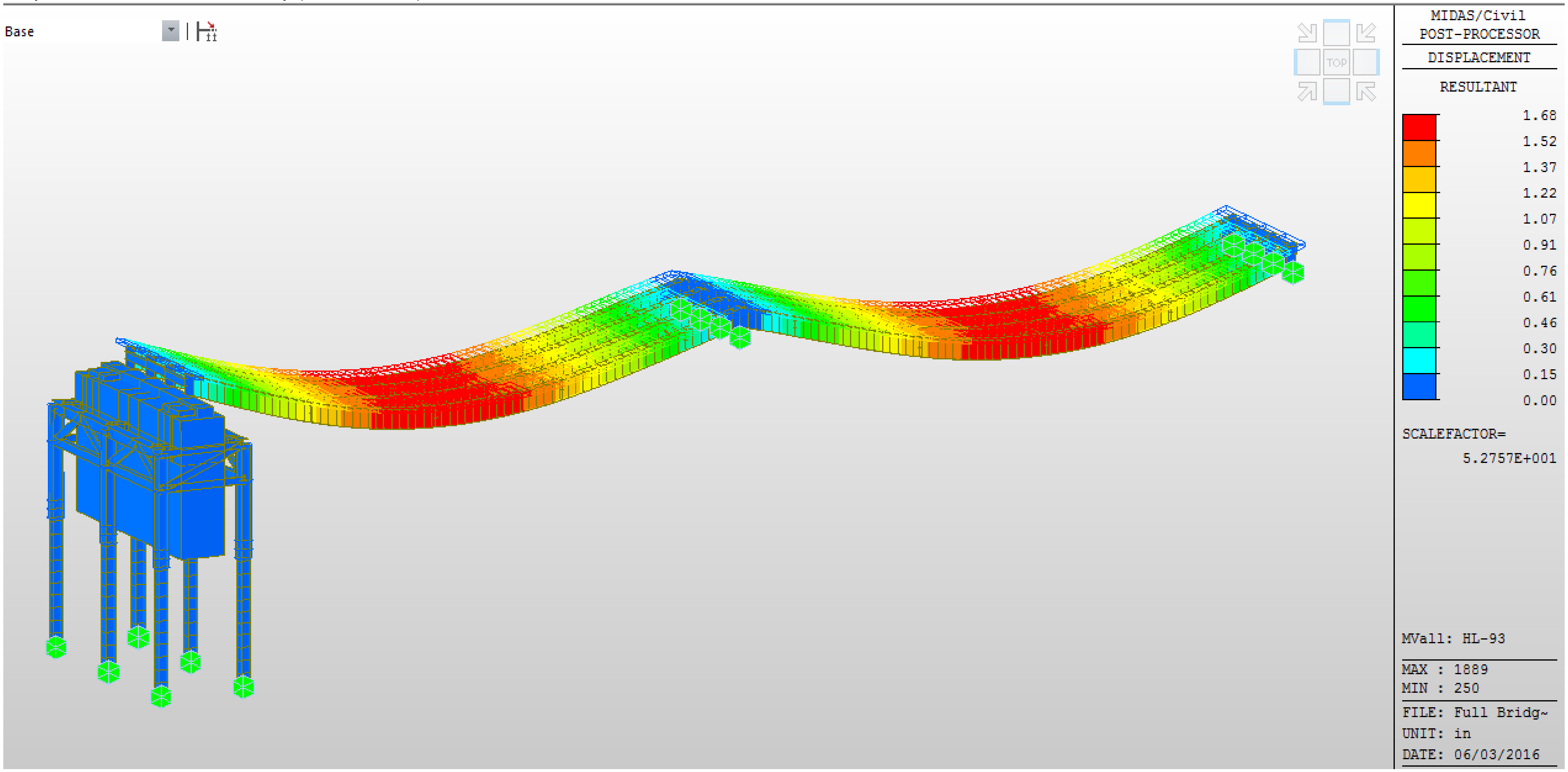
Displacement: Strength I (Factored DL and LL)



LRFD ANALYSIS

Fixed Span

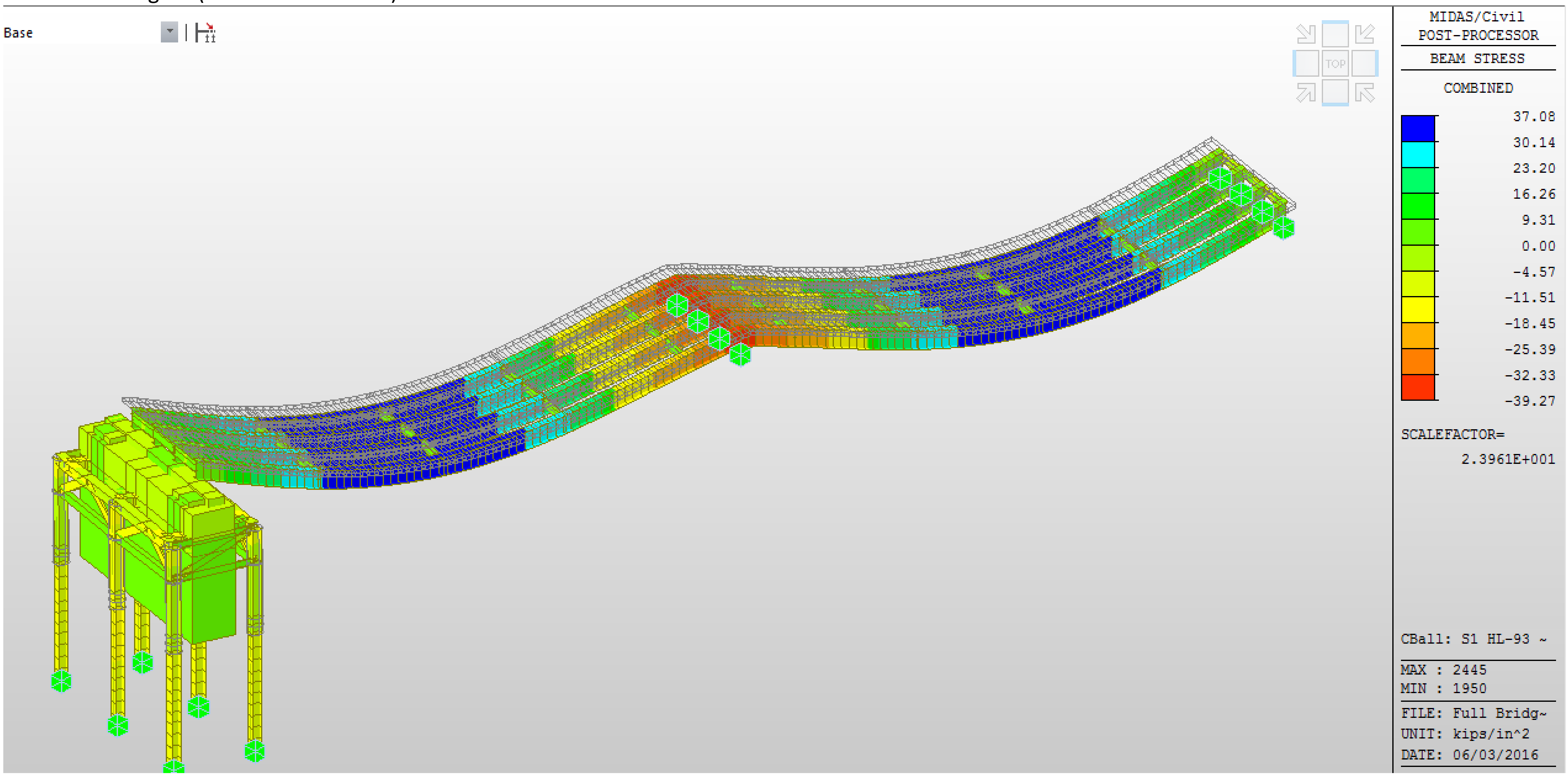
Displacement: Live Load Only (Unfactored)



LRFD ANALYSIS

Fixed Span

Stresses: Strength I (Factored DL and LL)



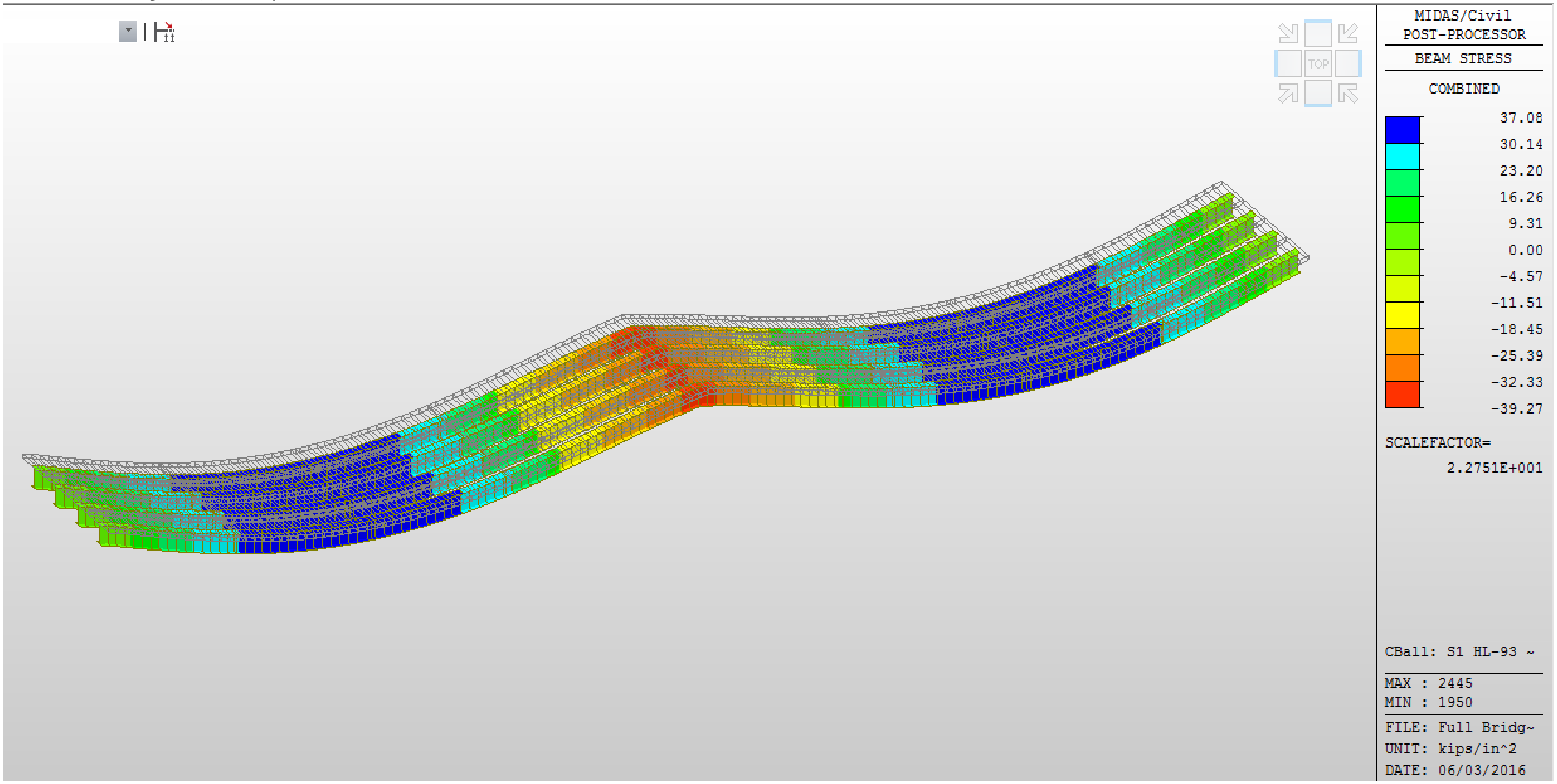
50 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Span

Stresses: Strength I (Fixed Span Main Girders) (Factored DL and LL)



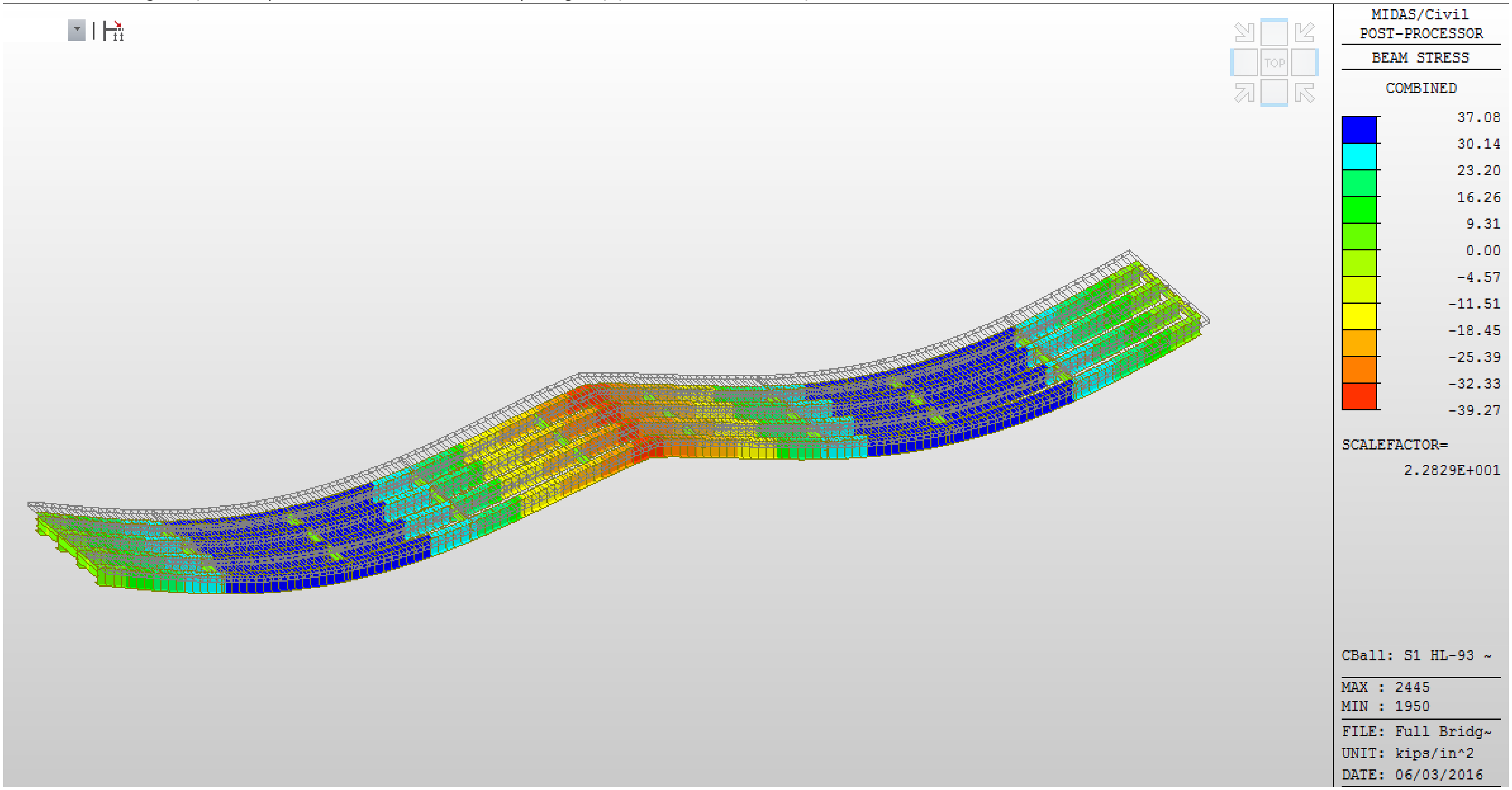
50 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Span

Stresses: Strength I (Fixed Span Main Girders with Diaphragms) (Factored DL and LL)



50 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>FIXED SPAN – RATING OUTPUT</u>

LOAD RATING FIXED SPAN -GIRDER 1

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 1.327758

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
538	HL-93 Inventory	50	47.5	0.06	0.59	80.40678
538	HL-93 Inventory	50	47.5	0.53	2.22	21.15766
539	HL-93 Inventory	50	47.5	0.53	2.36	19.90254
539	HL-93 Inventory	50	47.5	1.05	4.3	10.80233
540	HL-93 Inventory	50	47.5	1.07	4.49	10.34076
540	HL-93 Inventory	50	47.5	1.56	6.3	7.292063
541	HL-93 Inventory	50	47.5	1.59	6.49	7.07396
541	HL-93 Inventory	50	47.5	2.06	8.19	5.54823
542	HL-93 Inventory	50	47.5	2.09	8.38	5.418854
542	HL-93 Inventory	50	47.5	2.54	9.97	4.509529
543	HL-93 Inventory	50	47.5	2.57	10.16	4.422244
543	HL-93 Inventory	50	47.5	3.01	11.65	3.818884
544	HL-93 Inventory	50	47.5	3.03	11.83	3.759087
544	HL-93 Inventory	50	47.5	3.45	13.24	3.327039
545	HL-93 Inventory	50	47.5	3.47	13.42	3.280924
545	HL-93 Inventory	50	47.5	3.87	14.75	2.957966
546	HL-93 Inventory	50	47.5	3.89	14.91	2.924883
546	HL-93 Inventory	50	47.5	4.26	16.17	2.674088
547	HL-93 Inventory	50	47.5	4.29	16.32	2.647672
547	HL-93 Inventory	50	47.5	4.64	17.5	2.449143
548	HL-93 Inventory	50	47.5	4.67	17.65	2.426629
548	HL-93 Inventory	50	47.5	4.99	18.76	2.265991
549	HL-93 Inventory	50	47.5	5.02	18.89	2.248809
549	HL-93 Inventory	50	47.5	5.32	19.94	2.115346
550	HL-93 Inventory	50	47.5	5.35	20.06	2.101196
550	HL-93 Inventory	50	47.5	5.63	21.04	1.990019
551	HL-93 Inventory	50	47.5	5.66	21.14	1.979186
551	HL-93 Inventory	50	47.5	5.92	22.07	1.884005
552	HL-93 Inventory	50	47.5	5.94	22.16	1.875451
552	HL-93 Inventory	50	47.5	6.18	23.04	1.793403
553	HL-93 Inventory	50	47.5	6.2	23.08	1.789428
553	HL-93 Inventory	50	47.5	6.37	23.59	1.743535
554	HL-93 Inventory	50	47.5	6.37	23.59	1.743535
554	HL-93 Inventory	50	47.5	6.42	23.91	1.71811
555	HL-93 Inventory	50	47.5	6.44	23.93	1.715838
555	HL-93 Inventory	50	47.5	6.64	24.68	1.655592
556	HL-93 Inventory	50	47.5	6.65	24.73	1.65184
556	HL-93 Inventory	50	47.5	6.83	25.38	1.602443
557	HL-93 Inventory	50	47.5	6.84	25.43	1.598899
557	HL-93 Inventory	50	47.5	7	26.02	1.556495
558	HL-93 Inventory	50	47.5	7.01	26.08	1.552531
558	HL-93 Inventory	50	47.5	7.15	26.61	1.516347
559	HL-93 Inventory	50	47.5	7.16	26.66	1.513128
559	HL-93 Inventory	50	47.5	7.27	27.19	1.479588
560	HL-93 Inventory	50	47.5	7.28	27.24	1.476505
560	HL-93 Inventory	50	47.5	7.38	27.71	1.447853
561	HL-93 Inventory	50	47.5	7.38	27.75	1.445766
561	HL-93 Inventory	50	47.5	7.46	28.16	1.421875
562	HL-93 Inventory	50	47.5	7.46	28.19	1.420362
562	HL-93 Inventory	50	47.5	7.52	28.54	1.400841

563	HL-93 Inventory	50	47.5	7.52	28.57	1.39937
563	HL-93 Inventory	50	47.5	7.56	28.87	1.383443
564	HL-93 Inventory	50	47.5	7.56	28.88	1.382964
564	HL-93 Inventory	50	47.5	7.58	29.12	1.370879
565	HL-93 Inventory	50	47.5	7.58	29.13	1.370409
565	HL-93 Inventory	50	47.5	7.58	29.32	1.361528
566	HL-93 Inventory	50	47.5	7.57	29.32	1.361869
566	HL-93 Inventory	50	47.5	7.55	29.46	1.356076
567	HL-93 Inventory	50	47.5	7.54	29.45	1.356876
567	HL-93 Inventory	50	47.5	7.5	29.54	1.354096
568	HL-93 Inventory	50	47.5	7.5	29.52	1.355014
568	HL-93 Inventory	50	47.5	7.43	29.56	1.355548
569	HL-93 Inventory	50	47.5	7.43	29.54	1.356466
569	HL-93 Inventory	50	47.5	7.34	29.53	1.359973
570	HL-93 Inventory	50	47.5	7.33	29.51	1.361233
570	HL-93 Inventory	50	47.5	7.28	29.39	1.368493
571	HL-93 Inventory	50	47.5	7.28	29.39	1.368493
571	HL-93 Inventory	50	47.5	7.23	29.41	1.369262
572	HL-93 Inventory	50	47.5	7.22	29.39	1.370534
572	HL-93 Inventory	50	47.5	7.09	29.28	1.380123
573	HL-93 Inventory	50	47.5	7.08	29.27	1.380936
573	HL-93 Inventory	50	47.5	6.93	29.13	1.392722
574	HL-93 Inventory	50	47.5	6.92	29.11	1.394023
574	HL-93 Inventory	50	47.5	6.75	28.92	1.409059
575	HL-93 Inventory	50	47.5	6.73	28.9	1.410727
575	HL-93 Inventory	50	47.5	6.55	28.66	1.428821
576	HL-93 Inventory	50	47.5	6.53	28.63	1.431016
576	HL-93 Inventory	50	47.5	6.33	28.33	1.45323
577	HL-93 Inventory	50	47.5	6.3	28.3	1.45583
577	HL-93 Inventory	50	47.5	6.08	27.94	1.482462
578	HL-93 Inventory	50	47.5	6.05	27.92	1.484599
578	HL-93 Inventory	50	47.5	5.81	27.51	1.515449
579	HL-93 Inventory	50	47.5	5.78	27.48	1.518195
579	HL-93 Inventory	50	47.5	5.52	27.01	1.554239
580	HL-93 Inventory	50	47.5	5.49	26.98	1.557079
580	HL-93 Inventory	50	47.5	5.21	26.46	1.598262
581	HL-93 Inventory	50	47.5	5.18	26.42	1.601817
581	HL-93 Inventory	50	47.5	4.88	25.86	1.648105
582	HL-93 Inventory	50	47.5	4.84	25.81	1.652848
582	HL-93 Inventory	50	47.5	4.52	25.2	1.705556
583	HL-93 Inventory	50	47.5	4.48	25.15	1.710537
583	HL-93 Inventory	50	47.5	4.14	24.48	1.771242
584	HL-93 Inventory	50	47.5	4.1	24.43	1.776504
584	HL-93 Inventory	50	47.5	3.74	23.71	1.845635
585	HL-93 Inventory	50	47.5	3.7	23.66	1.851226
585	HL-93 Inventory	50	47.5	3.32	22.88	1.930944
586	HL-93 Inventory	50	47.5	3.28	22.83	1.936925
586	HL-93 Inventory	50	47.5	2.87	21.98	2.030482
587	HL-93 Inventory	50	47.5	2.83	21.96	2.034153
587	HL-93 Inventory	50	47.5	2.72	21.63	2.070273
588	HL-93 Inventory	50	47.5	2.72	21.63	2.070273
588	HL-93 Inventory	50	47.5	2.41	21.04	2.143061
589	HL-93 Inventory	50	47.5	2.36	20.99	2.150548
589	HL-93 Inventory	50	47.5	1.91	20.04	2.27495
590	HL-93 Inventory	50	47.5	1.86	19.96	2.286573
590	HL-93 Inventory	50	47.5	1.4	18.99	2.427593
591	HL-93 Inventory	50	47.5	1.34	18.88	2.444915
591	HL-93 Inventory	50	47.5	0.86	17.87	2.609961
592	HL-93 Inventory	50	47.5	0.8	17.75	2.630986

592	HL-93 Inventory	50	47.5	0.3	16.7	2.826347
593	HL-93 Inventory	50	47.5	0.24	16.57	2.852142
593	HL-93 Inventory	50	47.5	-0.33	15.49	3.04519
594	HL-93 Inventory	50	47.5	-0.37	15.36	3.068359
594	HL-93 Inventory	50	47.5	-0.94	14.24	3.269663
595	HL-93 Inventory	50	47.5	-0.98	14.1	3.299291
595	HL-93 Inventory	50	47.5	-1.57	-13.17	3.487472
596	HL-93 Inventory	50	47.5	-1.62	-13.19	3.478393
596	HL-93 Inventory	50	47.5	-2.22	-13.49	3.35656
597	HL-93 Inventory	50	47.5	-2.28	-13.5	3.34963
597	HL-93 Inventory	50	47.5	-2.9	-13.85	3.220217
598	HL-93 Inventory	50	47.5	-2.96	-13.86	3.213564
598	HL-93 Inventory	50	47.5	-3.61	-14.25	3.08
599	HL-93 Inventory	50	47.5	-3.66	-14.27	3.072179
599	HL-93 Inventory	50	47.5	-4.33	-14.71	2.934738
600	HL-93 Inventory	50	47.5	-4.39	-14.73	2.92668
600	HL-93 Inventory	50	47.5	-5.09	-15.22	2.786465
601	HL-93 Inventory	50	47.5	-5.15	-15.25	2.777049
601	HL-93 Inventory	50	47.5	-5.86	-15.79	2.637112
602	HL-93 Inventory	50	47.5	-5.93	-15.82	2.627686
602	HL-93 Inventory	50	47.5	-6.66	-16.42	2.487211
603	HL-93 Inventory	50	47.5	-6.74	-16.46	2.476306
603	HL-93 Inventory	50	47.5	-7.49	-17.11	2.338399
604	HL-93 Inventory	50	47.5	-7.57	-17.16	2.326923
604	HL-93 Inventory	50	47.5	-8.34	-17.84	2.195067
605	HL-93 Inventory	50	47.5	-8.43	-17.91	2.181463
605	HL-93 Inventory	50	47.5	-9.22	-18.64	2.053648
606	HL-93 Inventory	50	47.5	-9.33	-18.73	2.037907
606	HL-93 Inventory	50	47.5	-10.13	-19.49	1.917394
607	HL-93 Inventory	50	47.5	-10.25	-19.62	1.898573
607	HL-93 Inventory	50	47.5	-11.07	-20.42	1.784035
608	HL-93 Inventory	50	47.5	-11.2	-20.56	1.765564
608	HL-93 Inventory	50	47.5	-12.06	-21.45	1.652214
609	HL-93 Inventory	50	47.5	-12.18	-21.56	1.638219
609	HL-93 Inventory	50	47.5	-13.08	-23.2	1.483621
610	HL-93 Inventory	50	47.5	-13.17	-23.21	1.479104
610	HL-93 Inventory	50	47.5	-14.14	-25.1	1.329084
611	HL-93 Inventory	50	47.5	-14.16	-25.11	1.327758
611	HL-93 Inventory	50	47.5	-13.19	-23.24	1.476334
612	HL-93 Inventory	50	47.5	-13.1	-23.23	1.480844
612	HL-93 Inventory	50	47.5	-12.2	-21.55	1.638051
613	HL-93 Inventory	50	47.5	-12.08	-21.47	1.649744
613	HL-93 Inventory	50	47.5	-11.22	-20.56	1.764591
614	HL-93 Inventory	50	47.5	-11.09	-20.41	1.783929
614	HL-93 Inventory	50	47.5	-10.27	-19.61	1.898521
615	HL-93 Inventory	50	47.5	-10.14	-19.49	1.91688
615	HL-93 Inventory	50	47.5	-9.34	-18.72	2.038462
616	HL-93 Inventory	50	47.5	-9.24	-18.64	2.052575
616	HL-93 Inventory	50	47.5	-8.45	-17.91	2.180346
617	HL-93 Inventory	50	47.5	-8.36	-17.85	2.192717
617	HL-93 Inventory	50	47.5	-7.58	-17.16	2.32634
618	HL-93 Inventory	50	47.5	-7.5	-17.11	2.337814
618	HL-93 Inventory	50	47.5	-6.75	-16.47	2.474196
619	HL-93 Inventory	50	47.5	-6.68	-16.42	2.485993
619	HL-93 Inventory	50	47.5	-5.94	-15.83	2.625395
620	HL-93 Inventory	50	47.5	-5.87	-15.79	2.636479
620	HL-93 Inventory	50	47.5	-5.16	-15.25	2.776393
621	HL-93 Inventory	50	47.5	-5.1	-15.22	2.785808
621	HL-93 Inventory	50	47.5	-4.41	-14.73	2.925322

622	HL-93 Inventory	50	47.5	-4.34	-14.71	2.934058
622	HL-93 Inventory	50	47.5	-3.68	-14.27	3.070778
623	HL-93 Inventory	50	47.5	-3.62	-14.26	3.077139
623	HL-93 Inventory	50	47.5	-2.97	-13.87	3.210526
624	HL-93 Inventory	50	47.5	-2.91	-13.85	3.219495
624	HL-93 Inventory	50	47.5	-2.29	-13.51	3.34641
625	HL-93 Inventory	50	47.5	-2.23	-13.5	3.353333
625	HL-93 Inventory	50	47.5	-1.63	-13.2	3.475
626	HL-93 Inventory	50	47.5	-1.58	-13.19	3.481425
626	HL-93 Inventory	50	47.5	-0.99	14.14	3.28925
627	HL-93 Inventory	50	47.5	-0.94	14.29	3.258223
627	HL-93 Inventory	50	47.5	-0.38	15.41	3.057755
628	HL-93 Inventory	50	47.5	-0.33	15.54	3.035393
628	HL-93 Inventory	50	47.5	0.23	16.62	2.844164
629	HL-93 Inventory	50	47.5	0.29	16.75	2.818507
629	HL-93 Inventory	50	47.5	0.79	17.8	2.624157
630	HL-93 Inventory	50	47.5	0.85	17.91	2.60469
630	HL-93 Inventory	50	47.5	1.34	18.93	2.438457
631	HL-93 Inventory	50	47.5	1.39	19.03	2.423016
631	HL-93 Inventory	50	47.5	1.85	20.01	2.281359
632	HL-93 Inventory	50	47.5	1.91	20.09	2.269288
632	HL-93 Inventory	50	47.5	2.35	21.04	2.145913
633	HL-93 Inventory	50	47.5	2.4	21.09	2.138454
633	HL-93 Inventory	50	47.5	2.71	21.68	2.065959
634	HL-93 Inventory	50	47.5	2.71	21.68	2.065959
634	HL-93 Inventory	50	47.5	2.82	22.01	2.029986
635	HL-93 Inventory	50	47.5	2.87	22.02	2.026794
635	HL-93 Inventory	50	47.5	3.27	22.88	1.933129
636	HL-93 Inventory	50	47.5	3.31	22.92	1.92801
636	HL-93 Inventory	50	47.5	3.7	23.71	1.847322
637	HL-93 Inventory	50	47.5	3.74	23.76	1.841751
637	HL-93 Inventory	50	47.5	4.1	24.48	1.772876
638	HL-93 Inventory	50	47.5	4.14	24.53	1.767631
638	HL-93 Inventory	50	47.5	4.48	25.2	1.707143
639	HL-93 Inventory	50	47.5	4.52	25.25	1.702178
639	HL-93 Inventory	50	47.5	4.84	25.86	1.649652
640	HL-93 Inventory	50	47.5	4.87	25.91	1.645311
640	HL-93 Inventory	50	47.5	5.17	26.47	1.599169
641	HL-93 Inventory	50	47.5	5.21	26.51	1.595247
641	HL-93 Inventory	50	47.5	5.49	27.03	1.554199
642	HL-93 Inventory	50	47.5	5.52	27.06	1.551367
642	HL-93 Inventory	50	47.5	5.78	27.53	1.515438
643	HL-93 Inventory	50	47.5	5.81	27.56	1.5127
643	HL-93 Inventory	50	47.5	6.05	27.97	1.481945
644	HL-93 Inventory	50	47.5	6.08	28	1.479286
644	HL-93 Inventory	50	47.5	6.3	28.36	1.45275
645	HL-93 Inventory	50	47.5	6.32	28.38	1.451022
645	HL-93 Inventory	50	47.5	6.53	28.68	1.428522
646	HL-93 Inventory	50	47.5	6.55	28.71	1.426332
646	HL-93 Inventory	50	47.5	6.73	28.95	1.40829
647	HL-93 Inventory	50	47.5	6.75	28.98	1.406142
647	HL-93 Inventory	50	47.5	6.91	29.16	1.391975
648	HL-93 Inventory	50	47.5	6.93	29.18	1.390336
648	HL-93 Inventory	50	47.5	7.08	29.33	1.378111
649	HL-93 Inventory	50	47.5	7.09	29.33	1.37777
649	HL-93 Inventory	50	47.5	7.22	29.43	1.368671
650	HL-93 Inventory	50	47.5	7.23	29.45	1.367402
650	HL-93 Inventory	50	47.5	7.28	29.43	1.366633
651	HL-93 Inventory	50	47.5	7.28	29.43	1.366633

651	HL-93 Inventory	50	47.5	7.33	29.55	1.359391
652	HL-93 Inventory	50	47.5	7.34	29.57	1.358133
652	HL-93 Inventory	50	47.5	7.43	29.58	1.354632
653	HL-93 Inventory	50	47.5	7.43	29.6	1.353716
653	HL-93 Inventory	50	47.5	7.5	29.56	1.35318
654	HL-93 Inventory	50	47.5	7.5	29.58	1.352265
654	HL-93 Inventory	50	47.5	7.55	29.49	1.354697
655	HL-93 Inventory	50	47.5	7.55	29.49	1.354697
655	HL-93 Inventory	50	47.5	7.57	29.36	1.360014
656	HL-93 Inventory	50	47.5	7.58	29.36	1.359673
656	HL-93 Inventory	50	47.5	7.58	29.17	1.368529
657	HL-93 Inventory	50	47.5	7.58	29.16	1.368999
657	HL-93 Inventory	50	47.5	7.57	28.91	1.381183
658	HL-93 Inventory	50	47.5	7.57	28.9	1.381661
658	HL-93 Inventory	50	47.5	7.53	28.6	1.397552
659	HL-93 Inventory	50	47.5	7.53	28.58	1.39853
659	HL-93 Inventory	50	47.5	7.47	28.22	1.418498
660	HL-93 Inventory	50	47.5	7.47	28.19	1.420007
660	HL-93 Inventory	50	47.5	7.39	27.78	1.443844
661	HL-93 Inventory	50	47.5	7.39	27.74	1.445926
661	HL-93 Inventory	50	47.5	7.29	27.27	1.474514
662	HL-93 Inventory	50	47.5	7.29	27.22	1.477223
662	HL-93 Inventory	50	47.5	7.17	26.69	1.511053
663	HL-93 Inventory	50	47.5	7.16	26.64	1.514264
663	HL-93 Inventory	50	47.5	7.03	26.1	1.550575
664	HL-93 Inventory	50	47.5	7.02	26.04	1.554531
664	HL-93 Inventory	50	47.5	6.86	25.46	1.596229
665	HL-93 Inventory	50	47.5	6.85	25.4	1.600394
665	HL-93 Inventory	50	47.5	6.67	24.75	1.649697
666	HL-93 Inventory	50	47.5	6.66	24.7	1.653441
666	HL-93 Inventory	50	47.5	6.46	23.95	1.71357
667	HL-93 Inventory	50	47.5	6.45	23.93	1.71542
667	HL-93 Inventory	50	47.5	6.39	23.61	1.741211
668	HL-93 Inventory	50	47.5	6.39	23.61	1.741211
668	HL-93 Inventory	50	47.5	6.23	23.1	1.78658
669	HL-93 Inventory	50	47.5	6.21	23.06	1.790546
669	HL-93 Inventory	50	47.5	5.97	22.17	1.873252
670	HL-93 Inventory	50	47.5	5.95	22.09	1.880942
670	HL-93 Inventory	50	47.5	5.69	21.16	1.975898
671	HL-93 Inventory	50	47.5	5.67	21.06	1.98623
671	HL-93 Inventory	50	47.5	5.39	20.07	2.098156
672	HL-93 Inventory	50	47.5	5.37	19.95	2.111779
672	HL-93 Inventory	50	47.5	5.07	18.9	2.244974
673	HL-93 Inventory	50	47.5	5.04	18.77	2.26212
673	HL-93 Inventory	50	47.5	4.72	17.64	2.42517
674	HL-93 Inventory	50	47.5	4.69	17.51	2.444889
674	HL-93 Inventory	50	47.5	4.36	16.31	2.645003
675	HL-93 Inventory	50	47.5	4.32	16.17	2.670377
675	HL-93 Inventory	50	47.5	3.97	14.9	2.921477
676	HL-93 Inventory	50	47.5	3.93	14.75	2.953898
676	HL-93 Inventory	50	47.5	3.56	13.39	3.281553
677	HL-93 Inventory	50	47.5	3.52	13.24	3.321752
677	HL-93 Inventory	50	47.5	3.12	11.8	3.761017
678	HL-93 Inventory	50	47.5	3.08	11.64	3.816151
678	HL-93 Inventory	50	47.5	2.66	10.11	4.435213
679	HL-93 Inventory	50	47.5	2.62	9.94	4.515091
679	HL-93 Inventory	50	47.5	2.18	8.32	5.447115
680	HL-93 Inventory	50	47.5	2.14	8.15	5.565644
680	HL-93 Inventory	50	47.5	1.67	6.43	7.127527

681	HL-93 Inventory	50	47.5	1.64	6.27	7.314195
681	HL-93 Inventory	50	47.5	1.15	4.42	10.48643
682	HL-93 Inventory	50	47.5	1.11	4.29	10.81352
682	HL-93 Inventory	50	47.5	0.59	2.32	20.21983
683	HL-93 Inventory	50	47.5	0.57	2.21	21.23529
683	HL-93 Inventory	50	47.5	0.04	0.6	79.1

LOAD RATING FIXED SPAN -GIRDER 2

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 1.411372

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
392	HL-93 Inventory	50	47.5	0.05	-0.1	474.5
392	HL-93 Inventory	50	47.5	0.67	2.34	20.01282
393	HL-93 Inventory	50	47.5	0.63	2.3	20.37826
393	HL-93 Inventory	50	47.5	1.24	4.44	10.41892
394	HL-93 Inventory	50	47.5	1.2	4.39	10.5467
394	HL-93 Inventory	50	47.5	1.74	6.38	7.172414
395	HL-93 Inventory	50	47.5	1.71	6.33	7.233807
395	HL-93 Inventory	50	47.5	2.21	8.18	5.536675
396	HL-93 Inventory	50	47.5	2.19	8.14	5.566339
396	HL-93 Inventory	50	47.5	2.65	9.88	4.539474
397	HL-93 Inventory	50	47.5	2.64	9.86	4.549696
397	HL-93 Inventory	50	47.5	3.08	11.5	3.862609
398	HL-93 Inventory	50	47.5	3.07	11.48	3.870209
398	HL-93 Inventory	50	47.5	3.48	13.03	3.378358
399	HL-93 Inventory	50	47.5	3.47	13.02	3.38172
399	HL-93 Inventory	50	47.5	3.87	14.47	3.015204
400	HL-93 Inventory	50	47.5	3.86	14.46	3.017981
400	HL-93 Inventory	50	47.5	4.24	15.83	2.732786
401	HL-93 Inventory	50	47.5	4.23	15.82	2.735145
401	HL-93 Inventory	50	47.5	4.59	17.11	2.50789
402	HL-93 Inventory	50	47.5	4.58	17.11	2.508475
402	HL-93 Inventory	50	47.5	4.92	18.31	2.325505
403	HL-93 Inventory	50	47.5	4.91	18.31	2.326051
403	HL-93 Inventory	50	47.5	5.23	19.42	2.176622
404	HL-93 Inventory	50	47.5	5.22	19.43	2.176016
404	HL-93 Inventory	50	47.5	5.52	20.47	2.050806
405	HL-93 Inventory	50	47.5	5.51	20.47	2.051295
405	HL-93 Inventory	50	47.5	5.78	21.43	1.946804
406	HL-93 Inventory	50	47.5	5.78	21.43	1.946804
406	HL-93 Inventory	50	47.5	6.03	22.31	1.858808
407	HL-93 Inventory	50	47.5	6.03	22.31	1.858808
407	HL-93 Inventory	50	47.5	6.2	22.74	1.816183
408	HL-93 Inventory	50	47.5	6.2	22.74	1.816183
408	HL-93 Inventory	50	47.5	6.26	23.12	1.783737
409	HL-93 Inventory	50	47.5	6.25	23.12	1.78417
409	HL-93 Inventory	50	47.5	6.46	23.92	1.715719
410	HL-93 Inventory	50	47.5	6.46	23.92	1.715719
410	HL-93 Inventory	50	47.5	6.64	24.63	1.658952
411	HL-93 Inventory	50	47.5	6.64	24.63	1.658952
411	HL-93 Inventory	50	47.5	6.8	25.26	1.611243
412	HL-93 Inventory	50	47.5	6.8	25.26	1.611243
412	HL-93 Inventory	50	47.5	6.94	25.82	1.570875
413	HL-93 Inventory	50	47.5	6.94	25.82	1.570875
413	HL-93 Inventory	50	47.5	7.06	26.31	1.537058
414	HL-93 Inventory	50	47.5	7.06	26.32	1.536474
414	HL-93 Inventory	50	47.5	7.16	26.81	1.504662
415	HL-93 Inventory	50	47.5	7.15	26.81	1.505035
415	HL-93 Inventory	50	47.5	7.23	27.26	1.477256
416	HL-93 Inventory	50	47.5	7.23	27.26	1.477256
416	HL-93 Inventory	50	47.5	7.29	27.63	1.455302

417	HL-93 Inventory	50	47.5	7.29	27.64	1.454776
417	HL-93 Inventory	50	47.5	7.32	27.94	1.438082
418	HL-93 Inventory	50	47.5	7.32	27.95	1.437567
418	HL-93 Inventory	50	47.5	7.33	28.18	1.425479
419	HL-93 Inventory	50	47.5	7.33	28.18	1.425479
419	HL-93 Inventory	50	47.5	7.32	28.35	1.417284
420	HL-93 Inventory	50	47.5	7.33	28.35	1.416931
420	HL-93 Inventory	50	47.5	7.29	28.45	1.413357
421	HL-93 Inventory	50	47.5	7.3	28.45	1.413005
421	HL-93 Inventory	50	47.5	7.24	28.48	1.413624
422	HL-93 Inventory	50	47.5	7.25	28.48	1.413272
422	HL-93 Inventory	50	47.5	7.17	28.44	1.418073
423	HL-93 Inventory	50	47.5	7.17	28.44	1.418073
423	HL-93 Inventory	50	47.5	7.08	28.33	1.426756
424	HL-93 Inventory	50	47.5	7.08	28.33	1.426756
424	HL-93 Inventory	50	47.5	7.03	28.09	1.440726
425	HL-93 Inventory	50	47.5	7.02	28.09	1.441082
425	HL-93 Inventory	50	47.5	6.96	28.19	1.438099
426	HL-93 Inventory	50	47.5	6.97	28.18	1.438254
426	HL-93 Inventory	50	47.5	6.83	28.1	1.447331
427	HL-93 Inventory	50	47.5	6.83	28.11	1.446816
427	HL-93 Inventory	50	47.5	6.67	28.03	1.456654
428	HL-93 Inventory	50	47.5	6.67	28.04	1.456134
428	HL-93 Inventory	50	47.5	6.49	27.89	1.47042
429	HL-93 Inventory	50	47.5	6.49	27.9	1.469892
429	HL-93 Inventory	50	47.5	6.29	27.68	1.488801
430	HL-93 Inventory	50	47.5	6.29	27.69	1.488263
430	HL-93 Inventory	50	47.5	6.06	27.4	1.512409
431	HL-93 Inventory	50	47.5	6.07	27.41	1.511492
431	HL-93 Inventory	50	47.5	5.82	27.06	1.540281
432	HL-93 Inventory	50	47.5	5.82	27.07	1.539712
432	HL-93 Inventory	50	47.5	5.55	26.66	1.573518
433	HL-93 Inventory	50	47.5	5.56	26.66	1.573143
433	HL-93 Inventory	50	47.5	5.27	26.19	1.612447
434	HL-93 Inventory	50	47.5	5.27	26.19	1.612447
434	HL-93 Inventory	50	47.5	4.96	25.65	1.65848
435	HL-93 Inventory	50	47.5	4.97	25.66	1.657443
435	HL-93 Inventory	50	47.5	4.63	25.06	1.710694
436	HL-93 Inventory	50	47.5	4.64	25.07	1.709613
436	HL-93 Inventory	50	47.5	4.28	24.41	1.770586
437	HL-93 Inventory	50	47.5	4.29	24.42	1.769451
437	HL-93 Inventory	50	47.5	3.91	23.7	1.839241
438	HL-93 Inventory	50	47.5	3.92	23.71	1.838043
438	HL-93 Inventory	50	47.5	3.52	22.92	1.918848
439	HL-93 Inventory	50	47.5	3.52	22.93	1.918011
439	HL-93 Inventory	50	47.5	3.11	22.09	2.009507
440	HL-93 Inventory	50	47.5	3.11	22.1	2.008597
440	HL-93 Inventory	50	47.5	2.67	21.19	2.115621
441	HL-93 Inventory	50	47.5	2.67	21.2	2.114623
441	HL-93 Inventory	50	47.5	2.56	20.8	2.160577
442	HL-93 Inventory	50	47.5	2.56	20.8	2.160577
442	HL-93 Inventory	50	47.5	2.21	20.31	2.229936
443	HL-93 Inventory	50	47.5	2.22	20.31	2.229444
443	HL-93 Inventory	50	47.5	1.73	19.39	2.360495
444	HL-93 Inventory	50	47.5	1.74	19.4	2.358763
444	HL-93 Inventory	50	47.5	1.23	18.43	2.510581
445	HL-93 Inventory	50	47.5	1.23	18.43	2.510581
445	HL-93 Inventory	50	47.5	0.71	17.41	2.687536
446	HL-93 Inventory	50	47.5	0.71	17.42	2.685993

446	HL-93 Inventory	50	47.5	0.17	16.35	2.894801
447	HL-93 Inventory	50	47.5	0.17	16.35	2.894801
447	HL-93 Inventory	50	47.5	-0.4	15.23	3.09258
448	HL-93 Inventory	50	47.5	-0.41	15.24	3.089895
448	HL-93 Inventory	50	47.5	-0.99	14.06	3.307966
449	HL-93 Inventory	50	47.5	-0.99	14.07	3.305615
449	HL-93 Inventory	50	47.5	-1.6	-12.86	3.569207
450	HL-93 Inventory	50	47.5	-1.6	12.85	3.571984
450	HL-93 Inventory	50	47.5	-2.23	-13.11	3.453089
451	HL-93 Inventory	50	47.5	-2.23	-13.11	3.453089
451	HL-93 Inventory	50	47.5	-2.88	-13.41	3.327368
452	HL-93 Inventory	50	47.5	-2.88	-13.4	3.329851
452	HL-93 Inventory	50	47.5	-3.55	-13.75	3.196364
453	HL-93 Inventory	50	47.5	-3.55	-13.75	3.196364
453	HL-93 Inventory	50	47.5	-4.24	-14.15	3.057244
454	HL-93 Inventory	50	47.5	-4.24	-14.15	3.057244
454	HL-93 Inventory	50	47.5	-4.95	-14.62	2.910397
455	HL-93 Inventory	50	47.5	-4.95	-14.61	2.912389
455	HL-93 Inventory	50	47.5	-5.69	-15.13	2.763384
456	HL-93 Inventory	50	47.5	-5.69	-15.13	2.763384
456	HL-93 Inventory	50	47.5	-6.45	-15.7	2.61465
457	HL-93 Inventory	50	47.5	-6.45	-15.7	2.61465
457	HL-93 Inventory	50	47.5	-7.22	-16.32	2.468137
458	HL-93 Inventory	50	47.5	-7.22	-16.32	2.468137
458	HL-93 Inventory	50	47.5	-8.03	-16.99	2.323131
459	HL-93 Inventory	50	47.5	-8.03	-17	2.321765
459	HL-93 Inventory	50	47.5	-8.85	-17.71	2.182383
460	HL-93 Inventory	50	47.5	-8.85	-17.72	2.181151
460	HL-93 Inventory	50	47.5	-9.69	-18.47	2.047103
461	HL-93 Inventory	50	47.5	-9.7	-18.48	2.045455
461	HL-93 Inventory	50	47.5	-10.56	-19.27	1.916969
462	HL-93 Inventory	50	47.5	-10.56	-19.28	1.915975
462	HL-93 Inventory	50	47.5	-11.44	-20.11	1.793138
463	HL-93 Inventory	50	47.5	-11.44	-20.12	1.792247
463	HL-93 Inventory	50	47.5	-12.33	-20.99	1.67556
464	HL-93 Inventory	50	47.5	-12.33	-20.99	1.67556
464	HL-93 Inventory	50	47.5	-13.23	-22.06	1.55349
465	HL-93 Inventory	50	47.5	-13.24	-22.07	1.552333
465	HL-93 Inventory	50	47.5	-12.34	-21.03	1.671897
466	HL-93 Inventory	50	47.5	-12.34	-21.03	1.671897
466	HL-93 Inventory	50	47.5	-11.45	-20.16	1.788194
467	HL-93 Inventory	50	47.5	-11.44	-20.15	1.789578
467	HL-93 Inventory	50	47.5	-10.56	-19.32	1.912008
468	HL-93 Inventory	50	47.5	-10.56	-19.31	1.912998
468	HL-93 Inventory	50	47.5	-9.7	-18.51	2.042139
469	HL-93 Inventory	50	47.5	-9.7	-18.51	2.042139
469	HL-93 Inventory	50	47.5	-8.86	-17.75	2.176901
470	HL-93 Inventory	50	47.5	-8.85	-17.75	2.177465
470	HL-93 Inventory	50	47.5	-8.03	-17.03	2.317675
471	HL-93 Inventory	50	47.5	-8.03	-17.03	2.317675
471	HL-93 Inventory	50	47.5	-7.23	-16.36	2.461491
472	HL-93 Inventory	50	47.5	-7.23	-16.36	2.461491
472	HL-93 Inventory	50	47.5	-6.45	-15.74	2.608005
473	HL-93 Inventory	50	47.5	-6.45	-15.74	2.608005
473	HL-93 Inventory	50	47.5	-5.69	-15.17	2.756098
474	HL-93 Inventory	50	47.5	-5.69	-15.17	2.756098
474	HL-93 Inventory	50	47.5	-4.96	-14.65	2.903754
475	HL-93 Inventory	50	47.5	-4.96	-14.66	2.901774
475	HL-93 Inventory	50	47.5	-4.24	-14.19	3.048626

476	HL-93 Inventory	50	47.5	-4.24	-14.2	3.046479
476	HL-93 Inventory	50	47.5	-3.55	-13.79	3.187092
477	HL-93 Inventory	50	47.5	-3.55	-13.79	3.187092
477	HL-93 Inventory	50	47.5	-2.88	-13.45	3.317472
478	HL-93 Inventory	50	47.5	-2.88	-13.45	3.317472
478	HL-93 Inventory	50	47.5	-2.23	-13.16	3.43997
479	HL-93 Inventory	50	47.5	-2.23	-13.17	3.437358
479	HL-93 Inventory	50	47.5	-1.6	12.91	3.555383
480	HL-93 Inventory	50	47.5	-1.6	-12.92	3.552632
480	HL-93 Inventory	50	47.5	-0.99	14.13	3.291578
481	HL-93 Inventory	50	47.5	-0.99	14.12	3.293909
481	HL-93 Inventory	50	47.5	-0.41	15.3	3.077778
482	HL-93 Inventory	50	47.5	-0.41	15.29	3.079791
482	HL-93 Inventory	50	47.5	0.17	16.41	2.884217
483	HL-93 Inventory	50	47.5	0.17	16.41	2.884217
483	HL-93 Inventory	50	47.5	0.71	17.48	2.676773
484	HL-93 Inventory	50	47.5	0.71	17.47	2.678306
484	HL-93 Inventory	50	47.5	1.23	18.49	2.502434
485	HL-93 Inventory	50	47.5	1.23	18.49	2.502434
485	HL-93 Inventory	50	47.5	1.73	19.45	2.353213
486	HL-93 Inventory	50	47.5	1.73	19.45	2.353213
486	HL-93 Inventory	50	47.5	2.21	20.37	2.223368
487	HL-93 Inventory	50	47.5	2.21	20.36	2.22446
487	HL-93 Inventory	50	47.5	2.56	20.85	2.155396
488	HL-93 Inventory	50	47.5	2.56	20.85	2.155396
488	HL-93 Inventory	50	47.5	2.67	21.25	2.109647
489	HL-93 Inventory	50	47.5	2.67	21.24	2.11064
489	HL-93 Inventory	50	47.5	3.11	22.15	2.004063
490	HL-93 Inventory	50	47.5	3.1	22.15	2.004515
490	HL-93 Inventory	50	47.5	3.52	22.99	1.913006
491	HL-93 Inventory	50	47.5	3.52	22.98	1.913838
491	HL-93 Inventory	50	47.5	3.91	23.76	1.834596
492	HL-93 Inventory	50	47.5	3.91	23.75	1.835368
492	HL-93 Inventory	50	47.5	4.28	24.47	1.766244
493	HL-93 Inventory	50	47.5	4.28	24.46	1.766966
493	HL-93 Inventory	50	47.5	4.63	25.12	1.706608
494	HL-93 Inventory	50	47.5	4.63	25.12	1.706608
494	HL-93 Inventory	50	47.5	4.96	25.72	1.653966
495	HL-93 Inventory	50	47.5	4.96	25.71	1.654609
495	HL-93 Inventory	50	47.5	5.27	26.25	1.608762
496	HL-93 Inventory	50	47.5	5.27	26.24	1.609375
496	HL-93 Inventory	50	47.5	5.56	26.72	1.569611
497	HL-93 Inventory	50	47.5	5.55	26.71	1.570573
497	HL-93 Inventory	50	47.5	5.82	27.12	1.536873
498	HL-93 Inventory	50	47.5	5.82	27.12	1.536873
498	HL-93 Inventory	50	47.5	6.06	27.46	1.509104
499	HL-93 Inventory	50	47.5	6.06	27.46	1.509104
499	HL-93 Inventory	50	47.5	6.29	27.74	1.48558
500	HL-93 Inventory	50	47.5	6.28	27.73	1.486477
500	HL-93 Inventory	50	47.5	6.49	27.95	1.467263
501	HL-93 Inventory	50	47.5	6.48	27.94	1.468146
501	HL-93 Inventory	50	47.5	6.67	28.09	1.453542
502	HL-93 Inventory	50	47.5	6.66	28.08	1.454416
502	HL-93 Inventory	50	47.5	6.82	28.16	1.444602
503	HL-93 Inventory	50	47.5	6.82	28.15	1.445115
503	HL-93 Inventory	50	47.5	6.96	28.23	1.436061
504	HL-93 Inventory	50	47.5	6.96	28.23	1.436061
504	HL-93 Inventory	50	47.5	7.02	28.13	1.439033
505	HL-93 Inventory	50	47.5	7.02	28.13	1.439033

505	HL-93 Inventory	50	47.5	7.08	28.37	1.424744
506	HL-93 Inventory	50	47.5	7.07	28.37	1.425097
506	HL-93 Inventory	50	47.5	7.17	28.49	1.415584
507	HL-93 Inventory	50	47.5	7.17	28.48	1.416081
507	HL-93 Inventory	50	47.5	7.24	28.52	1.411641
508	HL-93 Inventory	50	47.5	7.24	28.52	1.411641
508	HL-93 Inventory	50	47.5	7.29	28.49	1.411372
509	HL-93 Inventory	50	47.5	7.29	28.49	1.411372
509	HL-93 Inventory	50	47.5	7.32	28.39	1.415287
510	HL-93 Inventory	50	47.5	7.32	28.39	1.415287
510	HL-93 Inventory	50	47.5	7.33	28.22	1.423459
511	HL-93 Inventory	50	47.5	7.33	28.22	1.423459
511	HL-93 Inventory	50	47.5	7.31	27.99	1.43587
512	HL-93 Inventory	50	47.5	7.31	27.98	1.436383
512	HL-93 Inventory	50	47.5	7.28	27.68	1.453035
513	HL-93 Inventory	50	47.5	7.28	27.67	1.45356
513	HL-93 Inventory	50	47.5	7.22	27.3	1.475458
514	HL-93 Inventory	50	47.5	7.22	27.29	1.475999
514	HL-93 Inventory	50	47.5	7.14	26.85	1.503166
515	HL-93 Inventory	50	47.5	7.14	26.84	1.503726
515	HL-93 Inventory	50	47.5	7.04	26.35	1.535484
516	HL-93 Inventory	50	47.5	7.04	26.35	1.535484
516	HL-93 Inventory	50	47.5	6.92	25.85	1.569826
517	HL-93 Inventory	50	47.5	6.92	25.85	1.569826
517	HL-93 Inventory	50	47.5	6.78	25.29	1.610123
518	HL-93 Inventory	50	47.5	6.78	25.29	1.610123
518	HL-93 Inventory	50	47.5	6.62	24.66	1.657745
519	HL-93 Inventory	50	47.5	6.62	24.66	1.657745
519	HL-93 Inventory	50	47.5	6.43	23.95	1.714823
520	HL-93 Inventory	50	47.5	6.43	23.95	1.714823
520	HL-93 Inventory	50	47.5	6.23	23.16	1.781952
521	HL-93 Inventory	50	47.5	6.23	23.15	1.782721
521	HL-93 Inventory	50	47.5	6.17	22.78	1.814311
522	HL-93 Inventory	50	47.5	6.17	22.77	1.815108
522	HL-93 Inventory	50	47.5	6	22.34	1.857654
523	HL-93 Inventory	50	47.5	6	22.34	1.857654
523	HL-93 Inventory	50	47.5	5.75	21.46	1.94548
524	HL-93 Inventory	50	47.5	5.75	21.46	1.94548
524	HL-93 Inventory	50	47.5	5.48	20.5	2.049756
525	HL-93 Inventory	50	47.5	5.48	20.5	2.049756
525	HL-93 Inventory	50	47.5	5.18	19.46	2.174717
526	HL-93 Inventory	50	47.5	5.19	19.46	2.174203
526	HL-93 Inventory	50	47.5	4.87	18.34	2.324427
527	HL-93 Inventory	50	47.5	4.87	18.34	2.324427
527	HL-93 Inventory	50	47.5	4.53	17.14	2.507001
528	HL-93 Inventory	50	47.5	4.54	17.14	2.506418
528	HL-93 Inventory	50	47.5	4.18	15.86	2.7314
529	HL-93 Inventory	50	47.5	4.18	15.87	2.729679
529	HL-93 Inventory	50	47.5	3.8	14.5	3.013793
530	HL-93 Inventory	50	47.5	3.8	14.51	3.011716
530	HL-93 Inventory	50	47.5	3.4	13.05	3.37931
531	HL-93 Inventory	50	47.5	3.4	13.07	3.374139
531	HL-93 Inventory	50	47.5	2.98	11.52	3.864583
532	HL-93 Inventory	50	47.5	2.98	11.54	3.857886
532	HL-93 Inventory	50	47.5	2.53	9.9	4.542424
533	HL-93 Inventory	50	47.5	2.54	9.93	4.527694
533	HL-93 Inventory	50	47.5	2.07	8.19	5.547009
534	HL-93 Inventory	50	47.5	2.07	8.23	5.520049
534	HL-93 Inventory	50	47.5	1.58	6.37	7.208791

535	HL-93 Inventory	50	47.5	1.58	6.42	7.152648
535	HL-93 Inventory	50	47.5	1.08	4.43	10.47856
536	HL-93 Inventory	50	47.5	1.07	4.48	10.36384
536	HL-93 Inventory	50	47.5	0.55	2.33	20.15021
537	HL-93 Inventory	50	47.5	0.55	2.37	19.81013
537	HL-93 Inventory	50	47.5	0.01	-0.11	431.7273

LOAD RATING FIXED SPAN -GIRDER 3

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 1.416988

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
246	HL-93 Inventory	50	47.5	0.05	-0.1	474.5
246	HL-93 Inventory	50	47.5	0.67	2.34	20.01282
247	HL-93 Inventory	50	47.5	0.62	2.3	20.38261
247	HL-93 Inventory	50	47.5	1.22	4.44	10.42342
248	HL-93 Inventory	50	47.5	1.18	4.39	10.55125
248	HL-93 Inventory	50	47.5	1.71	6.38	7.177116
249	HL-93 Inventory	50	47.5	1.68	6.33	7.238547
249	HL-93 Inventory	50	47.5	2.16	8.18	5.542787
250	HL-93 Inventory	50	47.5	2.14	8.14	5.572482
250	HL-93 Inventory	50	47.5	2.59	9.88	4.545547
251	HL-93 Inventory	50	47.5	2.57	9.86	4.556795
251	HL-93 Inventory	50	47.5	3	11.5	3.869565
252	HL-93 Inventory	50	47.5	2.99	11.48	3.877178
252	HL-93 Inventory	50	47.5	3.4	13.03	3.384497
253	HL-93 Inventory	50	47.5	3.39	13.02	3.387865
253	HL-93 Inventory	50	47.5	3.77	14.47	3.022115
254	HL-93 Inventory	50	47.5	3.77	14.46	3.024205
254	HL-93 Inventory	50	47.5	4.14	15.83	2.739103
255	HL-93 Inventory	50	47.5	4.14	15.82	2.740834
255	HL-93 Inventory	50	47.5	4.48	17.11	2.514319
256	HL-93 Inventory	50	47.5	4.48	17.11	2.514319
256	HL-93 Inventory	50	47.5	4.8	18.3	2.333333
257	HL-93 Inventory	50	47.5	4.81	18.31	2.331513
257	HL-93 Inventory	50	47.5	5.11	19.42	2.182801
258	HL-93 Inventory	50	47.5	5.11	19.43	2.181678
258	HL-93 Inventory	50	47.5	5.39	20.46	2.058162
259	HL-93 Inventory	50	47.5	5.39	20.47	2.057157
259	HL-93 Inventory	50	47.5	5.65	21.43	1.95287
260	HL-93 Inventory	50	47.5	5.66	21.43	1.952403
260	HL-93 Inventory	50	47.5	5.9	22.3	1.865471
261	HL-93 Inventory	50	47.5	5.9	22.31	1.864635
261	HL-93 Inventory	50	47.5	6.07	22.74	1.8219
262	HL-93 Inventory	50	47.5	6.07	22.74	1.8219
262	HL-93 Inventory	50	47.5	6.12	23.12	1.789792
263	HL-93 Inventory	50	47.5	6.12	23.12	1.789792
263	HL-93 Inventory	50	47.5	6.32	23.92	1.721572
264	HL-93 Inventory	50	47.5	6.32	23.92	1.721572
264	HL-93 Inventory	50	47.5	6.49	24.63	1.665043
265	HL-93 Inventory	50	47.5	6.5	24.63	1.664637
265	HL-93 Inventory	50	47.5	6.65	25.26	1.617181
266	HL-93 Inventory	50	47.5	6.65	25.26	1.617181
266	HL-93 Inventory	50	47.5	6.79	25.82	1.576685
267	HL-93 Inventory	50	47.5	6.79	25.82	1.576685
267	HL-93 Inventory	50	47.5	6.9	26.31	1.543139
268	HL-93 Inventory	50	47.5	6.91	26.32	1.542173
268	HL-93 Inventory	50	47.5	7	26.8	1.511194
269	HL-93 Inventory	50	47.5	7	26.81	1.51063
269	HL-93 Inventory	50	47.5	7.08	27.25	1.483303
270	HL-93 Inventory	50	47.5	7.08	27.26	1.482759
270	HL-93 Inventory	50	47.5	7.13	27.63	1.461093

271	HL-93 Inventory	50	47.5	7.13	27.64	1.460564
271	HL-93 Inventory	50	47.5	7.16	27.94	1.443808
272	HL-93 Inventory	50	47.5	7.16	27.94	1.443808
272	HL-93 Inventory	50	47.5	7.18	28.18	1.430802
273	HL-93 Inventory	50	47.5	7.18	28.18	1.430802
273	HL-93 Inventory	50	47.5	7.17	28.35	1.422575
274	HL-93 Inventory	50	47.5	7.17	28.35	1.422575
274	HL-93 Inventory	50	47.5	7.14	28.45	1.418629
275	HL-93 Inventory	50	47.5	7.14	28.45	1.418629
275	HL-93 Inventory	50	47.5	7.09	28.48	1.41889
276	HL-93 Inventory	50	47.5	7.09	28.48	1.41889
276	HL-93 Inventory	50	47.5	7.02	28.44	1.423347
277	HL-93 Inventory	50	47.5	7.01	28.44	1.423699
277	HL-93 Inventory	50	47.5	6.92	28.33	1.432404
278	HL-93 Inventory	50	47.5	6.92	28.33	1.432404
278	HL-93 Inventory	50	47.5	6.87	28.09	1.446422
279	HL-93 Inventory	50	47.5	6.87	28.09	1.446422
279	HL-93 Inventory	50	47.5	6.81	28.19	1.44342
280	HL-93 Inventory	50	47.5	6.81	28.18	1.443932
280	HL-93 Inventory	50	47.5	6.67	28.1	1.453025
281	HL-93 Inventory	50	47.5	6.67	28.1	1.453025
281	HL-93 Inventory	50	47.5	6.52	28.03	1.462005
282	HL-93 Inventory	50	47.5	6.51	28.04	1.46184
282	HL-93 Inventory	50	47.5	6.34	27.89	1.475798
283	HL-93 Inventory	50	47.5	6.33	27.89	1.476156
283	HL-93 Inventory	50	47.5	6.14	27.68	1.49422
284	HL-93 Inventory	50	47.5	6.13	27.68	1.494581
284	HL-93 Inventory	50	47.5	5.92	27.4	1.517518
285	HL-93 Inventory	50	47.5	5.91	27.41	1.517329
285	HL-93 Inventory	50	47.5	5.68	27.06	1.545455
286	HL-93 Inventory	50	47.5	5.67	27.07	1.545253
286	HL-93 Inventory	50	47.5	5.42	26.65	1.578987
287	HL-93 Inventory	50	47.5	5.41	26.66	1.57877
287	HL-93 Inventory	50	47.5	5.14	26.18	1.618029
288	HL-93 Inventory	50	47.5	5.13	26.19	1.617793
288	HL-93 Inventory	50	47.5	4.83	25.65	1.663548
289	HL-93 Inventory	50	47.5	4.82	25.66	1.663289
289	HL-93 Inventory	50	47.5	4.51	25.06	1.715483
290	HL-93 Inventory	50	47.5	4.5	25.07	1.715197
290	HL-93 Inventory	50	47.5	4.16	24.41	1.775502
291	HL-93 Inventory	50	47.5	4.15	24.42	1.775184
291	HL-93 Inventory	50	47.5	3.8	23.69	1.84466
292	HL-93 Inventory	50	47.5	3.79	23.7	1.844304
292	HL-93 Inventory	50	47.5	3.41	22.92	1.923647
293	HL-93 Inventory	50	47.5	3.4	22.93	1.923245
293	HL-93 Inventory	50	47.5	3.01	22.09	2.014033
294	HL-93 Inventory	50	47.5	2.99	22.1	2.014027
294	HL-93 Inventory	50	47.5	2.58	21.19	2.119868
295	HL-93 Inventory	50	47.5	2.57	21.2	2.11934
295	HL-93 Inventory	50	47.5	2.46	20.8	2.165385
296	HL-93 Inventory	50	47.5	2.46	20.8	2.165385
296	HL-93 Inventory	50	47.5	2.13	20.31	2.233875
297	HL-93 Inventory	50	47.5	2.12	20.31	2.234367
297	HL-93 Inventory	50	47.5	1.66	19.39	2.364105
298	HL-93 Inventory	50	47.5	1.65	19.39	2.364621
298	HL-93 Inventory	50	47.5	1.16	18.43	2.514379
299	HL-93 Inventory	50	47.5	1.15	18.43	2.514921
299	HL-93 Inventory	50	47.5	0.65	17.41	2.690982
300	HL-93 Inventory	50	47.5	0.64	17.42	2.690011

300	HL-93 Inventory	50	47.5	0.12	16.34	2.899633
301	HL-93 Inventory	50	47.5	0.11	16.35	2.898471
301	HL-93 Inventory	50	47.5	-0.45	15.23	3.089297
302	HL-93 Inventory	50	47.5	-0.45	15.23	3.089297
302	HL-93 Inventory	50	47.5	-1.02	14.06	3.305832
303	HL-93 Inventory	50	47.5	-1.02	14.07	3.303483
303	HL-93 Inventory	50	47.5	-1.61	-12.85	3.571206
304	HL-93 Inventory	50	47.5	-1.62	12.85	3.570428
304	HL-93 Inventory	50	47.5	-2.22	-13.11	3.453852
305	HL-93 Inventory	50	47.5	-2.23	-13.11	3.453089
305	HL-93 Inventory	50	47.5	-2.85	-13.41	3.329605
306	HL-93 Inventory	50	47.5	-2.86	-13.4	3.331343
306	HL-93 Inventory	50	47.5	-3.51	-13.75	3.199273
307	HL-93 Inventory	50	47.5	-3.52	-13.75	3.198545
307	HL-93 Inventory	50	47.5	-4.18	-14.15	3.061484
308	HL-93 Inventory	50	47.5	-4.19	-14.15	3.060777
308	HL-93 Inventory	50	47.5	-4.87	-14.62	2.915869
309	HL-93 Inventory	50	47.5	-4.89	-14.61	2.916496
309	HL-93 Inventory	50	47.5	-5.58	-15.13	2.770654
310	HL-93 Inventory	50	47.5	-5.6	-15.13	2.769332
310	HL-93 Inventory	50	47.5	-6.32	-15.7	2.62293
311	HL-93 Inventory	50	47.5	-6.33	-15.7	2.622293
311	HL-93 Inventory	50	47.5	-7.07	-16.32	2.477328
312	HL-93 Inventory	50	47.5	-7.08	-16.32	2.476716
312	HL-93 Inventory	50	47.5	-7.84	-16.99	2.334314
313	HL-93 Inventory	50	47.5	-7.85	-17	2.332353
313	HL-93 Inventory	50	47.5	-8.63	-17.71	2.194805
314	HL-93 Inventory	50	47.5	-8.64	-17.72	2.193002
314	HL-93 Inventory	50	47.5	-9.44	-18.47	2.060639
315	HL-93 Inventory	50	47.5	-9.45	-18.48	2.058983
315	HL-93 Inventory	50	47.5	-10.27	-19.27	1.932019
316	HL-93 Inventory	50	47.5	-10.28	-19.28	1.930498
316	HL-93 Inventory	50	47.5	-11.11	-20.11	1.809547
317	HL-93 Inventory	50	47.5	-11.12	-20.12	1.808151
317	HL-93 Inventory	50	47.5	-11.96	-20.99	1.693187
318	HL-93 Inventory	50	47.5	-11.97	-20.99	1.692711
318	HL-93 Inventory	50	47.5	-12.83	-22.06	1.571623
319	HL-93 Inventory	50	47.5	-12.83	-22.07	1.570911
319	HL-93 Inventory	50	47.5	-11.96	-21.03	1.689967
320	HL-93 Inventory	50	47.5	-11.96	-21.03	1.689967
320	HL-93 Inventory	50	47.5	-11.11	-20.16	1.80506
321	HL-93 Inventory	50	47.5	-11.1	-20.15	1.806452
321	HL-93 Inventory	50	47.5	-10.27	-19.32	1.927019
322	HL-93 Inventory	50	47.5	-10.26	-19.31	1.928534
322	HL-93 Inventory	50	47.5	-9.45	-18.51	2.055646
323	HL-93 Inventory	50	47.5	-9.44	-18.51	2.056186
323	HL-93 Inventory	50	47.5	-8.64	-17.75	2.189296
324	HL-93 Inventory	50	47.5	-8.63	-17.75	2.189859
324	HL-93 Inventory	50	47.5	-7.85	-17.03	2.328244
325	HL-93 Inventory	50	47.5	-7.84	-17.03	2.328831
325	HL-93 Inventory	50	47.5	-7.08	-16.36	2.47066
326	HL-93 Inventory	50	47.5	-7.06	-16.36	2.471883
326	HL-93 Inventory	50	47.5	-6.33	-15.74	2.615629
327	HL-93 Inventory	50	47.5	-6.31	-15.74	2.6169
327	HL-93 Inventory	50	47.5	-5.59	-15.17	2.76269
328	HL-93 Inventory	50	47.5	-5.58	-15.17	2.763349
328	HL-93 Inventory	50	47.5	-4.88	-14.65	2.909215
329	HL-93 Inventory	50	47.5	-4.87	-14.66	2.907913
329	HL-93 Inventory	50	47.5	-4.19	-14.19	3.052149

330	HL-93 Inventory	50	47.5	-4.17	-14.2	3.051408
330	HL-93 Inventory	50	47.5	-3.51	-13.79	3.189993
331	HL-93 Inventory	50	47.5	-3.5	-13.79	3.190718
331	HL-93 Inventory	50	47.5	-2.86	-13.45	3.318959
332	HL-93 Inventory	50	47.5	-2.85	-13.45	3.319703
332	HL-93 Inventory	50	47.5	-2.23	-13.16	3.43997
333	HL-93 Inventory	50	47.5	-2.22	-13.17	3.438117
333	HL-93 Inventory	50	47.5	-1.61	12.91	3.554609
334	HL-93 Inventory	50	47.5	-1.61	-12.92	3.551858
334	HL-93 Inventory	50	47.5	-1.02	14.13	3.289455
335	HL-93 Inventory	50	47.5	-1.02	14.12	3.291785
335	HL-93 Inventory	50	47.5	-0.45	15.3	3.075163
336	HL-93 Inventory	50	47.5	-0.44	15.29	3.077829
336	HL-93 Inventory	50	47.5	0.11	16.41	2.887873
337	HL-93 Inventory	50	47.5	0.12	16.41	2.887264
337	HL-93 Inventory	50	47.5	0.65	17.48	2.680206
338	HL-93 Inventory	50	47.5	0.65	17.47	2.68174
338	HL-93 Inventory	50	47.5	1.16	18.49	2.50622
339	HL-93 Inventory	50	47.5	1.17	18.49	2.505679
339	HL-93 Inventory	50	47.5	1.65	19.45	2.357326
340	HL-93 Inventory	50	47.5	1.66	19.45	2.356812
340	HL-93 Inventory	50	47.5	2.12	20.37	2.227786
341	HL-93 Inventory	50	47.5	2.13	20.36	2.228389
341	HL-93 Inventory	50	47.5	2.46	20.85	2.160192
342	HL-93 Inventory	50	47.5	2.46	20.85	2.160192
342	HL-93 Inventory	50	47.5	2.57	21.25	2.114353
343	HL-93 Inventory	50	47.5	2.58	21.24	2.114878
343	HL-93 Inventory	50	47.5	3	22.15	2.009029
344	HL-93 Inventory	50	47.5	3.01	22.15	2.008578
344	HL-93 Inventory	50	47.5	3.4	22.99	1.918225
345	HL-93 Inventory	50	47.5	3.41	22.98	1.918625
345	HL-93 Inventory	50	47.5	3.79	23.76	1.839646
346	HL-93 Inventory	50	47.5	3.8	23.75	1.84
346	HL-93 Inventory	50	47.5	4.16	24.47	1.771148
347	HL-93 Inventory	50	47.5	4.17	24.46	1.771464
347	HL-93 Inventory	50	47.5	4.5	25.12	1.711783
348	HL-93 Inventory	50	47.5	4.51	25.12	1.711385
348	HL-93 Inventory	50	47.5	4.83	25.72	1.65902
349	HL-93 Inventory	50	47.5	4.83	25.71	1.659665
349	HL-93 Inventory	50	47.5	5.13	26.25	1.614095
350	HL-93 Inventory	50	47.5	5.14	26.24	1.614329
350	HL-93 Inventory	50	47.5	5.41	26.72	1.575225
351	HL-93 Inventory	50	47.5	5.42	26.71	1.57544
351	HL-93 Inventory	50	47.5	5.67	27.12	1.542404
352	HL-93 Inventory	50	47.5	5.68	27.12	1.542035
352	HL-93 Inventory	50	47.5	5.91	27.46	1.514567
353	HL-93 Inventory	50	47.5	5.92	27.46	1.514202
353	HL-93 Inventory	50	47.5	6.13	27.74	1.491348
354	HL-93 Inventory	50	47.5	6.14	27.73	1.491525
354	HL-93 Inventory	50	47.5	6.33	27.95	1.472987
355	HL-93 Inventory	50	47.5	6.34	27.94	1.473157
355	HL-93 Inventory	50	47.5	6.51	28.09	1.459238
356	HL-93 Inventory	50	47.5	6.52	28.08	1.459402
356	HL-93 Inventory	50	47.5	6.67	28.16	1.449929
357	HL-93 Inventory	50	47.5	6.67	28.15	1.450444
357	HL-93 Inventory	50	47.5	6.81	28.23	1.441374
358	HL-93 Inventory	50	47.5	6.81	28.23	1.441374
358	HL-93 Inventory	50	47.5	6.87	28.13	1.444365
359	HL-93 Inventory	50	47.5	6.87	28.13	1.444365

359	HL-93 Inventory	50	47.5	6.92	28.37	1.430384
360	HL-93 Inventory	50	47.5	6.92	28.37	1.430384
360	HL-93 Inventory	50	47.5	7.01	28.49	1.4212
361	HL-93 Inventory	50	47.5	7.01	28.48	1.421699
361	HL-93 Inventory	50	47.5	7.08	28.52	1.417251
362	HL-93 Inventory	50	47.5	7.08	28.52	1.417251
362	HL-93 Inventory	50	47.5	7.13	28.49	1.416988
363	HL-93 Inventory	50	47.5	7.13	28.49	1.416988
363	HL-93 Inventory	50	47.5	7.16	28.39	1.420923
364	HL-93 Inventory	50	47.5	7.16	28.39	1.420923
364	HL-93 Inventory	50	47.5	7.17	28.22	1.429128
365	HL-93 Inventory	50	47.5	7.17	28.22	1.429128
365	HL-93 Inventory	50	47.5	7.16	27.99	1.441229
366	HL-93 Inventory	50	47.5	7.16	27.98	1.441744
366	HL-93 Inventory	50	47.5	7.12	27.68	1.458815
367	HL-93 Inventory	50	47.5	7.12	27.67	1.459342
367	HL-93 Inventory	50	47.5	7.07	27.3	1.480952
368	HL-93 Inventory	50	47.5	7.07	27.29	1.481495
368	HL-93 Inventory	50	47.5	6.99	26.85	1.508752
369	HL-93 Inventory	50	47.5	6.99	26.84	1.509314
369	HL-93 Inventory	50	47.5	6.9	26.35	1.540797
370	HL-93 Inventory	50	47.5	6.89	26.35	1.541176
370	HL-93 Inventory	50	47.5	6.78	25.85	1.575242
371	HL-93 Inventory	50	47.5	6.77	25.85	1.575629
371	HL-93 Inventory	50	47.5	6.64	25.29	1.615658
372	HL-93 Inventory	50	47.5	6.63	25.29	1.616054
372	HL-93 Inventory	50	47.5	6.48	24.66	1.663423
373	HL-93 Inventory	50	47.5	6.47	24.66	1.663828
373	HL-93 Inventory	50	47.5	6.3	23.95	1.720251
374	HL-93 Inventory	50	47.5	6.29	23.95	1.720668
374	HL-93 Inventory	50	47.5	6.1	23.16	1.787565
375	HL-93 Inventory	50	47.5	6.09	23.15	1.788769
375	HL-93 Inventory	50	47.5	6.04	22.78	1.820018
376	HL-93 Inventory	50	47.5	6.04	22.77	1.820817
376	HL-93 Inventory	50	47.5	5.87	22.34	1.863474
377	HL-93 Inventory	50	47.5	5.87	22.34	1.863474
377	HL-93 Inventory	50	47.5	5.63	21.46	1.951072
378	HL-93 Inventory	50	47.5	5.62	21.46	1.951538
378	HL-93 Inventory	50	47.5	5.36	20.5	2.05561
379	HL-93 Inventory	50	47.5	5.35	20.5	2.056098
379	HL-93 Inventory	50	47.5	5.07	19.46	2.18037
380	HL-93 Inventory	50	47.5	5.06	19.46	2.180884
380	HL-93 Inventory	50	47.5	4.76	18.34	2.330425
381	HL-93 Inventory	50	47.5	4.76	18.34	2.330425
381	HL-93 Inventory	50	47.5	4.44	17.14	2.512252
382	HL-93 Inventory	50	47.5	4.43	17.14	2.512835
382	HL-93 Inventory	50	47.5	4.09	15.86	2.737074
383	HL-93 Inventory	50	47.5	4.08	15.87	2.73598
383	HL-93 Inventory	50	47.5	3.72	14.5	3.01931
384	HL-93 Inventory	50	47.5	3.71	14.51	3.017919
384	HL-93 Inventory	50	47.5	3.32	13.05	3.385441
385	HL-93 Inventory	50	47.5	3.31	13.07	3.381025
385	HL-93 Inventory	50	47.5	2.91	11.52	3.87066
386	HL-93 Inventory	50	47.5	2.9	11.54	3.864818
386	HL-93 Inventory	50	47.5	2.48	9.9	4.547475
387	HL-93 Inventory	50	47.5	2.47	9.93	4.534743
387	HL-93 Inventory	50	47.5	2.02	8.19	5.553114
388	HL-93 Inventory	50	47.5	2.02	8.23	5.526124
388	HL-93 Inventory	50	47.5	1.55	6.37	7.213501

389	HL-93 Inventory	50	47.5	1.55	6.42	7.157321
389	HL-93 Inventory	50	47.5	1.06	4.43	10.48307
390	HL-93 Inventory	50	47.5	1.05	4.48	10.3683
390	HL-93 Inventory	50	47.5	0.54	2.33	20.15451
391	HL-93 Inventory	50	47.5	0.54	2.37	19.81435
391	HL-93 Inventory	50	47.5	0.01	-0.11	431.7273

LOAD RATING FIXED SPAN -GIRDER 4

RF= RATING FACTOR

RF = (.95 F_Y - f_{DL+SDL}) / (f_{LL+I}) MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating Factor 1.367478

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
100	HL-93 Inventory	50	47.5	0.11	0.59	80.32203
100	HL-93 Inventory	50	47.5	0.48	2.22	21.18018
101	HL-93 Inventory	50	47.5	0.53	2.36	19.90254
101	HL-93 Inventory	50	47.5	0.96	4.3	10.82326
102	HL-93 Inventory	50	47.5	1.01	4.49	10.35412
102	HL-93 Inventory	50	47.5	1.44	6.3	7.311111
103	HL-93 Inventory	50	47.5	1.49	6.49	7.089368
103	HL-93 Inventory	50	47.5	1.9	8.19	5.567766
104	HL-93 Inventory	50	47.5	1.95	8.38	5.435561
104	HL-93 Inventory	50	47.5	2.35	9.97	4.528586
105	HL-93 Inventory	50	47.5	2.4	10.16	4.438976
105	HL-93 Inventory	50	47.5	2.78	11.65	3.838627
106	HL-93 Inventory	50	47.5	2.83	11.83	3.775993
106	HL-93 Inventory	50	47.5	3.19	13.24	3.346677
107	HL-93 Inventory	50	47.5	3.25	13.41	3.299776
107	HL-93 Inventory	50	47.5	3.58	14.74	2.979647
108	HL-93 Inventory	50	47.5	3.65	14.91	2.940979
108	HL-93 Inventory	50	47.5	3.96	16.17	2.692641
109	HL-93 Inventory	50	47.5	4.02	16.32	2.664216
109	HL-93 Inventory	50	47.5	4.31	17.5	2.468
110	HL-93 Inventory	50	47.5	4.38	17.64	2.444444
110	HL-93 Inventory	50	47.5	4.65	18.76	2.284115
111	HL-93 Inventory	50	47.5	4.71	18.89	2.26522
111	HL-93 Inventory	50	47.5	4.96	19.94	2.1334
112	HL-93 Inventory	50	47.5	5.02	20.06	2.117647
112	HL-93 Inventory	50	47.5	5.25	21.04	2.00808
113	HL-93 Inventory	50	47.5	5.31	21.14	1.995743
113	HL-93 Inventory	50	47.5	5.53	22.07	1.901676
114	HL-93 Inventory	50	47.5	5.58	22.15	1.892551
114	HL-93 Inventory	50	47.5	5.78	23.04	1.810764
115	HL-93 Inventory	50	47.5	5.82	23.08	1.805893
115	HL-93 Inventory	50	47.5	5.96	23.59	1.760916
116	HL-93 Inventory	50	47.5	5.96	23.59	1.760916
116	HL-93 Inventory	50	47.5	6	23.91	1.735675
117	HL-93 Inventory	50	47.5	6.05	23.93	1.732135
117	HL-93 Inventory	50	47.5	6.21	24.67	1.673693
118	HL-93 Inventory	50	47.5	6.25	24.72	1.668689
118	HL-93 Inventory	50	47.5	6.4	25.37	1.620024
119	HL-93 Inventory	50	47.5	6.43	25.43	1.615022
119	HL-93 Inventory	50	47.5	6.56	26.02	1.573405
120	HL-93 Inventory	50	47.5	6.59	26.07	1.569237
120	HL-93 Inventory	50	47.5	6.7	26.6	1.533835
121	HL-93 Inventory	50	47.5	6.73	26.66	1.529257
121	HL-93 Inventory	50	47.5	6.82	27.19	1.496138
122	HL-93 Inventory	50	47.5	6.85	27.23	1.492839
122	HL-93 Inventory	50	47.5	6.92	27.7	1.464982
123	HL-93 Inventory	50	47.5	6.94	27.74	1.462149
123	HL-93 Inventory	50	47.5	7	28.15	1.438721
124	HL-93 Inventory	50	47.5	7.02	28.18	1.43648
124	HL-93 Inventory	50	47.5	7.06	28.54	1.416959
125	HL-93 Inventory	50	47.5	7.07	28.56	1.415616
125	HL-93 Inventory	50	47.5	7.1	28.86	1.399861
126	HL-93 Inventory	50	47.5	7.11	28.88	1.398546
126	HL-93 Inventory	50	47.5	7.11	29.12	1.387019

127	HL-93 Inventory	50	47.5	7.12	29.13	1.3862
127	HL-93 Inventory	50	47.5	7.11	29.32	1.377558
128	HL-93 Inventory	50	47.5	7.11	29.32	1.377558
128	HL-93 Inventory	50	47.5	7.08	29.46	1.37203
129	HL-93 Inventory	50	47.5	7.08	29.45	1.372496
129	HL-93 Inventory	50	47.5	7.04	29.54	1.369668
130	HL-93 Inventory	50	47.5	7.03	29.52	1.370935
130	HL-93 Inventory	50	47.5	6.97	29.56	1.37111
131	HL-93 Inventory	50	47.5	6.96	29.54	1.372376
131	HL-93 Inventory	50	47.5	6.88	29.53	1.37555
132	HL-93 Inventory	50	47.5	6.86	29.51	1.37716
132	HL-93 Inventory	50	47.5	6.82	29.39	1.384144
133	HL-93 Inventory	50	47.5	6.82	29.39	1.384144
133	HL-93 Inventory	50	47.5	6.77	29.41	1.384903
134	HL-93 Inventory	50	47.5	6.75	29.39	1.386526
134	HL-93 Inventory	50	47.5	6.64	29.27	1.395969
135	HL-93 Inventory	50	47.5	6.61	29.27	1.396994
135	HL-93 Inventory	50	47.5	6.48	29.12	1.408654
136	HL-93 Inventory	50	47.5	6.45	29.11	1.410168
136	HL-93 Inventory	50	47.5	6.31	28.92	1.424274
137	HL-93 Inventory	50	47.5	6.27	28.89	1.427137
137	HL-93 Inventory	50	47.5	6.11	28.65	1.444677
138	HL-93 Inventory	50	47.5	6.07	28.62	1.447589
138	HL-93 Inventory	50	47.5	5.9	28.33	1.468408
139	HL-93 Inventory	50	47.5	5.85	28.3	1.471731
139	HL-93 Inventory	50	47.5	5.66	27.94	1.497495
140	HL-93 Inventory	50	47.5	5.61	27.91	1.500896
140	HL-93 Inventory	50	47.5	5.4	27.5	1.530909
141	HL-93 Inventory	50	47.5	5.35	27.47	1.534401
141	HL-93 Inventory	50	47.5	5.12	27.01	1.569049
142	HL-93 Inventory	50	47.5	5.06	26.97	1.5736
142	HL-93 Inventory	50	47.5	4.82	26.46	1.613001
143	HL-93 Inventory	50	47.5	4.76	26.42	1.617714
143	HL-93 Inventory	50	47.5	4.5	25.85	1.663443
144	HL-93 Inventory	50	47.5	4.44	25.81	1.668346
144	HL-93 Inventory	50	47.5	4.16	25.19	1.720524
145	HL-93 Inventory	50	47.5	4.09	25.14	1.72673
145	HL-93 Inventory	50	47.5	3.79	24.48	1.785539
146	HL-93 Inventory	50	47.5	3.73	24.42	1.792383
146	HL-93 Inventory	50	47.5	3.41	23.7	1.860338
147	HL-93 Inventory	50	47.5	3.34	23.65	1.86723
147	HL-93 Inventory	50	47.5	3.01	22.87	1.945343
148	HL-93 Inventory	50	47.5	2.94	22.83	1.951818
148	HL-93 Inventory	50	47.5	2.58	21.97	2.044606
149	HL-93 Inventory	50	47.5	2.51	21.95	2.049658
149	HL-93 Inventory	50	47.5	2.41	21.62	2.085569
150	HL-93 Inventory	50	47.5	2.41	21.63	2.084605
150	HL-93 Inventory	50	47.5	2.13	21.04	2.156369
151	HL-93 Inventory	50	47.5	2.06	20.99	2.16484
151	HL-93 Inventory	50	47.5	1.67	20.04	2.286926
152	HL-93 Inventory	50	47.5	1.59	19.96	2.3001
152	HL-93 Inventory	50	47.5	1.18	18.98	2.440464
153	HL-93 Inventory	50	47.5	1.1	18.87	2.45893
153	HL-93 Inventory	50	47.5	0.67	17.87	2.620593
154	HL-93 Inventory	50	47.5	0.59	17.75	2.642817
154	HL-93 Inventory	50	47.5	0.14	16.7	2.835928
155	HL-93 Inventory	50	47.5	0.06	16.57	2.863005
155	HL-93 Inventory	50	47.5	-0.45	15.49	3.037444
156	HL-93 Inventory	50	47.5	-0.51	15.35	3.061238
156	HL-93 Inventory	50	47.5	-1.02	14.24	3.264045
157	HL-93 Inventory	50	47.5	-1.09	14.09	3.293825
157	HL-93 Inventory	50	47.5	-1.61	-13.17	3.484434

158	HL-93 Inventory	50	47.5	-1.68	-13.18	3.47648
158	HL-93 Inventory	50	47.5	-2.22	-13.49	3.35656
159	HL-93 Inventory	50	47.5	-2.29	-13.5	3.348889
159	HL-93 Inventory	50	47.5	-2.84	-13.85	3.224549
160	HL-93 Inventory	50	47.5	-2.93	-13.86	3.215729
160	HL-93 Inventory	50	47.5	-3.49	-14.25	3.088421
161	HL-93 Inventory	50	47.5	-3.58	-14.27	3.077786
161	HL-93 Inventory	50	47.5	-4.16	-14.71	2.946295
162	HL-93 Inventory	50	47.5	-4.25	-14.73	2.936185
162	HL-93 Inventory	50	47.5	-4.85	-15.22	2.802234
163	HL-93 Inventory	50	47.5	-4.94	-15.25	2.79082
163	HL-93 Inventory	50	47.5	-5.55	-15.79	2.656745
164	HL-93 Inventory	50	47.5	-5.65	-15.82	2.645386
164	HL-93 Inventory	50	47.5	-6.27	-16.42	2.510962
165	HL-93 Inventory	50	47.5	-6.38	-16.46	2.498177
165	HL-93 Inventory	50	47.5	-7.02	-17.11	2.365868
166	HL-93 Inventory	50	47.5	-7.13	-17.16	2.352564
166	HL-93 Inventory	50	47.5	-7.78	-17.84	2.226457
167	HL-93 Inventory	50	47.5	-7.9	-17.91	2.211055
167	HL-93 Inventory	50	47.5	-8.57	-18.64	2.088519
168	HL-93 Inventory	50	47.5	-8.7	-18.73	2.071543
168	HL-93 Inventory	50	47.5	-9.39	-19.49	1.955362
169	HL-93 Inventory	50	47.5	-9.51	-19.62	1.93629
169	HL-93 Inventory	50	47.5	-10.23	-20.42	1.825171
170	HL-93 Inventory	50	47.5	-10.35	-20.57	1.806028
170	HL-93 Inventory	50	47.5	-11.08	-21.45	1.697902
171	HL-93 Inventory	50	47.5	-11.2	-21.56	1.683673
171	HL-93 Inventory	50	47.5	-11.96	-23.2	1.531897
172	HL-93 Inventory	50	47.5	-12.04	-23.22	1.527132
172	HL-93 Inventory	50	47.5	-12.85	-25.11	1.379928
173	HL-93 Inventory	50	47.5	-12.83	-25.1	1.381275
173	HL-93 Inventory	50	47.5	-12.02	-23.24	1.526678
174	HL-93 Inventory	50	47.5	-11.94	-23.23	1.530779
174	HL-93 Inventory	50	47.5	-11.18	-21.55	1.685383
175	HL-93 Inventory	50	47.5	-11.07	-21.47	1.696786
175	HL-93 Inventory	50	47.5	-10.33	-20.56	1.807879
176	HL-93 Inventory	50	47.5	-10.21	-20.41	1.827046
176	HL-93 Inventory	50	47.5	-9.5	-19.61	1.937787
177	HL-93 Inventory	50	47.5	-9.37	-19.49	1.956388
177	HL-93 Inventory	50	47.5	-8.68	-18.72	2.073718
178	HL-93 Inventory	50	47.5	-8.56	-18.64	2.089056
178	HL-93 Inventory	50	47.5	-7.89	-17.91	2.211614
179	HL-93 Inventory	50	47.5	-7.76	-17.84	2.227578
179	HL-93 Inventory	50	47.5	-7.12	-17.16	2.353147
180	HL-93 Inventory	50	47.5	-7	-17.11	2.367037
180	HL-93 Inventory	50	47.5	-6.37	-16.46	2.498785
181	HL-93 Inventory	50	47.5	-6.26	-16.42	2.511571
181	HL-93 Inventory	50	47.5	-5.64	-15.83	2.644346
182	HL-93 Inventory	50	47.5	-5.54	-15.79	2.657378
182	HL-93 Inventory	50	47.5	-4.93	-15.25	2.791475
183	HL-93 Inventory	50	47.5	-4.83	-15.22	2.803548
183	HL-93 Inventory	50	47.5	-4.24	-14.73	2.936864
184	HL-93 Inventory	50	47.5	-4.15	-14.71	2.946975
184	HL-93 Inventory	50	47.5	-3.57	-14.27	3.078486
185	HL-93 Inventory	50	47.5	-3.48	-14.25	3.089123
185	HL-93 Inventory	50	47.5	-2.91	-13.87	3.214852
186	HL-93 Inventory	50	47.5	-2.83	-13.85	3.225271
186	HL-93 Inventory	50	47.5	-2.28	-13.51	3.34715
187	HL-93 Inventory	50	47.5	-2.21	-13.5	3.354815
187	HL-93 Inventory	50	47.5	-1.67	-13.2	3.47197
188	HL-93 Inventory	50	47.5	-1.6	-13.19	3.479909
188	HL-93 Inventory	50	47.5	-1.08	14.14	3.282885

189	HL-93 Inventory	50	47.5	-1.01	14.29	3.253324
189	HL-93 Inventory	50	47.5	-0.5	15.41	3.049968
190	HL-93 Inventory	50	47.5	-0.44	15.54	3.028314
190	HL-93 Inventory	50	47.5	0.07	16.62	2.853791
191	HL-93 Inventory	50	47.5	0.15	16.75	2.826866
191	HL-93 Inventory	50	47.5	0.6	17.8	2.634831
192	HL-93 Inventory	50	47.5	0.68	17.91	2.614182
192	HL-93 Inventory	50	47.5	1.11	18.93	2.450608
193	HL-93 Inventory	50	47.5	1.19	19.03	2.433526
193	HL-93 Inventory	50	47.5	1.6	20.01	2.293853
194	HL-93 Inventory	50	47.5	1.68	20.09	2.280737
194	HL-93 Inventory	50	47.5	2.07	21.04	2.159221
195	HL-93 Inventory	50	47.5	2.14	21.09	2.150782
195	HL-93 Inventory	50	47.5	2.42	21.68	2.079336
196	HL-93 Inventory	50	47.5	2.42	21.68	2.079336
196	HL-93 Inventory	50	47.5	2.52	22.01	2.043617
197	HL-93 Inventory	50	47.5	2.59	22.02	2.03951
197	HL-93 Inventory	50	47.5	2.95	22.88	1.947115
198	HL-93 Inventory	50	47.5	3.01	22.92	1.941099
198	HL-93 Inventory	50	47.5	3.35	23.71	1.862084
199	HL-93 Inventory	50	47.5	3.42	23.76	1.855219
199	HL-93 Inventory	50	47.5	3.73	24.48	1.78799
200	HL-93 Inventory	50	47.5	3.8	24.53	1.781492
200	HL-93 Inventory	50	47.5	4.1	25.2	1.722222
201	HL-93 Inventory	50	47.5	4.16	25.25	1.716436
201	HL-93 Inventory	50	47.5	4.44	25.86	1.66512
202	HL-93 Inventory	50	47.5	4.51	25.91	1.659205
202	HL-93 Inventory	50	47.5	4.77	26.47	1.61428
203	HL-93 Inventory	50	47.5	4.83	26.51	1.609581
203	HL-93 Inventory	50	47.5	5.07	27.03	1.569737
204	HL-93 Inventory	50	47.5	5.13	27.06	1.56578
204	HL-93 Inventory	50	47.5	5.35	27.53	1.531057
205	HL-93 Inventory	50	47.5	5.41	27.56	1.527213
205	HL-93 Inventory	50	47.5	5.62	27.97	1.497319
206	HL-93 Inventory	50	47.5	5.66	28	1.494286
206	HL-93 Inventory	50	47.5	5.86	28.36	1.468265
207	HL-93 Inventory	50	47.5	5.9	28.38	1.465821
207	HL-93 Inventory	50	47.5	6.08	28.68	1.444212
208	HL-93 Inventory	50	47.5	6.12	28.71	1.44131
208	HL-93 Inventory	50	47.5	6.28	28.95	1.423834
209	HL-93 Inventory	50	47.5	6.32	28.98	1.42098
209	HL-93 Inventory	50	47.5	6.46	29.16	1.407407
210	HL-93 Inventory	50	47.5	6.49	29.18	1.405415
210	HL-93 Inventory	50	47.5	6.62	29.33	1.393795
211	HL-93 Inventory	50	47.5	6.65	29.33	1.392772
211	HL-93 Inventory	50	47.5	6.76	29.43	1.384302
212	HL-93 Inventory	50	47.5	6.78	29.45	1.382683
212	HL-93 Inventory	50	47.5	6.83	29.43	1.381923
213	HL-93 Inventory	50	47.5	6.83	29.43	1.381923
213	HL-93 Inventory	50	47.5	6.87	29.55	1.374958
214	HL-93 Inventory	50	47.5	6.89	29.57	1.373351
214	HL-93 Inventory	50	47.5	6.97	29.58	1.370183
215	HL-93 Inventory	50	47.5	6.98	29.6	1.368919
215	HL-93 Inventory	50	47.5	7.04	29.56	1.368742
216	HL-93 Inventory	50	47.5	7.05	29.58	1.367478
216	HL-93 Inventory	50	47.5	7.09	29.49	1.370295
217	HL-93 Inventory	50	47.5	7.09	29.49	1.370295
217	HL-93 Inventory	50	47.5	7.12	29.36	1.375341
218	HL-93 Inventory	50	47.5	7.12	29.36	1.375341
218	HL-93 Inventory	50	47.5	7.13	29.17	1.383956
219	HL-93 Inventory	50	47.5	7.13	29.16	1.384431
219	HL-93 Inventory	50	47.5	7.12	28.91	1.396749

220	HL-93 Inventory	50	47.5	7.11	28.9	1.397578
220	HL-93 Inventory	50	47.5	7.09	28.6	1.412937
221	HL-93 Inventory	50	47.5	7.07	28.58	1.414626
221	HL-93 Inventory	50	47.5	7.03	28.22	1.434089
222	HL-93 Inventory	50	47.5	7.02	28.19	1.43597
222	HL-93 Inventory	50	47.5	6.96	27.78	1.459323
223	HL-93 Inventory	50	47.5	6.94	27.74	1.462149
223	HL-93 Inventory	50	47.5	6.86	27.27	1.490282
224	HL-93 Inventory	50	47.5	6.84	27.22	1.493755
224	HL-93 Inventory	50	47.5	6.75	26.69	1.526789
225	HL-93 Inventory	50	47.5	6.72	26.64	1.530781
225	HL-93 Inventory	50	47.5	6.61	26.1	1.566667
226	HL-93 Inventory	50	47.5	6.58	26.04	1.571429
226	HL-93 Inventory	50	47.5	6.46	25.46	1.61194
227	HL-93 Inventory	50	47.5	6.42	25.4	1.617323
227	HL-93 Inventory	50	47.5	6.28	24.75	1.665455
228	HL-93 Inventory	50	47.5	6.24	24.7	1.670445
228	HL-93 Inventory	50	47.5	6.08	23.95	1.729436
229	HL-93 Inventory	50	47.5	6.03	23.93	1.732971
229	HL-93 Inventory	50	47.5	5.99	23.61	1.758153
230	HL-93 Inventory	50	47.5	5.99	23.61	1.758153
230	HL-93 Inventory	50	47.5	5.86	23.1	1.802597
231	HL-93 Inventory	50	47.5	5.81	23.06	1.807892
231	HL-93 Inventory	50	47.5	5.61	22.17	1.88949
232	HL-93 Inventory	50	47.5	5.56	22.09	1.898597
232	HL-93 Inventory	50	47.5	5.35	21.16	1.991966
233	HL-93 Inventory	50	47.5	5.29	21.06	2.004274
233	HL-93 Inventory	50	47.5	5.07	20.07	2.114101
234	HL-93 Inventory	50	47.5	5	19.95	2.130326
234	HL-93 Inventory	50	47.5	4.76	18.9	2.261376
235	HL-93 Inventory	50	47.5	4.69	18.77	2.280767
235	HL-93 Inventory	50	47.5	4.44	17.64	2.441043
236	HL-93 Inventory	50	47.5	4.37	17.51	2.463164
236	HL-93 Inventory	50	47.5	4.09	16.31	2.661557
237	HL-93 Inventory	50	47.5	4.02	16.17	2.68893
237	HL-93 Inventory	50	47.5	3.72	14.9	2.938255
238	HL-93 Inventory	50	47.5	3.65	14.75	2.972881
238	HL-93 Inventory	50	47.5	3.34	13.39	3.297984
239	HL-93 Inventory	50	47.5	3.26	13.24	3.34139
239	HL-93 Inventory	50	47.5	2.93	11.8	3.777119
240	HL-93 Inventory	50	47.5	2.85	11.64	3.835911
240	HL-93 Inventory	50	47.5	2.5	10.11	4.451039
241	HL-93 Inventory	50	47.5	2.43	9.94	4.534205
241	HL-93 Inventory	50	47.5	2.05	8.32	5.46274
242	HL-93 Inventory	50	47.5	1.98	8.15	5.585276
242	HL-93 Inventory	50	47.5	1.59	6.43	7.139969
243	HL-93 Inventory	50	47.5	1.51	6.27	7.334928
243	HL-93 Inventory	50	47.5	1.1	4.42	10.49774
244	HL-93 Inventory	50	47.5	1.03	4.29	10.83217
244	HL-93 Inventory	50	47.5	0.59	2.32	20.21983
245	HL-93 Inventory	50	47.5	0.52	2.21	21.25792
245	HL-93 Inventory	50	47.5	0.07	0.6	79.05

LOAD RATING FIXED SPAN -GIRDER 1

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 1.721218

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
538	HL-93 Operating	50	47.5	0.06	0.45	105.4222
538	HL-93 Operating	50	47.5	0.53	1.71	27.46784
539	HL-93 Operating	50	47.5	0.53	1.82	25.80769
539	HL-93 Operating	50	47.5	1.05	3.32	13.99096
540	HL-93 Operating	50	47.5	1.07	3.46	13.41908
540	HL-93 Operating	50	47.5	1.56	4.86	9.452675
541	HL-93 Operating	50	47.5	1.59	5.01	9.163673
541	HL-93 Operating	50	47.5	2.06	6.32	7.189873
542	HL-93 Operating	50	47.5	2.09	6.46	7.029412
542	HL-93 Operating	50	47.5	2.54	7.69	5.846554
543	HL-93 Operating	50	47.5	2.57	7.84	5.730867
543	HL-93 Operating	50	47.5	3.01	8.99	4.948832
544	HL-93 Operating	50	47.5	3.03	9.13	4.870756
544	HL-93 Operating	50	47.5	3.45	10.22	4.310176
545	HL-93 Operating	50	47.5	3.47	10.35	4.254106
545	HL-93 Operating	50	47.5	3.87	11.38	3.833919
546	HL-93 Operating	50	47.5	3.89	11.5	3.792174
546	HL-93 Operating	50	47.5	4.26	12.47	3.467522
547	HL-93 Operating	50	47.5	4.29	12.59	3.432089
547	HL-93 Operating	50	47.5	4.64	13.5	3.174815
548	HL-93 Operating	50	47.5	4.67	13.61	3.146951
548	HL-93 Operating	50	47.5	4.99	14.47	2.937802
549	HL-93 Operating	50	47.5	5.02	14.57	2.91558
549	HL-93 Operating	50	47.5	5.32	15.38	2.742523
550	HL-93 Operating	50	47.5	5.35	15.47	2.724628
550	HL-93 Operating	50	47.5	5.63	16.23	2.579791
551	HL-93 Operating	50	47.5	5.66	16.31	2.565297
551	HL-93 Operating	50	47.5	5.92	17.03	2.441574
552	HL-93 Operating	50	47.5	5.94	17.09	2.431831
552	HL-93 Operating	50	47.5	6.18	17.77	2.325267
553	HL-93 Operating	50	47.5	6.2	17.81	2.318922
553	HL-93 Operating	50	47.5	6.37	18.2	2.25989
554	HL-93 Operating	50	47.5	6.37	18.2	2.25989
554	HL-93 Operating	50	47.5	6.42	18.45	2.226558
555	HL-93 Operating	50	47.5	6.44	18.46	2.224269
555	HL-93 Operating	50	47.5	6.64	19.04	2.146008
556	HL-93 Operating	50	47.5	6.65	19.07	2.142108
556	HL-93 Operating	50	47.5	6.83	19.58	2.07712
557	HL-93 Operating	50	47.5	6.84	19.62	2.072375
557	HL-93 Operating	50	47.5	7	20.07	2.017937
558	HL-93 Operating	50	47.5	7.01	20.12	2.012425
558	HL-93 Operating	50	47.5	7.15	20.53	1.965416
559	HL-93 Operating	50	47.5	7.16	20.57	1.961108
559	HL-93 Operating	50	47.5	7.27	20.98	1.917541
560	HL-93 Operating	50	47.5	7.28	21.01	1.914327
560	HL-93 Operating	50	47.5	7.38	21.37	1.877398
561	HL-93 Operating	50	47.5	7.38	21.41	1.873891
561	HL-93 Operating	50	47.5	7.46	21.72	1.843462
562	HL-93 Operating	50	47.5	7.46	21.74	1.841766
562	HL-93 Operating	50	47.5	7.52	22.02	1.815622

563	HL-93 Operating	50	47.5	7.52	22.04	1.813975
563	HL-93 Operating	50	47.5	7.56	22.27	1.793444
564	HL-93 Operating	50	47.5	7.56	22.28	1.792639
564	HL-93 Operating	50	47.5	7.58	22.47	1.776591
565	HL-93 Operating	50	47.5	7.58	22.48	1.775801
565	HL-93 Operating	50	47.5	7.58	22.62	1.76481
566	HL-93 Operating	50	47.5	7.57	22.62	1.765252
566	HL-93 Operating	50	47.5	7.55	22.73	1.757589
567	HL-93 Operating	50	47.5	7.54	22.72	1.758803
567	HL-93 Operating	50	47.5	7.5	22.79	1.755156
568	HL-93 Operating	50	47.5	7.5	22.78	1.755926
568	HL-93 Operating	50	47.5	7.43	22.8	1.757456
569	HL-93 Operating	50	47.5	7.43	22.79	1.758227
569	HL-93 Operating	50	47.5	7.34	22.78	1.76295
570	HL-93 Operating	50	47.5	7.33	22.77	1.764163
570	HL-93 Operating	50	47.5	7.28	22.68	1.773369
571	HL-93 Operating	50	47.5	7.28	22.68	1.773369
571	HL-93 Operating	50	47.5	7.23	22.69	1.774791
572	HL-93 Operating	50	47.5	7.22	22.67	1.776798
572	HL-93 Operating	50	47.5	7.09	22.59	1.788845
573	HL-93 Operating	50	47.5	7.08	22.58	1.79008
573	HL-93 Operating	50	47.5	6.93	22.47	1.805518
574	HL-93 Operating	50	47.5	6.92	22.46	1.806768
574	HL-93 Operating	50	47.5	6.75	22.31	1.826535
575	HL-93 Operating	50	47.5	6.73	22.29	1.829071
575	HL-93 Operating	50	47.5	6.55	22.11	1.852103
576	HL-93 Operating	50	47.5	6.53	22.08	1.855525
576	HL-93 Operating	50	47.5	6.33	21.86	1.883349
577	HL-93 Operating	50	47.5	6.3	21.83	1.887311
577	HL-93 Operating	50	47.5	6.08	21.56	1.92115
578	HL-93 Operating	50	47.5	6.05	21.54	1.924327
578	HL-93 Operating	50	47.5	5.81	21.22	1.964656
579	HL-93 Operating	50	47.5	5.78	21.2	1.967925
579	HL-93 Operating	50	47.5	5.52	20.84	2.014395
580	HL-93 Operating	50	47.5	5.49	20.81	2.018741
580	HL-93 Operating	50	47.5	5.21	20.41	2.072024
581	HL-93 Operating	50	47.5	5.18	20.38	2.076546
581	HL-93 Operating	50	47.5	4.88	19.95	2.136341
582	HL-93 Operating	50	47.5	4.84	19.91	2.142642
582	HL-93 Operating	50	47.5	4.52	19.44	2.210905
583	HL-93 Operating	50	47.5	4.48	19.4	2.217526
583	HL-93 Operating	50	47.5	4.14	18.89	2.295394
584	HL-93 Operating	50	47.5	4.1	18.84	2.303609
584	HL-93 Operating	50	47.5	3.74	18.29	2.392564
585	HL-93 Operating	50	47.5	3.7	18.25	2.4
585	HL-93 Operating	50	47.5	3.32	17.65	2.503116
586	HL-93 Operating	50	47.5	3.28	17.61	2.511073
586	HL-93 Operating	50	47.5	2.87	16.95	2.633038
587	HL-93 Operating	50	47.5	2.83	16.94	2.636954
587	HL-93 Operating	50	47.5	2.72	16.68	2.684652
588	HL-93 Operating	50	47.5	2.72	16.69	2.683044
588	HL-93 Operating	50	47.5	2.41	16.23	2.778189
589	HL-93 Operating	50	47.5	2.36	16.19	2.788141
589	HL-93 Operating	50	47.5	1.91	15.46	2.9489
590	HL-93 Operating	50	47.5	1.86	15.4	2.963636
590	HL-93 Operating	50	47.5	1.4	14.65	3.146758
591	HL-93 Operating	50	47.5	1.34	14.56	3.17033
591	HL-93 Operating	50	47.5	0.86	13.79	3.382161

592	HL-93 Operating	50	47.5	0.8	13.69	3.411249
592	HL-93 Operating	50	47.5	0.3	12.89	3.661753
593	HL-93 Operating	50	47.5	0.24	12.79	3.695074
593	HL-93 Operating	50	47.5	-0.33	11.95	3.94728
594	HL-93 Operating	50	47.5	-0.37	11.85	3.977215
594	HL-93 Operating	50	47.5	-0.94	10.99	4.236579
595	HL-93 Operating	50	47.5	-0.98	10.88	4.275735
595	HL-93 Operating	50	47.5	-1.57	-10.16	4.520669
596	HL-93 Operating	50	47.5	-1.62	-10.17	4.511308
596	HL-93 Operating	50	47.5	-2.22	-10.4	4.353846
597	HL-93 Operating	50	47.5	-2.28	-10.42	4.339731
597	HL-93 Operating	50	47.5	-2.9	-10.68	4.17603
598	HL-93 Operating	50	47.5	-2.96	-10.69	4.166511
598	HL-93 Operating	50	47.5	-3.61	-10.99	3.993631
599	HL-93 Operating	50	47.5	-3.66	-11.01	3.981835
599	HL-93 Operating	50	47.5	-4.33	-11.35	3.803524
600	HL-93 Operating	50	47.5	-4.39	-11.36	3.794894
600	HL-93 Operating	50	47.5	-5.09	-11.74	3.612436
601	HL-93 Operating	50	47.5	-5.15	-11.76	3.60119
601	HL-93 Operating	50	47.5	-5.86	-12.18	3.418719
602	HL-93 Operating	50	47.5	-5.93	-12.21	3.404586
602	HL-93 Operating	50	47.5	-6.66	-12.67	3.223362
603	HL-93 Operating	50	47.5	-6.74	-12.7	3.209449
603	HL-93 Operating	50	47.5	-7.49	-13.2	3.031061
604	HL-93 Operating	50	47.5	-7.57	-13.24	3.015861
604	HL-93 Operating	50	47.5	-8.34	-13.76	2.84593
605	HL-93 Operating	50	47.5	-8.43	-13.81	2.829109
605	HL-93 Operating	50	47.5	-9.22	-14.38	2.662031
606	HL-93 Operating	50	47.5	-9.33	-14.45	2.641522
606	HL-93 Operating	50	47.5	-10.13	-15.03	2.486361
607	HL-93 Operating	50	47.5	-10.25	-15.13	2.461996
607	HL-93 Operating	50	47.5	-11.07	-15.75	2.313016
608	HL-93 Operating	50	47.5	-11.2	-15.86	2.288777
608	HL-93 Operating	50	47.5	-12.06	-16.55	2.14139
609	HL-93 Operating	50	47.5	-12.18	-16.63	2.123873
609	HL-93 Operating	50	47.5	-13.08	-17.9	1.922905
610	HL-93 Operating	50	47.5	-13.17	-17.91	1.916806
610	HL-93 Operating	50	47.5	-14.14	-19.36	1.72314
611	HL-93 Operating	50	47.5	-14.16	-19.37	1.721218
611	HL-93 Operating	50	47.5	-13.19	-17.93	1.913553
612	HL-93 Operating	50	47.5	-13.1	-17.92	1.919643
612	HL-93 Operating	50	47.5	-12.2	-16.63	2.12267
613	HL-93 Operating	50	47.5	-12.08	-16.57	2.137598
613	HL-93 Operating	50	47.5	-11.22	-15.86	2.287516
614	HL-93 Operating	50	47.5	-11.09	-15.75	2.311746
614	HL-93 Operating	50	47.5	-10.27	-15.13	2.460674
615	HL-93 Operating	50	47.5	-10.14	-15.03	2.485695
615	HL-93 Operating	50	47.5	-9.34	-14.44	2.642659
616	HL-93 Operating	50	47.5	-9.24	-14.38	2.66064
616	HL-93 Operating	50	47.5	-8.45	-13.81	2.827661
617	HL-93 Operating	50	47.5	-8.36	-13.77	2.842411
617	HL-93 Operating	50	47.5	-7.58	-13.24	3.015106
618	HL-93 Operating	50	47.5	-7.5	-13.2	3.030303
618	HL-93 Operating	50	47.5	-6.75	-12.7	3.208661
619	HL-93 Operating	50	47.5	-6.68	-12.67	3.221784
619	HL-93 Operating	50	47.5	-5.94	-12.21	3.403767
620	HL-93 Operating	50	47.5	-5.87	-12.18	3.417898
620	HL-93 Operating	50	47.5	-5.16	-11.76	3.60034

621	HL-93 Operating	50	47.5	-5.1	-11.74	3.611584
621	HL-93 Operating	50	47.5	-4.41	-11.36	3.793134
622	HL-93 Operating	50	47.5	-4.34	-11.35	3.802643
622	HL-93 Operating	50	47.5	-3.68	-11.01	3.980018
623	HL-93 Operating	50	47.5	-3.62	-11	3.989091
623	HL-93 Operating	50	47.5	-2.97	-10.7	4.161682
624	HL-93 Operating	50	47.5	-2.91	-10.69	4.171188
624	HL-93 Operating	50	47.5	-2.29	-10.42	4.338772
625	HL-93 Operating	50	47.5	-2.23	-10.41	4.348703
625	HL-93 Operating	50	47.5	-1.63	-10.19	4.501472
626	HL-93 Operating	50	47.5	-1.58	-10.17	4.515241
626	HL-93 Operating	50	47.5	-0.99	10.91	4.263061
627	HL-93 Operating	50	47.5	-0.94	11.02	4.225045
627	HL-93 Operating	50	47.5	-0.38	11.89	3.962994
628	HL-93 Operating	50	47.5	-0.33	11.99	3.934112
628	HL-93 Operating	50	47.5	0.23	12.82	3.687207
629	HL-93 Operating	50	47.5	0.29	12.92	3.654025
629	HL-93 Operating	50	47.5	0.79	13.73	3.402039
630	HL-93 Operating	50	47.5	0.85	13.82	3.375543
630	HL-93 Operating	50	47.5	1.34	14.6	3.161644
631	HL-93 Operating	50	47.5	1.39	14.68	3.141008
631	HL-93 Operating	50	47.5	1.85	15.44	2.956606
632	HL-93 Operating	50	47.5	1.91	15.5	2.94129
632	HL-93 Operating	50	47.5	2.35	16.23	2.781885
633	HL-93 Operating	50	47.5	2.4	16.27	2.771973
633	HL-93 Operating	50	47.5	2.71	16.73	2.677227
634	HL-93 Operating	50	47.5	2.71	16.72	2.678828
634	HL-93 Operating	50	47.5	2.82	16.98	2.631331
635	HL-93 Operating	50	47.5	2.87	16.99	2.626839
635	HL-93 Operating	50	47.5	3.27	17.65	2.505949
636	HL-93 Operating	50	47.5	3.31	17.68	2.499434
636	HL-93 Operating	50	47.5	3.7	18.29	2.394751
637	HL-93 Operating	50	47.5	3.74	18.33	2.387343
637	HL-93 Operating	50	47.5	4.1	18.88	2.298729
638	HL-93 Operating	50	47.5	4.14	18.92	2.291755
638	HL-93 Operating	50	47.5	4.48	19.44	2.212963
639	HL-93 Operating	50	47.5	4.52	19.48	2.206366
639	HL-93 Operating	50	47.5	4.84	19.95	2.138346
640	HL-93 Operating	50	47.5	4.87	19.98	2.133634
640	HL-93 Operating	50	47.5	5.17	20.42	2.072968
641	HL-93 Operating	50	47.5	5.21	20.45	2.067971
641	HL-93 Operating	50	47.5	5.49	20.85	2.014868
642	HL-93 Operating	50	47.5	5.52	20.88	2.010536
642	HL-93 Operating	50	47.5	5.78	21.24	1.964218
643	HL-93 Operating	50	47.5	5.81	21.26	1.96096
643	HL-93 Operating	50	47.5	6.05	21.58	1.92076
644	HL-93 Operating	50	47.5	6.08	21.6	1.917593
644	HL-93 Operating	50	47.5	6.3	21.87	1.883859
645	HL-93 Operating	50	47.5	6.32	21.9	1.880365
645	HL-93 Operating	50	47.5	6.53	22.12	1.85217
646	HL-93 Operating	50	47.5	6.55	22.15	1.848758
646	HL-93 Operating	50	47.5	6.73	22.33	1.825795
647	HL-93 Operating	50	47.5	6.75	22.35	1.823266
647	HL-93 Operating	50	47.5	6.91	22.5	1.804
648	HL-93 Operating	50	47.5	6.93	22.51	1.80231
648	HL-93 Operating	50	47.5	7.08	22.62	1.786914
649	HL-93 Operating	50	47.5	7.09	22.63	1.785683
649	HL-93 Operating	50	47.5	7.22	22.7	1.774449

650	HL-93 Operating	50	47.5	7.23	22.72	1.772447
650	HL-93 Operating	50	47.5	7.28	22.7	1.771806
651	HL-93 Operating	50	47.5	7.28	22.7	1.771806
651	HL-93 Operating	50	47.5	7.33	22.79	1.762615
652	HL-93 Operating	50	47.5	7.34	22.81	1.760631
652	HL-93 Operating	50	47.5	7.43	22.82	1.755916
653	HL-93 Operating	50	47.5	7.43	22.83	1.755147
653	HL-93 Operating	50	47.5	7.5	22.8	1.754386
654	HL-93 Operating	50	47.5	7.5	22.82	1.752848
654	HL-93 Operating	50	47.5	7.55	22.75	1.756044
655	HL-93 Operating	50	47.5	7.55	22.75	1.756044
655	HL-93 Operating	50	47.5	7.57	22.65	1.762914
656	HL-93 Operating	50	47.5	7.58	22.65	1.762472
656	HL-93 Operating	50	47.5	7.58	22.5	1.774222
657	HL-93 Operating	50	47.5	7.58	22.49	1.775011
657	HL-93 Operating	50	47.5	7.57	22.3	1.790583
658	HL-93 Operating	50	47.5	7.57	22.29	1.791386
658	HL-93 Operating	50	47.5	7.53	22.06	1.811877
659	HL-93 Operating	50	47.5	7.53	22.04	1.813521
659	HL-93 Operating	50	47.5	7.47	21.77	1.838769
660	HL-93 Operating	50	47.5	7.47	21.75	1.84046
660	HL-93 Operating	50	47.5	7.39	21.43	1.871675
661	HL-93 Operating	50	47.5	7.39	21.4	1.874299
661	HL-93 Operating	50	47.5	7.29	21.03	1.91203
662	HL-93 Operating	50	47.5	7.29	21	1.914762
662	HL-93 Operating	50	47.5	7.17	20.59	1.958718
663	HL-93 Operating	50	47.5	7.16	20.55	1.963017
663	HL-93 Operating	50	47.5	7.03	20.13	2.010432
664	HL-93 Operating	50	47.5	7.02	20.09	2.014933
664	HL-93 Operating	50	47.5	6.86	19.64	2.069246
665	HL-93 Operating	50	47.5	6.85	19.59	2.075038
665	HL-93 Operating	50	47.5	6.67	19.09	2.138816
666	HL-93 Operating	50	47.5	6.66	19.05	2.143832
666	HL-93 Operating	50	47.5	6.46	18.48	2.220779
667	HL-93 Operating	50	47.5	6.45	18.46	2.223727
667	HL-93 Operating	50	47.5	6.39	18.21	2.257551
668	HL-93 Operating	50	47.5	6.39	18.22	2.256312
668	HL-93 Operating	50	47.5	6.23	17.82	2.315937
669	HL-93 Operating	50	47.5	6.21	17.79	2.320967
669	HL-93 Operating	50	47.5	5.97	17.1	2.428655
670	HL-93 Operating	50	47.5	5.95	17.04	2.43838
670	HL-93 Operating	50	47.5	5.69	16.32	2.561887
671	HL-93 Operating	50	47.5	5.67	16.24	2.575739
671	HL-93 Operating	50	47.5	5.39	15.48	2.720284
672	HL-93 Operating	50	47.5	5.37	15.39	2.737492
672	HL-93 Operating	50	47.5	5.07	14.58	2.910151
673	HL-93 Operating	50	47.5	5.04	14.48	2.93232
673	HL-93 Operating	50	47.5	4.72	13.61	3.143277
674	HL-93 Operating	50	47.5	4.69	13.51	3.168764
674	HL-93 Operating	50	47.5	4.36	12.58	3.429253
675	HL-93 Operating	50	47.5	4.32	12.47	3.462711
675	HL-93 Operating	50	47.5	3.97	11.49	3.788512
676	HL-93 Operating	50	47.5	3.93	11.38	3.828647
676	HL-93 Operating	50	47.5	3.56	10.33	4.25363
677	HL-93 Operating	50	47.5	3.52	10.21	4.307542
677	HL-93 Operating	50	47.5	3.12	9.1	4.876923
678	HL-93 Operating	50	47.5	3.08	8.98	4.946548
678	HL-93 Operating	50	47.5	2.66	7.8	5.748718

679	HL-93 Operating	50	47.5	2.62	7.67	5.851369
679	HL-93 Operating	50	47.5	2.18	6.42	7.05919
680	HL-93 Operating	50	47.5	2.14	6.29	7.211447
680	HL-93 Operating	50	47.5	1.67	4.96	9.239919
681	HL-93 Operating	50	47.5	1.64	4.84	9.475207
681	HL-93 Operating	50	47.5	1.15	3.41	13.59238
682	HL-93 Operating	50	47.5	1.11	3.31	14.01511
682	HL-93 Operating	50	47.5	0.59	1.79	26.2067
683	HL-93 Operating	50	47.5	0.57	1.7	27.60588
683	HL-93 Operating	50	47.5	0.04	0.46	103.1739

LOAD RATING FIXED SPAN -GIRDER 2

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 1.82939

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
392	HL-93 Operating	50	47.5	0.05	-0.08	593.125
392	HL-93 Operating	50	47.5	0.67	1.8	26.01667
393	HL-93 Operating	50	47.5	0.63	1.77	26.48023
393	HL-93 Operating	50	47.5	1.24	3.43	13.48688
394	HL-93 Operating	50	47.5	1.2	3.38	13.69822
394	HL-93 Operating	50	47.5	1.74	4.92	9.300813
395	HL-93 Operating	50	47.5	1.71	4.88	9.383197
395	HL-93 Operating	50	47.5	2.21	6.31	7.177496
396	HL-93 Operating	50	47.5	2.19	6.28	7.214968
396	HL-93 Operating	50	47.5	2.65	7.62	5.885827
397	HL-93 Operating	50	47.5	2.64	7.6	5.902632
397	HL-93 Operating	50	47.5	3.08	8.87	5.007892
398	HL-93 Operating	50	47.5	3.07	8.86	5.014673
398	HL-93 Operating	50	47.5	3.48	10.05	4.3801
399	HL-93 Operating	50	47.5	3.47	10.04	4.385458
399	HL-93 Operating	50	47.5	3.87	11.16	3.909498
400	HL-93 Operating	50	47.5	3.86	11.16	3.910394
400	HL-93 Operating	50	47.5	4.24	12.21	3.542998
401	HL-93 Operating	50	47.5	4.23	12.21	3.543817
401	HL-93 Operating	50	47.5	4.59	13.2	3.250758
402	HL-93 Operating	50	47.5	4.58	13.2	3.251515
402	HL-93 Operating	50	47.5	4.92	14.12	3.015581
403	HL-93 Operating	50	47.5	4.91	14.12	3.016289
403	HL-93 Operating	50	47.5	5.23	14.98	2.821762
404	HL-93 Operating	50	47.5	5.22	14.99	2.820547
404	HL-93 Operating	50	47.5	5.52	15.79	2.658645
405	HL-93 Operating	50	47.5	5.51	15.79	2.659278
405	HL-93 Operating	50	47.5	5.78	16.53	2.523896
406	HL-93 Operating	50	47.5	5.78	16.53	2.523896
406	HL-93 Operating	50	47.5	6.03	17.21	2.409646
407	HL-93 Operating	50	47.5	6.03	17.21	2.409646
407	HL-93 Operating	50	47.5	6.2	17.54	2.354618
408	HL-93 Operating	50	47.5	6.2	17.55	2.353276
408	HL-93 Operating	50	47.5	6.26	17.84	2.311659
409	HL-93 Operating	50	47.5	6.25	17.84	2.31222
409	HL-93 Operating	50	47.5	6.46	18.45	2.22439
410	HL-93 Operating	50	47.5	6.46	18.45	2.22439
410	HL-93 Operating	50	47.5	6.64	19	2.150526
411	HL-93 Operating	50	47.5	6.64	19	2.150526
411	HL-93 Operating	50	47.5	6.8	19.49	2.08825
412	HL-93 Operating	50	47.5	6.8	19.49	2.08825
412	HL-93 Operating	50	47.5	6.94	19.92	2.036145
413	HL-93 Operating	50	47.5	6.94	19.92	2.036145
413	HL-93 Operating	50	47.5	7.06	20.3	1.992118
414	HL-93 Operating	50	47.5	7.06	20.3	1.992118
414	HL-93 Operating	50	47.5	7.16	20.68	1.950677
415	HL-93 Operating	50	47.5	7.15	20.68	1.951161
415	HL-93 Operating	50	47.5	7.23	21.03	1.914883
416	HL-93 Operating	50	47.5	7.23	21.03	1.914883
416	HL-93 Operating	50	47.5	7.29	21.32	1.886023

417	HL-93 Operating	50	47.5	7.29	21.32	1.886023
417	HL-93 Operating	50	47.5	7.32	21.56	1.863636
418	HL-93 Operating	50	47.5	7.32	21.56	1.863636
418	HL-93 Operating	50	47.5	7.33	21.74	1.847746
419	HL-93 Operating	50	47.5	7.33	21.74	1.847746
419	HL-93 Operating	50	47.5	7.32	21.87	1.83722
420	HL-93 Operating	50	47.5	7.33	21.87	1.836763
420	HL-93 Operating	50	47.5	7.29	21.95	1.831891
421	HL-93 Operating	50	47.5	7.3	21.95	1.831435
421	HL-93 Operating	50	47.5	7.24	21.97	1.832499
422	HL-93 Operating	50	47.5	7.25	21.97	1.832044
422	HL-93 Operating	50	47.5	7.17	21.94	1.838195
423	HL-93 Operating	50	47.5	7.17	21.94	1.838195
423	HL-93 Operating	50	47.5	7.08	21.85	1.849886
424	HL-93 Operating	50	47.5	7.08	21.85	1.849886
424	HL-93 Operating	50	47.5	7.03	21.67	1.867559
425	HL-93 Operating	50	47.5	7.02	21.67	1.86802
425	HL-93 Operating	50	47.5	6.96	21.75	1.863908
426	HL-93 Operating	50	47.5	6.97	21.74	1.864305
426	HL-93 Operating	50	47.5	6.83	21.68	1.875923
427	HL-93 Operating	50	47.5	6.83	21.68	1.875923
427	HL-93 Operating	50	47.5	6.67	21.62	1.888529
428	HL-93 Operating	50	47.5	6.67	21.63	1.887656
428	HL-93 Operating	50	47.5	6.49	21.51	1.906555
429	HL-93 Operating	50	47.5	6.49	21.52	1.905669
429	HL-93 Operating	50	47.5	6.29	21.35	1.930211
430	HL-93 Operating	50	47.5	6.29	21.36	1.929307
430	HL-93 Operating	50	47.5	6.06	21.14	1.960265
431	HL-93 Operating	50	47.5	6.07	21.15	1.958865
431	HL-93 Operating	50	47.5	5.82	20.88	1.996169
432	HL-93 Operating	50	47.5	5.82	20.88	1.996169
432	HL-93 Operating	50	47.5	5.55	20.56	2.04037
433	HL-93 Operating	50	47.5	5.56	20.57	2.038892
433	HL-93 Operating	50	47.5	5.27	20.2	2.090594
434	HL-93 Operating	50	47.5	5.27	20.21	2.08956
434	HL-93 Operating	50	47.5	4.96	19.79	2.14957
435	HL-93 Operating	50	47.5	4.97	19.8	2.14798
435	HL-93 Operating	50	47.5	4.63	19.33	2.217796
436	HL-93 Operating	50	47.5	4.64	19.34	2.216132
436	HL-93 Operating	50	47.5	4.28	18.83	2.295273
437	HL-93 Operating	50	47.5	4.29	18.84	2.293524
437	HL-93 Operating	50	47.5	3.91	18.28	2.384573
438	HL-93 Operating	50	47.5	3.92	18.29	2.382723
438	HL-93 Operating	50	47.5	3.52	17.68	2.487557
439	HL-93 Operating	50	47.5	3.52	17.69	2.48615
439	HL-93 Operating	50	47.5	3.11	17.04	2.605047
440	HL-93 Operating	50	47.5	3.11	17.05	2.603519
440	HL-93 Operating	50	47.5	2.67	16.35	2.741896
441	HL-93 Operating	50	47.5	2.67	16.35	2.741896
441	HL-93 Operating	50	47.5	2.56	16.05	2.8
442	HL-93 Operating	50	47.5	2.56	16.04	2.801746
442	HL-93 Operating	50	47.5	2.21	15.67	2.890236
443	HL-93 Operating	50	47.5	2.22	15.67	2.889598
443	HL-93 Operating	50	47.5	1.73	14.96	3.059492
444	HL-93 Operating	50	47.5	1.74	14.96	3.058824
444	HL-93 Operating	50	47.5	1.23	14.22	3.253868
445	HL-93 Operating	50	47.5	1.23	14.22	3.253868
445	HL-93 Operating	50	47.5	0.71	13.43	3.483991

446	HL-93 Operating	50	47.5	0.71	13.44	3.481399
446	HL-93 Operating	50	47.5	0.17	12.61	3.75337
447	HL-93 Operating	50	47.5	0.17	12.62	3.750396
447	HL-93 Operating	50	47.5	-0.4	11.75	4.008511
448	HL-93 Operating	50	47.5	-0.41	11.75	4.00766
448	HL-93 Operating	50	47.5	-0.99	10.85	4.286636
449	HL-93 Operating	50	47.5	-0.99	10.85	4.286636
449	HL-93 Operating	50	47.5	-1.6	-9.92	4.627016
450	HL-93 Operating	50	47.5	-1.6	9.92	4.627016
450	HL-93 Operating	50	47.5	-2.23	-10.12	4.47332
451	HL-93 Operating	50	47.5	-2.23	-10.11	4.477745
451	HL-93 Operating	50	47.5	-2.88	-10.34	4.31528
452	HL-93 Operating	50	47.5	-2.88	-10.34	4.31528
452	HL-93 Operating	50	47.5	-3.55	-10.61	4.142319
453	HL-93 Operating	50	47.5	-3.55	-10.6	4.146226
453	HL-93 Operating	50	47.5	-4.24	-10.92	3.961538
454	HL-93 Operating	50	47.5	-4.24	-10.92	3.961538
454	HL-93 Operating	50	47.5	-4.95	-11.27	3.77551
455	HL-93 Operating	50	47.5	-4.95	-11.27	3.77551
455	HL-93 Operating	50	47.5	-5.69	-11.67	3.582691
456	HL-93 Operating	50	47.5	-5.69	-11.67	3.582691
456	HL-93 Operating	50	47.5	-6.45	-12.11	3.389761
457	HL-93 Operating	50	47.5	-6.45	-12.11	3.389761
457	HL-93 Operating	50	47.5	-7.22	-12.59	3.199365
458	HL-93 Operating	50	47.5	-7.22	-12.59	3.199365
458	HL-93 Operating	50	47.5	-8.03	-13.11	3.010679
459	HL-93 Operating	50	47.5	-8.03	-13.11	3.010679
459	HL-93 Operating	50	47.5	-8.85	-13.66	2.829429
460	HL-93 Operating	50	47.5	-8.85	-13.67	2.827359
460	HL-93 Operating	50	47.5	-9.69	-14.25	2.653333
461	HL-93 Operating	50	47.5	-9.7	-14.25	2.652632
461	HL-93 Operating	50	47.5	-10.56	-14.87	2.484196
462	HL-93 Operating	50	47.5	-10.56	-14.87	2.484196
462	HL-93 Operating	50	47.5	-11.44	-15.52	2.323454
463	HL-93 Operating	50	47.5	-11.44	-15.52	2.323454
463	HL-93 Operating	50	47.5	-12.33	-16.19	2.172329
464	HL-93 Operating	50	47.5	-12.33	-16.2	2.170988
464	HL-93 Operating	50	47.5	-13.23	-17.02	2.013514
465	HL-93 Operating	50	47.5	-13.24	-17.02	2.012926
465	HL-93 Operating	50	47.5	-12.34	-16.23	2.166359
466	HL-93 Operating	50	47.5	-12.34	-16.22	2.167694
466	HL-93 Operating	50	47.5	-11.45	-15.55	2.318328
467	HL-93 Operating	50	47.5	-11.44	-15.55	2.318971
467	HL-93 Operating	50	47.5	-10.56	-14.9	2.479195
468	HL-93 Operating	50	47.5	-10.56	-14.9	2.479195
468	HL-93 Operating	50	47.5	-9.7	-14.28	2.647059
469	HL-93 Operating	50	47.5	-9.7	-14.28	2.647059
469	HL-93 Operating	50	47.5	-8.86	-13.7	2.820438
470	HL-93 Operating	50	47.5	-8.85	-13.69	2.823229
470	HL-93 Operating	50	47.5	-8.03	-13.14	3.003805
471	HL-93 Operating	50	47.5	-8.03	-13.14	3.003805
471	HL-93 Operating	50	47.5	-7.23	-12.62	3.190967
472	HL-93 Operating	50	47.5	-7.23	-12.62	3.190967
472	HL-93 Operating	50	47.5	-6.45	-12.14	3.381384
473	HL-93 Operating	50	47.5	-6.45	-12.14	3.381384
473	HL-93 Operating	50	47.5	-5.69	-11.7	3.573504
474	HL-93 Operating	50	47.5	-5.69	-11.7	3.573504
474	HL-93 Operating	50	47.5	-4.96	-11.3	3.764602

475	HL-93 Operating	50	47.5	-4.96	-11.31	3.761273
475	HL-93 Operating	50	47.5	-4.24	-10.95	3.950685
476	HL-93 Operating	50	47.5	-4.24	-10.95	3.950685
476	HL-93 Operating	50	47.5	-3.55	-10.64	4.130639
477	HL-93 Operating	50	47.5	-3.55	-10.64	4.130639
477	HL-93 Operating	50	47.5	-2.88	-10.37	4.302797
478	HL-93 Operating	50	47.5	-2.88	-10.38	4.298651
478	HL-93 Operating	50	47.5	-2.23	-10.15	4.460099
479	HL-93 Operating	50	47.5	-2.23	-10.16	4.455709
479	HL-93 Operating	50	47.5	-1.6	9.96	4.608434
480	HL-93 Operating	50	47.5	-1.6	-9.96	4.608434
480	HL-93 Operating	50	47.5	-0.99	10.9	4.266972
481	HL-93 Operating	50	47.5	-0.99	10.89	4.270891
481	HL-93 Operating	50	47.5	-0.41	11.8	3.990678
482	HL-93 Operating	50	47.5	-0.41	11.79	3.994063
482	HL-93 Operating	50	47.5	0.17	12.66	3.738547
483	HL-93 Operating	50	47.5	0.17	12.66	3.738547
483	HL-93 Operating	50	47.5	0.71	13.49	3.468495
484	HL-93 Operating	50	47.5	0.71	13.48	3.471068
484	HL-93 Operating	50	47.5	1.23	14.27	3.242467
485	HL-93 Operating	50	47.5	1.23	14.26	3.244741
485	HL-93 Operating	50	47.5	1.73	15.01	3.0493
486	HL-93 Operating	50	47.5	1.73	15	3.051333
486	HL-93 Operating	50	47.5	2.21	15.71	2.882877
487	HL-93 Operating	50	47.5	2.21	15.71	2.882877
487	HL-93 Operating	50	47.5	2.56	16.09	2.793039
488	HL-93 Operating	50	47.5	2.56	16.09	2.793039
488	HL-93 Operating	50	47.5	2.67	16.39	2.735204
489	HL-93 Operating	50	47.5	2.67	16.39	2.735204
489	HL-93 Operating	50	47.5	3.11	17.09	2.597425
490	HL-93 Operating	50	47.5	3.1	17.08	2.599532
490	HL-93 Operating	50	47.5	3.52	17.73	2.480541
491	HL-93 Operating	50	47.5	3.52	17.73	2.480541
491	HL-93 Operating	50	47.5	3.91	18.33	2.378069
492	HL-93 Operating	50	47.5	3.91	18.32	2.379367
492	HL-93 Operating	50	47.5	4.28	18.88	2.289195
493	HL-93 Operating	50	47.5	4.28	18.87	2.290408
493	HL-93 Operating	50	47.5	4.63	19.38	2.212074
494	HL-93 Operating	50	47.5	4.63	19.38	2.212074
494	HL-93 Operating	50	47.5	4.96	19.84	2.144153
495	HL-93 Operating	50	47.5	4.96	19.83	2.145234
495	HL-93 Operating	50	47.5	5.27	20.25	2.085432
496	HL-93 Operating	50	47.5	5.27	20.24	2.086462
496	HL-93 Operating	50	47.5	5.56	20.61	2.034934
497	HL-93 Operating	50	47.5	5.55	20.6	2.036408
497	HL-93 Operating	50	47.5	5.82	20.92	1.992352
498	HL-93 Operating	50	47.5	5.82	20.92	1.992352
498	HL-93 Operating	50	47.5	6.06	21.19	1.955639
499	HL-93 Operating	50	47.5	6.06	21.18	1.956563
499	HL-93 Operating	50	47.5	6.29	21.4	1.925701
500	HL-93 Operating	50	47.5	6.28	21.39	1.927069
500	HL-93 Operating	50	47.5	6.49	21.56	1.902134
501	HL-93 Operating	50	47.5	6.48	21.55	1.90348
501	HL-93 Operating	50	47.5	6.67	21.67	1.884172
502	HL-93 Operating	50	47.5	6.66	21.66	1.885503
502	HL-93 Operating	50	47.5	6.82	21.72	1.872928
503	HL-93 Operating	50	47.5	6.82	21.72	1.872928
503	HL-93 Operating	50	47.5	6.96	21.78	1.861341

504	HL-93 Operating	50	47.5	6.96	21.78	1.861341
504	HL-93 Operating	50	47.5	7.02	21.7	1.865438
505	HL-93 Operating	50	47.5	7.02	21.7	1.865438
505	HL-93 Operating	50	47.5	7.08	21.89	1.846505
506	HL-93 Operating	50	47.5	7.07	21.89	1.846962
506	HL-93 Operating	50	47.5	7.17	21.97	1.835685
507	HL-93 Operating	50	47.5	7.17	21.97	1.835685
507	HL-93 Operating	50	47.5	7.24	22	1.83
508	HL-93 Operating	50	47.5	7.24	22	1.83
508	HL-93 Operating	50	47.5	7.29	21.98	1.82939
509	HL-93 Operating	50	47.5	7.29	21.98	1.82939
509	HL-93 Operating	50	47.5	7.32	21.9	1.834703
510	HL-93 Operating	50	47.5	7.32	21.9	1.834703
510	HL-93 Operating	50	47.5	7.33	21.77	1.8452
511	HL-93 Operating	50	47.5	7.33	21.77	1.8452
511	HL-93 Operating	50	47.5	7.31	21.59	1.86151
512	HL-93 Operating	50	47.5	7.31	21.59	1.86151
512	HL-93 Operating	50	47.5	7.28	21.35	1.883841
513	HL-93 Operating	50	47.5	7.28	21.35	1.883841
513	HL-93 Operating	50	47.5	7.22	21.06	1.912631
514	HL-93 Operating	50	47.5	7.22	21.06	1.912631
514	HL-93 Operating	50	47.5	7.14	20.71	1.948817
515	HL-93 Operating	50	47.5	7.14	20.71	1.948817
515	HL-93 Operating	50	47.5	7.04	20.33	1.990162
516	HL-93 Operating	50	47.5	7.04	20.33	1.990162
516	HL-93 Operating	50	47.5	6.92	19.94	2.035105
517	HL-93 Operating	50	47.5	6.92	19.94	2.035105
517	HL-93 Operating	50	47.5	6.78	19.51	2.087135
518	HL-93 Operating	50	47.5	6.78	19.51	2.087135
518	HL-93 Operating	50	47.5	6.62	19.03	2.148187
519	HL-93 Operating	50	47.5	6.62	19.03	2.148187
519	HL-93 Operating	50	47.5	6.43	18.48	2.222403
520	HL-93 Operating	50	47.5	6.43	18.48	2.222403
520	HL-93 Operating	50	47.5	6.23	17.86	2.31075
521	HL-93 Operating	50	47.5	6.23	17.86	2.31075
521	HL-93 Operating	50	47.5	6.17	17.57	2.352305
522	HL-93 Operating	50	47.5	6.17	17.57	2.352305
522	HL-93 Operating	50	47.5	6	17.23	2.40859
523	HL-93 Operating	50	47.5	6	17.23	2.40859
523	HL-93 Operating	50	47.5	5.75	16.56	2.521135
524	HL-93 Operating	50	47.5	5.75	16.55	2.522659
524	HL-93 Operating	50	47.5	5.48	15.81	2.657812
525	HL-93 Operating	50	47.5	5.48	15.81	2.657812
525	HL-93 Operating	50	47.5	5.18	15.01	2.819454
526	HL-93 Operating	50	47.5	5.19	15.01	2.818787
526	HL-93 Operating	50	47.5	4.87	14.15	3.012721
527	HL-93 Operating	50	47.5	4.87	14.15	3.012721
527	HL-93 Operating	50	47.5	4.53	13.22	3.250378
528	HL-93 Operating	50	47.5	4.54	13.22	3.249622
528	HL-93 Operating	50	47.5	4.18	12.23	3.54211
529	HL-93 Operating	50	47.5	4.18	12.24	3.539216
529	HL-93 Operating	50	47.5	3.8	11.18	3.908766
530	HL-93 Operating	50	47.5	3.8	11.19	3.905273
530	HL-93 Operating	50	47.5	3.4	10.07	4.379345
531	HL-93 Operating	50	47.5	3.4	10.08	4.375
531	HL-93 Operating	50	47.5	2.98	8.89	5.007874
532	HL-93 Operating	50	47.5	2.98	8.91	4.996633
532	HL-93 Operating	50	47.5	2.53	7.64	5.886126

533	HL-93 Operating	50	47.5	2.54	7.66	5.869452
533	HL-93 Operating	50	47.5	2.07	6.32	7.188291
534	HL-93 Operating	50	47.5	2.07	6.35	7.154331
534	HL-93 Operating	50	47.5	1.58	4.91	9.352342
535	HL-93 Operating	50	47.5	1.58	4.95	9.276768
535	HL-93 Operating	50	47.5	1.08	3.41	13.6129
536	HL-93 Operating	50	47.5	1.07	3.46	13.41908
536	HL-93 Operating	50	47.5	0.55	1.79	26.22905
537	HL-93 Operating	50	47.5	0.55	1.83	25.65574
537	HL-93 Operating	50	47.5	0.01	-0.08	593.625

LOAD RATING FIXED SPAN -GIRDER 3

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 1.83667

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
246	HL-93 Operating	50	47.5	0.05	-0.08	593.125
246	HL-93 Operating	50	47.5	0.67	1.8	26.01667
247	HL-93 Operating	50	47.5	0.62	1.77	26.48588
247	HL-93 Operating	50	47.5	1.22	3.43	13.49271
248	HL-93 Operating	50	47.5	1.18	3.39	13.66372
248	HL-93 Operating	50	47.5	1.71	4.92	9.306911
249	HL-93 Operating	50	47.5	1.68	4.88	9.389344
249	HL-93 Operating	50	47.5	2.16	6.31	7.18542
250	HL-93 Operating	50	47.5	2.14	6.28	7.22293
250	HL-93 Operating	50	47.5	2.59	7.62	5.893701
251	HL-93 Operating	50	47.5	2.57	7.6	5.911842
251	HL-93 Operating	50	47.5	3	8.87	5.016911
252	HL-93 Operating	50	47.5	2.99	8.86	5.023702
252	HL-93 Operating	50	47.5	3.4	10.05	4.38806
253	HL-93 Operating	50	47.5	3.39	10.04	4.393426
253	HL-93 Operating	50	47.5	3.77	11.16	3.918459
254	HL-93 Operating	50	47.5	3.77	11.16	3.918459
254	HL-93 Operating	50	47.5	4.14	12.21	3.551188
255	HL-93 Operating	50	47.5	4.14	12.21	3.551188
255	HL-93 Operating	50	47.5	4.48	13.2	3.259091
256	HL-93 Operating	50	47.5	4.48	13.2	3.259091
256	HL-93 Operating	50	47.5	4.8	14.12	3.024079
257	HL-93 Operating	50	47.5	4.81	14.12	3.023371
257	HL-93 Operating	50	47.5	5.11	14.98	2.829773
258	HL-93 Operating	50	47.5	5.11	14.99	2.827885
258	HL-93 Operating	50	47.5	5.39	15.79	2.666878
259	HL-93 Operating	50	47.5	5.39	15.79	2.666878
259	HL-93 Operating	50	47.5	5.65	16.53	2.53176
260	HL-93 Operating	50	47.5	5.66	16.53	2.531155
260	HL-93 Operating	50	47.5	5.9	17.21	2.417199
261	HL-93 Operating	50	47.5	5.9	17.21	2.417199
261	HL-93 Operating	50	47.5	6.07	17.54	2.36203
262	HL-93 Operating	50	47.5	6.07	17.54	2.36203
262	HL-93 Operating	50	47.5	6.12	17.84	2.319507
263	HL-93 Operating	50	47.5	6.12	17.84	2.319507
263	HL-93 Operating	50	47.5	6.32	18.45	2.231978
264	HL-93 Operating	50	47.5	6.32	18.45	2.231978
264	HL-93 Operating	50	47.5	6.49	19	2.158421
265	HL-93 Operating	50	47.5	6.5	19	2.157895
265	HL-93 Operating	50	47.5	6.65	19.49	2.095947
266	HL-93 Operating	50	47.5	6.65	19.49	2.095947
266	HL-93 Operating	50	47.5	6.79	19.92	2.043675
267	HL-93 Operating	50	47.5	6.79	19.92	2.043675
267	HL-93 Operating	50	47.5	6.9	20.3	2
268	HL-93 Operating	50	47.5	6.91	20.3	1.999507
268	HL-93 Operating	50	47.5	7	20.68	1.958414
269	HL-93 Operating	50	47.5	7	20.68	1.958414
269	HL-93 Operating	50	47.5	7.08	21.03	1.922016
270	HL-93 Operating	50	47.5	7.08	21.03	1.922016
270	HL-93 Operating	50	47.5	7.13	21.32	1.893527

271	HL-93 Operating	50	47.5	7.13	21.32	1.893527
271	HL-93 Operating	50	47.5	7.16	21.55	1.871926
272	HL-93 Operating	50	47.5	7.16	21.56	1.871058
272	HL-93 Operating	50	47.5	7.18	21.74	1.854646
273	HL-93 Operating	50	47.5	7.18	21.74	1.854646
273	HL-93 Operating	50	47.5	7.17	21.87	1.844079
274	HL-93 Operating	50	47.5	7.17	21.87	1.844079
274	HL-93 Operating	50	47.5	7.14	21.94	1.839562
275	HL-93 Operating	50	47.5	7.14	21.95	1.838724
275	HL-93 Operating	50	47.5	7.09	21.97	1.839326
276	HL-93 Operating	50	47.5	7.09	21.97	1.839326
276	HL-93 Operating	50	47.5	7.02	21.94	1.845032
277	HL-93 Operating	50	47.5	7.01	21.94	1.845488
277	HL-93 Operating	50	47.5	6.92	21.85	1.857208
278	HL-93 Operating	50	47.5	6.92	21.85	1.857208
278	HL-93 Operating	50	47.5	6.87	21.67	1.874942
279	HL-93 Operating	50	47.5	6.87	21.67	1.874942
279	HL-93 Operating	50	47.5	6.81	21.74	1.871665
280	HL-93 Operating	50	47.5	6.81	21.74	1.871665
280	HL-93 Operating	50	47.5	6.67	21.67	1.884172
281	HL-93 Operating	50	47.5	6.67	21.68	1.883303
281	HL-93 Operating	50	47.5	6.52	21.62	1.895467
282	HL-93 Operating	50	47.5	6.51	21.63	1.895053
282	HL-93 Operating	50	47.5	6.34	21.51	1.913529
283	HL-93 Operating	50	47.5	6.33	21.52	1.913104
283	HL-93 Operating	50	47.5	6.14	21.35	1.937237
284	HL-93 Operating	50	47.5	6.13	21.36	1.936798
284	HL-93 Operating	50	47.5	5.92	21.14	1.966887
285	HL-93 Operating	50	47.5	5.91	21.14	1.96736
285	HL-93 Operating	50	47.5	5.68	20.87	2.003833
286	HL-93 Operating	50	47.5	5.67	20.88	2.003352
286	HL-93 Operating	50	47.5	5.42	20.56	2.046693
287	HL-93 Operating	50	47.5	5.41	20.57	2.046184
287	HL-93 Operating	50	47.5	5.14	20.2	2.09703
288	HL-93 Operating	50	47.5	5.13	20.21	2.096487
288	HL-93 Operating	50	47.5	4.83	19.79	2.156139
289	HL-93 Operating	50	47.5	4.82	19.8	2.155556
289	HL-93 Operating	50	47.5	4.51	19.33	2.224004
290	HL-93 Operating	50	47.5	4.5	19.34	2.223371
290	HL-93 Operating	50	47.5	4.16	18.83	2.301646
291	HL-93 Operating	50	47.5	4.15	18.83	2.302177
291	HL-93 Operating	50	47.5	3.8	18.28	2.390591
292	HL-93 Operating	50	47.5	3.79	18.29	2.389831
292	HL-93 Operating	50	47.5	3.41	17.68	2.493778
293	HL-93 Operating	50	47.5	3.4	17.69	2.492934
293	HL-93 Operating	50	47.5	3.01	17.04	2.610915
294	HL-93 Operating	50	47.5	2.99	17.05	2.610557
294	HL-93 Operating	50	47.5	2.58	16.35	2.747401
295	HL-93 Operating	50	47.5	2.57	16.35	2.748012
295	HL-93 Operating	50	47.5	2.46	16.04	2.80798
296	HL-93 Operating	50	47.5	2.46	16.04	2.80798
296	HL-93 Operating	50	47.5	2.13	15.67	2.895341
297	HL-93 Operating	50	47.5	2.12	15.67	2.89598
297	HL-93 Operating	50	47.5	1.66	14.96	3.064171
298	HL-93 Operating	50	47.5	1.65	14.96	3.06484
298	HL-93 Operating	50	47.5	1.16	14.21	3.261084
299	HL-93 Operating	50	47.5	1.15	14.22	3.259494
299	HL-93 Operating	50	47.5	0.65	13.43	3.488459

300	HL-93 Operating	50	47.5	0.64	13.44	3.486607
300	HL-93 Operating	50	47.5	0.12	12.61	3.757335
301	HL-93 Operating	50	47.5	0.11	12.61	3.758128
301	HL-93 Operating	50	47.5	-0.45	11.75	4.004255
302	HL-93 Operating	50	47.5	-0.45	11.75	4.004255
302	HL-93 Operating	50	47.5	-1.02	10.84	4.287823
303	HL-93 Operating	50	47.5	-1.02	10.85	4.283871
303	HL-93 Operating	50	47.5	-1.61	-9.92	4.626008
304	HL-93 Operating	50	47.5	-1.62	9.91	4.629667
304	HL-93 Operating	50	47.5	-2.22	-10.12	4.474308
305	HL-93 Operating	50	47.5	-2.23	-10.11	4.477745
305	HL-93 Operating	50	47.5	-2.85	-10.34	4.318182
306	HL-93 Operating	50	47.5	-2.86	-10.34	4.317215
306	HL-93 Operating	50	47.5	-3.51	-10.61	4.146089
307	HL-93 Operating	50	47.5	-3.52	-10.6	4.149057
307	HL-93 Operating	50	47.5	-4.18	-10.92	3.967033
308	HL-93 Operating	50	47.5	-4.19	-10.92	3.966117
308	HL-93 Operating	50	47.5	-4.87	-11.27	3.782609
309	HL-93 Operating	50	47.5	-4.89	-11.27	3.780834
309	HL-93 Operating	50	47.5	-5.58	-11.67	3.592117
310	HL-93 Operating	50	47.5	-5.6	-11.67	3.590403
310	HL-93 Operating	50	47.5	-6.32	-12.11	3.400495
311	HL-93 Operating	50	47.5	-6.33	-12.11	3.39967
311	HL-93 Operating	50	47.5	-7.07	-12.59	3.211279
312	HL-93 Operating	50	47.5	-7.08	-12.59	3.210485
312	HL-93 Operating	50	47.5	-7.84	-13.11	3.025172
313	HL-93 Operating	50	47.5	-7.85	-13.11	3.024409
313	HL-93 Operating	50	47.5	-8.63	-13.66	2.845534
314	HL-93 Operating	50	47.5	-8.64	-13.67	2.842721
314	HL-93 Operating	50	47.5	-9.44	-14.25	2.670877
315	HL-93 Operating	50	47.5	-9.45	-14.25	2.670175
315	HL-93 Operating	50	47.5	-10.27	-14.87	2.503699
316	HL-93 Operating	50	47.5	-10.28	-14.87	2.503026
316	HL-93 Operating	50	47.5	-11.11	-15.52	2.344716
317	HL-93 Operating	50	47.5	-11.12	-15.52	2.344072
317	HL-93 Operating	50	47.5	-11.96	-16.19	2.195182
318	HL-93 Operating	50	47.5	-11.97	-16.2	2.19321
318	HL-93 Operating	50	47.5	-12.83	-17.02	2.037015
319	HL-93 Operating	50	47.5	-12.83	-17.02	2.037015
319	HL-93 Operating	50	47.5	-11.96	-16.22	2.191122
320	HL-93 Operating	50	47.5	-11.96	-16.22	2.191122
320	HL-93 Operating	50	47.5	-11.11	-15.55	2.340193
321	HL-93 Operating	50	47.5	-11.1	-15.55	2.340836
321	HL-93 Operating	50	47.5	-10.27	-14.9	2.498658
322	HL-93 Operating	50	47.5	-10.26	-14.9	2.499329
322	HL-93 Operating	50	47.5	-9.45	-14.28	2.664566
323	HL-93 Operating	50	47.5	-9.44	-14.28	2.665266
323	HL-93 Operating	50	47.5	-8.64	-13.69	2.838568
324	HL-93 Operating	50	47.5	-8.63	-13.69	2.839299
324	HL-93 Operating	50	47.5	-7.85	-13.14	3.017504
325	HL-93 Operating	50	47.5	-7.84	-13.14	3.018265
325	HL-93 Operating	50	47.5	-7.08	-12.62	3.202853
326	HL-93 Operating	50	47.5	-7.06	-12.62	3.204437
326	HL-93 Operating	50	47.5	-6.33	-12.14	3.391269
327	HL-93 Operating	50	47.5	-6.31	-12.14	3.392916
327	HL-93 Operating	50	47.5	-5.59	-11.7	3.582051
328	HL-93 Operating	50	47.5	-5.58	-11.7	3.582906
328	HL-93 Operating	50	47.5	-4.88	-11.3	3.771681

329	HL-93 Operating	50	47.5	-4.87	-11.31	3.769231
329	HL-93 Operating	50	47.5	-4.19	-10.95	3.955251
330	HL-93 Operating	50	47.5	-4.17	-10.95	3.957078
330	HL-93 Operating	50	47.5	-3.51	-10.64	4.134398
331	HL-93 Operating	50	47.5	-3.5	-10.64	4.135338
331	HL-93 Operating	50	47.5	-2.86	-10.37	4.304725
332	HL-93 Operating	50	47.5	-2.85	-10.38	4.301541
332	HL-93 Operating	50	47.5	-2.23	-10.15	4.460099
333	HL-93 Operating	50	47.5	-2.22	-10.16	4.456693
333	HL-93 Operating	50	47.5	-1.61	9.96	4.60743
334	HL-93 Operating	50	47.5	-1.61	-9.96	4.60743
334	HL-93 Operating	50	47.5	-1.02	10.9	4.26422
335	HL-93 Operating	50	47.5	-1.02	10.89	4.268136
335	HL-93 Operating	50	47.5	-0.45	11.8	3.987288
336	HL-93 Operating	50	47.5	-0.44	11.79	3.991518
336	HL-93 Operating	50	47.5	0.11	12.66	3.743286
337	HL-93 Operating	50	47.5	0.12	12.66	3.742496
337	HL-93 Operating	50	47.5	0.65	13.49	3.472943
338	HL-93 Operating	50	47.5	0.65	13.48	3.475519
338	HL-93 Operating	50	47.5	1.16	14.27	3.247372
339	HL-93 Operating	50	47.5	1.17	14.26	3.248948
339	HL-93 Operating	50	47.5	1.65	15.01	3.05463
340	HL-93 Operating	50	47.5	1.66	15	3.056
340	HL-93 Operating	50	47.5	2.12	15.71	2.888606
341	HL-93 Operating	50	47.5	2.13	15.71	2.887969
341	HL-93 Operating	50	47.5	2.46	16.09	2.799254
342	HL-93 Operating	50	47.5	2.46	16.09	2.799254
342	HL-93 Operating	50	47.5	2.57	16.39	2.741306
343	HL-93 Operating	50	47.5	2.58	16.39	2.740696
343	HL-93 Operating	50	47.5	3	17.09	2.603862
344	HL-93 Operating	50	47.5	3.01	17.08	2.604801
344	HL-93 Operating	50	47.5	3.4	17.73	2.48731
345	HL-93 Operating	50	47.5	3.41	17.73	2.486746
345	HL-93 Operating	50	47.5	3.79	18.33	2.384615
346	HL-93 Operating	50	47.5	3.8	18.32	2.385371
346	HL-93 Operating	50	47.5	4.16	18.88	2.295551
347	HL-93 Operating	50	47.5	4.17	18.87	2.296237
347	HL-93 Operating	50	47.5	4.5	19.38	2.218782
348	HL-93 Operating	50	47.5	4.51	19.38	2.218266
348	HL-93 Operating	50	47.5	4.83	19.84	2.150706
349	HL-93 Operating	50	47.5	4.83	19.83	2.15179
349	HL-93 Operating	50	47.5	5.13	20.25	2.092346
350	HL-93 Operating	50	47.5	5.14	20.24	2.092885
350	HL-93 Operating	50	47.5	5.41	20.61	2.042213
351	HL-93 Operating	50	47.5	5.42	20.6	2.042718
351	HL-93 Operating	50	47.5	5.67	20.92	1.999522
352	HL-93 Operating	50	47.5	5.68	20.92	1.999044
352	HL-93 Operating	50	47.5	5.91	21.19	1.962718
353	HL-93 Operating	50	47.5	5.92	21.18	1.963173
353	HL-93 Operating	50	47.5	6.13	21.4	1.933178
354	HL-93 Operating	50	47.5	6.14	21.39	1.933614
354	HL-93 Operating	50	47.5	6.33	21.56	1.909555
355	HL-93 Operating	50	47.5	6.34	21.55	1.909977
355	HL-93 Operating	50	47.5	6.51	21.67	1.891555
356	HL-93 Operating	50	47.5	6.52	21.66	1.891967
356	HL-93 Operating	50	47.5	6.67	21.72	1.879834
357	HL-93 Operating	50	47.5	6.67	21.72	1.879834
357	HL-93 Operating	50	47.5	6.81	21.78	1.868228

358	HL-93 Operating	50	47.5	6.81	21.78	1.868228
358	HL-93 Operating	50	47.5	6.87	21.7	1.87235
359	HL-93 Operating	50	47.5	6.87	21.7	1.87235
359	HL-93 Operating	50	47.5	6.92	21.89	1.853815
360	HL-93 Operating	50	47.5	6.92	21.89	1.853815
360	HL-93 Operating	50	47.5	7.01	21.97	1.842968
361	HL-93 Operating	50	47.5	7.01	21.97	1.842968
361	HL-93 Operating	50	47.5	7.08	22	1.837273
362	HL-93 Operating	50	47.5	7.08	22	1.837273
362	HL-93 Operating	50	47.5	7.13	21.98	1.83667
363	HL-93 Operating	50	47.5	7.13	21.98	1.83667
363	HL-93 Operating	50	47.5	7.16	21.9	1.842009
364	HL-93 Operating	50	47.5	7.16	21.9	1.842009
364	HL-93 Operating	50	47.5	7.17	21.77	1.852549
365	HL-93 Operating	50	47.5	7.17	21.77	1.852549
365	HL-93 Operating	50	47.5	7.16	21.59	1.868458
366	HL-93 Operating	50	47.5	7.16	21.59	1.868458
366	HL-93 Operating	50	47.5	7.12	21.35	1.891335
367	HL-93 Operating	50	47.5	7.12	21.35	1.891335
367	HL-93 Operating	50	47.5	7.07	21.06	1.919753
368	HL-93 Operating	50	47.5	7.07	21.06	1.919753
368	HL-93 Operating	50	47.5	6.99	20.71	1.95606
369	HL-93 Operating	50	47.5	6.99	20.71	1.95606
369	HL-93 Operating	50	47.5	6.9	20.33	1.997049
370	HL-93 Operating	50	47.5	6.89	20.33	1.997541
370	HL-93 Operating	50	47.5	6.78	19.94	2.042126
371	HL-93 Operating	50	47.5	6.77	19.94	2.042628
371	HL-93 Operating	50	47.5	6.64	19.51	2.094311
372	HL-93 Operating	50	47.5	6.63	19.51	2.094823
372	HL-93 Operating	50	47.5	6.48	19.03	2.155544
373	HL-93 Operating	50	47.5	6.47	19.03	2.156069
373	HL-93 Operating	50	47.5	6.3	18.48	2.229437
374	HL-93 Operating	50	47.5	6.29	18.48	2.229978
374	HL-93 Operating	50	47.5	6.1	17.86	2.318029
375	HL-93 Operating	50	47.5	6.09	17.86	2.318589
375	HL-93 Operating	50	47.5	6.04	17.57	2.359704
376	HL-93 Operating	50	47.5	6.04	17.57	2.359704
376	HL-93 Operating	50	47.5	5.87	17.23	2.416135
377	HL-93 Operating	50	47.5	5.87	17.23	2.416135
377	HL-93 Operating	50	47.5	5.63	16.56	2.528382
378	HL-93 Operating	50	47.5	5.62	16.55	2.530514
378	HL-93 Operating	50	47.5	5.36	15.81	2.665402
379	HL-93 Operating	50	47.5	5.35	15.81	2.666034
379	HL-93 Operating	50	47.5	5.07	15.01	2.826782
380	HL-93 Operating	50	47.5	5.06	15.01	2.827448
380	HL-93 Operating	50	47.5	4.76	14.15	3.020495
381	HL-93 Operating	50	47.5	4.76	14.15	3.020495
381	HL-93 Operating	50	47.5	4.44	13.22	3.257186
382	HL-93 Operating	50	47.5	4.43	13.22	3.257943
382	HL-93 Operating	50	47.5	4.09	12.23	3.549469
383	HL-93 Operating	50	47.5	4.08	12.24	3.547386
383	HL-93 Operating	50	47.5	3.72	11.18	3.915921
384	HL-93 Operating	50	47.5	3.71	11.19	3.913315
384	HL-93 Operating	50	47.5	3.32	10.07	4.387289
385	HL-93 Operating	50	47.5	3.31	10.08	4.383929
385	HL-93 Operating	50	47.5	2.91	8.89	5.015748
386	HL-93 Operating	50	47.5	2.9	8.91	5.005612
386	HL-93 Operating	50	47.5	2.48	7.64	5.89267

387	HL-93 Operating	50	47.5	2.47	7.66	5.87859
387	HL-93 Operating	50	47.5	2.02	6.32	7.196203
388	HL-93 Operating	50	47.5	2.02	6.35	7.162205
388	HL-93 Operating	50	47.5	1.55	4.91	9.358452
389	HL-93 Operating	50	47.5	1.55	4.95	9.282828
389	HL-93 Operating	50	47.5	1.06	3.41	13.61877
390	HL-93 Operating	50	47.5	1.05	3.46	13.42486
390	HL-93 Operating	50	47.5	0.54	1.79	26.23464
391	HL-93 Operating	50	47.5	0.54	1.83	25.6612
391	HL-93 Operating	50	47.5	0.01	-0.08	593.625

LOAD RATING FIXED SPAN -GIRDER 4

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 1.772568

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
100	HL-93 Operating	50	47.5	0.11	0.45	105.3111
100	HL-93 Operating	50	47.5	0.48	1.71	27.49708
101	HL-93 Operating	50	47.5	0.53	1.82	25.80769
101	HL-93 Operating	50	47.5	0.96	3.32	14.01807
102	HL-93 Operating	50	47.5	1.01	3.46	13.43642
102	HL-93 Operating	50	47.5	1.44	4.86	9.477366
103	HL-93 Operating	50	47.5	1.49	5.01	9.183633
103	HL-93 Operating	50	47.5	1.9	6.31	7.226624
104	HL-93 Operating	50	47.5	1.95	6.46	7.051084
104	HL-93 Operating	50	47.5	2.35	7.69	5.871261
105	HL-93 Operating	50	47.5	2.4	7.83	5.759898
105	HL-93 Operating	50	47.5	2.78	8.99	4.974416
106	HL-93 Operating	50	47.5	2.83	9.13	4.892662
106	HL-93 Operating	50	47.5	3.19	10.22	4.335616
107	HL-93 Operating	50	47.5	3.25	10.35	4.275362
107	HL-93 Operating	50	47.5	3.58	11.37	3.862797
108	HL-93 Operating	50	47.5	3.65	11.5	3.813043
108	HL-93 Operating	50	47.5	3.96	12.47	3.49158
109	HL-93 Operating	50	47.5	4.02	12.59	3.453535
109	HL-93 Operating	50	47.5	4.31	13.5	3.199259
110	HL-93 Operating	50	47.5	4.38	13.61	3.168259
110	HL-93 Operating	50	47.5	4.65	14.47	2.961299
111	HL-93 Operating	50	47.5	4.71	14.57	2.936857
111	HL-93 Operating	50	47.5	4.96	15.38	2.76593
112	HL-93 Operating	50	47.5	5.02	15.47	2.74596
112	HL-93 Operating	50	47.5	5.25	16.23	2.603204
113	HL-93 Operating	50	47.5	5.31	16.31	2.586757
113	HL-93 Operating	50	47.5	5.53	17.03	2.464474
114	HL-93 Operating	50	47.5	5.58	17.09	2.452896
114	HL-93 Operating	50	47.5	5.78	17.77	2.347777
115	HL-93 Operating	50	47.5	5.82	17.81	2.340258
115	HL-93 Operating	50	47.5	5.96	18.2	2.282418
116	HL-93 Operating	50	47.5	5.96	18.2	2.282418
116	HL-93 Operating	50	47.5	6	18.44	2.250542
117	HL-93 Operating	50	47.5	6.05	18.46	2.245395
117	HL-93 Operating	50	47.5	6.21	19.03	2.169732
118	HL-93 Operating	50	47.5	6.25	19.07	2.163083
118	HL-93 Operating	50	47.5	6.4	19.57	2.100153
119	HL-93 Operating	50	47.5	6.43	19.62	2.093272
119	HL-93 Operating	50	47.5	6.56	20.07	2.03986
120	HL-93 Operating	50	47.5	6.59	20.11	2.034311
120	HL-93 Operating	50	47.5	6.7	20.52	1.988304
121	HL-93 Operating	50	47.5	6.73	20.57	1.982013
121	HL-93 Operating	50	47.5	6.82	20.97	1.939914
122	HL-93 Operating	50	47.5	6.85	21.01	1.934793
122	HL-93 Operating	50	47.5	6.92	21.37	1.898924
123	HL-93 Operating	50	47.5	6.94	21.4	1.895327
123	HL-93 Operating	50	47.5	7	21.72	1.864641
124	HL-93 Operating	50	47.5	7.02	21.74	1.862006
124	HL-93 Operating	50	47.5	7.06	22.02	1.836512

125	HL-93 Operating	50	47.5	7.07	22.04	1.834392
125	HL-93 Operating	50	47.5	7.1	22.27	1.8141
126	HL-93 Operating	50	47.5	7.11	22.28	1.812837
126	HL-93 Operating	50	47.5	7.11	22.46	1.798308
127	HL-93 Operating	50	47.5	7.12	22.47	1.797063
127	HL-93 Operating	50	47.5	7.11	22.62	1.785588
128	HL-93 Operating	50	47.5	7.11	22.62	1.785588
128	HL-93 Operating	50	47.5	7.08	22.72	1.779049
129	HL-93 Operating	50	47.5	7.08	22.72	1.779049
129	HL-93 Operating	50	47.5	7.04	22.79	1.77534
130	HL-93 Operating	50	47.5	7.03	22.77	1.777339
130	HL-93 Operating	50	47.5	6.97	22.8	1.777632
131	HL-93 Operating	50	47.5	6.96	22.79	1.77885
131	HL-93 Operating	50	47.5	6.88	22.78	1.783143
132	HL-93 Operating	50	47.5	6.86	22.76	1.785589
132	HL-93 Operating	50	47.5	6.82	22.67	1.794442
133	HL-93 Operating	50	47.5	6.82	22.67	1.794442
133	HL-93 Operating	50	47.5	6.77	22.68	1.795855
134	HL-93 Operating	50	47.5	6.75	22.67	1.79753
134	HL-93 Operating	50	47.5	6.64	22.58	1.809566
135	HL-93 Operating	50	47.5	6.61	22.58	1.810895
135	HL-93 Operating	50	47.5	6.48	22.47	1.825545
136	HL-93 Operating	50	47.5	6.45	22.46	1.827694
136	HL-93 Operating	50	47.5	6.31	22.31	1.846257
137	HL-93 Operating	50	47.5	6.27	22.29	1.849708
137	HL-93 Operating	50	47.5	6.11	22.1	1.872851
138	HL-93 Operating	50	47.5	6.07	22.08	1.876359
138	HL-93 Operating	50	47.5	5.9	21.85	1.90389
139	HL-93 Operating	50	47.5	5.85	21.83	1.907925
139	HL-93 Operating	50	47.5	5.66	21.55	1.941531
140	HL-93 Operating	50	47.5	5.61	21.53	1.945657
140	HL-93 Operating	50	47.5	5.4	21.22	1.983977
141	HL-93 Operating	50	47.5	5.35	21.19	1.989146
141	HL-93 Operating	50	47.5	5.12	20.83	2.034566
142	HL-93 Operating	50	47.5	5.06	20.81	2.039404
142	HL-93 Operating	50	47.5	4.82	20.41	2.091132
143	HL-93 Operating	50	47.5	4.76	20.38	2.097154
143	HL-93 Operating	50	47.5	4.5	19.94	2.156469
144	HL-93 Operating	50	47.5	4.44	19.91	2.162732
144	HL-93 Operating	50	47.5	4.16	19.43	2.230571
145	HL-93 Operating	50	47.5	4.09	19.39	2.238783
145	HL-93 Operating	50	47.5	3.79	18.88	2.315148
146	HL-93 Operating	50	47.5	3.73	18.84	2.323248
146	HL-93 Operating	50	47.5	3.41	18.29	2.410607
147	HL-93 Operating	50	47.5	3.34	18.25	2.419726
147	HL-93 Operating	50	47.5	3.01	17.64	2.522109
148	HL-93 Operating	50	47.5	2.94	17.61	2.53038
148	HL-93 Operating	50	47.5	2.58	16.95	2.650147
149	HL-93 Operating	50	47.5	2.51	16.94	2.655844
149	HL-93 Operating	50	47.5	2.41	16.68	2.703237
150	HL-93 Operating	50	47.5	2.41	16.68	2.703237
150	HL-93 Operating	50	47.5	2.13	16.23	2.795441
151	HL-93 Operating	50	47.5	2.06	16.19	2.806671
151	HL-93 Operating	50	47.5	1.67	15.46	2.964424
152	HL-93 Operating	50	47.5	1.59	15.39	2.983106
152	HL-93 Operating	50	47.5	1.18	14.64	3.163934
153	HL-93 Operating	50	47.5	1.1	14.56	3.186813
153	HL-93 Operating	50	47.5	0.67	13.78	3.398403

154	HL-93 Operating	50	47.5	0.59	13.69	3.426589
154	HL-93 Operating	50	47.5	0.14	12.88	3.677019
155	HL-93 Operating	50	47.5	0.06	12.78	3.71205
155	HL-93 Operating	50	47.5	-0.45	11.95	3.937238
156	HL-93 Operating	50	47.5	-0.51	11.84	3.96875
156	HL-93 Operating	50	47.5	-1.02	10.98	4.233151
157	HL-93 Operating	50	47.5	-1.09	10.87	4.269549
157	HL-93 Operating	50	47.5	-1.61	-10.16	4.516732
158	HL-93 Operating	50	47.5	-1.68	-10.17	4.505408
158	HL-93 Operating	50	47.5	-2.22	-10.4	4.353846
159	HL-93 Operating	50	47.5	-2.29	-10.42	4.338772
159	HL-93 Operating	50	47.5	-2.84	-10.68	4.181648
160	HL-93 Operating	50	47.5	-2.93	-10.69	4.169317
160	HL-93 Operating	50	47.5	-3.49	-10.99	4.00455
161	HL-93 Operating	50	47.5	-3.58	-11.01	3.989101
161	HL-93 Operating	50	47.5	-4.16	-11.35	3.818502
162	HL-93 Operating	50	47.5	-4.25	-11.36	3.807218
162	HL-93 Operating	50	47.5	-4.85	-11.74	3.632879
163	HL-93 Operating	50	47.5	-4.94	-11.76	3.619048
163	HL-93 Operating	50	47.5	-5.55	-12.18	3.444171
164	HL-93 Operating	50	47.5	-5.65	-12.21	3.427518
164	HL-93 Operating	50	47.5	-6.27	-12.67	3.254144
165	HL-93 Operating	50	47.5	-6.38	-12.7	3.237795
165	HL-93 Operating	50	47.5	-7.02	-13.2	3.066667
166	HL-93 Operating	50	47.5	-7.13	-13.24	3.049094
166	HL-93 Operating	50	47.5	-7.78	-13.77	2.884532
167	HL-93 Operating	50	47.5	-7.9	-13.81	2.867487
167	HL-93 Operating	50	47.5	-8.57	-14.38	2.707232
168	HL-93 Operating	50	47.5	-8.7	-14.45	2.685121
168	HL-93 Operating	50	47.5	-9.39	-15.03	2.535595
169	HL-93 Operating	50	47.5	-9.51	-15.13	2.510905
169	HL-93 Operating	50	47.5	-10.23	-15.76	2.364848
170	HL-93 Operating	50	47.5	-10.35	-15.87	2.340895
170	HL-93 Operating	50	47.5	-11.08	-16.55	2.200604
171	HL-93 Operating	50	47.5	-11.2	-16.64	2.18149
171	HL-93 Operating	50	47.5	-11.96	-17.9	1.985475
172	HL-93 Operating	50	47.5	-12.04	-17.91	1.979899
172	HL-93 Operating	50	47.5	-12.85	-19.37	1.788849
173	HL-93 Operating	50	47.5	-12.83	-19.37	1.789881
173	HL-93 Operating	50	47.5	-12.02	-17.93	1.978806
174	HL-93 Operating	50	47.5	-11.94	-17.92	1.984375
174	HL-93 Operating	50	47.5	-11.18	-16.63	2.184005
175	HL-93 Operating	50	47.5	-11.07	-16.56	2.199879
175	HL-93 Operating	50	47.5	-10.33	-15.86	2.343632
176	HL-93 Operating	50	47.5	-10.21	-15.75	2.367619
176	HL-93 Operating	50	47.5	-9.5	-15.13	2.511566
177	HL-93 Operating	50	47.5	-9.37	-15.03	2.536926
177	HL-93 Operating	50	47.5	-8.68	-14.44	2.688366
178	HL-93 Operating	50	47.5	-8.56	-14.38	2.707928
178	HL-93 Operating	50	47.5	-7.89	-13.81	2.868211
179	HL-93 Operating	50	47.5	-7.76	-13.76	2.888081
179	HL-93 Operating	50	47.5	-7.12	-13.24	3.049849
180	HL-93 Operating	50	47.5	-7	-13.2	3.068182
180	HL-93 Operating	50	47.5	-6.37	-12.7	3.238583
181	HL-93 Operating	50	47.5	-6.26	-12.67	3.254933
181	HL-93 Operating	50	47.5	-5.64	-12.21	3.428337
182	HL-93 Operating	50	47.5	-5.54	-12.18	3.444992
182	HL-93 Operating	50	47.5	-4.93	-11.76	3.619898

183	HL-93 Operating	50	47.5	-4.83	-11.74	3.634583
183	HL-93 Operating	50	47.5	-4.24	-11.36	3.808099
184	HL-93 Operating	50	47.5	-4.15	-11.35	3.819383
184	HL-93 Operating	50	47.5	-3.57	-11.01	3.990009
185	HL-93 Operating	50	47.5	-3.48	-11	4.001818
185	HL-93 Operating	50	47.5	-2.91	-10.7	4.16729
186	HL-93 Operating	50	47.5	-2.83	-10.69	4.178672
186	HL-93 Operating	50	47.5	-2.28	-10.42	4.339731
187	HL-93 Operating	50	47.5	-2.21	-10.41	4.350624
187	HL-93 Operating	50	47.5	-1.67	-10.19	4.497547
188	HL-93 Operating	50	47.5	-1.6	-10.17	4.513274
188	HL-93 Operating	50	47.5	-1.08	10.91	4.254812
189	HL-93 Operating	50	47.5	-1.01	11.02	4.218693
189	HL-93 Operating	50	47.5	-0.5	11.89	3.952902
190	HL-93 Operating	50	47.5	-0.44	11.99	3.924937
190	HL-93 Operating	50	47.5	0.07	12.82	3.699688
191	HL-93 Operating	50	47.5	0.15	12.92	3.664861
191	HL-93 Operating	50	47.5	0.6	13.73	3.415878
192	HL-93 Operating	50	47.5	0.68	13.82	3.387844
192	HL-93 Operating	50	47.5	1.11	14.6	3.177397
193	HL-93 Operating	50	47.5	1.19	14.68	3.154632
193	HL-93 Operating	50	47.5	1.6	15.44	2.972798
194	HL-93 Operating	50	47.5	1.68	15.5	2.956129
194	HL-93 Operating	50	47.5	2.07	16.23	2.799137
195	HL-93 Operating	50	47.5	2.14	16.27	2.787953
195	HL-93 Operating	50	47.5	2.42	16.73	2.694561
196	HL-93 Operating	50	47.5	2.42	16.72	2.696172
196	HL-93 Operating	50	47.5	2.52	16.98	2.648999
197	HL-93 Operating	50	47.5	2.59	16.99	2.64332
197	HL-93 Operating	50	47.5	2.95	17.65	2.524079
198	HL-93 Operating	50	47.5	3.01	17.68	2.516403
198	HL-93 Operating	50	47.5	3.35	18.29	2.413887
199	HL-93 Operating	50	47.5	3.42	18.33	2.404801
199	HL-93 Operating	50	47.5	3.73	18.88	2.318326
200	HL-93 Operating	50	47.5	3.8	18.92	2.309725
200	HL-93 Operating	50	47.5	4.1	19.44	2.23251
201	HL-93 Operating	50	47.5	4.16	19.48	2.224846
201	HL-93 Operating	50	47.5	4.44	19.95	2.158396
202	HL-93 Operating	50	47.5	4.51	19.98	2.151652
202	HL-93 Operating	50	47.5	4.77	20.42	2.092556
203	HL-93 Operating	50	47.5	4.83	20.45	2.086553
203	HL-93 Operating	50	47.5	5.07	20.85	2.035012
204	HL-93 Operating	50	47.5	5.13	20.88	2.029215
204	HL-93 Operating	50	47.5	5.35	21.24	1.984463
205	HL-93 Operating	50	47.5	5.41	21.26	1.979774
205	HL-93 Operating	50	47.5	5.62	21.58	1.940686
206	HL-93 Operating	50	47.5	5.66	21.6	1.937037
206	HL-93 Operating	50	47.5	5.86	21.87	1.903978
207	HL-93 Operating	50	47.5	5.9	21.9	1.899543
207	HL-93 Operating	50	47.5	6.08	22.12	1.872514
208	HL-93 Operating	50	47.5	6.12	22.15	1.868172
208	HL-93 Operating	50	47.5	6.28	22.33	1.845947
209	HL-93 Operating	50	47.5	6.32	22.35	1.842506
209	HL-93 Operating	50	47.5	6.46	22.5	1.824
210	HL-93 Operating	50	47.5	6.49	22.51	1.821857
210	HL-93 Operating	50	47.5	6.62	22.62	1.80725
211	HL-93 Operating	50	47.5	6.65	22.63	1.805126
211	HL-93 Operating	50	47.5	6.76	22.7	1.794714

212	HL-93 Operating	50	47.5	6.78	22.72	1.792254
212	HL-93 Operating	50	47.5	6.83	22.7	1.79163
213	HL-93 Operating	50	47.5	6.83	22.7	1.79163
213	HL-93 Operating	50	47.5	6.87	22.79	1.782799
214	HL-93 Operating	50	47.5	6.89	22.81	1.780359
214	HL-93 Operating	50	47.5	6.97	22.82	1.776074
215	HL-93 Operating	50	47.5	6.98	22.83	1.774858
215	HL-93 Operating	50	47.5	7.04	22.8	1.774561
216	HL-93 Operating	50	47.5	7.05	22.82	1.772568
216	HL-93 Operating	50	47.5	7.09	22.75	1.776264
217	HL-93 Operating	50	47.5	7.09	22.75	1.776264
217	HL-93 Operating	50	47.5	7.12	22.65	1.782781
218	HL-93 Operating	50	47.5	7.12	22.65	1.782781
218	HL-93 Operating	50	47.5	7.13	22.5	1.794222
219	HL-93 Operating	50	47.5	7.13	22.49	1.79502
219	HL-93 Operating	50	47.5	7.12	22.3	1.810762
220	HL-93 Operating	50	47.5	7.11	22.29	1.812023
220	HL-93 Operating	50	47.5	7.09	22.06	1.831822
221	HL-93 Operating	50	47.5	7.07	22.04	1.834392
221	HL-93 Operating	50	47.5	7.03	21.77	1.85898
222	HL-93 Operating	50	47.5	7.02	21.75	1.861149
222	HL-93 Operating	50	47.5	6.96	21.43	1.891741
223	HL-93 Operating	50	47.5	6.94	21.4	1.895327
223	HL-93 Operating	50	47.5	6.86	21.03	1.932477
224	HL-93 Operating	50	47.5	6.84	21	1.93619
224	HL-93 Operating	50	47.5	6.75	20.59	1.979116
225	HL-93 Operating	50	47.5	6.72	20.55	1.984428
225	HL-93 Operating	50	47.5	6.61	20.13	2.031297
226	HL-93 Operating	50	47.5	6.58	20.09	2.036834
226	HL-93 Operating	50	47.5	6.46	19.64	2.089613
227	HL-93 Operating	50	47.5	6.42	19.59	2.096988
227	HL-93 Operating	50	47.5	6.28	19.09	2.159246
228	HL-93 Operating	50	47.5	6.24	19.05	2.165879
228	HL-93 Operating	50	47.5	6.08	18.48	2.241342
229	HL-93 Operating	50	47.5	6.03	18.46	2.246479
229	HL-93 Operating	50	47.5	5.99	18.21	2.279517
230	HL-93 Operating	50	47.5	5.99	18.22	2.278266
230	HL-93 Operating	50	47.5	5.86	17.82	2.3367
231	HL-93 Operating	50	47.5	5.81	17.79	2.343451
231	HL-93 Operating	50	47.5	5.61	17.1	2.449708
232	HL-93 Operating	50	47.5	5.56	17.04	2.461268
232	HL-93 Operating	50	47.5	5.35	16.32	2.582721
233	HL-93 Operating	50	47.5	5.29	16.24	2.599138
233	HL-93 Operating	50	47.5	5.07	15.48	2.740956
234	HL-93 Operating	50	47.5	5	15.39	2.761533
234	HL-93 Operating	50	47.5	4.76	14.58	2.931413
235	HL-93 Operating	50	47.5	4.69	14.48	2.956492
235	HL-93 Operating	50	47.5	4.44	13.61	3.16385
236	HL-93 Operating	50	47.5	4.37	13.51	3.19245
236	HL-93 Operating	50	47.5	4.09	12.58	3.450715
237	HL-93 Operating	50	47.5	4.02	12.47	3.486768
237	HL-93 Operating	50	47.5	3.72	11.49	3.81027
238	HL-93 Operating	50	47.5	3.65	11.38	3.853251
238	HL-93 Operating	50	47.5	3.34	10.33	4.274927
239	HL-93 Operating	50	47.5	3.26	10.21	4.333007
239	HL-93 Operating	50	47.5	2.93	9.1	4.897802
240	HL-93 Operating	50	47.5	2.85	8.98	4.97216
240	HL-93 Operating	50	47.5	2.5	7.8	5.769231

241	HL-93 Operating	50	47.5	2.43	7.67	5.876141
241	HL-93 Operating	50	47.5	2.05	6.42	7.079439
242	HL-93 Operating	50	47.5	1.98	6.29	7.236884
242	HL-93 Operating	50	47.5	1.59	4.96	9.256048
243	HL-93 Operating	50	47.5	1.51	4.84	9.502066
243	HL-93 Operating	50	47.5	1.1	3.41	13.60704
244	HL-93 Operating	50	47.5	1.03	3.31	14.03927
244	HL-93 Operating	50	47.5	0.59	1.79	26.2067
245	HL-93 Operating	50	47.5	0.52	1.7	27.63529
245	HL-93 Operating	50	47.5	0.07	0.46	103.1087

LOAD RATING FIXED SPAN -GIRDER 1

RF= RATING FACTOR

RF = (.95 F_Y - f_{DL+SDL}) / (f_{LL+I}) MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating Factor 1.860465

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
538	HS-20	50	47.5	0.06	0.42	112.9524
538	HS-20	50	47.5	0.53	1.7	27.62941
539	HS-20	50	47.5	0.53	1.82	25.80769
539	HS-20	50	47.5	1.05	3.3	14.07576
540	HS-20	50	47.5	1.07	3.45	13.45797
540	HS-20	50	47.5	1.56	4.81	9.550936
541	HS-20	50	47.5	1.59	4.96	9.256048
541	HS-20	50	47.5	2.06	6.23	7.29374
542	HS-20	50	47.5	2.09	6.38	7.117555
542	HS-20	50	47.5	2.54	7.56	5.94709
543	HS-20	50	47.5	2.57	7.7	5.835065
543	HS-20	50	47.5	3.01	8.81	5.049943
544	HS-20	50	47.5	3.03	8.95	4.968715
544	HS-20	50	47.5	3.45	9.98	4.413828
545	HS-20	50	47.5	3.47	10.11	4.355094
545	HS-20	50	47.5	3.87	11.08	3.937726
546	HS-20	50	47.5	3.89	11.21	3.890277
546	HS-20	50	47.5	4.26	12.12	3.567657
547	HS-20	50	47.5	4.29	12.23	3.533115
547	HS-20	50	47.5	4.64	13.09	3.274255
548	HS-20	50	47.5	4.67	13.2	3.244697
548	HS-20	50	47.5	4.99	13.99	3.038599
549	HS-20	50	47.5	5.02	14.09	3.014904
549	HS-20	50	47.5	5.32	14.83	2.844235
550	HS-20	50	47.5	5.35	14.93	2.823175
550	HS-20	50	47.5	5.63	15.62	2.680538
551	HS-20	50	47.5	5.66	15.7	2.664968
551	HS-20	50	47.5	5.92	16.35	2.543119
552	HS-20	50	47.5	5.94	16.42	2.53106
552	HS-20	50	47.5	6.18	17.03	2.426307
553	HS-20	50	47.5	6.2	17.08	2.418033
553	HS-20	50	47.5	6.37	17.38	2.366513
554	HS-20	50	47.5	6.37	17.38	2.366513
554	HS-20	50	47.5	6.42	17.64	2.328798
555	HS-20	50	47.5	6.44	17.67	2.323713
555	HS-20	50	47.5	6.64	18.17	2.248762
556	HS-20	50	47.5	6.65	18.22	2.242042
556	HS-20	50	47.5	6.83	18.65	2.180697
557	HS-20	50	47.5	6.84	18.71	2.173169
557	HS-20	50	47.5	7	19.1	2.120419
558	HS-20	50	47.5	7.01	19.15	2.11436
558	HS-20	50	47.5	7.15	19.5	2.069231
559	HS-20	50	47.5	7.16	19.55	2.063427
559	HS-20	50	47.5	7.27	19.91	2.020593
560	HS-20	50	47.5	7.28	19.95	2.01604
560	HS-20	50	47.5	7.38	20.27	1.97928

561	HS-20	50	47.5	7.38	20.31	1.975382
561	HS-20	50	47.5	7.46	20.58	1.945578
562	HS-20	50	47.5	7.46	20.61	1.942746
562	HS-20	50	47.5	7.52	20.84	1.918426
563	HS-20	50	47.5	7.52	20.87	1.915668
563	HS-20	50	47.5	7.56	21.06	1.896486
564	HS-20	50	47.5	7.56	21.08	1.894687
564	HS-20	50	47.5	7.58	21.23	1.880358
565	HS-20	50	47.5	7.58	21.25	1.878588
565	HS-20	50	47.5	7.58	21.36	1.868914
566	HS-20	50	47.5	7.57	21.37	1.868507
566	HS-20	50	47.5	7.55	21.44	1.86334
567	HS-20	50	47.5	7.54	21.45	1.862937
567	HS-20	50	47.5	7.5	21.48	1.862197
568	HS-20	50	47.5	7.5	21.48	1.862197
568	HS-20	50	47.5	7.43	21.48	1.865456
569	HS-20	50	47.5	7.43	21.46	1.867195
569	HS-20	50	47.5	7.34	21.44	1.873134
570	HS-20	50	47.5	7.33	21.42	1.87535
570	HS-20	50	47.5	7.28	21.31	1.887377
571	HS-20	50	47.5	7.28	21.31	1.887377
571	HS-20	50	47.5	7.23	21.33	1.887951
572	HS-20	50	47.5	7.22	21.32	1.889306
572	HS-20	50	47.5	7.09	21.25	1.901647
573	HS-20	50	47.5	7.08	21.24	1.903013
573	HS-20	50	47.5	6.93	21.16	1.917297
574	HS-20	50	47.5	6.92	21.13	1.920492
574	HS-20	50	47.5	6.75	21.02	1.93863
575	HS-20	50	47.5	6.73	20.99	1.942354
575	HS-20	50	47.5	6.55	20.84	1.964971
576	HS-20	50	47.5	6.53	20.81	1.968765
576	HS-20	50	47.5	6.33	20.62	1.996605
577	HS-20	50	47.5	6.3	20.58	2.001944
577	HS-20	50	47.5	6.08	20.35	2.035381
578	HS-20	50	47.5	6.05	20.32	2.039862
578	HS-20	50	47.5	5.81	20.04	2.080339
579	HS-20	50	47.5	5.78	20.01	2.084958
579	HS-20	50	47.5	5.52	19.7	2.130964
580	HS-20	50	47.5	5.49	19.66	2.136826
580	HS-20	50	47.5	5.21	19.32	2.188923
581	HS-20	50	47.5	5.18	19.28	2.195021
581	HS-20	50	47.5	4.88	18.9	2.255026
582	HS-20	50	47.5	4.84	18.85	2.26313
582	HS-20	50	47.5	4.52	18.44	2.330803
583	HS-20	50	47.5	4.48	18.39	2.339315
583	HS-20	50	47.5	4.14	17.94	2.416945
584	HS-20	50	47.5	4.1	17.89	2.425936
584	HS-20	50	47.5	3.74	17.4	2.514943
585	HS-20	50	47.5	3.7	17.35	2.524496
585	HS-20	50	47.5	3.32	16.83	2.625074
586	HS-20	50	47.5	3.28	16.77	2.636852
586	HS-20	50	47.5	2.87	16.2	2.754938
587	HS-20	50	47.5	2.83	16.17	2.762523
587	HS-20	50	47.5	2.72	15.91	2.814582
588	HS-20	50	47.5	2.72	15.91	2.814582

588	HS-20	50	47.5	2.41	15.55	2.899678
589	HS-20	50	47.5	2.36	15.5	2.912258
589	HS-20	50	47.5	1.91	14.86	3.067968
590	HS-20	50	47.5	1.86	14.78	3.087957
590	HS-20	50	47.5	1.4	14.13	3.262562
591	HS-20	50	47.5	1.34	14.04	3.287749
591	HS-20	50	47.5	0.86	13.36	3.491018
592	HS-20	50	47.5	0.8	13.26	3.52187
592	HS-20	50	47.5	0.3	12.56	3.757962
593	HS-20	50	47.5	0.24	12.46	3.792937
593	HS-20	50	47.5	-0.33	11.73	4.021313
594	HS-20	50	47.5	-0.37	11.63	4.052451
594	HS-20	50	47.5	-0.94	10.87	4.283349
595	HS-20	50	47.5	-0.98	10.77	4.319406
595	HS-20	50	47.5	-1.57	9.98	4.602204
596	HS-20	50	47.5	-1.62	9.88	4.643725
596	HS-20	50	47.5	-2.22	-9.33	4.853162
597	HS-20	50	47.5	-2.28	-9.35	4.836364
597	HS-20	50	47.5	-2.9	-9.52	4.684874
598	HS-20	50	47.5	-2.96	-9.54	4.668763
598	HS-20	50	47.5	-3.61	-9.72	4.515432
599	HS-20	50	47.5	-3.66	-9.74	4.501027
599	HS-20	50	47.5	-4.33	-9.92	4.351815
600	HS-20	50	47.5	-4.39	-9.94	4.337022
600	HS-20	50	47.5	-5.09	-10.12	4.190711
601	HS-20	50	47.5	-5.15	-10.14	4.176529
601	HS-20	50	47.5	-5.86	-10.32	4.034884
602	HS-20	50	47.5	-5.93	-10.35	4.016425
602	HS-20	50	47.5	-6.66	-10.53	3.878443
603	HS-20	50	47.5	-6.74	-10.56	3.859848
603	HS-20	50	47.5	-7.49	-10.74	3.725326
604	HS-20	50	47.5	-7.57	-10.78	3.704082
604	HS-20	50	47.5	-8.34	-10.96	3.572993
605	HS-20	50	47.5	-8.43	-10.99	3.55505
605	HS-20	50	47.5	-9.22	-11.17	3.427037
606	HS-20	50	47.5	-9.33	-11.21	3.404996
606	HS-20	50	47.5	-10.13	-11.39	3.280948
607	HS-20	50	47.5	-10.25	-11.44	3.256119
607	HS-20	50	47.5	-11.07	-11.63	3.132416
608	HS-20	50	47.5	-11.2	-11.69	3.105218
608	HS-20	50	47.5	-12.06	-11.91	2.975651
609	HS-20	50	47.5	-12.18	-11.94	2.958124
609	HS-20	50	47.5	-13.08	-12.87	2.674437
610	HS-20	50	47.5	-13.17	-12.81	2.679938
610	HS-20	50	47.5	-14.14	-13.94	2.393113
611	HS-20	50	47.5	-14.16	-13.97	2.386543
611	HS-20	50	47.5	-13.19	-12.87	2.66589
612	HS-20	50	47.5	-13.1	-12.92	2.662539
612	HS-20	50	47.5	-12.2	-11.95	2.953975
613	HS-20	50	47.5	-12.08	-11.96	2.961538
613	HS-20	50	47.5	-11.22	-11.7	3.100855
614	HS-20	50	47.5	-11.09	-11.65	3.125322
614	HS-20	50	47.5	-10.27	-11.46	3.248691
615	HS-20	50	47.5	-10.14	-11.42	3.271454
615	HS-20	50	47.5	-9.34	-11.24	3.395018

616	HS-20	50	47.5	-9.24	-11.19	3.419124
616	HS-20	50	47.5	-8.45	-11.01	3.546776
617	HS-20	50	47.5	-8.36	-10.98	3.564663
617	HS-20	50	47.5	-7.58	-10.8	3.696296
618	HS-20	50	47.5	-7.5	-10.76	3.717472
618	HS-20	50	47.5	-6.75	-10.58	3.851607
619	HS-20	50	47.5	-6.68	-10.55	3.869194
619	HS-20	50	47.5	-5.94	-10.37	4.007715
620	HS-20	50	47.5	-5.87	-10.34	4.026112
620	HS-20	50	47.5	-5.16	-10.16	4.167323
621	HS-20	50	47.5	-5.1	-10.14	4.18146
621	HS-20	50	47.5	-4.41	-9.96	4.326305
622	HS-20	50	47.5	-4.34	-9.93	4.346425
622	HS-20	50	47.5	-3.68	-9.76	4.489754
623	HS-20	50	47.5	-3.62	-9.74	4.505133
623	HS-20	50	47.5	-2.97	-9.56	4.65795
624	HS-20	50	47.5	-2.91	-9.54	4.674004
624	HS-20	50	47.5	-2.29	-9.36	4.830128
625	HS-20	50	47.5	-2.23	-9.35	4.841711
625	HS-20	50	47.5	-1.63	9.9	4.633333
626	HS-20	50	47.5	-1.58	10	4.592
626	HS-20	50	47.5	-0.99	10.79	4.310473
627	HS-20	50	47.5	-0.94	10.89	4.275482
627	HS-20	50	47.5	-0.38	11.65	4.044635
628	HS-20	50	47.5	-0.33	11.75	4.014468
628	HS-20	50	47.5	0.23	12.48	3.78766
629	HS-20	50	47.5	0.29	12.58	3.752782
629	HS-20	50	47.5	0.79	13.28	3.517319
630	HS-20	50	47.5	0.85	13.38	3.486547
630	HS-20	50	47.5	1.34	14.06	3.283073
631	HS-20	50	47.5	1.39	14.15	3.258657
631	HS-20	50	47.5	1.85	14.81	3.082377
632	HS-20	50	47.5	1.91	14.88	3.063844
632	HS-20	50	47.5	2.35	15.52	2.909149
633	HS-20	50	47.5	2.4	15.57	2.896596
633	HS-20	50	47.5	2.71	15.94	2.809912
634	HS-20	50	47.5	2.71	15.93	2.811676
634	HS-20	50	47.5	2.82	16.19	2.759728
635	HS-20	50	47.5	2.87	16.22	2.751541
635	HS-20	50	47.5	3.27	16.8	2.632738
636	HS-20	50	47.5	3.31	16.85	2.622552
636	HS-20	50	47.5	3.7	17.37	2.521589
637	HS-20	50	47.5	3.74	17.43	2.510614
637	HS-20	50	47.5	4.1	17.91	2.423227
638	HS-20	50	47.5	4.14	17.96	2.414254
638	HS-20	50	47.5	4.48	18.41	2.336773
639	HS-20	50	47.5	4.52	18.47	2.327017
639	HS-20	50	47.5	4.84	18.88	2.259534
640	HS-20	50	47.5	4.87	18.92	2.253171
640	HS-20	50	47.5	5.17	19.31	2.192128
641	HS-20	50	47.5	5.21	19.35	2.18553
641	HS-20	50	47.5	5.49	19.69	2.13357
642	HS-20	50	47.5	5.52	19.73	2.127724
642	HS-20	50	47.5	5.78	20.04	2.081836
643	HS-20	50	47.5	5.81	20.08	2.076195

643	HS-20	50	47.5	6.05	20.35	2.036855
644	HS-20	50	47.5	6.08	20.38	2.032385
644	HS-20	50	47.5	6.3	20.62	1.99806
645	HS-20	50	47.5	6.32	20.65	1.994189
645	HS-20	50	47.5	6.53	20.84	1.965931
646	HS-20	50	47.5	6.55	20.88	1.961207
646	HS-20	50	47.5	6.73	21.03	1.938659
647	HS-20	50	47.5	6.75	21.06	1.934948
647	HS-20	50	47.5	6.91	21.17	1.917336
648	HS-20	50	47.5	6.93	21.2	1.913679
648	HS-20	50	47.5	7.08	21.28	1.899436
649	HS-20	50	47.5	7.09	21.29	1.898074
649	HS-20	50	47.5	7.22	21.34	1.887535
650	HS-20	50	47.5	7.23	21.35	1.886183
650	HS-20	50	47.5	7.28	21.33	1.885607
651	HS-20	50	47.5	7.28	21.33	1.885607
651	HS-20	50	47.5	7.33	21.44	1.873601
652	HS-20	50	47.5	7.34	21.46	1.871389
652	HS-20	50	47.5	7.43	21.48	1.865456
653	HS-20	50	47.5	7.43	21.5	1.863721
653	HS-20	50	47.5	7.5	21.5	1.860465
654	HS-20	50	47.5	7.5	21.5	1.860465
654	HS-20	50	47.5	7.55	21.47	1.860736
655	HS-20	50	47.5	7.55	21.46	1.861603
655	HS-20	50	47.5	7.57	21.39	1.86676
656	HS-20	50	47.5	7.58	21.38	1.867166
656	HS-20	50	47.5	7.58	21.27	1.876822
657	HS-20	50	47.5	7.58	21.25	1.878588
657	HS-20	50	47.5	7.57	21.1	1.892417
658	HS-20	50	47.5	7.57	21.08	1.894213
658	HS-20	50	47.5	7.53	20.9	1.91244
659	HS-20	50	47.5	7.53	20.87	1.915189
659	HS-20	50	47.5	7.47	20.64	1.939438
660	HS-20	50	47.5	7.47	20.6	1.943204
660	HS-20	50	47.5	7.39	20.33	1.972946
661	HS-20	50	47.5	7.39	20.29	1.976836
661	HS-20	50	47.5	7.29	19.97	2.01352
662	HS-20	50	47.5	7.29	19.93	2.017561
662	HS-20	50	47.5	7.17	19.57	2.060807
663	HS-20	50	47.5	7.16	19.52	2.066598
663	HS-20	50	47.5	7.03	19.16	2.112213
664	HS-20	50	47.5	7.02	19.11	2.118263
664	HS-20	50	47.5	6.86	18.72	2.17094
665	HS-20	50	47.5	6.85	18.67	2.17729
665	HS-20	50	47.5	6.67	18.24	2.238487
666	HS-20	50	47.5	6.66	18.18	2.246425
666	HS-20	50	47.5	6.46	17.68	2.321267
667	HS-20	50	47.5	6.45	17.65	2.325779
667	HS-20	50	47.5	6.39	17.4	2.362644
668	HS-20	50	47.5	6.39	17.4	2.362644
668	HS-20	50	47.5	6.23	17.09	2.414862
669	HS-20	50	47.5	6.21	17.04	2.423122
669	HS-20	50	47.5	5.97	16.43	2.527693
670	HS-20	50	47.5	5.95	16.36	2.539731
670	HS-20	50	47.5	5.69	15.71	2.661362

671	HS-20	50	47.5	5.67	15.63	2.676264
671	HS-20	50	47.5	5.39	14.94	2.818608
672	HS-20	50	47.5	5.37	14.84	2.838949
672	HS-20	50	47.5	5.07	14.1	3.00922
673	HS-20	50	47.5	5.04	14	3.032857
673	HS-20	50	47.5	4.72	13.2	3.240909
674	HS-20	50	47.5	4.69	13.09	3.270435
674	HS-20	50	47.5	4.36	12.23	3.527392
675	HS-20	50	47.5	4.32	12.12	3.562706
675	HS-20	50	47.5	3.97	11.2	3.886607
676	HS-20	50	47.5	3.93	11.08	3.93231
676	HS-20	50	47.5	3.56	10.1	4.350495
677	HS-20	50	47.5	3.52	9.97	4.411234
677	HS-20	50	47.5	3.12	8.92	4.975336
678	HS-20	50	47.5	3.08	8.79	5.05347
678	HS-20	50	47.5	2.66	7.67	5.846154
679	HS-20	50	47.5	2.62	7.53	5.960159
679	HS-20	50	47.5	2.18	6.34	7.148265
680	HS-20	50	47.5	2.14	6.2	7.316129
680	HS-20	50	47.5	1.67	4.92	9.315041
681	HS-20	50	47.5	1.64	4.78	9.594142
681	HS-20	50	47.5	1.15	3.4	13.63235
682	HS-20	50	47.5	1.11	3.28	14.14329
682	HS-20	50	47.5	0.59	1.8	26.06111
683	HS-20	50	47.5	0.57	1.69	27.76923
683	HS-20	50	47.5	0.04	0.43	110.3721

LOAD RATING FIXED SPAN -GIRDER 2

RF= RATING FACTOR

RF = (.95 F_Y - f_{DL+SDL}) / (f_{LL+I}) MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
392	HS-20	50	47.5	0.05	-0.08	593.125
392	HS-20	50	47.5	0.67	1.83	25.59016
393	HS-20	50	47.5	0.63	1.8	26.03889
393	HS-20	50	47.5	1.24	3.44	13.44767
394	HS-20	50	47.5	1.2	3.4	13.61765
394	HS-20	50	47.5	1.74	4.91	9.319756
395	HS-20	50	47.5	1.71	4.87	9.402464
395	HS-20	50	47.5	2.21	6.26	7.234824
396	HS-20	50	47.5	2.19	6.23	7.272873
396	HS-20	50	47.5	2.65	7.53	5.956175
397	HS-20	50	47.5	2.64	7.5	5.981333
397	HS-20	50	47.5	3.08	8.73	5.088202
398	HS-20	50	47.5	3.07	8.71	5.101033
398	HS-20	50	47.5	3.48	9.86	4.464503
399	HS-20	50	47.5	3.47	9.85	4.470051
399	HS-20	50	47.5	3.87	10.92	3.995421
400	HS-20	50	47.5	3.86	10.91	4
400	HS-20	50	47.5	4.24	11.92	3.629195
401	HS-20	50	47.5	4.23	11.91	3.633081
401	HS-20	50	47.5	4.59	12.85	3.3393
402	HS-20	50	47.5	4.58	12.85	3.340078
402	HS-20	50	47.5	4.92	13.72	3.103499
403	HS-20	50	47.5	4.91	13.72	3.104227
403	HS-20	50	47.5	5.23	14.53	2.909153
404	HS-20	50	47.5	5.22	14.53	2.909842
404	HS-20	50	47.5	5.52	15.28	2.747382
405	HS-20	50	47.5	5.51	15.28	2.748037
405	HS-20	50	47.5	5.78	15.97	2.612398
406	HS-20	50	47.5	5.78	15.97	2.612398
406	HS-20	50	47.5	6.03	16.59	2.499699
407	HS-20	50	47.5	6.03	16.59	2.499699
407	HS-20	50	47.5	6.2	16.85	2.451039
408	HS-20	50	47.5	6.2	16.85	2.451039
408	HS-20	50	47.5	6.26	17.17	2.401864
409	HS-20	50	47.5	6.25	17.16	2.403846
409	HS-20	50	47.5	6.46	17.73	2.314721
410	HS-20	50	47.5	6.46	17.73	2.314721
410	HS-20	50	47.5	6.64	18.22	2.242591
411	HS-20	50	47.5	6.64	18.22	2.242591
411	HS-20	50	47.5	6.8	18.65	2.182306
412	HS-20	50	47.5	6.8	18.65	2.182306
412	HS-20	50	47.5	6.94	19.03	2.131372
413	HS-20	50	47.5	6.94	19.02	2.132492
413	HS-20	50	47.5	7.06	19.36	2.088843
414	HS-20	50	47.5	7.06	19.36	2.088843
414	HS-20	50	47.5	7.16	19.7	2.047716

Minimum Rating Factor 1.930389

415	HS-20	50	47.5	7.15	19.7	2.048223
415	HS-20	50	47.5	7.23	20.02	2.011489
416	HS-20	50	47.5	7.23	20.02	2.011489
416	HS-20	50	47.5	7.29	20.28	1.982742
417	HS-20	50	47.5	7.29	20.28	1.982742
417	HS-20	50	47.5	7.32	20.49	1.960957
418	HS-20	50	47.5	7.32	20.49	1.960957
418	HS-20	50	47.5	7.33	20.65	1.945278
419	HS-20	50	47.5	7.33	20.65	1.945278
419	HS-20	50	47.5	7.32	20.75	1.936386
420	HS-20	50	47.5	7.33	20.75	1.935904
420	HS-20	50	47.5	7.29	20.8	1.933173
421	HS-20	50	47.5	7.3	20.8	1.932692
421	HS-20	50	47.5	7.24	20.8	1.935577
422	HS-20	50	47.5	7.25	20.8	1.935096
422	HS-20	50	47.5	7.17	20.75	1.943614
423	HS-20	50	47.5	7.17	20.75	1.943614
423	HS-20	50	47.5	7.08	20.64	1.958333
424	HS-20	50	47.5	7.08	20.64	1.958333
424	HS-20	50	47.5	7.03	20.39	1.984796
425	HS-20	50	47.5	7.02	20.39	1.985287
425	HS-20	50	47.5	6.96	20.52	1.975634
426	HS-20	50	47.5	6.97	20.51	1.976109
426	HS-20	50	47.5	6.83	20.45	1.988753
427	HS-20	50	47.5	6.83	20.46	1.987781
427	HS-20	50	47.5	6.67	20.43	1.998532
428	HS-20	50	47.5	6.67	20.43	1.998532
428	HS-20	50	47.5	6.49	20.35	2.015233
429	HS-20	50	47.5	6.49	20.35	2.015233
429	HS-20	50	47.5	6.29	20.21	2.03909
430	HS-20	50	47.5	6.29	20.22	2.038081
430	HS-20	50	47.5	6.06	20.03	2.068897
431	HS-20	50	47.5	6.07	20.04	2.067365
431	HS-20	50	47.5	5.82	19.8	2.105051
432	HS-20	50	47.5	5.82	19.81	2.103988
432	HS-20	50	47.5	5.55	19.52	2.149078
433	HS-20	50	47.5	5.56	19.53	2.147465
433	HS-20	50	47.5	5.27	19.2	2.199479
434	HS-20	50	47.5	5.27	19.21	2.198334
434	HS-20	50	47.5	4.96	18.83	2.259161
435	HS-20	50	47.5	4.97	18.84	2.257431
435	HS-20	50	47.5	4.63	18.42	2.327362
436	HS-20	50	47.5	4.64	18.42	2.326819
436	HS-20	50	47.5	4.28	17.96	2.406459
437	HS-20	50	47.5	4.29	17.97	2.404563
437	HS-20	50	47.5	3.91	17.46	2.496564
438	HS-20	50	47.5	3.92	17.47	2.494562
438	HS-20	50	47.5	3.52	16.92	2.599291
439	HS-20	50	47.5	3.52	16.93	2.597755
439	HS-20	50	47.5	3.11	16.33	2.71831
440	HS-20	50	47.5	3.11	16.34	2.716646
440	HS-20	50	47.5	2.67	15.69	2.857234
441	HS-20	50	47.5	2.67	15.7	2.855414
441	HS-20	50	47.5	2.56	15.37	2.923878
442	HS-20	50	47.5	2.56	15.37	2.923878

442	HS-20	50	47.5	2.21	15.09	3.001325
443	HS-20	50	47.5	2.22	15.09	3.000663
443	HS-20	50	47.5	1.73	14.46	3.165284
444	HS-20	50	47.5	1.74	14.46	3.164592
444	HS-20	50	47.5	1.23	13.8	3.352899
445	HS-20	50	47.5	1.23	13.8	3.352899
445	HS-20	50	47.5	0.71	13.1	3.571756
446	HS-20	50	47.5	0.71	13.11	3.569031
446	HS-20	50	47.5	0.17	12.38	3.823102
447	HS-20	50	47.5	0.17	12.38	3.823102
447	HS-20	50	47.5	-0.4	11.61	4.056848
448	HS-20	50	47.5	-0.41	11.62	4.052496
448	HS-20	50	47.5	-0.99	10.81	4.302498
449	HS-20	50	47.5	-0.99	10.82	4.298521
449	HS-20	50	47.5	-1.6	9.99	4.594595
450	HS-20	50	47.5	-1.6	10	4.59
450	HS-20	50	47.5	-2.23	9.13	4.958379
451	HS-20	50	47.5	-2.23	9.14	4.952954
451	HS-20	50	47.5	-2.88	-9.29	4.803014
452	HS-20	50	47.5	-2.88	-9.28	4.80819
452	HS-20	50	47.5	-3.55	-9.46	4.645877
453	HS-20	50	47.5	-3.55	-9.46	4.645877
453	HS-20	50	47.5	-4.24	-9.63	4.492212
454	HS-20	50	47.5	-4.24	-9.63	4.492212
454	HS-20	50	47.5	-4.95	-9.81	4.337411
455	HS-20	50	47.5	-4.95	-9.81	4.337411
455	HS-20	50	47.5	-5.69	-9.99	4.185185
456	HS-20	50	47.5	-5.69	-9.99	4.185185
456	HS-20	50	47.5	-6.45	-10.17	4.036382
457	HS-20	50	47.5	-6.45	-10.17	4.036382
457	HS-20	50	47.5	-7.22	-10.35	3.891787
458	HS-20	50	47.5	-7.22	-10.35	3.891787
458	HS-20	50	47.5	-8.03	-10.53	3.748338
459	HS-20	50	47.5	-8.03	-10.54	3.744782
459	HS-20	50	47.5	-8.85	-10.72	3.60541
460	HS-20	50	47.5	-8.85	-10.73	3.60205
460	HS-20	50	47.5	-9.69	-10.91	3.465628
461	HS-20	50	47.5	-9.7	-10.92	3.461538
461	HS-20	50	47.5	-10.56	-11.1	3.327928
462	HS-20	50	47.5	-10.56	-11.11	3.324932
462	HS-20	50	47.5	-11.44	-11.29	3.193977
463	HS-20	50	47.5	-11.44	-11.3	3.19115
463	HS-20	50	47.5	-12.33	-11.48	3.063589
464	HS-20	50	47.5	-12.33	-11.48	3.063589
464	HS-20	50	47.5	-13.23	-11.83	2.896872
465	HS-20	50	47.5	-13.24	-11.85	2.891139
465	HS-20	50	47.5	-12.34	-11.53	3.049436
466	HS-20	50	47.5	-12.34	-11.53	3.049436
466	HS-20	50	47.5	-11.45	-11.34	3.179012
467	HS-20	50	47.5	-11.44	-11.34	3.179894
467	HS-20	50	47.5	-10.56	-11.15	3.313004
468	HS-20	50	47.5	-10.56	-11.15	3.313004
468	HS-20	50	47.5	-9.7	-10.96	3.448905
469	HS-20	50	47.5	-9.7	-10.96	3.448905
469	HS-20	50	47.5	-8.86	-10.77	3.587744

470	HS-20	50	47.5	-8.85	-10.77	3.588672
470	HS-20	50	47.5	-8.03	-10.58	3.730624
471	HS-20	50	47.5	-8.03	-10.58	3.730624
471	HS-20	50	47.5	-7.23	-10.39	3.875842
472	HS-20	50	47.5	-7.23	-10.39	3.875842
472	HS-20	50	47.5	-6.45	-10.21	4.020568
473	HS-20	50	47.5	-6.45	-10.21	4.020568
473	HS-20	50	47.5	-5.69	-10.03	4.168495
474	HS-20	50	47.5	-5.69	-10.03	4.168495
474	HS-20	50	47.5	-4.96	-9.85	4.318782
475	HS-20	50	47.5	-4.96	-9.85	4.318782
475	HS-20	50	47.5	-4.24	-9.67	4.47363
476	HS-20	50	47.5	-4.24	-9.67	4.47363
476	HS-20	50	47.5	-3.55	-9.49	4.631191
477	HS-20	50	47.5	-3.55	-9.5	4.626316
477	HS-20	50	47.5	-2.88	-9.32	4.787554
478	HS-20	50	47.5	-2.88	-9.32	4.787554
478	HS-20	50	47.5	-2.23	9.17	4.93675
479	HS-20	50	47.5	-2.23	9.16	4.94214
479	HS-20	50	47.5	-1.6	10.02	4.580838
480	HS-20	50	47.5	-1.6	10.01	4.585415
480	HS-20	50	47.5	-0.99	10.85	4.286636
481	HS-20	50	47.5	-0.99	10.84	4.29059
481	HS-20	50	47.5	-0.41	11.65	4.04206
482	HS-20	50	47.5	-0.41	11.64	4.045533
482	HS-20	50	47.5	0.17	12.41	3.81386
483	HS-20	50	47.5	0.17	12.41	3.81386
483	HS-20	50	47.5	0.71	13.14	3.560883
484	HS-20	50	47.5	0.71	13.14	3.560883
484	HS-20	50	47.5	1.23	13.84	3.343208
485	HS-20	50	47.5	1.23	13.83	3.345625
485	HS-20	50	47.5	1.73	14.49	3.15873
486	HS-20	50	47.5	1.73	14.49	3.15873
486	HS-20	50	47.5	2.21	15.12	2.99537
487	HS-20	50	47.5	2.21	15.12	2.99537
487	HS-20	50	47.5	2.56	15.4	2.918182
488	HS-20	50	47.5	2.56	15.4	2.918182
488	HS-20	50	47.5	2.67	15.73	2.849968
489	HS-20	50	47.5	2.67	15.72	2.851781
489	HS-20	50	47.5	3.11	16.37	2.711668
490	HS-20	50	47.5	3.1	16.36	2.713936
490	HS-20	50	47.5	3.52	16.96	2.59316
491	HS-20	50	47.5	3.52	16.95	2.59469
491	HS-20	50	47.5	3.91	17.5	2.490857
492	HS-20	50	47.5	3.91	17.49	2.492281
492	HS-20	50	47.5	4.28	18	2.401111
493	HS-20	50	47.5	4.28	17.99	2.402446
493	HS-20	50	47.5	4.63	18.46	2.322319
494	HS-20	50	47.5	4.63	18.45	2.323577
494	HS-20	50	47.5	4.96	18.87	2.254372
495	HS-20	50	47.5	4.96	18.86	2.255567
495	HS-20	50	47.5	5.27	19.24	2.194906
496	HS-20	50	47.5	5.27	19.23	2.196048
496	HS-20	50	47.5	5.56	19.56	2.144172
497	HS-20	50	47.5	5.55	19.56	2.144683

497	HS-20	50	47.5	5.82	19.84	2.100806
498	HS-20	50	47.5	5.82	19.83	2.101866
498	HS-20	50	47.5	6.06	20.07	2.064773
499	HS-20	50	47.5	6.06	20.07	2.064773
499	HS-20	50	47.5	6.29	20.25	2.035062
500	HS-20	50	47.5	6.28	20.25	2.035556
500	HS-20	50	47.5	6.49	20.39	2.01128
501	HS-20	50	47.5	6.48	20.38	2.012758
501	HS-20	50	47.5	6.67	20.47	1.994626
502	HS-20	50	47.5	6.66	20.46	1.99609
502	HS-20	50	47.5	6.82	20.49	1.985359
503	HS-20	50	47.5	6.82	20.49	1.985359
503	HS-20	50	47.5	6.96	20.54	1.97371
504	HS-20	50	47.5	6.96	20.54	1.97371
504	HS-20	50	47.5	7.02	20.41	1.983341
505	HS-20	50	47.5	7.02	20.41	1.983341
505	HS-20	50	47.5	7.08	20.67	1.955491
506	HS-20	50	47.5	7.07	20.67	1.955975
506	HS-20	50	47.5	7.17	20.78	1.940808
507	HS-20	50	47.5	7.17	20.78	1.940808
507	HS-20	50	47.5	7.24	20.83	1.932789
508	HS-20	50	47.5	7.24	20.83	1.932789
508	HS-20	50	47.5	7.29	20.83	1.930389
509	HS-20	50	47.5	7.29	20.83	1.930389
509	HS-20	50	47.5	7.32	20.78	1.93359
510	HS-20	50	47.5	7.32	20.78	1.93359
510	HS-20	50	47.5	7.33	20.67	1.943396
511	HS-20	50	47.5	7.33	20.67	1.943396
511	HS-20	50	47.5	7.31	20.52	1.958577
512	HS-20	50	47.5	7.31	20.52	1.958577
512	HS-20	50	47.5	7.28	20.31	1.980305
513	HS-20	50	47.5	7.28	20.31	1.980305
513	HS-20	50	47.5	7.22	20.04	2.00998
514	HS-20	50	47.5	7.22	20.04	2.00998
514	HS-20	50	47.5	7.14	19.72	2.046653
515	HS-20	50	47.5	7.14	19.73	2.045616
515	HS-20	50	47.5	7.04	19.38	2.087719
516	HS-20	50	47.5	7.04	19.38	2.087719
516	HS-20	50	47.5	6.92	19.05	2.130184
517	HS-20	50	47.5	6.92	19.05	2.130184
517	HS-20	50	47.5	6.78	18.67	2.181039
518	HS-20	50	47.5	6.78	18.68	2.179872
518	HS-20	50	47.5	6.62	18.24	2.241228
519	HS-20	50	47.5	6.62	18.24	2.241228
519	HS-20	50	47.5	6.43	17.75	2.313803
520	HS-20	50	47.5	6.43	17.75	2.313803
520	HS-20	50	47.5	6.23	17.19	2.400814
521	HS-20	50	47.5	6.23	17.19	2.400814
521	HS-20	50	47.5	6.17	16.87	2.449911
522	HS-20	50	47.5	6.17	16.87	2.449911
522	HS-20	50	47.5	6	16.61	2.498495
523	HS-20	50	47.5	6	16.61	2.498495
523	HS-20	50	47.5	5.75	15.99	2.611007
524	HS-20	50	47.5	5.75	15.99	2.611007
524	HS-20	50	47.5	5.48	15.3	2.746405

525	HS-20	50	47.5	5.48	15.3	2.746405
525	HS-20	50	47.5	5.18	14.55	2.908591
526	HS-20	50	47.5	5.19	14.56	2.905907
526	HS-20	50	47.5	4.87	13.74	3.10262
527	HS-20	50	47.5	4.87	13.75	3.100364
527	HS-20	50	47.5	4.53	12.87	3.338772
528	HS-20	50	47.5	4.54	12.88	3.335404
528	HS-20	50	47.5	4.18	11.94	3.628141
529	HS-20	50	47.5	4.18	11.94	3.628141
529	HS-20	50	47.5	3.8	10.94	3.994516
530	HS-20	50	47.5	3.8	10.95	3.990868
530	HS-20	50	47.5	3.4	9.87	4.468085
531	HS-20	50	47.5	3.4	9.89	4.45905
531	HS-20	50	47.5	2.98	8.74	5.093822
532	HS-20	50	47.5	2.98	8.76	5.082192
532	HS-20	50	47.5	2.53	7.54	5.964191
533	HS-20	50	47.5	2.54	7.56	5.94709
533	HS-20	50	47.5	2.07	6.26	7.257188
534	HS-20	50	47.5	2.07	6.29	7.222576
534	HS-20	50	47.5	1.58	4.9	9.371429
535	HS-20	50	47.5	1.58	4.94	9.295547
535	HS-20	50	47.5	1.08	3.43	13.53353
536	HS-20	50	47.5	1.07	3.47	13.3804
536	HS-20	50	47.5	0.55	1.82	25.7967
537	HS-20	50	47.5	0.55	1.85	25.37838
537	HS-20	50	47.5	0.01	-0.08	593.625

LOAD RATING FIXED SPAN -GIRDER 3

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
246	HS-20	50	47.5	0.05	-0.08	593.125
246	HS-20	50	47.5	0.67	1.83	25.59016
247	HS-20	50	47.5	0.62	1.8	26.04444
247	HS-20	50	47.5	1.22	3.44	13.45349
248	HS-20	50	47.5	1.18	3.4	13.62353
248	HS-20	50	47.5	1.71	4.91	9.325866
249	HS-20	50	47.5	1.68	4.87	9.408624
249	HS-20	50	47.5	2.16	6.26	7.242812
250	HS-20	50	47.5	2.14	6.23	7.280899
250	HS-20	50	47.5	2.59	7.53	5.964143
251	HS-20	50	47.5	2.57	7.5	5.990667
251	HS-20	50	47.5	3	8.72	5.103211
252	HS-20	50	47.5	2.99	8.71	5.110218
252	HS-20	50	47.5	3.4	9.86	4.472617
253	HS-20	50	47.5	3.39	9.85	4.478173
253	HS-20	50	47.5	3.77	10.92	4.004579
254	HS-20	50	47.5	3.77	10.91	4.008249
254	HS-20	50	47.5	4.14	11.92	3.637584
255	HS-20	50	47.5	4.14	11.91	3.640638
255	HS-20	50	47.5	4.48	12.85	3.34786
256	HS-20	50	47.5	4.48	12.85	3.34786
256	HS-20	50	47.5	4.8	13.72	3.112245
257	HS-20	50	47.5	4.81	13.72	3.111516
257	HS-20	50	47.5	5.11	14.53	2.917412
258	HS-20	50	47.5	5.11	14.53	2.917412
258	HS-20	50	47.5	5.39	15.28	2.75589
259	HS-20	50	47.5	5.39	15.28	2.75589
259	HS-20	50	47.5	5.65	15.97	2.620539
260	HS-20	50	47.5	5.66	15.97	2.619912
260	HS-20	50	47.5	5.9	16.59	2.507535
261	HS-20	50	47.5	5.9	16.59	2.507535
261	HS-20	50	47.5	6.07	16.85	2.458754
262	HS-20	50	47.5	6.07	16.85	2.458754
262	HS-20	50	47.5	6.12	17.17	2.410017
263	HS-20	50	47.5	6.12	17.16	2.411422
263	HS-20	50	47.5	6.32	17.73	2.322617
264	HS-20	50	47.5	6.32	17.73	2.322617
264	HS-20	50	47.5	6.49	18.22	2.250823
265	HS-20	50	47.5	6.5	18.22	2.250274
265	HS-20	50	47.5	6.65	18.65	2.190349
266	HS-20	50	47.5	6.65	18.65	2.190349
266	HS-20	50	47.5	6.79	19.03	2.139254
267	HS-20	50	47.5	6.79	19.02	2.140379
267	HS-20	50	47.5	6.9	19.36	2.097107
268	HS-20	50	47.5	6.91	19.36	2.096591
268	HS-20	50	47.5	7	19.7	2.055838

Minimum Rating Factor 1.93807

269	HS-20	50	47.5	7	19.7	2.055838
269	HS-20	50	47.5	7.08	20.02	2.018981
270	HS-20	50	47.5	7.08	20.02	2.018981
270	HS-20	50	47.5	7.13	20.28	1.990631
271	HS-20	50	47.5	7.13	20.28	1.990631
271	HS-20	50	47.5	7.16	20.49	1.968765
272	HS-20	50	47.5	7.16	20.49	1.968765
272	HS-20	50	47.5	7.18	20.65	1.952542
273	HS-20	50	47.5	7.18	20.65	1.952542
273	HS-20	50	47.5	7.17	20.75	1.943614
274	HS-20	50	47.5	7.17	20.75	1.943614
274	HS-20	50	47.5	7.14	20.8	1.940385
275	HS-20	50	47.5	7.14	20.8	1.940385
275	HS-20	50	47.5	7.09	20.8	1.942788
276	HS-20	50	47.5	7.09	20.8	1.942788
276	HS-20	50	47.5	7.02	20.75	1.950843
277	HS-20	50	47.5	7.01	20.75	1.951325
277	HS-20	50	47.5	6.92	20.64	1.966085
278	HS-20	50	47.5	6.92	20.64	1.966085
278	HS-20	50	47.5	6.87	20.39	1.992643
279	HS-20	50	47.5	6.87	20.39	1.992643
279	HS-20	50	47.5	6.81	20.52	1.982943
280	HS-20	50	47.5	6.81	20.51	1.98391
280	HS-20	50	47.5	6.67	20.45	1.996577
281	HS-20	50	47.5	6.67	20.46	1.995601
281	HS-20	50	47.5	6.52	20.42	2.006856
282	HS-20	50	47.5	6.51	20.43	2.006363
282	HS-20	50	47.5	6.34	20.34	2.023599
283	HS-20	50	47.5	6.33	20.35	2.023096
283	HS-20	50	47.5	6.14	20.21	2.046512
284	HS-20	50	47.5	6.13	20.22	2.045994
284	HS-20	50	47.5	5.92	20.03	2.075886
285	HS-20	50	47.5	5.91	20.04	2.075349
285	HS-20	50	47.5	5.68	19.8	2.112121
286	HS-20	50	47.5	5.67	19.81	2.11156
286	HS-20	50	47.5	5.42	19.52	2.155738
287	HS-20	50	47.5	5.41	19.53	2.155146
287	HS-20	50	47.5	5.14	19.2	2.20625
288	HS-20	50	47.5	5.13	19.2	2.206771
288	HS-20	50	47.5	4.83	18.83	2.266065
289	HS-20	50	47.5	4.82	18.84	2.265393
289	HS-20	50	47.5	4.51	18.41	2.335144
290	HS-20	50	47.5	4.5	18.42	2.334419
290	HS-20	50	47.5	4.16	17.96	2.41314
291	HS-20	50	47.5	4.15	17.97	2.412354
291	HS-20	50	47.5	3.8	17.46	2.502864
292	HS-20	50	47.5	3.79	17.47	2.502003
292	HS-20	50	47.5	3.41	16.92	2.605792
293	HS-20	50	47.5	3.4	16.93	2.604843
293	HS-20	50	47.5	3.01	16.33	2.724434
294	HS-20	50	47.5	2.99	16.34	2.72399
294	HS-20	50	47.5	2.58	15.69	2.86297
295	HS-20	50	47.5	2.57	15.7	2.861783
295	HS-20	50	47.5	2.46	15.37	2.930384
296	HS-20	50	47.5	2.46	15.37	2.930384

296	HS-20	50	47.5	2.13	15.09	3.006627
297	HS-20	50	47.5	2.12	15.09	3.00729
297	HS-20	50	47.5	1.66	14.46	3.170124
298	HS-20	50	47.5	1.65	14.46	3.170816
298	HS-20	50	47.5	1.16	13.8	3.357971
299	HS-20	50	47.5	1.15	13.8	3.358696
299	HS-20	50	47.5	0.65	13.1	3.576336
300	HS-20	50	47.5	0.64	13.11	3.574371
300	HS-20	50	47.5	0.12	12.37	3.830234
301	HS-20	50	47.5	0.11	12.38	3.827948
301	HS-20	50	47.5	-0.45	11.61	4.052541
302	HS-20	50	47.5	-0.45	11.62	4.049053
302	HS-20	50	47.5	-1.02	10.81	4.299722
303	HS-20	50	47.5	-1.02	10.82	4.295749
303	HS-20	50	47.5	-1.61	9.99	4.593594
304	HS-20	50	47.5	-1.62	9.99	4.592593
304	HS-20	50	47.5	-2.22	9.13	4.959474
305	HS-20	50	47.5	-2.23	9.14	4.952954
305	HS-20	50	47.5	-2.85	-9.29	4.806243
306	HS-20	50	47.5	-2.86	-9.28	4.810345
306	HS-20	50	47.5	-3.51	-9.46	4.650106
307	HS-20	50	47.5	-3.52	-9.46	4.649049
307	HS-20	50	47.5	-4.18	-9.63	4.498442
308	HS-20	50	47.5	-4.19	-9.63	4.497404
308	HS-20	50	47.5	-4.87	-9.81	4.345566
309	HS-20	50	47.5	-4.89	-9.81	4.343527
309	HS-20	50	47.5	-5.58	-9.99	4.196196
310	HS-20	50	47.5	-5.6	-9.99	4.194194
310	HS-20	50	47.5	-6.32	-10.17	4.049164
311	HS-20	50	47.5	-6.33	-10.17	4.048181
311	HS-20	50	47.5	-7.07	-10.35	3.90628
312	HS-20	50	47.5	-7.08	-10.35	3.905314
312	HS-20	50	47.5	-7.84	-10.53	3.766382
313	HS-20	50	47.5	-7.85	-10.54	3.76186
313	HS-20	50	47.5	-8.63	-10.72	3.625933
314	HS-20	50	47.5	-8.64	-10.73	3.621622
314	HS-20	50	47.5	-9.44	-10.91	3.488543
315	HS-20	50	47.5	-9.45	-10.92	3.484432
315	HS-20	50	47.5	-10.27	-11.1	3.354054
316	HS-20	50	47.5	-10.28	-11.11	3.350135
316	HS-20	50	47.5	-11.11	-11.29	3.223206
317	HS-20	50	47.5	-11.12	-11.3	3.219469
317	HS-20	50	47.5	-11.96	-11.48	3.095819
318	HS-20	50	47.5	-11.97	-11.48	3.094948
318	HS-20	50	47.5	-12.83	-11.83	2.930685
319	HS-20	50	47.5	-12.83	-11.85	2.925738
319	HS-20	50	47.5	-11.96	-11.53	3.082394
320	HS-20	50	47.5	-11.96	-11.53	3.082394
320	HS-20	50	47.5	-11.11	-11.34	3.208995
321	HS-20	50	47.5	-11.1	-11.34	3.209877
321	HS-20	50	47.5	-10.27	-11.15	3.339013
322	HS-20	50	47.5	-10.26	-11.15	3.33991
322	HS-20	50	47.5	-9.45	-10.96	3.471715
323	HS-20	50	47.5	-9.44	-10.96	3.472628
323	HS-20	50	47.5	-8.64	-10.77	3.608171

324	HS-20	50	47.5	-8.63	-10.77	3.609099
324	HS-20	50	47.5	-7.85	-10.58	3.747637
325	HS-20	50	47.5	-7.84	-10.58	3.748582
325	HS-20	50	47.5	-7.08	-10.39	3.890279
326	HS-20	50	47.5	-7.06	-10.39	3.892204
326	HS-20	50	47.5	-6.33	-10.21	4.032321
327	HS-20	50	47.5	-6.31	-10.21	4.03428
327	HS-20	50	47.5	-5.59	-10.03	4.178465
328	HS-20	50	47.5	-5.58	-10.03	4.179462
328	HS-20	50	47.5	-4.88	-9.85	4.326904
329	HS-20	50	47.5	-4.87	-9.85	4.327919
329	HS-20	50	47.5	-4.19	-9.67	4.4788
330	HS-20	50	47.5	-4.17	-9.67	4.480869
330	HS-20	50	47.5	-3.51	-9.49	4.635406
331	HS-20	50	47.5	-3.5	-9.5	4.631579
331	HS-20	50	47.5	-2.86	-9.32	4.7897
332	HS-20	50	47.5	-2.85	-9.32	4.790773
332	HS-20	50	47.5	-2.23	9.17	4.93675
333	HS-20	50	47.5	-2.22	9.16	4.943231
333	HS-20	50	47.5	-1.61	10.02	4.57984
334	HS-20	50	47.5	-1.61	10.01	4.584416
334	HS-20	50	47.5	-1.02	10.85	4.283871
335	HS-20	50	47.5	-1.02	10.84	4.287823
335	HS-20	50	47.5	-0.45	11.65	4.038627
336	HS-20	50	47.5	-0.44	11.64	4.042955
336	HS-20	50	47.5	0.11	12.41	3.818695
337	HS-20	50	47.5	0.12	12.41	3.817889
337	HS-20	50	47.5	0.65	13.14	3.565449
338	HS-20	50	47.5	0.65	13.14	3.565449
338	HS-20	50	47.5	1.16	13.84	3.348266
339	HS-20	50	47.5	1.17	13.83	3.349964
339	HS-20	50	47.5	1.65	14.49	3.164251
340	HS-20	50	47.5	1.66	14.49	3.163561
340	HS-20	50	47.5	2.12	15.12	3.001323
341	HS-20	50	47.5	2.13	15.12	3.000661
341	HS-20	50	47.5	2.46	15.4	2.924675
342	HS-20	50	47.5	2.46	15.4	2.924675
342	HS-20	50	47.5	2.57	15.73	2.856325
343	HS-20	50	47.5	2.58	15.72	2.857506
343	HS-20	50	47.5	3	16.37	2.718387
344	HS-20	50	47.5	3.01	16.36	2.719438
344	HS-20	50	47.5	3.4	16.96	2.600236
345	HS-20	50	47.5	3.41	16.95	2.60118
345	HS-20	50	47.5	3.79	17.5	2.497714
346	HS-20	50	47.5	3.8	17.49	2.498571
346	HS-20	50	47.5	4.16	18	2.407778
347	HS-20	50	47.5	4.17	17.99	2.40856
347	HS-20	50	47.5	4.5	18.46	2.329361
348	HS-20	50	47.5	4.51	18.45	2.330081
348	HS-20	50	47.5	4.83	18.87	2.261261
349	HS-20	50	47.5	4.83	18.86	2.26246
349	HS-20	50	47.5	5.13	19.24	2.202183
350	HS-20	50	47.5	5.14	19.23	2.202808
350	HS-20	50	47.5	5.41	19.56	2.15184
351	HS-20	50	47.5	5.42	19.56	2.151329

351	HS-20	50	47.5	5.67	19.84	2.108367
352	HS-20	50	47.5	5.68	19.83	2.108926
352	HS-20	50	47.5	5.91	20.07	2.072247
353	HS-20	50	47.5	5.92	20.07	2.071749
353	HS-20	50	47.5	6.13	20.25	2.042963
354	HS-20	50	47.5	6.14	20.25	2.042469
354	HS-20	50	47.5	6.33	20.39	2.019127
355	HS-20	50	47.5	6.34	20.38	2.019627
355	HS-20	50	47.5	6.51	20.47	2.002443
356	HS-20	50	47.5	6.52	20.46	2.002933
356	HS-20	50	47.5	6.67	20.49	1.992679
357	HS-20	50	47.5	6.67	20.49	1.992679
357	HS-20	50	47.5	6.81	20.54	1.981013
358	HS-20	50	47.5	6.81	20.54	1.981013
358	HS-20	50	47.5	6.87	20.41	1.990691
359	HS-20	50	47.5	6.87	20.41	1.990691
359	HS-20	50	47.5	6.92	20.67	1.963232
360	HS-20	50	47.5	6.92	20.67	1.963232
360	HS-20	50	47.5	7.01	20.78	1.948508
361	HS-20	50	47.5	7.01	20.78	1.948508
361	HS-20	50	47.5	7.08	20.83	1.94047
362	HS-20	50	47.5	7.08	20.83	1.94047
362	HS-20	50	47.5	7.13	20.83	1.93807
363	HS-20	50	47.5	7.13	20.83	1.93807
363	HS-20	50	47.5	7.16	20.78	1.94129
364	HS-20	50	47.5	7.16	20.78	1.94129
364	HS-20	50	47.5	7.17	20.67	1.951137
365	HS-20	50	47.5	7.17	20.67	1.951137
365	HS-20	50	47.5	7.16	20.52	1.965887
366	HS-20	50	47.5	7.16	20.52	1.965887
366	HS-20	50	47.5	7.12	20.31	1.988183
367	HS-20	50	47.5	7.12	20.31	1.988183
367	HS-20	50	47.5	7.07	20.04	2.017465
368	HS-20	50	47.5	7.07	20.04	2.017465
368	HS-20	50	47.5	6.99	19.72	2.05426
369	HS-20	50	47.5	6.99	19.73	2.053218
369	HS-20	50	47.5	6.9	19.38	2.094943
370	HS-20	50	47.5	6.89	19.38	2.095459
370	HS-20	50	47.5	6.78	19.05	2.137533
371	HS-20	50	47.5	6.77	19.05	2.138058
371	HS-20	50	47.5	6.64	18.67	2.188538
372	HS-20	50	47.5	6.63	18.68	2.187901
372	HS-20	50	47.5	6.48	18.24	2.248904
373	HS-20	50	47.5	6.47	18.24	2.249452
373	HS-20	50	47.5	6.3	17.75	2.321127
374	HS-20	50	47.5	6.29	17.75	2.32169
374	HS-20	50	47.5	6.1	17.19	2.408377
375	HS-20	50	47.5	6.09	17.19	2.408959
375	HS-20	50	47.5	6.04	16.87	2.457617
376	HS-20	50	47.5	6.04	16.87	2.457617
376	HS-20	50	47.5	5.87	16.61	2.506321
377	HS-20	50	47.5	5.87	16.61	2.506321
377	HS-20	50	47.5	5.63	15.99	2.618512
378	HS-20	50	47.5	5.62	15.99	2.619137
378	HS-20	50	47.5	5.36	15.3	2.754248

379	HS-20	50	47.5	5.35	15.3	2.754902
379	HS-20	50	47.5	5.07	14.55	2.916151
380	HS-20	50	47.5	5.06	14.56	2.914835
380	HS-20	50	47.5	4.76	13.74	3.110626
381	HS-20	50	47.5	4.76	13.75	3.108364
381	HS-20	50	47.5	4.44	12.87	3.345765
382	HS-20	50	47.5	4.43	12.88	3.343944
382	HS-20	50	47.5	4.09	11.94	3.635678
383	HS-20	50	47.5	4.08	11.94	3.636516
383	HS-20	50	47.5	3.72	10.94	4.001828
384	HS-20	50	47.5	3.71	10.95	3.999087
384	HS-20	50	47.5	3.32	9.87	4.47619
385	HS-20	50	47.5	3.31	9.89	4.46815
385	HS-20	50	47.5	2.91	8.74	5.101831
386	HS-20	50	47.5	2.9	8.76	5.091324
386	HS-20	50	47.5	2.48	7.54	5.970822
387	HS-20	50	47.5	2.47	7.56	5.956349
387	HS-20	50	47.5	2.02	6.26	7.265176
388	HS-20	50	47.5	2.02	6.29	7.230525
388	HS-20	50	47.5	1.55	4.9	9.377551
389	HS-20	50	47.5	1.55	4.94	9.301619
389	HS-20	50	47.5	1.06	3.43	13.53936
390	HS-20	50	47.5	1.05	3.47	13.38617
390	HS-20	50	47.5	0.54	1.82	25.8022
391	HS-20	50	47.5	0.54	1.85	25.38378
391	HS-20	50	47.5	0.01	-0.08	593.625

LOAD RATING FIXED SPAN -GIRDER 4

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
100	HS-20	50	47.5	0.11	0.42	112.8333
100	HS-20	50	47.5	0.48	1.7	27.65882
101	HS-20	50	47.5	0.53	1.82	25.80769
101	HS-20	50	47.5	0.96	3.3	14.10303
102	HS-20	50	47.5	1.01	3.45	13.47536
102	HS-20	50	47.5	1.44	4.81	9.575884
103	HS-20	50	47.5	1.49	4.96	9.27621
103	HS-20	50	47.5	1.9	6.23	7.319422
104	HS-20	50	47.5	1.95	6.38	7.139498
104	HS-20	50	47.5	2.35	7.56	5.972222
105	HS-20	50	47.5	2.4	7.7	5.857143
105	HS-20	50	47.5	2.78	8.81	5.07605
106	HS-20	50	47.5	2.83	8.94	4.996644
106	HS-20	50	47.5	3.19	9.98	4.43988
107	HS-20	50	47.5	3.25	10.11	4.376855
107	HS-20	50	47.5	3.58	11.08	3.963899
108	HS-20	50	47.5	3.65	11.21	3.911686
108	HS-20	50	47.5	3.96	12.12	3.592409
109	HS-20	50	47.5	4.02	12.23	3.555192
109	HS-20	50	47.5	4.31	13.08	3.301988
110	HS-20	50	47.5	4.38	13.19	3.269143
110	HS-20	50	47.5	4.65	13.99	3.062902
111	HS-20	50	47.5	4.71	14.09	3.036906
111	HS-20	50	47.5	4.96	14.83	2.86851
112	HS-20	50	47.5	5.02	14.93	2.845278
112	HS-20	50	47.5	5.25	15.62	2.704866
113	HS-20	50	47.5	5.31	15.7	2.687261
113	HS-20	50	47.5	5.53	16.35	2.566972
114	HS-20	50	47.5	5.58	16.42	2.552984
114	HS-20	50	47.5	5.78	17.03	2.449794
115	HS-20	50	47.5	5.82	17.08	2.440281
115	HS-20	50	47.5	5.96	17.38	2.390104
116	HS-20	50	47.5	5.96	17.38	2.390104
116	HS-20	50	47.5	6	17.64	2.352608
117	HS-20	50	47.5	6.05	17.67	2.345784
117	HS-20	50	47.5	6.21	18.17	2.272427
118	HS-20	50	47.5	6.25	18.22	2.263996
118	HS-20	50	47.5	6.4	18.65	2.203753
119	HS-20	50	47.5	6.43	18.71	2.195083
119	HS-20	50	47.5	6.56	19.1	2.143455
120	HS-20	50	47.5	6.59	19.14	2.137409
120	HS-20	50	47.5	6.7	19.5	2.092308
121	HS-20	50	47.5	6.73	19.55	2.085422
121	HS-20	50	47.5	6.82	19.91	2.043194
122	HS-20	50	47.5	6.85	19.95	2.037594
122	HS-20	50	47.5	6.92	20.27	2.001973

Minimum Rating Factor 1.881395

123	HS-20	50	47.5	6.94	20.31	1.997046
123	HS-20	50	47.5	7	20.58	1.96793
124	HS-20	50	47.5	7.02	20.61	1.964095
124	HS-20	50	47.5	7.06	20.84	1.940499
125	HS-20	50	47.5	7.07	20.87	1.93723
125	HS-20	50	47.5	7.1	21.06	1.918329
126	HS-20	50	47.5	7.11	21.08	1.916034
126	HS-20	50	47.5	7.11	21.23	1.902496
127	HS-20	50	47.5	7.12	21.25	1.900235
127	HS-20	50	47.5	7.11	21.36	1.890918
128	HS-20	50	47.5	7.11	21.37	1.890033
128	HS-20	50	47.5	7.08	21.44	1.885261
129	HS-20	50	47.5	7.08	21.45	1.884382
129	HS-20	50	47.5	7.04	21.48	1.883613
130	HS-20	50	47.5	7.03	21.48	1.884078
130	HS-20	50	47.5	6.97	21.47	1.88775
131	HS-20	50	47.5	6.96	21.46	1.889096
131	HS-20	50	47.5	6.88	21.44	1.89459
132	HS-20	50	47.5	6.86	21.42	1.897292
132	HS-20	50	47.5	6.82	21.31	1.908963
133	HS-20	50	47.5	6.82	21.31	1.908963
133	HS-20	50	47.5	6.77	21.33	1.909517
134	HS-20	50	47.5	6.75	21.32	1.911351
134	HS-20	50	47.5	6.64	21.25	1.922824
135	HS-20	50	47.5	6.61	21.24	1.925141
135	HS-20	50	47.5	6.48	21.16	1.938563
136	HS-20	50	47.5	6.45	21.13	1.942735
136	HS-20	50	47.5	6.31	21.02	1.959562
137	HS-20	50	47.5	6.27	20.99	1.964269
137	HS-20	50	47.5	6.11	20.84	1.986084
138	HS-20	50	47.5	6.07	20.8	1.991827
138	HS-20	50	47.5	5.9	20.61	2.018438
139	HS-20	50	47.5	5.85	20.58	2.02381
139	HS-20	50	47.5	5.66	20.35	2.05602
140	HS-20	50	47.5	5.61	20.31	2.062531
140	HS-20	50	47.5	5.4	20.04	2.100798
141	HS-20	50	47.5	5.35	20.01	2.106447
141	HS-20	50	47.5	5.12	19.7	2.151269
142	HS-20	50	47.5	5.06	19.66	2.158698
142	HS-20	50	47.5	4.82	19.32	2.20911
143	HS-20	50	47.5	4.76	19.27	2.217955
143	HS-20	50	47.5	4.5	18.89	2.276337
144	HS-20	50	47.5	4.44	18.85	2.28435
144	HS-20	50	47.5	4.16	18.44	2.350325
145	HS-20	50	47.5	4.09	18.38	2.361806
145	HS-20	50	47.5	3.79	17.94	2.436455
146	HS-20	50	47.5	3.73	17.88	2.447987
146	HS-20	50	47.5	3.41	17.4	2.533908
147	HS-20	50	47.5	3.34	17.35	2.545245
147	HS-20	50	47.5	3.01	16.82	2.645065
148	HS-20	50	47.5	2.94	16.77	2.657126
148	HS-20	50	47.5	2.58	16.2	2.77284
149	HS-20	50	47.5	2.51	16.17	2.782313
149	HS-20	50	47.5	2.41	15.91	2.834067
150	HS-20	50	47.5	2.41	15.91	2.834067

150	HS-20	50	47.5	2.13	15.55	2.917685
151	HS-20	50	47.5	2.06	15.5	2.931613
151	HS-20	50	47.5	1.67	14.86	3.084118
152	HS-20	50	47.5	1.59	14.78	3.106225
152	HS-20	50	47.5	1.18	14.13	3.278132
153	HS-20	50	47.5	1.1	14.03	3.307199
153	HS-20	50	47.5	0.67	13.36	3.50524
154	HS-20	50	47.5	0.59	13.26	3.537707
154	HS-20	50	47.5	0.14	12.56	3.770701
155	HS-20	50	47.5	0.06	12.45	3.810442
155	HS-20	50	47.5	-0.45	11.73	4.011083
156	HS-20	50	47.5	-0.51	11.62	4.04389
156	HS-20	50	47.5	-1.02	10.87	4.275989
157	HS-20	50	47.5	-1.09	10.77	4.309192
157	HS-20	50	47.5	-1.61	9.98	4.598196
158	HS-20	50	47.5	-1.68	9.87	4.642351
158	HS-20	50	47.5	-2.22	-9.33	4.853162
159	HS-20	50	47.5	-2.29	-9.35	4.835294
159	HS-20	50	47.5	-2.84	-9.52	4.691176
160	HS-20	50	47.5	-2.93	-9.54	4.671908
160	HS-20	50	47.5	-3.49	-9.72	4.527778
161	HS-20	50	47.5	-3.58	-9.74	4.50924
161	HS-20	50	47.5	-4.16	-9.91	4.37336
162	HS-20	50	47.5	-4.25	-9.94	4.351107
162	HS-20	50	47.5	-4.85	-10.12	4.214427
163	HS-20	50	47.5	-4.94	-10.14	4.197239
163	HS-20	50	47.5	-5.55	-10.32	4.064922
164	HS-20	50	47.5	-5.65	-10.35	4.043478
164	HS-20	50	47.5	-6.27	-10.53	3.91548
165	HS-20	50	47.5	-6.38	-10.56	3.893939
165	HS-20	50	47.5	-7.02	-10.74	3.769088
166	HS-20	50	47.5	-7.13	-10.78	3.744898
166	HS-20	50	47.5	-7.78	-10.95	3.627397
167	HS-20	50	47.5	-7.9	-10.99	3.603276
167	HS-20	50	47.5	-8.57	-11.17	3.485228
168	HS-20	50	47.5	-8.7	-11.21	3.461195
168	HS-20	50	47.5	-9.39	-11.39	3.345917
169	HS-20	50	47.5	-9.51	-11.44	3.320804
169	HS-20	50	47.5	-10.23	-11.63	3.204643
170	HS-20	50	47.5	-10.35	-11.69	3.17793
170	HS-20	50	47.5	-11.08	-11.91	3.057935
171	HS-20	50	47.5	-11.2	-11.94	3.040201
171	HS-20	50	47.5	-11.96	-12.87	2.761461
172	HS-20	50	47.5	-12.04	-12.82	2.765991
172	HS-20	50	47.5	-12.85	-13.94	2.485653
173	HS-20	50	47.5	-12.83	-13.96	2.483524
173	HS-20	50	47.5	-12.02	-12.87	2.756799
174	HS-20	50	47.5	-11.94	-12.92	2.752322
174	HS-20	50	47.5	-11.18	-11.95	3.039331
175	HS-20	50	47.5	-11.07	-11.96	3.045987
175	HS-20	50	47.5	-10.33	-11.7	3.176923
176	HS-20	50	47.5	-10.21	-11.64	3.203608
176	HS-20	50	47.5	-9.5	-11.46	3.315881
177	HS-20	50	47.5	-9.37	-11.41	3.341805
177	HS-20	50	47.5	-8.68	-11.23	3.456812

178	HS-20	50	47.5	-8.56	-11.19	3.479893
178	HS-20	50	47.5	-7.89	-11.01	3.597639
179	HS-20	50	47.5	-7.76	-10.97	3.622607
179	HS-20	50	47.5	-7.12	-10.8	3.738889
180	HS-20	50	47.5	-7	-10.76	3.763941
180	HS-20	50	47.5	-6.37	-10.58	3.887524
181	HS-20	50	47.5	-6.26	-10.55	3.909005
181	HS-20	50	47.5	-5.64	-10.37	4.036644
182	HS-20	50	47.5	-5.54	-10.34	4.058027
182	HS-20	50	47.5	-4.93	-10.16	4.189961
183	HS-20	50	47.5	-4.83	-10.13	4.212241
183	HS-20	50	47.5	-4.24	-9.96	4.343373
184	HS-20	50	47.5	-4.15	-9.93	4.365559
184	HS-20	50	47.5	-3.57	-9.76	4.501025
185	HS-20	50	47.5	-3.48	-9.73	4.524152
185	HS-20	50	47.5	-2.91	-9.56	4.664226
186	HS-20	50	47.5	-2.83	-9.54	4.68239
186	HS-20	50	47.5	-2.28	-9.36	4.831197
187	HS-20	50	47.5	-2.21	-9.35	4.84385
187	HS-20	50	47.5	-1.67	9.9	4.629293
188	HS-20	50	47.5	-1.6	10	4.59
188	HS-20	50	47.5	-1.08	10.79	4.302132
189	HS-20	50	47.5	-1.01	10.89	4.269054
189	HS-20	50	47.5	-0.5	11.65	4.034335
190	HS-20	50	47.5	-0.44	11.75	4.005106
190	HS-20	50	47.5	0.07	12.48	3.800481
191	HS-20	50	47.5	0.15	12.58	3.763911
191	HS-20	50	47.5	0.6	13.28	3.531627
192	HS-20	50	47.5	0.68	13.38	3.499253
192	HS-20	50	47.5	1.11	14.06	3.299431
193	HS-20	50	47.5	1.19	14.15	3.272792
193	HS-20	50	47.5	1.6	14.81	3.099257
194	HS-20	50	47.5	1.68	14.88	3.079301
194	HS-20	50	47.5	2.07	15.52	2.927191
195	HS-20	50	47.5	2.14	15.57	2.913295
195	HS-20	50	47.5	2.42	15.94	2.828105
196	HS-20	50	47.5	2.42	15.93	2.829881
196	HS-20	50	47.5	2.52	16.19	2.778258
197	HS-20	50	47.5	2.59	16.22	2.768804
197	HS-20	50	47.5	2.95	16.8	2.651786
198	HS-20	50	47.5	3.01	16.85	2.640356
198	HS-20	50	47.5	3.35	17.37	2.541739
199	HS-20	50	47.5	3.42	17.43	2.528973
199	HS-20	50	47.5	3.73	17.91	2.443886
200	HS-20	50	47.5	3.8	17.96	2.433185
200	HS-20	50	47.5	4.1	18.41	2.357414
201	HS-20	50	47.5	4.16	18.46	2.347779
201	HS-20	50	47.5	4.44	18.88	2.28072
202	HS-20	50	47.5	4.51	18.92	2.272199
202	HS-20	50	47.5	4.77	19.31	2.212843
203	HS-20	50	47.5	4.83	19.35	2.205168
203	HS-20	50	47.5	5.07	19.69	2.154901
204	HS-20	50	47.5	5.13	19.73	2.147491
204	HS-20	50	47.5	5.35	20.04	2.103293
205	HS-20	50	47.5	5.41	20.08	2.096116

205	HS-20	50	47.5	5.62	20.35	2.057985
206	HS-20	50	47.5	5.66	20.38	2.052993
206	HS-20	50	47.5	5.86	20.62	2.019399
207	HS-20	50	47.5	5.9	20.65	2.014528
207	HS-20	50	47.5	6.08	20.84	1.987524
208	HS-20	50	47.5	6.12	20.88	1.981801
208	HS-20	50	47.5	6.28	21.03	1.960057
209	HS-20	50	47.5	6.32	21.06	1.955366
209	HS-20	50	47.5	6.46	21.17	1.938592
210	HS-20	50	47.5	6.49	21.2	1.934434
210	HS-20	50	47.5	6.62	21.28	1.921053
211	HS-20	50	47.5	6.65	21.29	1.918741
211	HS-20	50	47.5	6.76	21.34	1.909091
212	HS-20	50	47.5	6.78	21.35	1.90726
212	HS-20	50	47.5	6.83	21.33	1.906704
213	HS-20	50	47.5	6.83	21.33	1.906704
213	HS-20	50	47.5	6.87	21.44	1.895056
214	HS-20	50	47.5	6.89	21.46	1.892358
214	HS-20	50	47.5	6.97	21.48	1.886872
215	HS-20	50	47.5	6.98	21.5	1.884651
215	HS-20	50	47.5	7.04	21.5	1.88186
216	HS-20	50	47.5	7.05	21.5	1.881395
216	HS-20	50	47.5	7.09	21.47	1.882161
217	HS-20	50	47.5	7.09	21.46	1.883038
217	HS-20	50	47.5	7.12	21.39	1.887798
218	HS-20	50	47.5	7.12	21.38	1.888681
218	HS-20	50	47.5	7.13	21.27	1.897978
219	HS-20	50	47.5	7.13	21.25	1.899765
219	HS-20	50	47.5	7.12	21.1	1.913744
220	HS-20	50	47.5	7.11	21.08	1.916034
220	HS-20	50	47.5	7.09	20.9	1.933493
221	HS-20	50	47.5	7.07	20.87	1.93723
221	HS-20	50	47.5	7.03	20.64	1.960756
222	HS-20	50	47.5	7.02	20.6	1.965049
222	HS-20	50	47.5	6.96	20.33	1.994097
223	HS-20	50	47.5	6.94	20.29	1.999014
223	HS-20	50	47.5	6.86	19.97	2.035053
224	HS-20	50	47.5	6.84	19.93	2.04014
224	HS-20	50	47.5	6.75	19.57	2.082269
225	HS-20	50	47.5	6.72	19.52	2.089139
225	HS-20	50	47.5	6.61	19.16	2.134134
226	HS-20	50	47.5	6.58	19.11	2.141287
226	HS-20	50	47.5	6.46	18.72	2.192308
227	HS-20	50	47.5	6.42	18.67	2.200321
227	HS-20	50	47.5	6.28	18.24	2.259868
228	HS-20	50	47.5	6.24	18.18	2.269527
228	HS-20	50	47.5	6.08	17.68	2.34276
229	HS-20	50	47.5	6.03	17.65	2.349575
229	HS-20	50	47.5	5.99	17.4	2.385632
230	HS-20	50	47.5	5.99	17.4	2.385632
230	HS-20	50	47.5	5.86	17.09	2.436513
231	HS-20	50	47.5	5.81	17.04	2.446596
231	HS-20	50	47.5	5.61	16.43	2.549604
232	HS-20	50	47.5	5.56	16.36	2.56357
232	HS-20	50	47.5	5.35	15.71	2.683004

233	HS-20	50	47.5	5.29	15.63	2.700576
233	HS-20	50	47.5	5.07	14.94	2.840027
234	HS-20	50	47.5	5	14.84	2.863881
234	HS-20	50	47.5	4.76	14.1	3.031206
235	HS-20	50	47.5	4.69	14	3.057857
235	HS-20	50	47.5	4.44	13.2	3.262121
236	HS-20	50	47.5	4.37	13.09	3.294882
236	HS-20	50	47.5	4.09	12.23	3.549469
237	HS-20	50	47.5	4.02	12.12	3.587459
237	HS-20	50	47.5	3.72	11.2	3.908929
238	HS-20	50	47.5	3.65	11.08	3.957581
238	HS-20	50	47.5	3.34	10.1	4.372277
239	HS-20	50	47.5	3.26	9.97	4.437312
239	HS-20	50	47.5	2.93	8.92	4.996637
240	HS-20	50	47.5	2.85	8.79	5.079636
240	HS-20	50	47.5	2.5	7.67	5.867014
241	HS-20	50	47.5	2.43	7.53	5.985392
241	HS-20	50	47.5	2.05	6.34	7.16877
242	HS-20	50	47.5	1.98	6.2	7.341935
242	HS-20	50	47.5	1.59	4.92	9.331301
243	HS-20	50	47.5	1.51	4.78	9.621339
243	HS-20	50	47.5	1.1	3.4	13.64706
244	HS-20	50	47.5	1.03	3.28	14.16768
244	HS-20	50	47.5	0.59	1.8	26.06111
245	HS-20	50	47.5	0.52	1.69	27.79882
245	HS-20	50	47.5	0.07	0.43	110.3023

LOAD RATING FIXED SPAN -GIRDER 1

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
538	H-20	50	47.5	0.06	0.250	189.760
538	H-20	50	47.5	0.53	1.150	40.843
539	H-20	50	47.5	0.53	1.260	37.278
539	H-20	50	47.5	1.05	2.240	20.737
540	H-20	50	47.5	1.07	2.350	19.757
540	H-20	50	47.5	1.56	3.250	14.135
541	H-20	50	47.5	1.59	3.360	13.664
541	H-20	50	47.5	2.06	4.200	10.819
542	H-20	50	47.5	2.09	4.300	10.560
542	H-20	50	47.5	2.54	5.080	8.850
543	H-20	50	47.5	2.57	5.180	8.674
543	H-20	50	47.5	3.01	5.910	7.528
544	H-20	50	47.5	3.03	6.000	7.412
544	H-20	50	47.5	3.45	6.690	6.584
545	H-20	50	47.5	3.47	6.780	6.494
545	H-20	50	47.5	3.87	7.420	5.880
546	H-20	50	47.5	3.89	7.500	5.815
546	H-20	50	47.5	4.26	8.110	5.332
547	H-20	50	47.5	4.29	8.180	5.282
547	H-20	50	47.5	4.64	8.750	4.898
548	H-20	50	47.5	4.67	8.830	4.851
548	H-20	50	47.5	4.99	9.360	4.542
549	H-20	50	47.5	5.02	9.430	4.505
549	H-20	50	47.5	5.32	9.920	4.252
550	H-20	50	47.5	5.35	9.990	4.219
550	H-20	50	47.5	5.63	10.460	4.003
551	H-20	50	47.5	5.66	10.510	3.981
551	H-20	50	47.5	5.92	10.940	3.801
552	H-20	50	47.5	5.94	11.000	3.778
552	H-20	50	47.5	6.18	11.400	3.625
553	H-20	50	47.5	6.2	11.450	3.607
553	H-20	50	47.5	6.37	11.650	3.530
554	H-20	50	47.5	6.37	11.650	3.530
554	H-20	50	47.5	6.42	11.810	3.478
555	H-20	50	47.5	6.44	11.850	3.465
555	H-20	50	47.5	6.64	12.200	3.349
556	H-20	50	47.5	6.65	12.230	3.340
556	H-20	50	47.5	6.83	12.540	3.243
557	H-20	50	47.5	6.84	12.580	3.232
557	H-20	50	47.5	7	12.860	3.149
558	H-20	50	47.5	7.01	12.890	3.141
558	H-20	50	47.5	7.15	13.140	3.071
559	H-20	50	47.5	7.16	13.170	3.063
559	H-20	50	47.5	7.27	13.390	3.004
560	H-20	50	47.5	7.28	13.410	2.999
560	H-20	50	47.5	7.38	13.610	2.948

Minimum Rating Factor 2.778

561	H-20	50	47.5	7.38	13.630	2.944
561	H-20	50	47.5	7.46	13.800	2.901
562	H-20	50	47.5	7.46	13.820	2.897
562	H-20	50	47.5	7.52	13.960	2.864
563	H-20	50	47.5	7.52	13.980	2.860
563	H-20	50	47.5	7.56	14.100	2.833
564	H-20	50	47.5	7.56	14.110	2.831
564	H-20	50	47.5	7.58	14.200	2.811
565	H-20	50	47.5	7.58	14.220	2.807
565	H-20	50	47.5	7.58	14.290	2.794
566	H-20	50	47.5	7.57	14.300	2.792
566	H-20	50	47.5	7.55	14.350	2.784
567	H-20	50	47.5	7.54	14.360	2.783
567	H-20	50	47.5	7.5	14.380	2.782
568	H-20	50	47.5	7.5	14.390	2.780
568	H-20	50	47.5	7.43	14.380	2.787
569	H-20	50	47.5	7.43	14.390	2.785
569	H-20	50	47.5	7.34	14.350	2.799
570	H-20	50	47.5	7.33	14.360	2.797
570	H-20	50	47.5	7.28	14.180	2.836
571	H-20	50	47.5	7.28	14.180	2.836
571	H-20	50	47.5	7.23	14.310	2.814
572	H-20	50	47.5	7.22	14.300	2.817
572	H-20	50	47.5	7.09	14.250	2.836
573	H-20	50	47.5	7.08	14.240	2.838
573	H-20	50	47.5	6.93	14.180	2.861
574	H-20	50	47.5	6.92	14.160	2.866
574	H-20	50	47.5	6.75	14.090	2.892
575	H-20	50	47.5	6.73	14.070	2.898
575	H-20	50	47.5	6.55	13.970	2.931
576	H-20	50	47.5	6.53	13.950	2.937
576	H-20	50	47.5	6.33	13.820	2.979
577	H-20	50	47.5	6.3	13.800	2.986
577	H-20	50	47.5	6.08	13.650	3.034
578	H-20	50	47.5	6.05	13.630	3.041
578	H-20	50	47.5	5.81	13.460	3.097
579	H-20	50	47.5	5.78	13.430	3.106
579	H-20	50	47.5	5.52	13.240	3.171
580	H-20	50	47.5	5.49	13.210	3.180
580	H-20	50	47.5	5.21	13.010	3.251
581	H-20	50	47.5	5.18	12.980	3.260
581	H-20	50	47.5	4.88	12.760	3.340
582	H-20	50	47.5	4.84	12.720	3.354
582	H-20	50	47.5	4.52	12.480	3.444
583	H-20	50	47.5	4.48	12.440	3.458
583	H-20	50	47.5	4.14	12.180	3.560
584	H-20	50	47.5	4.1	12.140	3.575
584	H-20	50	47.5	3.74	11.860	3.690
585	H-20	50	47.5	3.7	11.820	3.706
585	H-20	50	47.5	3.32	11.510	3.838
586	H-20	50	47.5	3.28	11.480	3.852
586	H-20	50	47.5	2.87	11.150	4.003
587	H-20	50	47.5	2.83	11.110	4.021
587	H-20	50	47.5	2.72	10.940	4.093
588	H-20	50	47.5	2.72	10.940	4.093

588	H-20	50	47.5	2.41	10.770	4.187
589	H-20	50	47.5	2.36	10.720	4.211
589	H-20	50	47.5	1.91	10.360	4.401
590	H-20	50	47.5	1.86	10.310	4.427
590	H-20	50	47.5	1.4	9.930	4.642
591	H-20	50	47.5	1.34	9.870	4.677
591	H-20	50	47.5	0.86	9.480	4.920
592	H-20	50	47.5	0.8	9.420	4.958
592	H-20	50	47.5	0.3	9.010	5.239
593	H-20	50	47.5	0.24	8.950	5.280
593	H-20	50	47.5	-0.33	8.520	5.536
594	H-20	50	47.5	-0.37	8.460	5.571
594	H-20	50	47.5	-0.94	8.030	5.798
595	H-20	50	47.5	-0.98	7.960	5.844
595	H-20	50	47.5	-1.57	7.510	6.116
596	H-20	50	47.5	-1.62	7.450	6.158
596	H-20	50	47.5	-2.22	6.980	6.487
597	H-20	50	47.5	-2.28	6.920	6.535
597	H-20	50	47.5	-2.9	6.440	6.925
598	H-20	50	47.5	-2.96	6.370	6.992
598	H-20	50	47.5	-3.61	5.890	7.452
599	H-20	50	47.5	-3.66	5.820	7.533
599	H-20	50	47.5	-4.33	-5.800	7.443
600	H-20	50	47.5	-4.39	-5.820	7.407
600	H-20	50	47.5	-5.09	-5.920	7.164
601	H-20	50	47.5	-5.15	-5.930	7.142
601	H-20	50	47.5	-5.86	-6.040	6.894
602	H-20	50	47.5	-5.93	-6.060	6.860
602	H-20	50	47.5	-6.66	-6.160	6.630
603	H-20	50	47.5	-6.74	-6.180	6.595
603	H-20	50	47.5	-7.49	-6.290	6.361
604	H-20	50	47.5	-7.57	-6.310	6.328
604	H-20	50	47.5	-8.34	-6.410	6.109
605	H-20	50	47.5	-8.43	-6.440	6.067
605	H-20	50	47.5	-9.22	-6.540	5.853
606	H-20	50	47.5	-9.33	-6.570	5.810
606	H-20	50	47.5	-10.13	-6.670	5.603
607	H-20	50	47.5	-10.25	-6.700	5.560
607	H-20	50	47.5	-11.07	-6.810	5.349
608	H-20	50	47.5	-11.2	-6.840	5.307
608	H-20	50	47.5	-12.06	-7.000	5.063
609	H-20	50	47.5	-12.18	-6.990	5.053
609	H-20	50	47.5	-13.08	-7.550	4.559
610	H-20	50	47.5	-13.17	-7.510	4.571
610	H-20	50	47.5	-14.14	-8.160	4.088
611	H-20	50	47.5	-14.16	-8.180	4.076
611	H-20	50	47.5	-13.19	-7.550	4.544
612	H-20	50	47.5	-13.1	-7.580	4.538
612	H-20	50	47.5	-12.2	-7.010	5.036
613	H-20	50	47.5	-12.08	-7.030	5.038
613	H-20	50	47.5	-11.22	-6.850	5.296
614	H-20	50	47.5	-11.09	-6.820	5.339
614	H-20	50	47.5	-10.27	-6.710	5.548
615	H-20	50	47.5	-10.14	-6.680	5.593
615	H-20	50	47.5	-9.34	-6.580	5.799

616	H-20	50	47.5	-9.24	-6.550	5.841
616	H-20	50	47.5	-8.45	-6.440	6.064
617	H-20	50	47.5	-8.36	-6.420	6.097
617	H-20	50	47.5	-7.58	-6.320	6.316
618	H-20	50	47.5	-7.5	-6.300	6.349
618	H-20	50	47.5	-6.75	-6.190	6.583
619	H-20	50	47.5	-6.68	-6.170	6.616
619	H-20	50	47.5	-5.94	-6.070	6.847
620	H-20	50	47.5	-5.87	-6.050	6.881
620	H-20	50	47.5	-5.16	-5.940	7.128
621	H-20	50	47.5	-5.1	-5.930	7.150
621	H-20	50	47.5	-4.41	-5.820	7.404
622	H-20	50	47.5	-4.34	-5.810	7.429
622	H-20	50	47.5	-3.68	5.820	7.529
623	H-20	50	47.5	-3.62	5.890	7.450
623	H-20	50	47.5	-2.97	6.380	6.980
624	H-20	50	47.5	-2.91	6.440	6.924
624	H-20	50	47.5	-2.29	6.920	6.533
625	H-20	50	47.5	-2.23	6.980	6.486
625	H-20	50	47.5	-1.63	7.450	6.157
626	H-20	50	47.5	-1.58	7.510	6.115
626	H-20	50	47.5	-0.99	7.970	5.836
627	H-20	50	47.5	-0.94	8.030	5.798
627	H-20	50	47.5	-0.38	8.470	5.563
628	H-20	50	47.5	-0.33	8.530	5.530
628	H-20	50	47.5	0.23	8.950	5.282
629	H-20	50	47.5	0.29	9.010	5.240
629	H-20	50	47.5	0.79	9.420	4.959
630	H-20	50	47.5	0.85	9.480	4.921
630	H-20	50	47.5	1.34	9.880	4.672
631	H-20	50	47.5	1.39	9.930	4.644
631	H-20	50	47.5	1.85	10.310	4.428
632	H-20	50	47.5	1.91	10.370	4.396
632	H-20	50	47.5	2.35	10.730	4.208
633	H-20	50	47.5	2.4	10.780	4.184
633	H-20	50	47.5	2.71	10.940	4.094
634	H-20	50	47.5	2.71	10.940	4.094
634	H-20	50	47.5	2.82	11.120	4.018
635	H-20	50	47.5	2.87	11.160	3.999
635	H-20	50	47.5	3.27	11.490	3.849
636	H-20	50	47.5	3.31	11.520	3.836
636	H-20	50	47.5	3.7	11.830	3.702
637	H-20	50	47.5	3.74	11.870	3.687
637	H-20	50	47.5	4.1	12.150	3.572
638	H-20	50	47.5	4.14	12.190	3.557
638	H-20	50	47.5	4.48	12.460	3.453
639	H-20	50	47.5	4.52	12.490	3.441
639	H-20	50	47.5	4.84	12.730	3.351
640	H-20	50	47.5	4.87	12.770	3.338
640	H-20	50	47.5	5.17	12.990	3.259
641	H-20	50	47.5	5.21	13.020	3.248
641	H-20	50	47.5	5.49	13.230	3.175
642	H-20	50	47.5	5.52	13.260	3.166
642	H-20	50	47.5	5.78	13.450	3.102
643	H-20	50	47.5	5.81	13.470	3.095

643	H-20	50	47.5	6.05	13.640	3.039
644	H-20	50	47.5	6.08	13.670	3.030
644	H-20	50	47.5	6.3	13.820	2.981
645	H-20	50	47.5	6.32	13.840	2.975
645	H-20	50	47.5	6.53	13.960	2.935
646	H-20	50	47.5	6.55	13.980	2.929
646	H-20	50	47.5	6.73	14.080	2.896
647	H-20	50	47.5	6.75	14.100	2.890
647	H-20	50	47.5	6.91	14.180	2.862
648	H-20	50	47.5	6.93	14.200	2.857
648	H-20	50	47.5	7.08	14.260	2.835
649	H-20	50	47.5	7.09	14.270	2.832
649	H-20	50	47.5	7.22	14.310	2.815
650	H-20	50	47.5	7.23	14.320	2.812
650	H-20	50	47.5	7.28	14.190	2.834
651	H-20	50	47.5	7.28	14.190	2.834
651	H-20	50	47.5	7.33	14.370	2.795
652	H-20	50	47.5	7.34	14.370	2.795
652	H-20	50	47.5	7.43	14.400	2.783
653	H-20	50	47.5	7.43	14.390	2.785
653	H-20	50	47.5	7.5	14.400	2.778
654	H-20	50	47.5	7.5	14.390	2.780
654	H-20	50	47.5	7.55	14.370	2.780
655	H-20	50	47.5	7.55	14.360	2.782
655	H-20	50	47.5	7.57	14.310	2.790
656	H-20	50	47.5	7.58	14.300	2.792
656	H-20	50	47.5	7.58	14.230	2.805
657	H-20	50	47.5	7.58	14.220	2.807
657	H-20	50	47.5	7.57	14.130	2.826
658	H-20	50	47.5	7.57	14.110	2.830
658	H-20	50	47.5	7.53	14.000	2.855
659	H-20	50	47.5	7.53	13.980	2.859
659	H-20	50	47.5	7.47	13.830	2.894
660	H-20	50	47.5	7.47	13.820	2.897
660	H-20	50	47.5	7.39	13.640	2.941
661	H-20	50	47.5	7.39	13.620	2.945
661	H-20	50	47.5	7.29	13.430	2.994
662	H-20	50	47.5	7.29	13.400	3.001
662	H-20	50	47.5	7.17	13.180	3.060
663	H-20	50	47.5	7.16	13.150	3.068
663	H-20	50	47.5	7.03	12.900	3.137
664	H-20	50	47.5	7.02	12.870	3.145
664	H-20	50	47.5	6.86	12.590	3.228
665	H-20	50	47.5	6.85	12.560	3.236
665	H-20	50	47.5	6.67	12.240	3.336
666	H-20	50	47.5	6.66	12.210	3.345
666	H-20	50	47.5	6.46	11.860	3.460
667	H-20	50	47.5	6.45	11.820	3.473
667	H-20	50	47.5	6.39	11.660	3.526
668	H-20	50	47.5	6.39	11.660	3.526
668	H-20	50	47.5	6.23	11.460	3.601
669	H-20	50	47.5	6.21	11.410	3.619
669	H-20	50	47.5	5.97	11.010	3.772
670	H-20	50	47.5	5.95	10.950	3.795
670	H-20	50	47.5	5.69	10.520	3.974

671	H-20	50	47.5	5.67	10.460	3.999
671	H-20	50	47.5	5.39	9.990	4.215
672	H-20	50	47.5	5.37	9.930	4.243
672	H-20	50	47.5	5.07	9.430	4.499
673	H-20	50	47.5	5.04	9.360	4.536
673	H-20	50	47.5	4.72	8.830	4.845
674	H-20	50	47.5	4.69	8.760	4.887
674	H-20	50	47.5	4.36	8.180	5.274
675	H-20	50	47.5	4.32	8.110	5.324
675	H-20	50	47.5	3.97	7.500	5.804
676	H-20	50	47.5	3.93	7.420	5.872
676	H-20	50	47.5	3.56	6.770	6.490
677	H-20	50	47.5	3.52	6.680	6.584
677	H-20	50	47.5	3.12	5.990	7.409
678	H-20	50	47.5	3.08	5.900	7.529
678	H-20	50	47.5	2.66	5.160	8.690
679	H-20	50	47.5	2.62	5.060	8.870
679	H-20	50	47.5	2.18	4.280	10.589
680	H-20	50	47.5	2.14	4.170	10.878
680	H-20	50	47.5	1.67	3.330	13.763
681	H-20	50	47.5	1.64	3.220	14.242
681	H-20	50	47.5	1.15	2.320	19.978
682	H-20	50	47.5	1.11	2.200	21.086
682	H-20	50	47.5	0.59	1.240	37.831
683	H-20	50	47.5	0.57	1.130	41.531
683	H-20	50	47.5	0.04	0.250	189.840

LOAD RATING FIXED SPAN -GIRDER 2

RF= RATING FACTOR

RF = (.95 F_Y - f_{DL+SDL}) / (f_{LL+I}) MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
392	H-20	50	47.5	0.05	-0.070	677.857
392	H-20	50	47.5	0.67	1.300	36.023
393	H-20	50	47.5	0.63	1.270	36.906
393	H-20	50	47.5	1.24	2.410	19.195
394	H-20	50	47.5	1.2	2.380	19.454
394	H-20	50	47.5	1.74	3.400	13.459
395	H-20	50	47.5	1.71	3.370	13.588
395	H-20	50	47.5	2.21	4.300	10.533
396	H-20	50	47.5	2.19	4.270	10.611
396	H-20	50	47.5	2.65	5.120	8.760
397	H-20	50	47.5	2.64	5.100	8.796
397	H-20	50	47.5	3.08	5.890	7.542
398	H-20	50	47.5	3.07	5.870	7.569
398	H-20	50	47.5	3.48	6.610	6.660
399	H-20	50	47.5	3.47	6.600	6.671
399	H-20	50	47.5	3.87	7.300	5.977
400	H-20	50	47.5	3.86	7.290	5.986
400	H-20	50	47.5	4.24	7.960	5.435
401	H-20	50	47.5	4.23	7.960	5.436
401	H-20	50	47.5	4.59	8.580	5.001
402	H-20	50	47.5	4.58	8.580	5.002
402	H-20	50	47.5	4.92	9.170	4.643
403	H-20	50	47.5	4.91	9.170	4.644
403	H-20	50	47.5	5.23	9.720	4.349
404	H-20	50	47.5	5.22	9.720	4.350
404	H-20	50	47.5	5.52	10.230	4.104
405	H-20	50	47.5	5.51	10.240	4.101
405	H-20	50	47.5	5.78	10.710	3.895
406	H-20	50	47.5	5.78	10.710	3.895
406	H-20	50	47.5	6.03	11.140	3.723
407	H-20	50	47.5	6.03	11.150	3.719
407	H-20	50	47.5	6.2	11.320	3.648
408	H-20	50	47.5	6.2	11.320	3.648
408	H-20	50	47.5	6.26	11.550	3.571
409	H-20	50	47.5	6.25	11.550	3.571
409	H-20	50	47.5	6.46	11.970	3.429
410	H-20	50	47.5	6.46	11.970	3.429
410	H-20	50	47.5	6.64	12.340	3.311
411	H-20	50	47.5	6.64	12.340	3.311
411	H-20	50	47.5	6.8	12.680	3.210
412	H-20	50	47.5	6.8	12.680	3.210
412	H-20	50	47.5	6.94	12.980	3.125
413	H-20	50	47.5	6.94	12.980	3.125
413	H-20	50	47.5	7.06	13.240	3.054
414	H-20	50	47.5	7.06	13.240	3.054
414	H-20	50	47.5	7.16	13.470	2.995

Minimum Rating Factor 2.830

415	H-20	50	47.5	7.15	13.470	2.996
415	H-20	50	47.5	7.23	13.670	2.946
416	H-20	50	47.5	7.23	13.670	2.946
416	H-20	50	47.5	7.29	13.840	2.905
417	H-20	50	47.5	7.29	13.840	2.905
417	H-20	50	47.5	7.32	13.970	2.876
418	H-20	50	47.5	7.32	13.970	2.876
418	H-20	50	47.5	7.33	14.070	2.855
419	H-20	50	47.5	7.33	14.080	2.853
419	H-20	50	47.5	7.32	14.150	2.840
420	H-20	50	47.5	7.33	14.150	2.839
420	H-20	50	47.5	7.29	14.190	2.834
421	H-20	50	47.5	7.3	14.190	2.833
421	H-20	50	47.5	7.24	14.200	2.835
422	H-20	50	47.5	7.25	14.200	2.835
422	H-20	50	47.5	7.17	14.180	2.844
423	H-20	50	47.5	7.17	14.180	2.844
423	H-20	50	47.5	7.08	14.120	2.863
424	H-20	50	47.5	7.08	14.120	2.863
424	H-20	50	47.5	7.03	13.820	2.928
425	H-20	50	47.5	7.02	13.820	2.929
425	H-20	50	47.5	6.96	14.060	2.883
426	H-20	50	47.5	6.97	14.060	2.883
426	H-20	50	47.5	6.83	14.030	2.899
427	H-20	50	47.5	6.83	14.030	2.899
427	H-20	50	47.5	6.67	13.990	2.919
428	H-20	50	47.5	6.67	13.990	2.919
428	H-20	50	47.5	6.49	13.920	2.946
429	H-20	50	47.5	6.49	13.920	2.946
429	H-20	50	47.5	6.29	13.820	2.982
430	H-20	50	47.5	6.29	13.820	2.982
430	H-20	50	47.5	6.06	13.690	3.027
431	H-20	50	47.5	6.07	13.690	3.026
431	H-20	50	47.5	5.82	13.540	3.078
432	H-20	50	47.5	5.82	13.540	3.078
432	H-20	50	47.5	5.55	13.350	3.142
433	H-20	50	47.5	5.56	13.360	3.139
433	H-20	50	47.5	5.27	13.150	3.211
434	H-20	50	47.5	5.27	13.150	3.211
434	H-20	50	47.5	4.96	12.920	3.293
435	H-20	50	47.5	4.97	12.920	3.292
435	H-20	50	47.5	4.63	12.660	3.386
436	H-20	50	47.5	4.64	12.660	3.385
436	H-20	50	47.5	4.28	12.380	3.491
437	H-20	50	47.5	4.29	12.380	3.490
437	H-20	50	47.5	3.91	12.070	3.611
438	H-20	50	47.5	3.92	12.080	3.608
438	H-20	50	47.5	3.52	11.750	3.743
439	H-20	50	47.5	3.52	11.750	3.743
439	H-20	50	47.5	3.11	11.390	3.897
440	H-20	50	47.5	3.11	11.400	3.894
440	H-20	50	47.5	2.67	11.010	4.072
441	H-20	50	47.5	2.67	11.010	4.072
441	H-20	50	47.5	2.56	10.770	4.173
442	H-20	50	47.5	2.56	10.760	4.177

442	H-20	50	47.5	2.21	10.650	4.253
443	H-20	50	47.5	2.22	10.650	4.252
443	H-20	50	47.5	1.73	10.280	4.452
444	H-20	50	47.5	1.74	10.280	4.451
444	H-20	50	47.5	1.23	9.880	4.683
445	H-20	50	47.5	1.23	9.880	4.683
445	H-20	50	47.5	0.71	9.460	4.946
446	H-20	50	47.5	0.71	9.460	4.946
446	H-20	50	47.5	0.17	9.030	5.241
447	H-20	50	47.5	0.17	9.030	5.241
447	H-20	50	47.5	-0.4	8.570	5.496
448	H-20	50	47.5	-0.41	8.580	5.488
448	H-20	50	47.5	-0.99	8.110	5.735
449	H-20	50	47.5	-0.99	8.110	5.735
449	H-20	50	47.5	-1.6	7.630	6.016
450	H-20	50	47.5	-1.6	7.630	6.016
450	H-20	50	47.5	-2.23	7.140	6.340
451	H-20	50	47.5	-2.23	7.140	6.340
451	H-20	50	47.5	-2.88	6.640	6.720
452	H-20	50	47.5	-2.88	6.640	6.720
452	H-20	50	47.5	-3.55	6.130	7.170
453	H-20	50	47.5	-3.55	6.140	7.158
453	H-20	50	47.5	-4.24	-5.640	7.670
454	H-20	50	47.5	-4.24	-5.630	7.684
454	H-20	50	47.5	-4.95	-5.740	7.413
455	H-20	50	47.5	-4.95	-5.740	7.413
455	H-20	50	47.5	-5.69	-5.840	7.159
456	H-20	50	47.5	-5.69	-5.840	7.159
456	H-20	50	47.5	-6.45	-5.950	6.899
457	H-20	50	47.5	-6.45	-5.950	6.899
457	H-20	50	47.5	-7.22	-6.050	6.658
458	H-20	50	47.5	-7.22	-6.050	6.658
458	H-20	50	47.5	-8.03	-6.160	6.407
459	H-20	50	47.5	-8.03	-6.160	6.407
459	H-20	50	47.5	-8.85	-6.270	6.164
460	H-20	50	47.5	-8.85	-6.270	6.164
460	H-20	50	47.5	-9.69	-6.380	5.926
461	H-20	50	47.5	-9.7	-6.380	5.925
461	H-20	50	47.5	-10.56	-6.490	5.692
462	H-20	50	47.5	-10.56	-6.490	5.692
462	H-20	50	47.5	-11.44	-6.600	5.464
463	H-20	50	47.5	-11.44	-6.600	5.464
463	H-20	50	47.5	-12.33	-6.710	5.241
464	H-20	50	47.5	-12.33	-6.710	5.241
464	H-20	50	47.5	-13.23	-6.910	4.959
465	H-20	50	47.5	-13.24	-6.920	4.951
465	H-20	50	47.5	-12.34	-6.730	5.224
466	H-20	50	47.5	-12.34	-6.740	5.217
466	H-20	50	47.5	-11.45	-6.630	5.437
467	H-20	50	47.5	-11.44	-6.630	5.439
467	H-20	50	47.5	-10.56	-6.520	5.666
468	H-20	50	47.5	-10.56	-6.520	5.666
468	H-20	50	47.5	-9.7	-6.410	5.897
469	H-20	50	47.5	-9.7	-6.410	5.897
469	H-20	50	47.5	-8.86	-6.290	6.143

470	H-20	50	47.5	-8.85	-6.290	6.145
470	H-20	50	47.5	-8.03	-6.180	6.387
471	H-20	50	47.5	-8.03	-6.180	6.387
471	H-20	50	47.5	-7.23	-6.070	6.634
472	H-20	50	47.5	-7.23	-6.070	6.634
472	H-20	50	47.5	-6.45	-5.970	6.876
473	H-20	50	47.5	-6.45	-5.970	6.876
473	H-20	50	47.5	-5.69	-5.860	7.135
474	H-20	50	47.5	-5.69	-5.860	7.135
474	H-20	50	47.5	-4.96	-5.760	7.385
475	H-20	50	47.5	-4.96	-5.760	7.385
475	H-20	50	47.5	-4.24	-5.660	7.643
476	H-20	50	47.5	-4.24	-5.660	7.643
476	H-20	50	47.5	-3.55	6.150	7.146
477	H-20	50	47.5	-3.55	6.140	7.158
477	H-20	50	47.5	-2.88	6.650	6.710
478	H-20	50	47.5	-2.88	6.650	6.710
478	H-20	50	47.5	-2.23	7.150	6.331
479	H-20	50	47.5	-2.23	7.150	6.331
479	H-20	50	47.5	-1.6	7.640	6.008
480	H-20	50	47.5	-1.6	7.640	6.008
480	H-20	50	47.5	-0.99	8.120	5.728
481	H-20	50	47.5	-0.99	8.120	5.728
481	H-20	50	47.5	-0.41	8.590	5.482
482	H-20	50	47.5	-0.41	8.580	5.488
482	H-20	50	47.5	0.17	9.040	5.236
483	H-20	50	47.5	0.17	9.040	5.236
483	H-20	50	47.5	0.71	9.470	4.941
484	H-20	50	47.5	0.71	9.470	4.941
484	H-20	50	47.5	1.23	9.890	4.678
485	H-20	50	47.5	1.23	9.890	4.678
485	H-20	50	47.5	1.73	10.290	4.448
486	H-20	50	47.5	1.73	10.290	4.448
486	H-20	50	47.5	2.21	10.660	4.249
487	H-20	50	47.5	2.21	10.660	4.249
487	H-20	50	47.5	2.56	10.780	4.169
488	H-20	50	47.5	2.56	10.780	4.169
488	H-20	50	47.5	2.67	11.020	4.068
489	H-20	50	47.5	2.67	11.020	4.068
489	H-20	50	47.5	3.11	11.410	3.890
490	H-20	50	47.5	3.1	11.410	3.891
490	H-20	50	47.5	3.52	11.770	3.737
491	H-20	50	47.5	3.52	11.760	3.740
491	H-20	50	47.5	3.91	12.090	3.605
492	H-20	50	47.5	3.91	12.090	3.605
492	H-20	50	47.5	4.28	12.400	3.485
493	H-20	50	47.5	4.28	12.390	3.488
493	H-20	50	47.5	4.63	12.680	3.381
494	H-20	50	47.5	4.63	12.680	3.381
494	H-20	50	47.5	4.96	12.940	3.287
495	H-20	50	47.5	4.96	12.930	3.290
495	H-20	50	47.5	5.27	13.170	3.207
496	H-20	50	47.5	5.27	13.160	3.209
496	H-20	50	47.5	5.56	13.370	3.137
497	H-20	50	47.5	5.55	13.370	3.138

497	H-20	50	47.5	5.82	13.560	3.074
498	H-20	50	47.5	5.82	13.550	3.076
498	H-20	50	47.5	6.06	13.710	3.023
499	H-20	50	47.5	6.06	13.710	3.023
499	H-20	50	47.5	6.29	13.840	2.978
500	H-20	50	47.5	6.28	13.840	2.978
500	H-20	50	47.5	6.49	13.940	2.942
501	H-20	50	47.5	6.48	13.940	2.943
501	H-20	50	47.5	6.67	14.010	2.914
502	H-20	50	47.5	6.66	14.010	2.915
502	H-20	50	47.5	6.82	14.050	2.895
503	H-20	50	47.5	6.82	14.050	2.895
503	H-20	50	47.5	6.96	14.080	2.879
504	H-20	50	47.5	6.96	14.080	2.879
504	H-20	50	47.5	7.02	13.830	2.927
505	H-20	50	47.5	7.02	13.830	2.927
505	H-20	50	47.5	7.08	14.140	2.859
506	H-20	50	47.5	7.07	14.140	2.859
506	H-20	50	47.5	7.17	14.200	2.840
507	H-20	50	47.5	7.17	14.190	2.842
507	H-20	50	47.5	7.24	14.220	2.831
508	H-20	50	47.5	7.24	14.210	2.833
508	H-20	50	47.5	7.29	14.210	2.830
509	H-20	50	47.5	7.29	14.200	2.832
509	H-20	50	47.5	7.32	14.160	2.838
510	H-20	50	47.5	7.32	14.160	2.838
510	H-20	50	47.5	7.33	14.090	2.851
511	H-20	50	47.5	7.33	14.090	2.851
511	H-20	50	47.5	7.31	13.990	2.873
512	H-20	50	47.5	7.31	13.990	2.873
512	H-20	50	47.5	7.28	13.850	2.904
513	H-20	50	47.5	7.28	13.850	2.904
513	H-20	50	47.5	7.22	13.690	2.942
514	H-20	50	47.5	7.22	13.680	2.944
514	H-20	50	47.5	7.14	13.490	2.992
515	H-20	50	47.5	7.14	13.490	2.992
515	H-20	50	47.5	7.04	13.260	3.051
516	H-20	50	47.5	7.04	13.250	3.054
516	H-20	50	47.5	6.92	12.990	3.124
517	H-20	50	47.5	6.92	12.990	3.124
517	H-20	50	47.5	6.78	12.690	3.209
518	H-20	50	47.5	6.78	12.690	3.209
518	H-20	50	47.5	6.62	12.360	3.307
519	H-20	50	47.5	6.62	12.360	3.307
519	H-20	50	47.5	6.43	11.990	3.425
520	H-20	50	47.5	6.43	11.990	3.425
520	H-20	50	47.5	6.23	11.570	3.567
521	H-20	50	47.5	6.23	11.570	3.567
521	H-20	50	47.5	6.17	11.340	3.645
522	H-20	50	47.5	6.17	11.340	3.645
522	H-20	50	47.5	6	11.160	3.719
523	H-20	50	47.5	6	11.160	3.719
523	H-20	50	47.5	5.75	10.730	3.891
524	H-20	50	47.5	5.75	10.720	3.895
524	H-20	50	47.5	5.48	10.250	4.100

525	H-20	50	47.5	5.48	10.250	4.100
525	H-20	50	47.5	5.18	9.740	4.345
526	H-20	50	47.5	5.19	9.740	4.344
526	H-20	50	47.5	4.87	9.190	4.639
527	H-20	50	47.5	4.87	9.190	4.639
527	H-20	50	47.5	4.53	8.600	4.997
528	H-20	50	47.5	4.54	8.600	4.995
528	H-20	50	47.5	4.18	7.970	5.435
529	H-20	50	47.5	4.18	7.980	5.429
529	H-20	50	47.5	3.8	7.310	5.978
530	H-20	50	47.5	3.8	7.320	5.970
530	H-20	50	47.5	3.4	6.620	6.662
531	H-20	50	47.5	3.4	6.630	6.652
531	H-20	50	47.5	2.98	5.890	7.559
532	H-20	50	47.5	2.98	5.910	7.533
532	H-20	50	47.5	2.53	5.120	8.783
533	H-20	50	47.5	2.54	5.140	8.747
533	H-20	50	47.5	2.07	4.290	10.590
534	H-20	50	47.5	2.07	4.320	10.516
534	H-20	50	47.5	1.58	3.390	13.546
535	H-20	50	47.5	1.58	3.420	13.427
535	H-20	50	47.5	1.08	2.390	19.423
536	H-20	50	47.5	1.07	2.430	19.107
536	H-20	50	47.5	0.55	1.280	36.680
537	H-20	50	47.5	0.55	1.310	35.840
537	H-20	50	47.5	0.01	-0.070	678.429

LOAD RATING FIXED SPAN -GIRDER 3

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating Factor 2.841

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
246	H-20	50	47.5	0.05	-0.070	677.857
246	H-20	50	47.5	0.67	1.300	36.023
247	H-20	50	47.5	0.62	1.270	36.913
247	H-20	50	47.5	1.22	2.410	19.203
248	H-20	50	47.5	1.18	2.380	19.462
248	H-20	50	47.5	1.71	3.400	13.468
249	H-20	50	47.5	1.68	3.370	13.596
249	H-20	50	47.5	2.16	4.300	10.544
250	H-20	50	47.5	2.14	4.270	10.623
250	H-20	50	47.5	2.59	5.120	8.771
251	H-20	50	47.5	2.57	5.100	8.810
251	H-20	50	47.5	3	5.890	7.555
252	H-20	50	47.5	2.99	5.870	7.583
252	H-20	50	47.5	3.4	6.610	6.672
253	H-20	50	47.5	3.39	6.600	6.683
253	H-20	50	47.5	3.77	7.300	5.990
254	H-20	50	47.5	3.77	7.290	5.999
254	H-20	50	47.5	4.14	7.960	5.447
255	H-20	50	47.5	4.14	7.960	5.447
255	H-20	50	47.5	4.48	8.580	5.014
256	H-20	50	47.5	4.48	8.580	5.014
256	H-20	50	47.5	4.8	9.170	4.656
257	H-20	50	47.5	4.81	9.170	4.655
257	H-20	50	47.5	5.11	9.720	4.361
258	H-20	50	47.5	5.11	9.720	4.361
258	H-20	50	47.5	5.39	10.230	4.116
259	H-20	50	47.5	5.39	10.240	4.112
259	H-20	50	47.5	5.65	10.710	3.908
260	H-20	50	47.5	5.66	10.710	3.907
260	H-20	50	47.5	5.9	11.140	3.734
261	H-20	50	47.5	5.9	11.150	3.731
261	H-20	50	47.5	6.07	11.320	3.660
262	H-20	50	47.5	6.07	11.320	3.660
262	H-20	50	47.5	6.12	11.550	3.583
263	H-20	50	47.5	6.12	11.550	3.583
263	H-20	50	47.5	6.32	11.970	3.440
264	H-20	50	47.5	6.32	11.970	3.440
264	H-20	50	47.5	6.49	12.340	3.323
265	H-20	50	47.5	6.5	12.340	3.323
265	H-20	50	47.5	6.65	12.680	3.222
266	H-20	50	47.5	6.65	12.680	3.222
266	H-20	50	47.5	6.79	12.980	3.136
267	H-20	50	47.5	6.79	12.980	3.136
267	H-20	50	47.5	6.9	13.240	3.066
268	H-20	50	47.5	6.91	13.240	3.066
268	H-20	50	47.5	7	13.470	3.007

269	H-20	50	47.5	7	13.470	3.007
269	H-20	50	47.5	7.08	13.670	2.957
270	H-20	50	47.5	7.08	13.670	2.957
270	H-20	50	47.5	7.13	13.830	2.919
271	H-20	50	47.5	7.13	13.840	2.917
271	H-20	50	47.5	7.16	13.970	2.888
272	H-20	50	47.5	7.16	13.970	2.888
272	H-20	50	47.5	7.18	14.070	2.866
273	H-20	50	47.5	7.18	14.070	2.866
273	H-20	50	47.5	7.17	14.150	2.850
274	H-20	50	47.5	7.17	14.150	2.850
274	H-20	50	47.5	7.14	14.190	2.844
275	H-20	50	47.5	7.14	14.190	2.844
275	H-20	50	47.5	7.09	14.200	2.846
276	H-20	50	47.5	7.09	14.200	2.846
276	H-20	50	47.5	7.02	14.180	2.855
277	H-20	50	47.5	7.01	14.180	2.855
277	H-20	50	47.5	6.92	14.120	2.874
278	H-20	50	47.5	6.92	14.120	2.874
278	H-20	50	47.5	6.87	13.820	2.940
279	H-20	50	47.5	6.87	13.820	2.940
279	H-20	50	47.5	6.81	14.060	2.894
280	H-20	50	47.5	6.81	14.060	2.894
280	H-20	50	47.5	6.67	14.030	2.910
281	H-20	50	47.5	6.67	14.030	2.910
281	H-20	50	47.5	6.52	13.990	2.929
282	H-20	50	47.5	6.51	13.990	2.930
282	H-20	50	47.5	6.34	13.920	2.957
283	H-20	50	47.5	6.33	13.920	2.958
283	H-20	50	47.5	6.14	13.820	2.993
284	H-20	50	47.5	6.13	13.820	2.993
284	H-20	50	47.5	5.92	13.690	3.037
285	H-20	50	47.5	5.91	13.690	3.038
285	H-20	50	47.5	5.68	13.540	3.089
286	H-20	50	47.5	5.67	13.540	3.089
286	H-20	50	47.5	5.42	13.350	3.152
287	H-20	50	47.5	5.41	13.360	3.150
287	H-20	50	47.5	5.14	13.150	3.221
288	H-20	50	47.5	5.13	13.150	3.222
288	H-20	50	47.5	4.83	12.910	3.305
289	H-20	50	47.5	4.82	12.920	3.303
289	H-20	50	47.5	4.51	12.660	3.396
290	H-20	50	47.5	4.5	12.660	3.397
290	H-20	50	47.5	4.16	12.380	3.501
291	H-20	50	47.5	4.15	12.380	3.502
291	H-20	50	47.5	3.8	12.070	3.621
292	H-20	50	47.5	3.79	12.080	3.618
292	H-20	50	47.5	3.41	11.750	3.752
293	H-20	50	47.5	3.4	11.750	3.753
293	H-20	50	47.5	3.01	11.390	3.906
294	H-20	50	47.5	2.99	11.400	3.904
294	H-20	50	47.5	2.58	11.010	4.080
295	H-20	50	47.5	2.57	11.010	4.081
295	H-20	50	47.5	2.46	10.760	4.186
296	H-20	50	47.5	2.46	10.760	4.186

296	H-20	50	47.5	2.13	10.650	4.260
297	H-20	50	47.5	2.12	10.650	4.261
297	H-20	50	47.5	1.66	10.280	4.459
298	H-20	50	47.5	1.65	10.280	4.460
298	H-20	50	47.5	1.16	9.880	4.690
299	H-20	50	47.5	1.15	9.880	4.691
299	H-20	50	47.5	0.65	9.460	4.952
300	H-20	50	47.5	0.64	9.460	4.953
300	H-20	50	47.5	0.12	9.030	5.247
301	H-20	50	47.5	0.11	9.030	5.248
301	H-20	50	47.5	-0.45	8.570	5.490
302	H-20	50	47.5	-0.45	8.580	5.484
302	H-20	50	47.5	-1.02	8.110	5.731
303	H-20	50	47.5	-1.02	8.110	5.731
303	H-20	50	47.5	-1.61	7.630	6.014
304	H-20	50	47.5	-1.62	7.630	6.013
304	H-20	50	47.5	-2.22	7.140	6.342
305	H-20	50	47.5	-2.23	7.140	6.340
305	H-20	50	47.5	-2.85	6.640	6.724
306	H-20	50	47.5	-2.86	6.640	6.723
306	H-20	50	47.5	-3.51	6.130	7.176
307	H-20	50	47.5	-3.52	6.140	7.163
307	H-20	50	47.5	-4.18	-5.640	7.681
308	H-20	50	47.5	-4.19	-5.630	7.693
308	H-20	50	47.5	-4.87	-5.740	7.427
309	H-20	50	47.5	-4.89	-5.740	7.423
309	H-20	50	47.5	-5.58	-5.840	7.178
310	H-20	50	47.5	-5.6	-5.840	7.175
310	H-20	50	47.5	-6.32	-5.950	6.921
311	H-20	50	47.5	-6.33	-5.950	6.919
311	H-20	50	47.5	-7.07	-6.050	6.683
312	H-20	50	47.5	-7.08	-6.050	6.681
312	H-20	50	47.5	-7.84	-6.160	6.438
313	H-20	50	47.5	-7.85	-6.160	6.437
313	H-20	50	47.5	-8.63	-6.270	6.199
314	H-20	50	47.5	-8.64	-6.270	6.198
314	H-20	50	47.5	-9.44	-6.380	5.966
315	H-20	50	47.5	-9.45	-6.380	5.964
315	H-20	50	47.5	-10.27	-6.490	5.737
316	H-20	50	47.5	-10.28	-6.490	5.735
316	H-20	50	47.5	-11.11	-6.600	5.514
317	H-20	50	47.5	-11.12	-6.600	5.512
317	H-20	50	47.5	-11.96	-6.710	5.297
318	H-20	50	47.5	-11.97	-6.710	5.295
318	H-20	50	47.5	-12.83	-6.910	5.017
319	H-20	50	47.5	-12.83	-6.920	5.010
319	H-20	50	47.5	-11.96	-6.730	5.281
320	H-20	50	47.5	-11.96	-6.730	5.281
320	H-20	50	47.5	-11.11	-6.630	5.489
321	H-20	50	47.5	-11.1	-6.630	5.490
321	H-20	50	47.5	-10.27	-6.520	5.710
322	H-20	50	47.5	-10.26	-6.520	5.712
322	H-20	50	47.5	-9.45	-6.410	5.936
323	H-20	50	47.5	-9.44	-6.400	5.947
323	H-20	50	47.5	-8.64	-6.290	6.178

324	H-20	50	47.5	-8.63	-6.290	6.180
324	H-20	50	47.5	-7.85	-6.180	6.416
325	H-20	50	47.5	-7.84	-6.180	6.417
325	H-20	50	47.5	-7.08	-6.070	6.659
326	H-20	50	47.5	-7.06	-6.070	6.662
326	H-20	50	47.5	-6.33	-5.970	6.896
327	H-20	50	47.5	-6.31	-5.970	6.899
327	H-20	50	47.5	-5.59	-5.860	7.152
328	H-20	50	47.5	-5.58	-5.860	7.154
328	H-20	50	47.5	-4.88	-5.760	7.399
329	H-20	50	47.5	-4.87	-5.760	7.401
329	H-20	50	47.5	-4.19	-5.650	7.665
330	H-20	50	47.5	-4.17	-5.660	7.655
330	H-20	50	47.5	-3.51	6.150	7.153
331	H-20	50	47.5	-3.5	6.140	7.166
331	H-20	50	47.5	-2.86	6.650	6.713
332	H-20	50	47.5	-2.85	6.650	6.714
332	H-20	50	47.5	-2.23	7.150	6.331
333	H-20	50	47.5	-2.22	7.150	6.333
333	H-20	50	47.5	-1.61	7.640	6.007
334	H-20	50	47.5	-1.61	7.640	6.007
334	H-20	50	47.5	-1.02	8.120	5.724
335	H-20	50	47.5	-1.02	8.120	5.724
335	H-20	50	47.5	-0.45	8.590	5.477
336	H-20	50	47.5	-0.44	8.580	5.485
336	H-20	50	47.5	0.11	9.040	5.242
337	H-20	50	47.5	0.12	9.040	5.241
337	H-20	50	47.5	0.65	9.470	4.947
338	H-20	50	47.5	0.65	9.470	4.947
338	H-20	50	47.5	1.16	9.890	4.686
339	H-20	50	47.5	1.17	9.890	4.685
339	H-20	50	47.5	1.65	10.290	4.456
340	H-20	50	47.5	1.66	10.290	4.455
340	H-20	50	47.5	2.12	10.660	4.257
341	H-20	50	47.5	2.13	10.660	4.256
341	H-20	50	47.5	2.46	10.780	4.178
342	H-20	50	47.5	2.46	10.780	4.178
342	H-20	50	47.5	2.57	11.020	4.077
343	H-20	50	47.5	2.58	11.020	4.076
343	H-20	50	47.5	3	11.410	3.900
344	H-20	50	47.5	3.01	11.410	3.899
344	H-20	50	47.5	3.4	11.770	3.747
345	H-20	50	47.5	3.41	11.760	3.749
345	H-20	50	47.5	3.79	12.090	3.615
346	H-20	50	47.5	3.8	12.090	3.615
346	H-20	50	47.5	4.16	12.400	3.495
347	H-20	50	47.5	4.17	12.390	3.497
347	H-20	50	47.5	4.5	12.680	3.391
348	H-20	50	47.5	4.51	12.680	3.390
348	H-20	50	47.5	4.83	12.940	3.298
349	H-20	50	47.5	4.83	12.930	3.300
349	H-20	50	47.5	5.13	13.170	3.217
350	H-20	50	47.5	5.14	13.160	3.219
350	H-20	50	47.5	5.41	13.370	3.148
351	H-20	50	47.5	5.42	13.370	3.147

351	H-20	50	47.5	5.67	13.560	3.085
352	H-20	50	47.5	5.68	13.550	3.086
352	H-20	50	47.5	5.91	13.710	3.034
353	H-20	50	47.5	5.92	13.710	3.033
353	H-20	50	47.5	6.13	13.840	2.989
354	H-20	50	47.5	6.14	13.840	2.988
354	H-20	50	47.5	6.33	13.940	2.953
355	H-20	50	47.5	6.34	13.940	2.953
355	H-20	50	47.5	6.51	14.010	2.926
356	H-20	50	47.5	6.52	14.010	2.925
356	H-20	50	47.5	6.67	14.050	2.906
357	H-20	50	47.5	6.67	14.050	2.906
357	H-20	50	47.5	6.81	14.080	2.890
358	H-20	50	47.5	6.81	14.080	2.890
358	H-20	50	47.5	6.87	13.830	2.938
359	H-20	50	47.5	6.87	13.830	2.938
359	H-20	50	47.5	6.92	14.140	2.870
360	H-20	50	47.5	6.92	14.140	2.870
360	H-20	50	47.5	7.01	14.200	2.851
361	H-20	50	47.5	7.01	14.190	2.853
361	H-20	50	47.5	7.08	14.220	2.842
362	H-20	50	47.5	7.08	14.210	2.844
362	H-20	50	47.5	7.13	14.210	2.841
363	H-20	50	47.5	7.13	14.200	2.843
363	H-20	50	47.5	7.16	14.160	2.849
364	H-20	50	47.5	7.16	14.160	2.849
364	H-20	50	47.5	7.17	14.090	2.862
365	H-20	50	47.5	7.17	14.090	2.862
365	H-20	50	47.5	7.16	13.990	2.883
366	H-20	50	47.5	7.16	13.990	2.883
366	H-20	50	47.5	7.12	13.850	2.916
367	H-20	50	47.5	7.12	13.850	2.916
367	H-20	50	47.5	7.07	13.690	2.953
368	H-20	50	47.5	7.07	13.680	2.955
368	H-20	50	47.5	6.99	13.490	3.003
369	H-20	50	47.5	6.99	13.490	3.003
369	H-20	50	47.5	6.9	13.260	3.062
370	H-20	50	47.5	6.89	13.250	3.065
370	H-20	50	47.5	6.78	12.990	3.135
371	H-20	50	47.5	6.77	12.990	3.135
371	H-20	50	47.5	6.64	12.690	3.220
372	H-20	50	47.5	6.63	12.690	3.221
372	H-20	50	47.5	6.48	12.360	3.319
373	H-20	50	47.5	6.47	12.360	3.320
373	H-20	50	47.5	6.3	11.990	3.436
374	H-20	50	47.5	6.29	11.990	3.437
374	H-20	50	47.5	6.1	11.570	3.578
375	H-20	50	47.5	6.09	11.570	3.579
375	H-20	50	47.5	6.04	11.340	3.656
376	H-20	50	47.5	6.04	11.340	3.656
376	H-20	50	47.5	5.87	11.160	3.730
377	H-20	50	47.5	5.87	11.160	3.730
377	H-20	50	47.5	5.63	10.730	3.902
378	H-20	50	47.5	5.62	10.720	3.907
378	H-20	50	47.5	5.36	10.250	4.111

379	H-20	50	47.5	5.35	10.250	4.112
379	H-20	50	47.5	5.07	9.740	4.356
380	H-20	50	47.5	5.06	9.740	4.357
380	H-20	50	47.5	4.76	9.190	4.651
381	H-20	50	47.5	4.76	9.190	4.651
381	H-20	50	47.5	4.44	8.600	5.007
382	H-20	50	47.5	4.43	8.600	5.008
382	H-20	50	47.5	4.09	7.970	5.447
383	H-20	50	47.5	4.08	7.980	5.441
383	H-20	50	47.5	3.72	7.310	5.989
384	H-20	50	47.5	3.71	7.320	5.982
384	H-20	50	47.5	3.32	6.620	6.674
385	H-20	50	47.5	3.31	6.630	6.665
385	H-20	50	47.5	2.91	5.890	7.570
386	H-20	50	47.5	2.9	5.910	7.547
386	H-20	50	47.5	2.48	5.120	8.793
387	H-20	50	47.5	2.47	5.140	8.761
387	H-20	50	47.5	2.02	4.290	10.601
388	H-20	50	47.5	2.02	4.320	10.528
388	H-20	50	47.5	1.55	3.390	13.555
389	H-20	50	47.5	1.55	3.420	13.436
389	H-20	50	47.5	1.06	2.390	19.431
390	H-20	50	47.5	1.05	2.430	19.115
390	H-20	50	47.5	0.54	1.280	36.688
391	H-20	50	47.5	0.54	1.310	35.847
391	H-20	50	47.5	0.01	-0.070	678.429

LOAD RATING FIXED SPAN -GIRDER 4

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
100	H-20	50	47.5	0.11	0.250	189.560
100	H-20	50	47.5	0.48	1.150	40.887
101	H-20	50	47.5	0.53	1.260	37.278
101	H-20	50	47.5	0.96	2.240	20.777
102	H-20	50	47.5	1.01	2.350	19.783
102	H-20	50	47.5	1.44	3.250	14.172
103	H-20	50	47.5	1.49	3.360	13.693
103	H-20	50	47.5	1.9	4.190	10.883
104	H-20	50	47.5	1.95	4.300	10.593
104	H-20	50	47.5	2.35	5.080	8.888
105	H-20	50	47.5	2.4	5.180	8.707
105	H-20	50	47.5	2.78	5.910	7.567
106	H-20	50	47.5	2.83	6.000	7.445
106	H-20	50	47.5	3.19	6.690	6.623
107	H-20	50	47.5	3.25	6.780	6.527
107	H-20	50	47.5	3.58	7.420	5.919
108	H-20	50	47.5	3.65	7.500	5.847
108	H-20	50	47.5	3.96	8.110	5.369
109	H-20	50	47.5	4.02	8.180	5.315
109	H-20	50	47.5	4.31	8.750	4.936
110	H-20	50	47.5	4.38	8.820	4.889
110	H-20	50	47.5	4.65	9.360	4.578
111	H-20	50	47.5	4.71	9.430	4.538
111	H-20	50	47.5	4.96	9.920	4.288
112	H-20	50	47.5	5.02	9.990	4.252
112	H-20	50	47.5	5.25	10.450	4.043
113	H-20	50	47.5	5.31	10.510	4.014
113	H-20	50	47.5	5.53	10.940	3.836
114	H-20	50	47.5	5.58	11.000	3.811
114	H-20	50	47.5	5.78	11.400	3.660
115	H-20	50	47.5	5.82	11.450	3.640
115	H-20	50	47.5	5.96	11.650	3.566
116	H-20	50	47.5	5.96	11.650	3.566
116	H-20	50	47.5	6	11.810	3.514
117	H-20	50	47.5	6.05	11.850	3.498
117	H-20	50	47.5	6.21	12.190	3.387
118	H-20	50	47.5	6.25	12.230	3.373
118	H-20	50	47.5	6.4	12.540	3.278
119	H-20	50	47.5	6.43	12.570	3.267
119	H-20	50	47.5	6.56	12.860	3.184
120	H-20	50	47.5	6.59	12.890	3.174
120	H-20	50	47.5	6.7	13.140	3.105
121	H-20	50	47.5	6.73	13.170	3.096
121	H-20	50	47.5	6.82	13.390	3.038
122	H-20	50	47.5	6.85	13.410	3.031
122	H-20	50	47.5	6.92	13.610	2.982

Minimum Rating Factor 2.810

123	H-20	50	47.5	6.94	13.630	2.976
123	H-20	50	47.5	7	13.800	2.935
124	H-20	50	47.5	7.02	13.820	2.929
124	H-20	50	47.5	7.06	13.960	2.897
125	H-20	50	47.5	7.07	13.980	2.892
125	H-20	50	47.5	7.1	14.100	2.865
126	H-20	50	47.5	7.11	14.110	2.863
126	H-20	50	47.5	7.11	14.200	2.844
127	H-20	50	47.5	7.12	14.220	2.840
127	H-20	50	47.5	7.11	14.290	2.826
128	H-20	50	47.5	7.11	14.300	2.824
128	H-20	50	47.5	7.08	14.350	2.817
129	H-20	50	47.5	7.08	14.350	2.817
129	H-20	50	47.5	7.04	14.380	2.814
130	H-20	50	47.5	7.03	14.380	2.814
130	H-20	50	47.5	6.97	14.380	2.818
131	H-20	50	47.5	6.96	14.380	2.819
131	H-20	50	47.5	6.88	14.350	2.831
132	H-20	50	47.5	6.86	14.350	2.832
132	H-20	50	47.5	6.82	14.180	2.869
133	H-20	50	47.5	6.82	14.180	2.869
133	H-20	50	47.5	6.77	14.300	2.848
134	H-20	50	47.5	6.75	14.300	2.850
134	H-20	50	47.5	6.64	14.250	2.867
135	H-20	50	47.5	6.61	14.240	2.871
135	H-20	50	47.5	6.48	14.180	2.893
136	H-20	50	47.5	6.45	14.160	2.899
136	H-20	50	47.5	6.31	14.090	2.923
137	H-20	50	47.5	6.27	14.070	2.930
137	H-20	50	47.5	6.11	13.970	2.963
138	H-20	50	47.5	6.07	13.940	2.972
138	H-20	50	47.5	5.9	13.820	3.010
139	H-20	50	47.5	5.85	13.800	3.018
139	H-20	50	47.5	5.66	13.650	3.065
140	H-20	50	47.5	5.61	13.630	3.073
140	H-20	50	47.5	5.4	13.450	3.130
141	H-20	50	47.5	5.35	13.430	3.138
141	H-20	50	47.5	5.12	13.240	3.201
142	H-20	50	47.5	5.06	13.210	3.213
142	H-20	50	47.5	4.82	13.010	3.281
143	H-20	50	47.5	4.76	12.980	3.293
143	H-20	50	47.5	4.5	12.750	3.373
144	H-20	50	47.5	4.44	12.720	3.385
144	H-20	50	47.5	4.16	12.480	3.473
145	H-20	50	47.5	4.09	12.440	3.490
145	H-20	50	47.5	3.79	12.180	3.589
146	H-20	50	47.5	3.73	12.140	3.605
146	H-20	50	47.5	3.41	11.860	3.718
147	H-20	50	47.5	3.34	11.820	3.736
147	H-20	50	47.5	3.01	11.510	3.865
148	H-20	50	47.5	2.94	11.480	3.882
148	H-20	50	47.5	2.58	11.150	4.029
149	H-20	50	47.5	2.51	11.110	4.050
149	H-20	50	47.5	2.41	10.930	4.125
150	H-20	50	47.5	2.41	10.930	4.125

150	H-20	50	47.5	2.13	10.770	4.213
151	H-20	50	47.5	2.06	10.720	4.239
151	H-20	50	47.5	1.67	10.360	4.424
152	H-20	50	47.5	1.59	10.310	4.453
152	H-20	50	47.5	1.18	9.930	4.665
153	H-20	50	47.5	1.1	9.870	4.701
153	H-20	50	47.5	0.67	9.480	4.940
154	H-20	50	47.5	0.59	9.420	4.980
154	H-20	50	47.5	0.14	9.010	5.256
155	H-20	50	47.5	0.06	8.950	5.301
155	H-20	50	47.5	-0.45	8.520	5.522
156	H-20	50	47.5	-0.51	8.460	5.554
156	H-20	50	47.5	-1.02	8.020	5.796
157	H-20	50	47.5	-1.09	7.960	5.830
157	H-20	50	47.5	-1.61	7.510	6.111
158	H-20	50	47.5	-1.68	7.450	6.150
158	H-20	50	47.5	-2.22	6.980	6.487
159	H-20	50	47.5	-2.29	6.920	6.533
159	H-20	50	47.5	-2.84	6.440	6.935
160	H-20	50	47.5	-2.93	6.370	6.997
160	H-20	50	47.5	-3.49	5.880	7.485
161	H-20	50	47.5	-3.58	5.820	7.546
161	H-20	50	47.5	-4.16	-5.800	7.472
162	H-20	50	47.5	-4.25	-5.810	7.444
162	H-20	50	47.5	-4.85	-5.920	7.204
163	H-20	50	47.5	-4.94	-5.930	7.177
163	H-20	50	47.5	-5.55	-6.040	6.945
164	H-20	50	47.5	-5.65	-6.060	6.906
164	H-20	50	47.5	-6.27	-6.160	6.693
165	H-20	50	47.5	-6.38	-6.180	6.654
165	H-20	50	47.5	-7.02	-6.290	6.436
166	H-20	50	47.5	-7.13	-6.310	6.398
166	H-20	50	47.5	-7.78	-6.410	6.197
167	H-20	50	47.5	-7.9	-6.430	6.159
167	H-20	50	47.5	-8.57	-6.540	5.953
168	H-20	50	47.5	-8.7	-6.570	5.906
168	H-20	50	47.5	-9.39	-6.670	5.714
169	H-20	50	47.5	-9.51	-6.700	5.670
169	H-20	50	47.5	-10.23	-6.810	5.473
170	H-20	50	47.5	-10.35	-6.840	5.431
170	H-20	50	47.5	-11.08	-7.000	5.203
171	H-20	50	47.5	-11.2	-6.990	5.193
171	H-20	50	47.5	-11.96	-7.550	4.707
172	H-20	50	47.5	-12.04	-7.510	4.722
172	H-20	50	47.5	-12.85	-8.160	4.246
173	H-20	50	47.5	-12.83	-8.180	4.238
173	H-20	50	47.5	-12.02	-7.550	4.699
174	H-20	50	47.5	-11.94	-7.580	4.691
174	H-20	50	47.5	-11.18	-7.010	5.181
175	H-20	50	47.5	-11.07	-7.030	5.182
175	H-20	50	47.5	-10.33	-6.850	5.426
176	H-20	50	47.5	-10.21	-6.820	5.468
176	H-20	50	47.5	-9.5	-6.710	5.663
177	H-20	50	47.5	-9.37	-6.680	5.708
177	H-20	50	47.5	-8.68	-6.570	5.909

178	H-20	50	47.5	-8.56	-6.550	5.945
178	H-20	50	47.5	-7.89	-6.440	6.151
179	H-20	50	47.5	-7.76	-6.420	6.190
179	H-20	50	47.5	-7.12	-6.320	6.389
180	H-20	50	47.5	-7	-6.300	6.429
180	H-20	50	47.5	-6.37	-6.190	6.645
181	H-20	50	47.5	-6.26	-6.170	6.684
181	H-20	50	47.5	-5.64	-6.060	6.908
182	H-20	50	47.5	-5.54	-6.050	6.936
182	H-20	50	47.5	-4.93	-5.940	7.167
183	H-20	50	47.5	-4.83	-5.930	7.196
183	H-20	50	47.5	-4.24	-5.820	7.433
184	H-20	50	47.5	-4.15	-5.810	7.461
184	H-20	50	47.5	-3.57	5.820	7.548
185	H-20	50	47.5	-3.48	5.890	7.474
185	H-20	50	47.5	-2.91	6.380	6.989
186	H-20	50	47.5	-2.83	6.440	6.936
186	H-20	50	47.5	-2.28	6.920	6.535
187	H-20	50	47.5	-2.21	6.980	6.489
187	H-20	50	47.5	-1.67	7.450	6.152
188	H-20	50	47.5	-1.6	7.510	6.112
188	H-20	50	47.5	-1.08	7.970	5.824
189	H-20	50	47.5	-1.01	8.030	5.790
189	H-20	50	47.5	-0.5	8.470	5.549
190	H-20	50	47.5	-0.44	8.530	5.517
190	H-20	50	47.5	0.07	8.950	5.299
191	H-20	50	47.5	0.15	9.010	5.255
191	H-20	50	47.5	0.6	9.420	4.979
192	H-20	50	47.5	0.68	9.480	4.939
192	H-20	50	47.5	1.11	9.880	4.695
193	H-20	50	47.5	1.19	9.930	4.664
193	H-20	50	47.5	1.6	10.310	4.452
194	H-20	50	47.5	1.68	10.370	4.419
194	H-20	50	47.5	2.07	10.730	4.234
195	H-20	50	47.5	2.14	10.780	4.208
195	H-20	50	47.5	2.42	10.940	4.121
196	H-20	50	47.5	2.42	10.940	4.121
196	H-20	50	47.5	2.52	11.120	4.045
197	H-20	50	47.5	2.59	11.160	4.024
197	H-20	50	47.5	2.95	11.490	3.877
198	H-20	50	47.5	3.01	11.520	3.862
198	H-20	50	47.5	3.35	11.830	3.732
199	H-20	50	47.5	3.42	11.870	3.714
199	H-20	50	47.5	3.73	12.150	3.602
200	H-20	50	47.5	3.8	12.190	3.585
200	H-20	50	47.5	4.1	12.460	3.483
201	H-20	50	47.5	4.16	12.490	3.470
201	H-20	50	47.5	4.44	12.730	3.383
202	H-20	50	47.5	4.51	12.770	3.366
202	H-20	50	47.5	4.77	12.990	3.289
203	H-20	50	47.5	4.83	13.020	3.277
203	H-20	50	47.5	5.07	13.230	3.207
204	H-20	50	47.5	5.13	13.260	3.195
204	H-20	50	47.5	5.35	13.450	3.134
205	H-20	50	47.5	5.41	13.470	3.125

205	H-20	50	47.5	5.62	13.640	3.070
206	H-20	50	47.5	5.66	13.670	3.061
206	H-20	50	47.5	5.86	13.820	3.013
207	H-20	50	47.5	5.9	13.840	3.006
207	H-20	50	47.5	6.08	13.960	2.967
208	H-20	50	47.5	6.12	13.980	2.960
208	H-20	50	47.5	6.28	14.080	2.928
209	H-20	50	47.5	6.32	14.100	2.921
209	H-20	50	47.5	6.46	14.180	2.894
210	H-20	50	47.5	6.49	14.200	2.888
210	H-20	50	47.5	6.62	14.260	2.867
211	H-20	50	47.5	6.65	14.270	2.863
211	H-20	50	47.5	6.76	14.310	2.847
212	H-20	50	47.5	6.78	14.320	2.844
212	H-20	50	47.5	6.83	14.190	2.866
213	H-20	50	47.5	6.83	14.190	2.866
213	H-20	50	47.5	6.87	14.370	2.827
214	H-20	50	47.5	6.89	14.370	2.826
214	H-20	50	47.5	6.97	14.400	2.815
215	H-20	50	47.5	6.98	14.390	2.816
215	H-20	50	47.5	7.04	14.400	2.810
216	H-20	50	47.5	7.05	14.390	2.811
216	H-20	50	47.5	7.09	14.370	2.812
217	H-20	50	47.5	7.09	14.360	2.814
217	H-20	50	47.5	7.12	14.310	2.822
218	H-20	50	47.5	7.12	14.300	2.824
218	H-20	50	47.5	7.13	14.230	2.837
219	H-20	50	47.5	7.13	14.220	2.839
219	H-20	50	47.5	7.12	14.130	2.858
220	H-20	50	47.5	7.11	14.110	2.863
220	H-20	50	47.5	7.09	14.000	2.886
221	H-20	50	47.5	7.07	13.980	2.892
221	H-20	50	47.5	7.03	13.830	2.926
222	H-20	50	47.5	7.02	13.820	2.929
222	H-20	50	47.5	6.96	13.640	2.972
223	H-20	50	47.5	6.94	13.620	2.978
223	H-20	50	47.5	6.86	13.430	3.026
224	H-20	50	47.5	6.84	13.400	3.034
224	H-20	50	47.5	6.75	13.180	3.092
225	H-20	50	47.5	6.72	13.150	3.101
225	H-20	50	47.5	6.61	12.900	3.170
226	H-20	50	47.5	6.58	12.870	3.179
226	H-20	50	47.5	6.46	12.590	3.260
227	H-20	50	47.5	6.42	12.560	3.271
227	H-20	50	47.5	6.28	12.240	3.368
228	H-20	50	47.5	6.24	12.210	3.379
228	H-20	50	47.5	6.08	11.860	3.492
229	H-20	50	47.5	6.03	11.820	3.508
229	H-20	50	47.5	5.99	11.660	3.560
230	H-20	50	47.5	5.99	11.660	3.560
230	H-20	50	47.5	5.86	11.460	3.634
231	H-20	50	47.5	5.81	11.410	3.654
231	H-20	50	47.5	5.61	11.010	3.805
232	H-20	50	47.5	5.56	10.950	3.830
232	H-20	50	47.5	5.35	10.520	4.007

233	H-20	50	47.5	5.29	10.460	4.035
233	H-20	50	47.5	5.07	9.990	4.247
234	H-20	50	47.5	5	9.930	4.280
234	H-20	50	47.5	4.76	9.430	4.532
235	H-20	50	47.5	4.69	9.360	4.574
235	H-20	50	47.5	4.44	8.830	4.877
236	H-20	50	47.5	4.37	8.760	4.924
236	H-20	50	47.5	4.09	8.180	5.307
237	H-20	50	47.5	4.02	8.110	5.361
237	H-20	50	47.5	3.72	7.500	5.837
238	H-20	50	47.5	3.65	7.420	5.910
238	H-20	50	47.5	3.34	6.770	6.523
239	H-20	50	47.5	3.26	6.680	6.623
239	H-20	50	47.5	2.93	5.990	7.441
240	H-20	50	47.5	2.85	5.900	7.568
240	H-20	50	47.5	2.5	5.160	8.721
241	H-20	50	47.5	2.43	5.060	8.907
241	H-20	50	47.5	2.05	4.280	10.619
242	H-20	50	47.5	1.98	4.170	10.916
242	H-20	50	47.5	1.59	3.330	13.787
243	H-20	50	47.5	1.51	3.220	14.283
243	H-20	50	47.5	1.1	2.320	20.000
244	H-20	50	47.5	1.03	2.200	21.123
244	H-20	50	47.5	0.59	1.240	37.831
245	H-20	50	47.5	0.52	1.130	41.575
245	H-20	50	47.5	0.07	0.250	189.720

LOAD RATING FIXED SPAN -GIRDER 1

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
538	CT-L3S2	50	47.5	0.06	0.250	189.760
538	CT-L3S2	50	47.5	0.53	0.980	47.929
539	CT-L3S2	50	47.5	0.53	1.090	43.092
539	CT-L3S2	50	47.5	1.05	1.900	24.447
540	CT-L3S2	50	47.5	1.07	2.020	22.985
540	CT-L3S2	50	47.5	1.56	2.770	16.585
541	CT-L3S2	50	47.5	1.59	2.880	15.941
541	CT-L3S2	50	47.5	2.06	3.580	12.693
542	CT-L3S2	50	47.5	2.09	3.690	12.306
542	CT-L3S2	50	47.5	2.54	4.340	10.359
543	CT-L3S2	50	47.5	2.57	4.440	10.119
543	CT-L3S2	50	47.5	3.01	5.050	8.810
544	CT-L3S2	50	47.5	3.03	5.150	8.635
544	CT-L3S2	50	47.5	3.45	5.730	7.688
545	CT-L3S2	50	47.5	3.47	5.820	7.565
545	CT-L3S2	50	47.5	3.87	6.360	6.860
546	CT-L3S2	50	47.5	3.89	6.450	6.761
546	CT-L3S2	50	47.5	4.26	6.960	6.213
547	CT-L3S2	50	47.5	4.29	7.040	6.138
547	CT-L3S2	50	47.5	4.64	7.510	5.707
548	CT-L3S2	50	47.5	4.67	7.590	5.643
548	CT-L3S2	50	47.5	4.99	8.040	5.287
549	CT-L3S2	50	47.5	5.02	8.110	5.238
549	CT-L3S2	50	47.5	5.32	8.530	4.945
550	CT-L3S2	50	47.5	5.35	8.590	4.907
550	CT-L3S2	50	47.5	5.63	9.080	4.611
551	CT-L3S2	50	47.5	5.66	9.130	4.583
551	CT-L3S2	50	47.5	5.92	9.590	4.336
552	CT-L3S2	50	47.5	5.94	9.630	4.316
552	CT-L3S2	50	47.5	6.18	10.050	4.111
553	CT-L3S2	50	47.5	6.2	10.080	4.097
553	CT-L3S2	50	47.5	6.37	10.340	3.978
554	CT-L3S2	50	47.5	6.37	10.340	3.978
554	CT-L3S2	50	47.5	6.42	10.470	3.924
555	CT-L3S2	50	47.5	6.44	10.480	3.918
555	CT-L3S2	50	47.5	6.64	10.830	3.773
556	CT-L3S2	50	47.5	6.65	10.860	3.762
556	CT-L3S2	50	47.5	6.83	11.150	3.648
557	CT-L3S2	50	47.5	6.84	11.190	3.634
557	CT-L3S2	50	47.5	7	11.440	3.540
558	CT-L3S2	50	47.5	7.01	11.480	3.527
558	CT-L3S2	50	47.5	7.15	11.700	3.449
559	CT-L3S2	50	47.5	7.16	11.730	3.439
559	CT-L3S2	50	47.5	7.27	11.910	3.378
560	CT-L3S2	50	47.5	7.28	11.940	3.369
560	CT-L3S2	50	47.5	7.38	12.100	3.316

Minimum Rating Factor 3.184

561	CT-L3S2	50	47.5	7.38	12.120	3.310
561	CT-L3S2	50	47.5	7.46	12.250	3.269
562	CT-L3S2	50	47.5	7.46	12.270	3.263
562	CT-L3S2	50	47.5	7.52	12.360	3.235
563	CT-L3S2	50	47.5	7.52	12.380	3.229
563	CT-L3S2	50	47.5	7.56	12.450	3.208
564	CT-L3S2	50	47.5	7.56	12.460	3.205
564	CT-L3S2	50	47.5	7.58	12.500	3.194
565	CT-L3S2	50	47.5	7.58	12.510	3.191
565	CT-L3S2	50	47.5	7.58	12.520	3.188
566	CT-L3S2	50	47.5	7.57	12.530	3.187
566	CT-L3S2	50	47.5	7.55	12.510	3.193
567	CT-L3S2	50	47.5	7.54	12.520	3.192
567	CT-L3S2	50	47.5	7.5	12.470	3.208
568	CT-L3S2	50	47.5	7.5	12.470	3.208
568	CT-L3S2	50	47.5	7.43	12.400	3.231
569	CT-L3S2	50	47.5	7.43	12.400	3.231
569	CT-L3S2	50	47.5	7.34	12.330	3.257
570	CT-L3S2	50	47.5	7.33	12.330	3.258
570	CT-L3S2	50	47.5	7.28	12.270	3.278
571	CT-L3S2	50	47.5	7.28	12.270	3.278
571	CT-L3S2	50	47.5	7.23	12.230	3.293
572	CT-L3S2	50	47.5	7.22	12.230	3.294
572	CT-L3S2	50	47.5	7.09	12.110	3.337
573	CT-L3S2	50	47.5	7.08	12.100	3.340
573	CT-L3S2	50	47.5	6.93	11.970	3.389
574	CT-L3S2	50	47.5	6.92	11.960	3.393
574	CT-L3S2	50	47.5	6.75	11.850	3.439
575	CT-L3S2	50	47.5	6.73	11.840	3.443
575	CT-L3S2	50	47.5	6.55	11.710	3.497
576	CT-L3S2	50	47.5	6.53	11.700	3.502
576	CT-L3S2	50	47.5	6.33	11.590	3.552
577	CT-L3S2	50	47.5	6.3	11.590	3.555
577	CT-L3S2	50	47.5	6.08	11.510	3.599
578	CT-L3S2	50	47.5	6.05	11.500	3.604
578	CT-L3S2	50	47.5	5.81	11.420	3.651
579	CT-L3S2	50	47.5	5.78	11.400	3.660
579	CT-L3S2	50	47.5	5.52	11.290	3.718
580	CT-L3S2	50	47.5	5.49	11.270	3.728
580	CT-L3S2	50	47.5	5.21	11.160	3.789
581	CT-L3S2	50	47.5	5.18	11.140	3.799
581	CT-L3S2	50	47.5	4.88	11.010	3.871
582	CT-L3S2	50	47.5	4.84	10.980	3.885
582	CT-L3S2	50	47.5	4.52	10.820	3.972
583	CT-L3S2	50	47.5	4.48	10.790	3.987
583	CT-L3S2	50	47.5	4.14	10.600	4.091
584	CT-L3S2	50	47.5	4.1	10.570	4.106
584	CT-L3S2	50	47.5	3.74	10.340	4.232
585	CT-L3S2	50	47.5	3.7	10.300	4.252
585	CT-L3S2	50	47.5	3.32	10.040	4.400
586	CT-L3S2	50	47.5	3.28	10.010	4.418
586	CT-L3S2	50	47.5	2.87	9.710	4.596
587	CT-L3S2	50	47.5	2.83	9.690	4.610
587	CT-L3S2	50	47.5	2.72	9.550	4.689
588	CT-L3S2	50	47.5	2.72	9.550	4.689

588	CT-L3S2	50	47.5	2.41	9.350	4.822
589	CT-L3S2	50	47.5	2.36	9.310	4.849
589	CT-L3S2	50	47.5	1.91	8.950	5.094
590	CT-L3S2	50	47.5	1.86	8.900	5.128
590	CT-L3S2	50	47.5	1.4	8.510	5.417
591	CT-L3S2	50	47.5	1.34	8.450	5.463
591	CT-L3S2	50	47.5	0.86	8.040	5.801
592	CT-L3S2	50	47.5	0.8	7.980	5.852
592	CT-L3S2	50	47.5	0.3	7.540	6.260
593	CT-L3S2	50	47.5	0.24	7.470	6.327
593	CT-L3S2	50	47.5	-0.33	7.000	6.739
594	CT-L3S2	50	47.5	-0.37	6.930	6.801
594	CT-L3S2	50	47.5	-0.94	6.500	7.163
595	CT-L3S2	50	47.5	-0.98	6.420	7.246
595	CT-L3S2	50	47.5	-1.57	6.000	7.655
596	CT-L3S2	50	47.5	-1.62	5.920	7.750
596	CT-L3S2	50	47.5	-2.22	-5.650	8.014
597	CT-L3S2	50	47.5	-2.28	-5.660	7.989
597	CT-L3S2	50	47.5	-2.9	-5.770	7.730
598	CT-L3S2	50	47.5	-2.96	-5.780	7.706
598	CT-L3S2	50	47.5	-3.61	-5.890	7.452
599	CT-L3S2	50	47.5	-3.66	-5.900	7.431
599	CT-L3S2	50	47.5	-4.33	-6.000	7.195
600	CT-L3S2	50	47.5	-4.39	-6.020	7.161
600	CT-L3S2	50	47.5	-5.09	-6.130	6.918
601	CT-L3S2	50	47.5	-5.15	-6.140	6.897
601	CT-L3S2	50	47.5	-5.86	-6.250	6.662
602	CT-L3S2	50	47.5	-5.93	-6.270	6.630
602	CT-L3S2	50	47.5	-6.66	-6.370	6.411
603	CT-L3S2	50	47.5	-6.74	-6.390	6.379
603	CT-L3S2	50	47.5	-7.49	-6.500	6.155
604	CT-L3S2	50	47.5	-7.57	-6.520	6.124
604	CT-L3S2	50	47.5	-8.34	-6.630	5.906
605	CT-L3S2	50	47.5	-8.43	-6.650	5.875
605	CT-L3S2	50	47.5	-9.22	-7.100	5.392
606	CT-L3S2	50	47.5	-9.33	-7.120	5.361
606	CT-L3S2	50	47.5	-10.13	-7.590	4.924
607	CT-L3S2	50	47.5	-10.25	-7.620	4.888
607	CT-L3S2	50	47.5	-11.07	-8.100	4.498
608	CT-L3S2	50	47.5	-11.2	-8.130	4.465
608	CT-L3S2	50	47.5	-12.06	-8.700	4.074
609	CT-L3S2	50	47.5	-12.18	-8.780	4.023
609	CT-L3S2	50	47.5	-13.08	-9.520	3.616
610	CT-L3S2	50	47.5	-13.17	-9.570	3.587
610	CT-L3S2	50	47.5	-14.14	-10.380	3.214
611	CT-L3S2	50	47.5	-14.16	-10.370	3.215
611	CT-L3S2	50	47.5	-13.19	-9.570	3.585
612	CT-L3S2	50	47.5	-13.1	-9.530	3.610
612	CT-L3S2	50	47.5	-12.2	-8.770	4.025
613	CT-L3S2	50	47.5	-12.08	-8.700	4.071
613	CT-L3S2	50	47.5	-11.22	-8.160	4.446
614	CT-L3S2	50	47.5	-11.09	-8.120	4.484
614	CT-L3S2	50	47.5	-10.27	-7.650	4.867
615	CT-L3S2	50	47.5	-10.14	-7.610	4.909
615	CT-L3S2	50	47.5	-9.34	-7.150	5.337

616	CT-L3S2	50	47.5	-9.24	-7.130	5.366
616	CT-L3S2	50	47.5	-8.45	-6.680	5.846
617	CT-L3S2	50	47.5	-8.36	-6.650	5.886
617	CT-L3S2	50	47.5	-7.58	-6.550	6.095
618	CT-L3S2	50	47.5	-7.5	-6.530	6.126
618	CT-L3S2	50	47.5	-6.75	-6.420	6.347
619	CT-L3S2	50	47.5	-6.68	-6.400	6.378
619	CT-L3S2	50	47.5	-5.94	-6.290	6.607
620	CT-L3S2	50	47.5	-5.87	-6.280	6.629
620	CT-L3S2	50	47.5	-5.16	-6.170	6.862
621	CT-L3S2	50	47.5	-5.1	-6.150	6.894
621	CT-L3S2	50	47.5	-4.41	-6.050	7.122
622	CT-L3S2	50	47.5	-4.34	-6.030	7.158
622	CT-L3S2	50	47.5	-3.68	-5.920	7.402
623	CT-L3S2	50	47.5	-3.62	-5.910	7.425
623	CT-L3S2	50	47.5	-2.97	-5.810	7.664
624	CT-L3S2	50	47.5	-2.91	-5.790	7.701
624	CT-L3S2	50	47.5	-2.29	-5.690	7.946
625	CT-L3S2	50	47.5	-2.23	-5.680	7.970
625	CT-L3S2	50	47.5	-1.63	5.920	7.748
626	CT-L3S2	50	47.5	-1.58	6.000	7.653
626	CT-L3S2	50	47.5	-0.99	6.420	7.245
627	CT-L3S2	50	47.5	-0.94	6.500	7.163
627	CT-L3S2	50	47.5	-0.38	6.970	6.760
628	CT-L3S2	50	47.5	-0.33	7.040	6.700
628	CT-L3S2	50	47.5	0.23	7.500	6.303
629	CT-L3S2	50	47.5	0.29	7.570	6.236
629	CT-L3S2	50	47.5	0.79	8.010	5.831
630	CT-L3S2	50	47.5	0.85	8.070	5.781
630	CT-L3S2	50	47.5	1.34	8.490	5.437
631	CT-L3S2	50	47.5	1.39	8.540	5.399
631	CT-L3S2	50	47.5	1.85	8.930	5.112
632	CT-L3S2	50	47.5	1.91	8.980	5.077
632	CT-L3S2	50	47.5	2.35	9.350	4.829
633	CT-L3S2	50	47.5	2.4	9.380	4.808
633	CT-L3S2	50	47.5	2.71	9.590	4.670
634	CT-L3S2	50	47.5	2.71	9.580	4.675
634	CT-L3S2	50	47.5	2.82	9.720	4.597
635	CT-L3S2	50	47.5	2.87	9.750	4.577
635	CT-L3S2	50	47.5	3.27	10.040	4.405
636	CT-L3S2	50	47.5	3.31	10.080	4.384
636	CT-L3S2	50	47.5	3.7	10.340	4.236
637	CT-L3S2	50	47.5	3.74	10.380	4.216
637	CT-L3S2	50	47.5	4.1	10.600	4.094
638	CT-L3S2	50	47.5	4.14	10.640	4.075
638	CT-L3S2	50	47.5	4.48	10.830	3.972
639	CT-L3S2	50	47.5	4.52	10.860	3.958
639	CT-L3S2	50	47.5	4.84	11.020	3.871
640	CT-L3S2	50	47.5	4.87	11.050	3.858
640	CT-L3S2	50	47.5	5.17	11.180	3.786
641	CT-L3S2	50	47.5	5.21	11.200	3.776
641	CT-L3S2	50	47.5	5.49	11.290	3.721
642	CT-L3S2	50	47.5	5.52	11.320	3.708
642	CT-L3S2	50	47.5	5.78	11.420	3.653
643	CT-L3S2	50	47.5	5.81	11.440	3.644

643	CT-L3S2	50	47.5	6.05	11.520	3.598
644	CT-L3S2	50	47.5	6.08	11.540	3.589
644	CT-L3S2	50	47.5	6.3	11.610	3.549
645	CT-L3S2	50	47.5	6.32	11.610	3.547
645	CT-L3S2	50	47.5	6.53	11.710	3.499
646	CT-L3S2	50	47.5	6.55	11.720	3.494
646	CT-L3S2	50	47.5	6.73	11.850	3.441
647	CT-L3S2	50	47.5	6.75	11.860	3.436
647	CT-L3S2	50	47.5	6.91	11.970	3.391
648	CT-L3S2	50	47.5	6.93	11.980	3.386
648	CT-L3S2	50	47.5	7.08	12.110	3.338
649	CT-L3S2	50	47.5	7.09	12.130	3.331
649	CT-L3S2	50	47.5	7.22	12.240	3.291
650	CT-L3S2	50	47.5	7.23	12.250	3.287
650	CT-L3S2	50	47.5	7.28	12.280	3.275
651	CT-L3S2	50	47.5	7.28	12.280	3.275
651	CT-L3S2	50	47.5	7.33	12.340	3.255
652	CT-L3S2	50	47.5	7.34	12.350	3.252
652	CT-L3S2	50	47.5	7.43	12.410	3.229
653	CT-L3S2	50	47.5	7.43	12.410	3.229
653	CT-L3S2	50	47.5	7.5	12.490	3.203
654	CT-L3S2	50	47.5	7.5	12.480	3.205
654	CT-L3S2	50	47.5	7.55	12.530	3.188
655	CT-L3S2	50	47.5	7.55	12.520	3.191
655	CT-L3S2	50	47.5	7.57	12.540	3.184
656	CT-L3S2	50	47.5	7.58	12.530	3.186
656	CT-L3S2	50	47.5	7.58	12.530	3.186
657	CT-L3S2	50	47.5	7.58	12.510	3.191
657	CT-L3S2	50	47.5	7.57	12.480	3.200
658	CT-L3S2	50	47.5	7.57	12.460	3.205
658	CT-L3S2	50	47.5	7.53	12.400	3.223
659	CT-L3S2	50	47.5	7.53	12.380	3.229
659	CT-L3S2	50	47.5	7.47	12.280	3.260
660	CT-L3S2	50	47.5	7.47	12.260	3.265
660	CT-L3S2	50	47.5	7.39	12.130	3.307
661	CT-L3S2	50	47.5	7.39	12.110	3.312
661	CT-L3S2	50	47.5	7.29	11.950	3.365
662	CT-L3S2	50	47.5	7.29	11.930	3.370
662	CT-L3S2	50	47.5	7.17	11.740	3.435
663	CT-L3S2	50	47.5	7.16	11.710	3.445
663	CT-L3S2	50	47.5	7.03	11.490	3.522
664	CT-L3S2	50	47.5	7.02	11.450	3.535
664	CT-L3S2	50	47.5	6.86	11.200	3.629
665	CT-L3S2	50	47.5	6.85	11.160	3.642
665	CT-L3S2	50	47.5	6.67	10.870	3.756
666	CT-L3S2	50	47.5	6.66	10.840	3.768
666	CT-L3S2	50	47.5	6.46	10.490	3.912
667	CT-L3S2	50	47.5	6.45	10.480	3.917
667	CT-L3S2	50	47.5	6.39	10.350	3.972
668	CT-L3S2	50	47.5	6.39	10.350	3.972
668	CT-L3S2	50	47.5	6.23	10.090	4.090
669	CT-L3S2	50	47.5	6.21	10.060	4.104
669	CT-L3S2	50	47.5	5.97	9.630	4.313
670	CT-L3S2	50	47.5	5.95	9.600	4.328
670	CT-L3S2	50	47.5	5.69	9.140	4.574

671	CT-L3S2	50	47.5	5.67	9.090	4.602
671	CT-L3S2	50	47.5	5.39	8.600	4.897
672	CT-L3S2	50	47.5	5.37	8.530	4.939
672	CT-L3S2	50	47.5	5.07	8.110	5.232
673	CT-L3S2	50	47.5	5.04	8.040	5.281
673	CT-L3S2	50	47.5	4.72	7.590	5.636
674	CT-L3S2	50	47.5	4.69	7.520	5.693
674	CT-L3S2	50	47.5	4.36	7.040	6.128
675	CT-L3S2	50	47.5	4.32	6.960	6.204
675	CT-L3S2	50	47.5	3.97	6.440	6.759
676	CT-L3S2	50	47.5	3.93	6.360	6.851
676	CT-L3S2	50	47.5	3.56	5.810	7.563
677	CT-L3S2	50	47.5	3.52	5.730	7.675
677	CT-L3S2	50	47.5	3.12	5.140	8.634
678	CT-L3S2	50	47.5	3.08	5.050	8.796
678	CT-L3S2	50	47.5	2.66	4.430	10.122
679	CT-L3S2	50	47.5	2.62	4.330	10.365
679	CT-L3S2	50	47.5	2.18	3.670	12.349
680	CT-L3S2	50	47.5	2.14	3.560	12.742
680	CT-L3S2	50	47.5	1.67	2.860	16.024
681	CT-L3S2	50	47.5	1.64	2.750	16.676
681	CT-L3S2	50	47.5	1.15	1.990	23.291
682	CT-L3S2	50	47.5	1.11	1.880	24.676
682	CT-L3S2	50	47.5	0.59	1.070	43.841
683	CT-L3S2	50	47.5	0.57	0.970	48.381
683	CT-L3S2	50	47.5	0.04	0.260	182.538

LOAD RATING FIXED SPAN -GIRDER 2

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

$f_{DL+SDL}=1.25*DL+1.5*DW$

$f_{LL+I}=\Upsilon_{LL}*LL$

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
392	CT-L3S2	50	47.5	0.05	-0.050	949.000
392	CT-L3S2	50	47.5	0.67	1.040	45.029
393	CT-L3S2	50	47.5	0.63	1.010	46.406
393	CT-L3S2	50	47.5	1.24	1.970	23.482
394	CT-L3S2	50	47.5	1.2	1.930	23.990
394	CT-L3S2	50	47.5	1.74	2.790	16.401
395	CT-L3S2	50	47.5	1.71	2.760	16.591
395	CT-L3S2	50	47.5	2.21	3.550	12.758
396	CT-L3S2	50	47.5	2.19	3.520	12.872
396	CT-L3S2	50	47.5	2.65	4.250	10.553
397	CT-L3S2	50	47.5	2.64	4.220	10.630
397	CT-L3S2	50	47.5	3.08	4.890	9.084
398	CT-L3S2	50	47.5	3.07	4.870	9.123
398	CT-L3S2	50	47.5	3.48	5.490	8.018
399	CT-L3S2	50	47.5	3.47	5.490	8.020
399	CT-L3S2	50	47.5	3.87	6.070	7.188
400	CT-L3S2	50	47.5	3.86	6.060	7.201
400	CT-L3S2	50	47.5	4.24	6.600	6.555
401	CT-L3S2	50	47.5	4.23	6.590	6.566
401	CT-L3S2	50	47.5	4.59	7.090	6.052
402	CT-L3S2	50	47.5	4.58	7.080	6.062
402	CT-L3S2	50	47.5	4.92	7.550	5.640
403	CT-L3S2	50	47.5	4.91	7.550	5.641
403	CT-L3S2	50	47.5	5.23	8.130	5.199
404	CT-L3S2	50	47.5	5.22	8.130	5.200
404	CT-L3S2	50	47.5	5.52	8.670	4.842
405	CT-L3S2	50	47.5	5.51	8.670	4.843
405	CT-L3S2	50	47.5	5.78	9.170	4.550
406	CT-L3S2	50	47.5	5.78	9.170	4.550
406	CT-L3S2	50	47.5	6.03	9.620	4.311
407	CT-L3S2	50	47.5	6.03	9.620	4.311
407	CT-L3S2	50	47.5	6.2	9.880	4.180
408	CT-L3S2	50	47.5	6.2	9.880	4.180
408	CT-L3S2	50	47.5	6.26	10.030	4.112
409	CT-L3S2	50	47.5	6.25	10.030	4.113
409	CT-L3S2	50	47.5	6.46	10.430	3.935
410	CT-L3S2	50	47.5	6.46	10.430	3.935
410	CT-L3S2	50	47.5	6.64	10.780	3.790
411	CT-L3S2	50	47.5	6.64	10.780	3.790
411	CT-L3S2	50	47.5	6.8	11.080	3.673
412	CT-L3S2	50	47.5	6.8	11.080	3.673
412	CT-L3S2	50	47.5	6.94	11.350	3.574
413	CT-L3S2	50	47.5	6.94	11.350	3.574
413	CT-L3S2	50	47.5	7.06	11.570	3.495
414	CT-L3S2	50	47.5	7.06	11.570	3.495
414	CT-L3S2	50	47.5	7.16	11.750	3.433

Minimum Rating Factor 3.312

415	CT-L3S2	50	47.5	7.15	11.750	3.434
415	CT-L3S2	50	47.5	7.23	11.900	3.384
416	CT-L3S2	50	47.5	7.23	11.900	3.384
416	CT-L3S2	50	47.5	7.29	12.010	3.348
417	CT-L3S2	50	47.5	7.29	12.000	3.351
417	CT-L3S2	50	47.5	7.32	12.080	3.326
418	CT-L3S2	50	47.5	7.32	12.080	3.326
418	CT-L3S2	50	47.5	7.33	12.110	3.317
419	CT-L3S2	50	47.5	7.33	12.110	3.317
419	CT-L3S2	50	47.5	7.32	12.110	3.318
420	CT-L3S2	50	47.5	7.33	12.110	3.317
420	CT-L3S2	50	47.5	7.29	12.090	3.326
421	CT-L3S2	50	47.5	7.3	12.090	3.325
421	CT-L3S2	50	47.5	7.24	12.050	3.341
422	CT-L3S2	50	47.5	7.25	12.070	3.335
422	CT-L3S2	50	47.5	7.17	11.990	3.364
423	CT-L3S2	50	47.5	7.17	12.010	3.358
423	CT-L3S2	50	47.5	7.08	11.900	3.397
424	CT-L3S2	50	47.5	7.08	11.920	3.391
424	CT-L3S2	50	47.5	7.03	11.810	3.427
425	CT-L3S2	50	47.5	7.02	11.810	3.428
425	CT-L3S2	50	47.5	6.96	11.790	3.439
426	CT-L3S2	50	47.5	6.97	11.800	3.435
426	CT-L3S2	50	47.5	6.83	11.680	3.482
427	CT-L3S2	50	47.5	6.83	11.680	3.482
427	CT-L3S2	50	47.5	6.67	11.540	3.538
428	CT-L3S2	50	47.5	6.67	11.540	3.538
428	CT-L3S2	50	47.5	6.49	11.460	3.579
429	CT-L3S2	50	47.5	6.49	11.450	3.582
429	CT-L3S2	50	47.5	6.29	11.350	3.631
430	CT-L3S2	50	47.5	6.29	11.350	3.631
430	CT-L3S2	50	47.5	6.06	11.230	3.690
431	CT-L3S2	50	47.5	6.07	11.220	3.693
431	CT-L3S2	50	47.5	5.82	11.150	3.738
432	CT-L3S2	50	47.5	5.82	11.150	3.738
432	CT-L3S2	50	47.5	5.55	11.060	3.793
433	CT-L3S2	50	47.5	5.56	11.060	3.792
433	CT-L3S2	50	47.5	5.27	10.950	3.857
434	CT-L3S2	50	47.5	5.27	10.940	3.860
434	CT-L3S2	50	47.5	4.96	10.800	3.939
435	CT-L3S2	50	47.5	4.97	10.800	3.938
435	CT-L3S2	50	47.5	4.63	10.640	4.029
436	CT-L3S2	50	47.5	4.64	10.650	4.024
436	CT-L3S2	50	47.5	4.28	10.470	4.128
437	CT-L3S2	50	47.5	4.29	10.480	4.123
437	CT-L3S2	50	47.5	3.91	10.260	4.249
438	CT-L3S2	50	47.5	3.92	10.270	4.243
438	CT-L3S2	50	47.5	3.52	10.010	4.394
439	CT-L3S2	50	47.5	3.52	10.010	4.394
439	CT-L3S2	50	47.5	3.11	9.720	4.567
440	CT-L3S2	50	47.5	3.11	9.720	4.567
440	CT-L3S2	50	47.5	2.67	9.380	4.779
441	CT-L3S2	50	47.5	2.67	9.390	4.774
441	CT-L3S2	50	47.5	2.56	9.220	4.874
442	CT-L3S2	50	47.5	2.56	9.220	4.874

442	CT-L3S2	50	47.5	2.21	9.040	5.010
443	CT-L3S2	50	47.5	2.22	9.050	5.003
443	CT-L3S2	50	47.5	1.73	8.670	5.279
444	CT-L3S2	50	47.5	1.74	8.680	5.272
444	CT-L3S2	50	47.5	1.23	8.270	5.595
445	CT-L3S2	50	47.5	1.23	8.270	5.595
445	CT-L3S2	50	47.5	0.71	7.830	5.976
446	CT-L3S2	50	47.5	0.71	7.830	5.976
446	CT-L3S2	50	47.5	0.17	7.350	6.439
447	CT-L3S2	50	47.5	0.17	7.360	6.431
447	CT-L3S2	50	47.5	-0.4	6.850	6.876
448	CT-L3S2	50	47.5	-0.41	6.850	6.874
448	CT-L3S2	50	47.5	-0.99	6.320	7.359
449	CT-L3S2	50	47.5	-0.99	6.320	7.359
449	CT-L3S2	50	47.5	-1.6	5.820	7.887
450	CT-L3S2	50	47.5	-1.6	5.830	7.873
450	CT-L3S2	50	47.5	-2.23	-5.510	8.216
451	CT-L3S2	50	47.5	-2.23	-5.510	8.216
451	CT-L3S2	50	47.5	-2.88	-5.620	7.940
452	CT-L3S2	50	47.5	-2.88	-5.620	7.940
452	CT-L3S2	50	47.5	-3.55	-5.720	7.684
453	CT-L3S2	50	47.5	-3.55	-5.720	7.684
453	CT-L3S2	50	47.5	-4.24	-5.830	7.420
454	CT-L3S2	50	47.5	-4.24	-5.830	7.420
454	CT-L3S2	50	47.5	-4.95	-5.940	7.163
455	CT-L3S2	50	47.5	-4.95	-5.940	7.163
455	CT-L3S2	50	47.5	-5.69	-6.050	6.911
456	CT-L3S2	50	47.5	-5.69	-6.050	6.911
456	CT-L3S2	50	47.5	-6.45	-6.160	6.664
457	CT-L3S2	50	47.5	-6.45	-6.160	6.664
457	CT-L3S2	50	47.5	-7.22	-6.270	6.424
458	CT-L3S2	50	47.5	-7.22	-6.280	6.414
458	CT-L3S2	50	47.5	-8.03	-6.390	6.177
459	CT-L3S2	50	47.5	-8.03	-6.390	6.177
459	CT-L3S2	50	47.5	-8.85	-6.510	5.937
460	CT-L3S2	50	47.5	-8.85	-6.510	5.937
460	CT-L3S2	50	47.5	-9.69	-6.870	5.504
461	CT-L3S2	50	47.5	-9.7	-6.890	5.486
461	CT-L3S2	50	47.5	-10.56	-7.440	4.965
462	CT-L3S2	50	47.5	-10.56	-7.440	4.965
462	CT-L3S2	50	47.5	-11.44	-8.040	4.485
463	CT-L3S2	50	47.5	-11.44	-8.040	4.485
463	CT-L3S2	50	47.5	-12.33	-8.630	4.075
464	CT-L3S2	50	47.5	-12.33	-8.630	4.075
464	CT-L3S2	50	47.5	-13.23	-9.240	3.709
465	CT-L3S2	50	47.5	-13.24	-9.240	3.708
465	CT-L3S2	50	47.5	-12.34	-8.630	4.074
466	CT-L3S2	50	47.5	-12.34	-8.630	4.074
466	CT-L3S2	50	47.5	-11.45	-8.040	4.484
467	CT-L3S2	50	47.5	-11.44	-8.040	4.485
467	CT-L3S2	50	47.5	-10.56	-7.450	4.958
468	CT-L3S2	50	47.5	-10.56	-7.450	4.958
468	CT-L3S2	50	47.5	-9.7	-6.910	5.470
469	CT-L3S2	50	47.5	-9.7	-6.900	5.478
469	CT-L3S2	50	47.5	-8.86	-6.550	5.899

470	CT-L3S2	50	47.5	-8.85	-6.550	5.901
470	CT-L3S2	50	47.5	-8.03	-6.430	6.138
471	CT-L3S2	50	47.5	-8.03	-6.430	6.138
471	CT-L3S2	50	47.5	-7.23	-6.320	6.372
472	CT-L3S2	50	47.5	-7.23	-6.310	6.382
472	CT-L3S2	50	47.5	-6.45	-6.200	6.621
473	CT-L3S2	50	47.5	-6.45	-6.200	6.621
473	CT-L3S2	50	47.5	-5.69	-6.090	6.865
474	CT-L3S2	50	47.5	-5.69	-6.090	6.865
474	CT-L3S2	50	47.5	-4.96	-5.980	7.114
475	CT-L3S2	50	47.5	-4.96	-5.980	7.114
475	CT-L3S2	50	47.5	-4.24	-5.870	7.370
476	CT-L3S2	50	47.5	-4.24	-5.870	7.370
476	CT-L3S2	50	47.5	-3.55	-5.760	7.630
477	CT-L3S2	50	47.5	-3.55	-5.760	7.630
477	CT-L3S2	50	47.5	-2.88	-5.650	7.897
478	CT-L3S2	50	47.5	-2.88	-5.660	7.883
478	CT-L3S2	50	47.5	-2.23	-5.550	8.157
479	CT-L3S2	50	47.5	-2.23	-5.550	8.157
479	CT-L3S2	50	47.5	-1.6	5.840	7.860
480	CT-L3S2	50	47.5	-1.6	5.840	7.860
480	CT-L3S2	50	47.5	-0.99	6.360	7.313
481	CT-L3S2	50	47.5	-0.99	6.350	7.324
481	CT-L3S2	50	47.5	-0.41	6.890	6.835
482	CT-L3S2	50	47.5	-0.41	6.880	6.844
482	CT-L3S2	50	47.5	0.17	7.390	6.405
483	CT-L3S2	50	47.5	0.17	7.390	6.405
483	CT-L3S2	50	47.5	0.71	7.860	5.953
484	CT-L3S2	50	47.5	0.71	7.860	5.953
484	CT-L3S2	50	47.5	1.23	8.310	5.568
485	CT-L3S2	50	47.5	1.23	8.300	5.575
485	CT-L3S2	50	47.5	1.73	8.710	5.255
486	CT-L3S2	50	47.5	1.73	8.710	5.255
486	CT-L3S2	50	47.5	2.21	9.080	4.988
487	CT-L3S2	50	47.5	2.21	9.080	4.988
487	CT-L3S2	50	47.5	2.56	9.260	4.853
488	CT-L3S2	50	47.5	2.56	9.260	4.853
488	CT-L3S2	50	47.5	2.67	9.430	4.754
489	CT-L3S2	50	47.5	2.67	9.420	4.759
489	CT-L3S2	50	47.5	3.11	9.760	4.548
490	CT-L3S2	50	47.5	3.1	9.750	4.554
490	CT-L3S2	50	47.5	3.52	10.050	4.376
491	CT-L3S2	50	47.5	3.52	10.040	4.380
491	CT-L3S2	50	47.5	3.91	10.300	4.232
492	CT-L3S2	50	47.5	3.91	10.300	4.232
492	CT-L3S2	50	47.5	4.28	10.520	4.108
493	CT-L3S2	50	47.5	4.28	10.510	4.112
493	CT-L3S2	50	47.5	4.63	10.690	4.010
494	CT-L3S2	50	47.5	4.63	10.680	4.014
494	CT-L3S2	50	47.5	4.96	10.830	3.928
495	CT-L3S2	50	47.5	4.96	10.840	3.924
495	CT-L3S2	50	47.5	5.27	10.970	3.850
496	CT-L3S2	50	47.5	5.27	10.980	3.846
496	CT-L3S2	50	47.5	5.56	11.090	3.782
497	CT-L3S2	50	47.5	5.55	11.100	3.779

497	CT-L3S2	50	47.5	5.82	11.180	3.728
498	CT-L3S2	50	47.5	5.82	11.180	3.728
498	CT-L3S2	50	47.5	6.06	11.250	3.684
499	CT-L3S2	50	47.5	6.06	11.240	3.687
499	CT-L3S2	50	47.5	6.29	11.360	3.628
500	CT-L3S2	50	47.5	6.28	11.370	3.625
500	CT-L3S2	50	47.5	6.49	11.470	3.575
501	CT-L3S2	50	47.5	6.48	11.470	3.576
501	CT-L3S2	50	47.5	6.67	11.550	3.535
502	CT-L3S2	50	47.5	6.66	11.550	3.536
502	CT-L3S2	50	47.5	6.82	11.700	3.477
503	CT-L3S2	50	47.5	6.82	11.690	3.480
503	CT-L3S2	50	47.5	6.96	11.820	3.430
504	CT-L3S2	50	47.5	6.96	11.810	3.433
504	CT-L3S2	50	47.5	7.02	11.830	3.422
505	CT-L3S2	50	47.5	7.02	11.830	3.422
505	CT-L3S2	50	47.5	7.08	11.940	3.385
506	CT-L3S2	50	47.5	7.07	11.920	3.392
506	CT-L3S2	50	47.5	7.17	12.030	3.352
507	CT-L3S2	50	47.5	7.17	12.010	3.358
507	CT-L3S2	50	47.5	7.24	12.080	3.333
508	CT-L3S2	50	47.5	7.24	12.070	3.336
508	CT-L3S2	50	47.5	7.29	12.110	3.320
509	CT-L3S2	50	47.5	7.29	12.100	3.323
509	CT-L3S2	50	47.5	7.32	12.130	3.312
510	CT-L3S2	50	47.5	7.32	12.130	3.312
510	CT-L3S2	50	47.5	7.33	12.130	3.312
511	CT-L3S2	50	47.5	7.33	12.130	3.312
511	CT-L3S2	50	47.5	7.31	12.090	3.324
512	CT-L3S2	50	47.5	7.31	12.090	3.324
512	CT-L3S2	50	47.5	7.28	12.020	3.346
513	CT-L3S2	50	47.5	7.28	12.020	3.346
513	CT-L3S2	50	47.5	7.22	11.910	3.382
514	CT-L3S2	50	47.5	7.22	11.910	3.382
514	CT-L3S2	50	47.5	7.14	11.770	3.429
515	CT-L3S2	50	47.5	7.14	11.770	3.429
515	CT-L3S2	50	47.5	7.04	11.580	3.494
516	CT-L3S2	50	47.5	7.04	11.590	3.491
516	CT-L3S2	50	47.5	6.92	11.360	3.572
517	CT-L3S2	50	47.5	6.92	11.360	3.572
517	CT-L3S2	50	47.5	6.78	11.100	3.668
518	CT-L3S2	50	47.5	6.78	11.100	3.668
518	CT-L3S2	50	47.5	6.62	10.790	3.789
519	CT-L3S2	50	47.5	6.62	10.790	3.789
519	CT-L3S2	50	47.5	6.43	10.440	3.934
520	CT-L3S2	50	47.5	6.43	10.450	3.930
520	CT-L3S2	50	47.5	6.23	10.050	4.106
521	CT-L3S2	50	47.5	6.23	10.050	4.106
521	CT-L3S2	50	47.5	6.17	9.890	4.179
522	CT-L3S2	50	47.5	6.17	9.890	4.179
522	CT-L3S2	50	47.5	6	9.640	4.305
523	CT-L3S2	50	47.5	6	9.640	4.305
523	CT-L3S2	50	47.5	5.75	9.190	4.543
524	CT-L3S2	50	47.5	5.75	9.190	4.543
524	CT-L3S2	50	47.5	5.48	8.690	4.835

525	CT-L3S2	50	47.5	5.48	8.690	4.835
525	CT-L3S2	50	47.5	5.18	8.140	5.199
526	CT-L3S2	50	47.5	5.19	8.140	5.198
526	CT-L3S2	50	47.5	4.87	7.560	5.639
527	CT-L3S2	50	47.5	4.87	7.570	5.631
527	CT-L3S2	50	47.5	4.53	7.100	6.052
528	CT-L3S2	50	47.5	4.54	7.100	6.051
528	CT-L3S2	50	47.5	4.18	6.600	6.564
529	CT-L3S2	50	47.5	4.18	6.610	6.554
529	CT-L3S2	50	47.5	3.8	6.070	7.199
530	CT-L3S2	50	47.5	3.8	6.080	7.188
530	CT-L3S2	50	47.5	3.4	5.500	8.018
531	CT-L3S2	50	47.5	3.4	5.510	8.004
531	CT-L3S2	50	47.5	2.98	4.890	9.104
532	CT-L3S2	50	47.5	2.98	4.910	9.067
532	CT-L3S2	50	47.5	2.53	4.240	10.606
533	CT-L3S2	50	47.5	2.54	4.260	10.554
533	CT-L3S2	50	47.5	2.07	3.540	12.833
534	CT-L3S2	50	47.5	2.07	3.570	12.725
534	CT-L3S2	50	47.5	1.58	2.780	16.518
535	CT-L3S2	50	47.5	1.58	2.810	16.342
535	CT-L3S2	50	47.5	1.08	1.950	23.805
536	CT-L3S2	50	47.5	1.07	1.980	23.449
536	CT-L3S2	50	47.5	0.55	1.020	46.029
537	CT-L3S2	50	47.5	0.55	1.050	44.714
537	CT-L3S2	50	47.5	0.01	-0.060	791.500

LOAD RATING FIXED SPAN -GIRDER 3

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 3.325

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
246	CT-L3S2	50	47.5	0.05	-0.050	949.000
246	CT-L3S2	50	47.5	0.67	1.040	45.029
247	CT-L3S2	50	47.5	0.62	1.010	46.416
247	CT-L3S2	50	47.5	1.22	1.970	23.492
248	CT-L3S2	50	47.5	1.18	1.930	24.000
248	CT-L3S2	50	47.5	1.71	2.790	16.412
249	CT-L3S2	50	47.5	1.68	2.760	16.601
249	CT-L3S2	50	47.5	2.16	3.550	12.772
250	CT-L3S2	50	47.5	2.14	3.520	12.886
250	CT-L3S2	50	47.5	2.59	4.240	10.592
251	CT-L3S2	50	47.5	2.57	4.220	10.647
251	CT-L3S2	50	47.5	3	4.890	9.100
252	CT-L3S2	50	47.5	2.99	4.870	9.140
252	CT-L3S2	50	47.5	3.4	5.490	8.033
253	CT-L3S2	50	47.5	3.39	5.490	8.035
253	CT-L3S2	50	47.5	3.77	6.070	7.204
254	CT-L3S2	50	47.5	3.77	6.060	7.216
254	CT-L3S2	50	47.5	4.14	6.600	6.570
255	CT-L3S2	50	47.5	4.14	6.590	6.580
255	CT-L3S2	50	47.5	4.48	7.090	6.068
256	CT-L3S2	50	47.5	4.48	7.080	6.076
256	CT-L3S2	50	47.5	4.8	7.550	5.656
257	CT-L3S2	50	47.5	4.81	7.550	5.654
257	CT-L3S2	50	47.5	5.11	8.130	5.214
258	CT-L3S2	50	47.5	5.11	8.130	5.214
258	CT-L3S2	50	47.5	5.39	8.670	4.857
259	CT-L3S2	50	47.5	5.39	8.670	4.857
259	CT-L3S2	50	47.5	5.65	9.170	4.564
260	CT-L3S2	50	47.5	5.66	9.170	4.563
260	CT-L3S2	50	47.5	5.9	9.620	4.324
261	CT-L3S2	50	47.5	5.9	9.620	4.324
261	CT-L3S2	50	47.5	6.07	9.880	4.193
262	CT-L3S2	50	47.5	6.07	9.880	4.193
262	CT-L3S2	50	47.5	6.12	10.030	4.126
263	CT-L3S2	50	47.5	6.12	10.030	4.126
263	CT-L3S2	50	47.5	6.32	10.430	3.948
264	CT-L3S2	50	47.5	6.32	10.430	3.948
264	CT-L3S2	50	47.5	6.49	10.780	3.804
265	CT-L3S2	50	47.5	6.5	10.780	3.803
265	CT-L3S2	50	47.5	6.65	11.080	3.687
266	CT-L3S2	50	47.5	6.65	11.080	3.687
266	CT-L3S2	50	47.5	6.79	11.350	3.587
267	CT-L3S2	50	47.5	6.79	11.350	3.587
267	CT-L3S2	50	47.5	6.9	11.570	3.509
268	CT-L3S2	50	47.5	6.91	11.570	3.508
268	CT-L3S2	50	47.5	7	11.750	3.447

269	CT-L3S2	50	47.5	7	11.750	3.447
269	CT-L3S2	50	47.5	7.08	11.900	3.397
270	CT-L3S2	50	47.5	7.08	11.900	3.397
270	CT-L3S2	50	47.5	7.13	12.000	3.364
271	CT-L3S2	50	47.5	7.13	12.000	3.364
271	CT-L3S2	50	47.5	7.16	12.080	3.339
272	CT-L3S2	50	47.5	7.16	12.070	3.342
272	CT-L3S2	50	47.5	7.18	12.110	3.329
273	CT-L3S2	50	47.5	7.18	12.110	3.329
273	CT-L3S2	50	47.5	7.17	12.110	3.330
274	CT-L3S2	50	47.5	7.17	12.110	3.330
274	CT-L3S2	50	47.5	7.14	12.080	3.341
275	CT-L3S2	50	47.5	7.14	12.090	3.338
275	CT-L3S2	50	47.5	7.09	12.050	3.354
276	CT-L3S2	50	47.5	7.09	12.070	3.348
276	CT-L3S2	50	47.5	7.02	11.990	3.376
277	CT-L3S2	50	47.5	7.01	12.010	3.371
277	CT-L3S2	50	47.5	6.92	11.900	3.410
278	CT-L3S2	50	47.5	6.92	11.920	3.404
278	CT-L3S2	50	47.5	6.87	11.810	3.440
279	CT-L3S2	50	47.5	6.87	11.810	3.440
279	CT-L3S2	50	47.5	6.81	11.790	3.451
280	CT-L3S2	50	47.5	6.81	11.800	3.448
280	CT-L3S2	50	47.5	6.67	11.680	3.496
281	CT-L3S2	50	47.5	6.67	11.680	3.496
281	CT-L3S2	50	47.5	6.52	11.540	3.551
282	CT-L3S2	50	47.5	6.51	11.540	3.552
282	CT-L3S2	50	47.5	6.34	11.460	3.592
283	CT-L3S2	50	47.5	6.33	11.450	3.596
283	CT-L3S2	50	47.5	6.14	11.350	3.644
284	CT-L3S2	50	47.5	6.13	11.350	3.645
284	CT-L3S2	50	47.5	5.92	11.230	3.703
285	CT-L3S2	50	47.5	5.91	11.220	3.707
285	CT-L3S2	50	47.5	5.68	11.150	3.751
286	CT-L3S2	50	47.5	5.67	11.150	3.752
286	CT-L3S2	50	47.5	5.42	11.060	3.805
287	CT-L3S2	50	47.5	5.41	11.060	3.806
287	CT-L3S2	50	47.5	5.14	10.950	3.868
288	CT-L3S2	50	47.5	5.13	10.930	3.876
288	CT-L3S2	50	47.5	4.83	10.800	3.951
289	CT-L3S2	50	47.5	4.82	10.800	3.952
289	CT-L3S2	50	47.5	4.51	10.640	4.040
290	CT-L3S2	50	47.5	4.5	10.650	4.038
290	CT-L3S2	50	47.5	4.16	10.470	4.139
291	CT-L3S2	50	47.5	4.15	10.480	4.136
291	CT-L3S2	50	47.5	3.8	10.260	4.259
292	CT-L3S2	50	47.5	3.79	10.270	4.256
292	CT-L3S2	50	47.5	3.41	10.010	4.405
293	CT-L3S2	50	47.5	3.4	10.010	4.406
293	CT-L3S2	50	47.5	3.01	9.720	4.577
294	CT-L3S2	50	47.5	2.99	9.720	4.579
294	CT-L3S2	50	47.5	2.58	9.380	4.789
295	CT-L3S2	50	47.5	2.57	9.390	4.785
295	CT-L3S2	50	47.5	2.46	9.220	4.885
296	CT-L3S2	50	47.5	2.46	9.220	4.885

296	CT-L3S2	50	47.5	2.13	9.040	5.019
297	CT-L3S2	50	47.5	2.12	9.040	5.020
297	CT-L3S2	50	47.5	1.66	8.670	5.287
298	CT-L3S2	50	47.5	1.65	8.670	5.288
298	CT-L3S2	50	47.5	1.16	8.270	5.603
299	CT-L3S2	50	47.5	1.15	8.270	5.605
299	CT-L3S2	50	47.5	0.65	7.830	5.983
300	CT-L3S2	50	47.5	0.64	7.830	5.985
300	CT-L3S2	50	47.5	0.12	7.350	6.446
301	CT-L3S2	50	47.5	0.11	7.360	6.439
301	CT-L3S2	50	47.5	-0.45	6.850	6.869
302	CT-L3S2	50	47.5	-0.45	6.850	6.869
302	CT-L3S2	50	47.5	-1.02	6.320	7.354
303	CT-L3S2	50	47.5	-1.02	6.320	7.354
303	CT-L3S2	50	47.5	-1.61	5.820	7.885
304	CT-L3S2	50	47.5	-1.62	5.830	7.870
304	CT-L3S2	50	47.5	-2.22	-5.510	8.218
305	CT-L3S2	50	47.5	-2.23	-5.510	8.216
305	CT-L3S2	50	47.5	-2.85	-5.620	7.945
306	CT-L3S2	50	47.5	-2.86	-5.620	7.943
306	CT-L3S2	50	47.5	-3.51	-5.720	7.691
307	CT-L3S2	50	47.5	-3.52	-5.720	7.689
307	CT-L3S2	50	47.5	-4.18	-5.830	7.431
308	CT-L3S2	50	47.5	-4.19	-5.830	7.429
308	CT-L3S2	50	47.5	-4.87	-5.940	7.177
309	CT-L3S2	50	47.5	-4.89	-5.940	7.173
309	CT-L3S2	50	47.5	-5.58	-6.050	6.929
310	CT-L3S2	50	47.5	-5.6	-6.050	6.926
310	CT-L3S2	50	47.5	-6.32	-6.160	6.685
311	CT-L3S2	50	47.5	-6.33	-6.160	6.683
311	CT-L3S2	50	47.5	-7.07	-6.270	6.448
312	CT-L3S2	50	47.5	-7.08	-6.280	6.436
312	CT-L3S2	50	47.5	-7.84	-6.390	6.207
313	CT-L3S2	50	47.5	-7.85	-6.390	6.205
313	CT-L3S2	50	47.5	-8.63	-6.510	5.971
314	CT-L3S2	50	47.5	-8.64	-6.510	5.969
314	CT-L3S2	50	47.5	-9.44	-6.870	5.540
315	CT-L3S2	50	47.5	-9.45	-6.890	5.522
315	CT-L3S2	50	47.5	-10.27	-7.440	5.004
316	CT-L3S2	50	47.5	-10.28	-7.440	5.003
316	CT-L3S2	50	47.5	-11.11	-8.040	4.526
317	CT-L3S2	50	47.5	-11.12	-8.040	4.525
317	CT-L3S2	50	47.5	-11.96	-8.630	4.118
318	CT-L3S2	50	47.5	-11.97	-8.630	4.117
318	CT-L3S2	50	47.5	-12.83	-9.240	3.752
319	CT-L3S2	50	47.5	-12.83	-9.240	3.752
319	CT-L3S2	50	47.5	-11.96	-8.630	4.118
320	CT-L3S2	50	47.5	-11.96	-8.630	4.118
320	CT-L3S2	50	47.5	-11.11	-8.040	4.526
321	CT-L3S2	50	47.5	-11.1	-8.040	4.527
321	CT-L3S2	50	47.5	-10.27	-7.450	4.997
322	CT-L3S2	50	47.5	-10.26	-7.450	4.999
322	CT-L3S2	50	47.5	-9.45	-6.910	5.507
323	CT-L3S2	50	47.5	-9.44	-6.900	5.516
323	CT-L3S2	50	47.5	-8.64	-6.550	5.933

324	CT-L3S2	50	47.5	-8.63	-6.550	5.934
324	CT-L3S2	50	47.5	-7.85	-6.430	6.166
325	CT-L3S2	50	47.5	-7.84	-6.430	6.168
325	CT-L3S2	50	47.5	-7.08	-6.320	6.396
326	CT-L3S2	50	47.5	-7.06	-6.310	6.409
326	CT-L3S2	50	47.5	-6.33	-6.200	6.640
327	CT-L3S2	50	47.5	-6.31	-6.200	6.644
327	CT-L3S2	50	47.5	-5.59	-6.090	6.882
328	CT-L3S2	50	47.5	-5.58	-6.090	6.883
328	CT-L3S2	50	47.5	-4.88	-5.980	7.127
329	CT-L3S2	50	47.5	-4.87	-5.980	7.129
329	CT-L3S2	50	47.5	-4.19	-5.870	7.378
330	CT-L3S2	50	47.5	-4.17	-5.870	7.382
330	CT-L3S2	50	47.5	-3.51	-5.760	7.637
331	CT-L3S2	50	47.5	-3.5	-5.760	7.639
331	CT-L3S2	50	47.5	-2.86	-5.650	7.901
332	CT-L3S2	50	47.5	-2.85	-5.660	7.889
332	CT-L3S2	50	47.5	-2.23	-5.550	8.157
333	CT-L3S2	50	47.5	-2.22	-5.550	8.159
333	CT-L3S2	50	47.5	-1.61	5.840	7.858
334	CT-L3S2	50	47.5	-1.61	5.840	7.858
334	CT-L3S2	50	47.5	-1.02	6.360	7.308
335	CT-L3S2	50	47.5	-1.02	6.350	7.320
335	CT-L3S2	50	47.5	-0.45	6.890	6.829
336	CT-L3S2	50	47.5	-0.44	6.880	6.840
336	CT-L3S2	50	47.5	0.11	7.390	6.413
337	CT-L3S2	50	47.5	0.12	7.390	6.411
337	CT-L3S2	50	47.5	0.65	7.860	5.961
338	CT-L3S2	50	47.5	0.65	7.860	5.961
338	CT-L3S2	50	47.5	1.16	8.300	5.583
339	CT-L3S2	50	47.5	1.17	8.300	5.582
339	CT-L3S2	50	47.5	1.65	8.710	5.264
340	CT-L3S2	50	47.5	1.66	8.710	5.263
340	CT-L3S2	50	47.5	2.12	9.080	4.998
341	CT-L3S2	50	47.5	2.13	9.080	4.997
341	CT-L3S2	50	47.5	2.46	9.260	4.864
342	CT-L3S2	50	47.5	2.46	9.260	4.864
342	CT-L3S2	50	47.5	2.57	9.430	4.765
343	CT-L3S2	50	47.5	2.58	9.420	4.769
343	CT-L3S2	50	47.5	3	9.760	4.559
344	CT-L3S2	50	47.5	3.01	9.750	4.563
344	CT-L3S2	50	47.5	3.4	10.050	4.388
345	CT-L3S2	50	47.5	3.41	10.040	4.391
345	CT-L3S2	50	47.5	3.79	10.300	4.244
346	CT-L3S2	50	47.5	3.8	10.300	4.243
346	CT-L3S2	50	47.5	4.16	10.520	4.120
347	CT-L3S2	50	47.5	4.17	10.510	4.123
347	CT-L3S2	50	47.5	4.5	10.690	4.022
348	CT-L3S2	50	47.5	4.51	10.680	4.025
348	CT-L3S2	50	47.5	4.83	10.830	3.940
349	CT-L3S2	50	47.5	4.83	10.840	3.936
349	CT-L3S2	50	47.5	5.13	10.970	3.862
350	CT-L3S2	50	47.5	5.14	10.980	3.858
350	CT-L3S2	50	47.5	5.41	11.090	3.795
351	CT-L3S2	50	47.5	5.42	11.100	3.791

351	CT-L3S2	50	47.5	5.67	11.180	3.742
352	CT-L3S2	50	47.5	5.68	11.180	3.741
352	CT-L3S2	50	47.5	5.91	11.250	3.697
353	CT-L3S2	50	47.5	5.92	11.240	3.699
353	CT-L3S2	50	47.5	6.13	11.360	3.642
354	CT-L3S2	50	47.5	6.14	11.370	3.638
354	CT-L3S2	50	47.5	6.33	11.470	3.589
355	CT-L3S2	50	47.5	6.34	11.470	3.588
355	CT-L3S2	50	47.5	6.51	11.550	3.549
356	CT-L3S2	50	47.5	6.52	11.550	3.548
356	CT-L3S2	50	47.5	6.67	11.700	3.490
357	CT-L3S2	50	47.5	6.67	11.690	3.493
357	CT-L3S2	50	47.5	6.81	11.820	3.442
358	CT-L3S2	50	47.5	6.81	11.810	3.445
358	CT-L3S2	50	47.5	6.87	11.830	3.434
359	CT-L3S2	50	47.5	6.87	11.830	3.434
359	CT-L3S2	50	47.5	6.92	11.940	3.399
360	CT-L3S2	50	47.5	6.92	11.920	3.404
360	CT-L3S2	50	47.5	7.01	12.030	3.366
361	CT-L3S2	50	47.5	7.01	12.010	3.371
361	CT-L3S2	50	47.5	7.08	12.080	3.346
362	CT-L3S2	50	47.5	7.08	12.070	3.349
362	CT-L3S2	50	47.5	7.13	12.110	3.334
363	CT-L3S2	50	47.5	7.13	12.100	3.336
363	CT-L3S2	50	47.5	7.16	12.130	3.326
364	CT-L3S2	50	47.5	7.16	12.130	3.326
364	CT-L3S2	50	47.5	7.17	12.130	3.325
365	CT-L3S2	50	47.5	7.17	12.130	3.325
365	CT-L3S2	50	47.5	7.16	12.090	3.337
366	CT-L3S2	50	47.5	7.16	12.090	3.337
366	CT-L3S2	50	47.5	7.12	12.020	3.359
367	CT-L3S2	50	47.5	7.12	12.020	3.359
367	CT-L3S2	50	47.5	7.07	11.910	3.395
368	CT-L3S2	50	47.5	7.07	11.910	3.395
368	CT-L3S2	50	47.5	6.99	11.770	3.442
369	CT-L3S2	50	47.5	6.99	11.770	3.442
369	CT-L3S2	50	47.5	6.9	11.580	3.506
370	CT-L3S2	50	47.5	6.89	11.590	3.504
370	CT-L3S2	50	47.5	6.78	11.360	3.585
371	CT-L3S2	50	47.5	6.77	11.360	3.585
371	CT-L3S2	50	47.5	6.64	11.100	3.681
372	CT-L3S2	50	47.5	6.63	11.100	3.682
372	CT-L3S2	50	47.5	6.48	10.790	3.802
373	CT-L3S2	50	47.5	6.47	10.790	3.803
373	CT-L3S2	50	47.5	6.3	10.440	3.946
374	CT-L3S2	50	47.5	6.29	10.450	3.944
374	CT-L3S2	50	47.5	6.1	10.050	4.119
375	CT-L3S2	50	47.5	6.09	10.050	4.120
375	CT-L3S2	50	47.5	6.04	9.890	4.192
376	CT-L3S2	50	47.5	6.04	9.890	4.192
376	CT-L3S2	50	47.5	5.87	9.640	4.318
377	CT-L3S2	50	47.5	5.87	9.640	4.318
377	CT-L3S2	50	47.5	5.63	9.190	4.556
378	CT-L3S2	50	47.5	5.62	9.190	4.557
378	CT-L3S2	50	47.5	5.36	8.690	4.849

379	CT-L3S2	50	47.5	5.35	8.690	4.850
379	CT-L3S2	50	47.5	5.07	8.140	5.213
380	CT-L3S2	50	47.5	5.06	8.140	5.214
380	CT-L3S2	50	47.5	4.76	7.560	5.653
381	CT-L3S2	50	47.5	4.76	7.570	5.646
381	CT-L3S2	50	47.5	4.44	7.100	6.065
382	CT-L3S2	50	47.5	4.43	7.100	6.066
382	CT-L3S2	50	47.5	4.09	6.600	6.577
383	CT-L3S2	50	47.5	4.08	6.610	6.569
383	CT-L3S2	50	47.5	3.72	6.070	7.213
384	CT-L3S2	50	47.5	3.71	6.080	7.202
384	CT-L3S2	50	47.5	3.32	5.500	8.033
385	CT-L3S2	50	47.5	3.31	5.510	8.020
385	CT-L3S2	50	47.5	2.91	4.890	9.119
386	CT-L3S2	50	47.5	2.9	4.910	9.084
386	CT-L3S2	50	47.5	2.48	4.240	10.618
387	CT-L3S2	50	47.5	2.47	4.260	10.570
387	CT-L3S2	50	47.5	2.02	3.540	12.847
388	CT-L3S2	50	47.5	2.02	3.570	12.739
388	CT-L3S2	50	47.5	1.55	2.780	16.529
389	CT-L3S2	50	47.5	1.55	2.810	16.352
389	CT-L3S2	50	47.5	1.06	1.950	23.815
390	CT-L3S2	50	47.5	1.05	1.980	23.460
390	CT-L3S2	50	47.5	0.54	1.020	46.039
391	CT-L3S2	50	47.5	0.54	1.050	44.724
391	CT-L3S2	50	47.5	0.01	-0.060	791.500

LOAD RATING FIXED SPAN -GIRDER 4

RF= RATING FACTOR

$RF = (.95\,F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 3.220

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
100	CT-L3S2	50	47.5	0.11	0.250	189.560
100	CT-L3S2	50	47.5	0.48	0.980	47.980
101	CT-L3S2	50	47.5	0.53	1.090	43.092
101	CT-L3S2	50	47.5	0.96	1.900	24.495
102	CT-L3S2	50	47.5	1.01	2.020	23.015
102	CT-L3S2	50	47.5	1.44	2.770	16.628
103	CT-L3S2	50	47.5	1.49	2.880	15.976
103	CT-L3S2	50	47.5	1.9	3.580	12.737
104	CT-L3S2	50	47.5	1.95	3.690	12.344
104	CT-L3S2	50	47.5	2.35	4.340	10.403
105	CT-L3S2	50	47.5	2.4	4.440	10.158
105	CT-L3S2	50	47.5	2.78	5.050	8.855
106	CT-L3S2	50	47.5	2.83	5.150	8.674
106	CT-L3S2	50	47.5	3.19	5.720	7.747
107	CT-L3S2	50	47.5	3.25	5.820	7.603
107	CT-L3S2	50	47.5	3.58	6.360	6.906
108	CT-L3S2	50	47.5	3.65	6.450	6.798
108	CT-L3S2	50	47.5	3.96	6.950	6.265
109	CT-L3S2	50	47.5	4.02	7.040	6.176
109	CT-L3S2	50	47.5	4.31	7.510	5.751
110	CT-L3S2	50	47.5	4.38	7.590	5.681
110	CT-L3S2	50	47.5	4.65	8.040	5.330
111	CT-L3S2	50	47.5	4.71	8.110	5.276
111	CT-L3S2	50	47.5	4.96	8.530	4.987
112	CT-L3S2	50	47.5	5.02	8.590	4.945
112	CT-L3S2	50	47.5	5.25	9.080	4.653
113	CT-L3S2	50	47.5	5.31	9.130	4.621
113	CT-L3S2	50	47.5	5.53	9.590	4.376
114	CT-L3S2	50	47.5	5.58	9.630	4.353
114	CT-L3S2	50	47.5	5.78	10.050	4.151
115	CT-L3S2	50	47.5	5.82	10.080	4.135
115	CT-L3S2	50	47.5	5.96	10.340	4.017
116	CT-L3S2	50	47.5	5.96	10.340	4.017
116	CT-L3S2	50	47.5	6	10.470	3.964
117	CT-L3S2	50	47.5	6.05	10.480	3.955
117	CT-L3S2	50	47.5	6.21	10.830	3.813
118	CT-L3S2	50	47.5	6.25	10.860	3.798
118	CT-L3S2	50	47.5	6.4	11.150	3.686
119	CT-L3S2	50	47.5	6.43	11.190	3.670
119	CT-L3S2	50	47.5	6.56	11.440	3.579
120	CT-L3S2	50	47.5	6.59	11.470	3.567
120	CT-L3S2	50	47.5	6.7	11.700	3.487
121	CT-L3S2	50	47.5	6.73	11.730	3.476
121	CT-L3S2	50	47.5	6.82	11.910	3.416
122	CT-L3S2	50	47.5	6.85	11.940	3.405
122	CT-L3S2	50	47.5	6.92	12.090	3.356

123	CT-L3S2	50	47.5	6.94	12.120	3.347
123	CT-L3S2	50	47.5	7	12.250	3.306
124	CT-L3S2	50	47.5	7.02	12.270	3.299
124	CT-L3S2	50	47.5	7.06	12.360	3.272
125	CT-L3S2	50	47.5	7.07	12.380	3.266
125	CT-L3S2	50	47.5	7.1	12.450	3.245
126	CT-L3S2	50	47.5	7.11	12.460	3.242
126	CT-L3S2	50	47.5	7.11	12.500	3.231
127	CT-L3S2	50	47.5	7.12	12.510	3.228
127	CT-L3S2	50	47.5	7.11	12.520	3.226
128	CT-L3S2	50	47.5	7.11	12.530	3.223
128	CT-L3S2	50	47.5	7.08	12.510	3.231
129	CT-L3S2	50	47.5	7.08	12.510	3.231
129	CT-L3S2	50	47.5	7.04	12.470	3.245
130	CT-L3S2	50	47.5	7.03	12.470	3.245
130	CT-L3S2	50	47.5	6.97	12.400	3.269
131	CT-L3S2	50	47.5	6.96	12.400	3.269
131	CT-L3S2	50	47.5	6.88	12.330	3.294
132	CT-L3S2	50	47.5	6.86	12.320	3.299
132	CT-L3S2	50	47.5	6.82	12.260	3.318
133	CT-L3S2	50	47.5	6.82	12.260	3.318
133	CT-L3S2	50	47.5	6.77	12.230	3.330
134	CT-L3S2	50	47.5	6.75	12.230	3.332
134	CT-L3S2	50	47.5	6.64	12.110	3.374
135	CT-L3S2	50	47.5	6.61	12.090	3.382
135	CT-L3S2	50	47.5	6.48	11.970	3.427
136	CT-L3S2	50	47.5	6.45	11.960	3.432
136	CT-L3S2	50	47.5	6.31	11.850	3.476
137	CT-L3S2	50	47.5	6.27	11.830	3.485
137	CT-L3S2	50	47.5	6.11	11.710	3.535
138	CT-L3S2	50	47.5	6.07	11.700	3.541
138	CT-L3S2	50	47.5	5.9	11.580	3.592
139	CT-L3S2	50	47.5	5.85	11.590	3.594
139	CT-L3S2	50	47.5	5.66	11.510	3.635
140	CT-L3S2	50	47.5	5.61	11.490	3.646
140	CT-L3S2	50	47.5	5.4	11.410	3.690
141	CT-L3S2	50	47.5	5.35	11.400	3.697
141	CT-L3S2	50	47.5	5.12	11.290	3.754
142	CT-L3S2	50	47.5	5.06	11.270	3.766
142	CT-L3S2	50	47.5	4.82	11.160	3.824
143	CT-L3S2	50	47.5	4.76	11.130	3.840
143	CT-L3S2	50	47.5	4.5	11.010	3.906
144	CT-L3S2	50	47.5	4.44	10.980	3.922
144	CT-L3S2	50	47.5	4.16	10.820	4.006
145	CT-L3S2	50	47.5	4.09	10.790	4.023
145	CT-L3S2	50	47.5	3.79	10.590	4.127
146	CT-L3S2	50	47.5	3.73	10.560	4.145
146	CT-L3S2	50	47.5	3.41	10.340	4.264
147	CT-L3S2	50	47.5	3.34	10.300	4.287
147	CT-L3S2	50	47.5	3.01	10.040	4.431
148	CT-L3S2	50	47.5	2.94	10.000	4.456
148	CT-L3S2	50	47.5	2.58	9.710	4.626
149	CT-L3S2	50	47.5	2.51	9.680	4.648
149	CT-L3S2	50	47.5	2.41	9.540	4.726
150	CT-L3S2	50	47.5	2.41	9.550	4.721

150	CT-L3S2	50	47.5	2.13	9.340	4.858
151	CT-L3S2	50	47.5	2.06	9.310	4.881
151	CT-L3S2	50	47.5	1.67	8.940	5.126
152	CT-L3S2	50	47.5	1.59	8.890	5.164
152	CT-L3S2	50	47.5	1.18	8.510	5.443
153	CT-L3S2	50	47.5	1.1	8.450	5.491
153	CT-L3S2	50	47.5	0.67	8.040	5.825
154	CT-L3S2	50	47.5	0.59	7.970	5.886
154	CT-L3S2	50	47.5	0.14	7.530	6.290
155	CT-L3S2	50	47.5	0.06	7.470	6.351
155	CT-L3S2	50	47.5	-0.45	7.000	6.721
156	CT-L3S2	50	47.5	-0.51	6.930	6.781
156	CT-L3S2	50	47.5	-1.02	6.500	7.151
157	CT-L3S2	50	47.5	-1.09	6.420	7.229
157	CT-L3S2	50	47.5	-1.61	6.000	7.648
158	CT-L3S2	50	47.5	-1.68	5.910	7.753
158	CT-L3S2	50	47.5	-2.22	-5.650	8.014
159	CT-L3S2	50	47.5	-2.29	-5.660	7.988
159	CT-L3S2	50	47.5	-2.84	-5.770	7.740
160	CT-L3S2	50	47.5	-2.93	-5.780	7.711
160	CT-L3S2	50	47.5	-3.49	-5.880	7.485
161	CT-L3S2	50	47.5	-3.58	-5.900	7.444
161	CT-L3S2	50	47.5	-4.16	-6.000	7.223
162	CT-L3S2	50	47.5	-4.25	-6.020	7.184
162	CT-L3S2	50	47.5	-4.85	-6.130	6.958
163	CT-L3S2	50	47.5	-4.94	-6.140	6.932
163	CT-L3S2	50	47.5	-5.55	-6.250	6.712
164	CT-L3S2	50	47.5	-5.65	-6.270	6.675
164	CT-L3S2	50	47.5	-6.27	-6.370	6.473
165	CT-L3S2	50	47.5	-6.38	-6.390	6.435
165	CT-L3S2	50	47.5	-7.02	-6.500	6.228
166	CT-L3S2	50	47.5	-7.13	-6.520	6.192
166	CT-L3S2	50	47.5	-7.78	-6.630	5.991
167	CT-L3S2	50	47.5	-7.9	-6.650	5.955
167	CT-L3S2	50	47.5	-8.57	-7.100	5.483
168	CT-L3S2	50	47.5	-8.7	-7.120	5.449
168	CT-L3S2	50	47.5	-9.39	-7.590	5.021
169	CT-L3S2	50	47.5	-9.51	-7.620	4.986
169	CT-L3S2	50	47.5	-10.23	-8.100	4.601
170	CT-L3S2	50	47.5	-10.35	-8.130	4.569
170	CT-L3S2	50	47.5	-11.08	-8.700	4.186
171	CT-L3S2	50	47.5	-11.2	-8.780	4.134
171	CT-L3S2	50	47.5	-11.96	-9.520	3.733
172	CT-L3S2	50	47.5	-12.04	-9.570	3.705
172	CT-L3S2	50	47.5	-12.85	-10.380	3.338
173	CT-L3S2	50	47.5	-12.83	-10.370	3.343
173	CT-L3S2	50	47.5	-12.02	-9.570	3.707
174	CT-L3S2	50	47.5	-11.94	-9.530	3.731
174	CT-L3S2	50	47.5	-11.18	-8.770	4.141
175	CT-L3S2	50	47.5	-11.07	-8.700	4.187
175	CT-L3S2	50	47.5	-10.33	-8.160	4.555
176	CT-L3S2	50	47.5	-10.21	-8.120	4.592
176	CT-L3S2	50	47.5	-9.5	-7.650	4.967
177	CT-L3S2	50	47.5	-9.37	-7.610	5.011
177	CT-L3S2	50	47.5	-8.68	-7.150	5.429

178	CT-L3S2	50	47.5	-8.56	-7.130	5.461
178	CT-L3S2	50	47.5	-7.89	-6.680	5.930
179	CT-L3S2	50	47.5	-7.76	-6.650	5.976
179	CT-L3S2	50	47.5	-7.12	-6.550	6.165
180	CT-L3S2	50	47.5	-7	-6.530	6.202
180	CT-L3S2	50	47.5	-6.37	-6.420	6.407
181	CT-L3S2	50	47.5	-6.26	-6.400	6.444
181	CT-L3S2	50	47.5	-5.64	-6.290	6.655
182	CT-L3S2	50	47.5	-5.54	-6.280	6.682
182	CT-L3S2	50	47.5	-4.93	-6.170	6.900
183	CT-L3S2	50	47.5	-4.83	-6.150	6.938
183	CT-L3S2	50	47.5	-4.24	-6.050	7.150
184	CT-L3S2	50	47.5	-4.15	-6.030	7.189
184	CT-L3S2	50	47.5	-3.57	-5.920	7.421
185	CT-L3S2	50	47.5	-3.48	-5.910	7.448
185	CT-L3S2	50	47.5	-2.91	-5.800	7.688
186	CT-L3S2	50	47.5	-2.83	-5.790	7.715
186	CT-L3S2	50	47.5	-2.28	-5.690	7.947
187	CT-L3S2	50	47.5	-2.21	-5.680	7.974
187	CT-L3S2	50	47.5	-1.67	5.920	7.742
188	CT-L3S2	50	47.5	-1.6	6.000	7.650
188	CT-L3S2	50	47.5	-1.08	6.420	7.231
189	CT-L3S2	50	47.5	-1.01	6.500	7.152
189	CT-L3S2	50	47.5	-0.5	6.970	6.743
190	CT-L3S2	50	47.5	-0.44	7.040	6.685
190	CT-L3S2	50	47.5	0.07	7.500	6.324
191	CT-L3S2	50	47.5	0.15	7.570	6.255
191	CT-L3S2	50	47.5	0.6	8.010	5.855
192	CT-L3S2	50	47.5	0.68	8.070	5.802
192	CT-L3S2	50	47.5	1.11	8.490	5.464
193	CT-L3S2	50	47.5	1.19	8.540	5.423
193	CT-L3S2	50	47.5	1.6	8.930	5.140
194	CT-L3S2	50	47.5	1.68	8.980	5.102
194	CT-L3S2	50	47.5	2.07	9.350	4.859
195	CT-L3S2	50	47.5	2.14	9.380	4.836
195	CT-L3S2	50	47.5	2.42	9.590	4.701
196	CT-L3S2	50	47.5	2.42	9.580	4.706
196	CT-L3S2	50	47.5	2.52	9.720	4.628
197	CT-L3S2	50	47.5	2.59	9.750	4.606
197	CT-L3S2	50	47.5	2.95	10.040	4.437
198	CT-L3S2	50	47.5	3.01	10.080	4.414
198	CT-L3S2	50	47.5	3.35	10.340	4.270
199	CT-L3S2	50	47.5	3.42	10.380	4.247
199	CT-L3S2	50	47.5	3.73	10.600	4.129
200	CT-L3S2	50	47.5	3.8	10.640	4.107
200	CT-L3S2	50	47.5	4.1	10.830	4.007
201	CT-L3S2	50	47.5	4.16	10.860	3.991
201	CT-L3S2	50	47.5	4.44	11.020	3.907
202	CT-L3S2	50	47.5	4.51	11.050	3.890
202	CT-L3S2	50	47.5	4.77	11.180	3.822
203	CT-L3S2	50	47.5	4.83	11.200	3.810
203	CT-L3S2	50	47.5	5.07	11.290	3.758
204	CT-L3S2	50	47.5	5.13	11.320	3.743
204	CT-L3S2	50	47.5	5.35	11.420	3.691
205	CT-L3S2	50	47.5	5.41	11.440	3.679

205	CT-L3S2	50	47.5	5.62	11.520	3.635
206	CT-L3S2	50	47.5	5.66	11.540	3.626
206	CT-L3S2	50	47.5	5.86	11.610	3.587
207	CT-L3S2	50	47.5	5.9	11.610	3.583
207	CT-L3S2	50	47.5	6.08	11.710	3.537
208	CT-L3S2	50	47.5	6.12	11.720	3.531
208	CT-L3S2	50	47.5	6.28	11.850	3.478
209	CT-L3S2	50	47.5	6.32	11.860	3.472
209	CT-L3S2	50	47.5	6.46	11.970	3.429
210	CT-L3S2	50	47.5	6.49	11.980	3.423
210	CT-L3S2	50	47.5	6.62	12.110	3.376
211	CT-L3S2	50	47.5	6.65	12.130	3.368
211	CT-L3S2	50	47.5	6.76	12.240	3.328
212	CT-L3S2	50	47.5	6.78	12.250	3.324
212	CT-L3S2	50	47.5	6.83	12.280	3.312
213	CT-L3S2	50	47.5	6.83	12.280	3.312
213	CT-L3S2	50	47.5	6.87	12.340	3.293
214	CT-L3S2	50	47.5	6.89	12.350	3.288
214	CT-L3S2	50	47.5	6.97	12.410	3.266
215	CT-L3S2	50	47.5	6.98	12.410	3.265
215	CT-L3S2	50	47.5	7.04	12.490	3.239
216	CT-L3S2	50	47.5	7.05	12.480	3.241
216	CT-L3S2	50	47.5	7.09	12.530	3.225
217	CT-L3S2	50	47.5	7.09	12.520	3.228
217	CT-L3S2	50	47.5	7.12	12.540	3.220
218	CT-L3S2	50	47.5	7.12	12.530	3.223
218	CT-L3S2	50	47.5	7.13	12.530	3.222
219	CT-L3S2	50	47.5	7.13	12.510	3.227
219	CT-L3S2	50	47.5	7.12	12.480	3.236
220	CT-L3S2	50	47.5	7.11	12.460	3.242
220	CT-L3S2	50	47.5	7.09	12.400	3.259
221	CT-L3S2	50	47.5	7.07	12.380	3.266
221	CT-L3S2	50	47.5	7.03	12.280	3.296
222	CT-L3S2	50	47.5	7.02	12.260	3.302
222	CT-L3S2	50	47.5	6.96	12.130	3.342
223	CT-L3S2	50	47.5	6.94	12.110	3.349
223	CT-L3S2	50	47.5	6.86	11.950	3.401
224	CT-L3S2	50	47.5	6.84	11.930	3.408
224	CT-L3S2	50	47.5	6.75	11.740	3.471
225	CT-L3S2	50	47.5	6.72	11.710	3.482
225	CT-L3S2	50	47.5	6.61	11.490	3.559
226	CT-L3S2	50	47.5	6.58	11.450	3.574
226	CT-L3S2	50	47.5	6.46	11.200	3.664
227	CT-L3S2	50	47.5	6.42	11.160	3.681
227	CT-L3S2	50	47.5	6.28	10.870	3.792
228	CT-L3S2	50	47.5	6.24	10.840	3.806
228	CT-L3S2	50	47.5	6.08	10.490	3.949
229	CT-L3S2	50	47.5	6.03	10.480	3.957
229	CT-L3S2	50	47.5	5.99	10.350	4.011
230	CT-L3S2	50	47.5	5.99	10.350	4.011
230	CT-L3S2	50	47.5	5.86	10.090	4.127
231	CT-L3S2	50	47.5	5.81	10.060	4.144
231	CT-L3S2	50	47.5	5.61	9.630	4.350
232	CT-L3S2	50	47.5	5.56	9.600	4.369
232	CT-L3S2	50	47.5	5.35	9.140	4.612

233	CT-L3S2	50	47.5	5.29	9.090	4.644
233	CT-L3S2	50	47.5	5.07	8.600	4.934
234	CT-L3S2	50	47.5	5	8.530	4.982
234	CT-L3S2	50	47.5	4.76	8.110	5.270
235	CT-L3S2	50	47.5	4.69	8.040	5.325
235	CT-L3S2	50	47.5	4.44	7.590	5.673
236	CT-L3S2	50	47.5	4.37	7.520	5.735
236	CT-L3S2	50	47.5	4.09	7.040	6.166
237	CT-L3S2	50	47.5	4.02	6.960	6.247
237	CT-L3S2	50	47.5	3.72	6.440	6.798
238	CT-L3S2	50	47.5	3.65	6.360	6.895
238	CT-L3S2	50	47.5	3.34	5.810	7.601
239	CT-L3S2	50	47.5	3.26	5.730	7.721
239	CT-L3S2	50	47.5	2.93	5.140	8.671
240	CT-L3S2	50	47.5	2.85	5.050	8.842
240	CT-L3S2	50	47.5	2.5	4.430	10.158
241	CT-L3S2	50	47.5	2.43	4.330	10.409
241	CT-L3S2	50	47.5	2.05	3.670	12.384
242	CT-L3S2	50	47.5	1.98	3.560	12.787
242	CT-L3S2	50	47.5	1.59	2.860	16.052
243	CT-L3S2	50	47.5	1.51	2.750	16.724
243	CT-L3S2	50	47.5	1.1	1.990	23.317
244	CT-L3S2	50	47.5	1.03	1.880	24.718
244	CT-L3S2	50	47.5	0.59	1.070	43.841
245	CT-L3S2	50	47.5	0.52	0.970	48.433
245	CT-L3S2	50	47.5	0.07	0.260	182.423

LOAD RATING FIXED SPAN -GIRDER 1

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
538	CT-L73.0	50	47.5	0.06	0.330	143.758
538	CT-L73.0	50	47.5	0.53	1.330	35.316
539	CT-L73.0	50	47.5	0.53	1.440	32.618
539	CT-L73.0	50	47.5	1.05	2.580	18.004
540	CT-L73.0	50	47.5	1.07	2.700	17.196
540	CT-L73.0	50	47.5	1.56	3.750	12.251
541	CT-L73.0	50	47.5	1.59	3.880	11.832
541	CT-L73.0	50	47.5	2.06	4.860	9.350
542	CT-L73.0	50	47.5	2.09	4.990	9.100
542	CT-L73.0	50	47.5	2.54	5.900	7.620
543	CT-L73.0	50	47.5	2.57	6.020	7.463
543	CT-L73.0	50	47.5	3.01	6.890	6.457
544	CT-L73.0	50	47.5	3.03	6.990	6.362
544	CT-L73.0	50	47.5	3.45	7.810	5.640
545	CT-L73.0	50	47.5	3.47	7.910	5.566
545	CT-L73.0	50	47.5	3.87	8.680	5.026
546	CT-L73.0	50	47.5	3.89	8.770	4.973
546	CT-L73.0	50	47.5	4.26	9.490	4.556
547	CT-L73.0	50	47.5	4.29	9.580	4.510
547	CT-L73.0	50	47.5	4.64	10.250	4.181
548	CT-L73.0	50	47.5	4.67	10.330	4.146
548	CT-L73.0	50	47.5	4.99	10.970	3.875
549	CT-L73.0	50	47.5	5.02	11.050	3.844
549	CT-L73.0	50	47.5	5.32	11.690	3.608
550	CT-L73.0	50	47.5	5.35	11.760	3.584
550	CT-L73.0	50	47.5	5.63	12.390	3.379
551	CT-L73.0	50	47.5	5.66	12.450	3.361
551	CT-L73.0	50	47.5	5.92	13.030	3.191
552	CT-L73.0	50	47.5	5.94	13.080	3.177
552	CT-L73.0	50	47.5	6.18	13.630	3.032
553	CT-L73.0	50	47.5	6.2	13.660	3.023
553	CT-L73.0	50	47.5	6.37	14.030	2.932
554	CT-L73.0	50	47.5	6.37	14.030	2.932
554	CT-L73.0	50	47.5	6.42	14.170	2.899
555	CT-L73.0	50	47.5	6.44	14.190	2.894
555	CT-L73.0	50	47.5	6.64	14.650	2.789
556	CT-L73.0	50	47.5	6.65	14.690	2.781
556	CT-L73.0	50	47.5	6.83	15.090	2.695
557	CT-L73.0	50	47.5	6.84	15.130	2.687
557	CT-L73.0	50	47.5	7	15.490	2.615
558	CT-L73.0	50	47.5	7.01	15.530	2.607
558	CT-L73.0	50	47.5	7.15	15.860	2.544
559	CT-L73.0	50	47.5	7.16	15.890	2.539
559	CT-L73.0	50	47.5	7.27	16.180	2.486
560	CT-L73.0	50	47.5	7.28	16.210	2.481
560	CT-L73.0	50	47.5	7.38	16.460	2.437

Minimum Rating Factor 2.292

561	CT-L73.0	50	47.5	7.38	16.490	2.433
561	CT-L73.0	50	47.5	7.46	16.710	2.396
562	CT-L73.0	50	47.5	7.46	16.740	2.392
562	CT-L73.0	50	47.5	7.52	16.920	2.363
563	CT-L73.0	50	47.5	7.52	16.940	2.360
563	CT-L73.0	50	47.5	7.56	17.090	2.337
564	CT-L73.0	50	47.5	7.56	17.110	2.334
564	CT-L73.0	50	47.5	7.58	17.230	2.317
565	CT-L73.0	50	47.5	7.58	17.250	2.314
565	CT-L73.0	50	47.5	7.58	17.330	2.304
566	CT-L73.0	50	47.5	7.57	17.350	2.301
566	CT-L73.0	50	47.5	7.55	17.400	2.296
567	CT-L73.0	50	47.5	7.54	17.410	2.295
567	CT-L73.0	50	47.5	7.5	17.430	2.295
568	CT-L73.0	50	47.5	7.5	17.440	2.294
568	CT-L73.0	50	47.5	7.43	17.420	2.300
569	CT-L73.0	50	47.5	7.43	17.430	2.299
569	CT-L73.0	50	47.5	7.34	17.390	2.309
570	CT-L73.0	50	47.5	7.33	17.380	2.311
570	CT-L73.0	50	47.5	7.28	17.340	2.319
571	CT-L73.0	50	47.5	7.28	17.340	2.319
571	CT-L73.0	50	47.5	7.23	17.310	2.326
572	CT-L73.0	50	47.5	7.22	17.300	2.328
572	CT-L73.0	50	47.5	7.09	17.240	2.344
573	CT-L73.0	50	47.5	7.08	17.220	2.347
573	CT-L73.0	50	47.5	6.93	17.160	2.364
574	CT-L73.0	50	47.5	6.92	17.140	2.368
574	CT-L73.0	50	47.5	6.75	17.050	2.390
575	CT-L73.0	50	47.5	6.73	17.020	2.395
575	CT-L73.0	50	47.5	6.55	16.900	2.423
576	CT-L73.0	50	47.5	6.53	16.870	2.429
576	CT-L73.0	50	47.5	6.33	16.720	2.462
577	CT-L73.0	50	47.5	6.3	16.690	2.469
577	CT-L73.0	50	47.5	6.08	16.500	2.510
578	CT-L73.0	50	47.5	6.05	16.470	2.517
578	CT-L73.0	50	47.5	5.81	16.260	2.564
579	CT-L73.0	50	47.5	5.78	16.230	2.571
579	CT-L73.0	50	47.5	5.52	15.980	2.627
580	CT-L73.0	50	47.5	5.49	15.950	2.634
580	CT-L73.0	50	47.5	5.21	15.670	2.699
581	CT-L73.0	50	47.5	5.18	15.640	2.706
581	CT-L73.0	50	47.5	4.88	15.340	2.778
582	CT-L73.0	50	47.5	4.84	15.290	2.790
582	CT-L73.0	50	47.5	4.52	14.970	2.871
583	CT-L73.0	50	47.5	4.48	14.930	2.881
583	CT-L73.0	50	47.5	4.14	14.580	2.974
584	CT-L73.0	50	47.5	4.1	14.530	2.987
584	CT-L73.0	50	47.5	3.74	14.160	3.090
585	CT-L73.0	50	47.5	3.7	14.110	3.104
585	CT-L73.0	50	47.5	3.32	13.700	3.225
586	CT-L73.0	50	47.5	3.28	13.660	3.237
586	CT-L73.0	50	47.5	2.87	13.220	3.376
587	CT-L73.0	50	47.5	2.83	13.190	3.387
587	CT-L73.0	50	47.5	2.72	13.030	3.437
588	CT-L73.0	50	47.5	2.72	13.030	3.437

588	CT-L73.0	50	47.5	2.41	12.710	3.548
589	CT-L73.0	50	47.5	2.36	12.670	3.563
589	CT-L73.0	50	47.5	1.91	12.170	3.746
590	CT-L73.0	50	47.5	1.86	12.110	3.769
590	CT-L73.0	50	47.5	1.4	11.600	3.974
591	CT-L73.0	50	47.5	1.34	11.530	4.003
591	CT-L73.0	50	47.5	0.86	11.000	4.240
592	CT-L73.0	50	47.5	0.8	10.920	4.277
592	CT-L73.0	50	47.5	0.3	10.380	4.547
593	CT-L73.0	50	47.5	0.24	10.300	4.588
593	CT-L73.0	50	47.5	-0.33	9.730	4.848
594	CT-L73.0	50	47.5	-0.37	9.650	4.884
594	CT-L73.0	50	47.5	-0.94	9.060	5.139
595	CT-L73.0	50	47.5	-0.98	8.980	5.180
595	CT-L73.0	50	47.5	-1.57	8.370	5.487
596	CT-L73.0	50	47.5	-1.62	8.290	5.534
596	CT-L73.0	50	47.5	-2.22	7.660	5.911
597	CT-L73.0	50	47.5	-2.28	7.570	5.974
597	CT-L73.0	50	47.5	-2.9	-7.410	6.019
598	CT-L73.0	50	47.5	-2.96	-7.430	5.995
598	CT-L73.0	50	47.5	-3.61	-7.560	5.806
599	CT-L73.0	50	47.5	-3.66	-7.580	5.784
599	CT-L73.0	50	47.5	-4.33	-7.720	5.592
600	CT-L73.0	50	47.5	-4.39	-7.740	5.570
600	CT-L73.0	50	47.5	-5.09	-7.870	5.389
601	CT-L73.0	50	47.5	-5.15	-7.890	5.368
601	CT-L73.0	50	47.5	-5.86	-8.030	5.186
602	CT-L73.0	50	47.5	-5.93	-8.060	5.158
602	CT-L73.0	50	47.5	-6.66	-8.200	4.980
603	CT-L73.0	50	47.5	-6.74	-8.220	4.959
603	CT-L73.0	50	47.5	-7.49	-8.360	4.786
604	CT-L73.0	50	47.5	-7.57	-8.390	4.759
604	CT-L73.0	50	47.5	-8.34	-8.530	4.591
605	CT-L73.0	50	47.5	-8.43	-8.560	4.564
605	CT-L73.0	50	47.5	-9.22	-8.700	4.400
606	CT-L73.0	50	47.5	-9.33	-8.730	4.372
606	CT-L73.0	50	47.5	-10.13	-8.870	4.213
607	CT-L73.0	50	47.5	-10.25	-8.910	4.181
607	CT-L73.0	50	47.5	-11.07	-9.060	4.021
608	CT-L73.0	50	47.5	-11.2	-9.100	3.989
608	CT-L73.0	50	47.5	-12.06	-9.290	3.815
609	CT-L73.0	50	47.5	-12.18	-9.300	3.798
609	CT-L73.0	50	47.5	-13.08	-10.030	3.432
610	CT-L73.0	50	47.5	-13.17	-9.980	3.440
610	CT-L73.0	50	47.5	-14.14	-10.850	3.075
611	CT-L73.0	50	47.5	-14.16	-10.880	3.064
611	CT-L73.0	50	47.5	-13.19	-10.030	3.421
612	CT-L73.0	50	47.5	-13.1	-10.070	3.416
612	CT-L73.0	50	47.5	-12.2	-9.310	3.792
613	CT-L73.0	50	47.5	-12.08	-9.330	3.796
613	CT-L73.0	50	47.5	-11.22	-9.110	3.982
614	CT-L73.0	50	47.5	-11.09	-9.070	4.014
614	CT-L73.0	50	47.5	-10.27	-8.920	4.174
615	CT-L73.0	50	47.5	-10.14	-8.890	4.202
615	CT-L73.0	50	47.5	-9.34	-8.740	4.366

616	CT-L73.0	50	47.5	-9.24	-8.710	4.393
616	CT-L73.0	50	47.5	-8.45	-8.570	4.557
617	CT-L73.0	50	47.5	-8.36	-8.540	4.583
617	CT-L73.0	50	47.5	-7.58	-8.400	4.752
618	CT-L73.0	50	47.5	-7.5	-8.380	4.773
618	CT-L73.0	50	47.5	-6.75	-8.230	4.951
619	CT-L73.0	50	47.5	-6.68	-8.210	4.972
619	CT-L73.0	50	47.5	-5.94	-8.070	5.150
620	CT-L73.0	50	47.5	-5.87	-8.050	5.171
620	CT-L73.0	50	47.5	-5.16	-7.910	5.353
621	CT-L73.0	50	47.5	-5.1	-7.890	5.374
621	CT-L73.0	50	47.5	-4.41	-7.750	5.560
622	CT-L73.0	50	47.5	-4.34	-7.730	5.583
622	CT-L73.0	50	47.5	-3.68	-7.590	5.773
623	CT-L73.0	50	47.5	-3.62	-7.580	5.789
623	CT-L73.0	50	47.5	-2.97	-7.440	5.985
624	CT-L73.0	50	47.5	-2.91	-7.420	6.009
624	CT-L73.0	50	47.5	-2.29	7.580	5.964
625	CT-L73.0	50	47.5	-2.23	7.670	5.902
625	CT-L73.0	50	47.5	-1.63	8.290	5.533
626	CT-L73.0	50	47.5	-1.58	8.380	5.480
626	CT-L73.0	50	47.5	-0.99	8.990	5.174
627	CT-L73.0	50	47.5	-0.94	9.070	5.133
627	CT-L73.0	50	47.5	-0.38	9.660	4.878
628	CT-L73.0	50	47.5	-0.33	9.740	4.843
628	CT-L73.0	50	47.5	0.23	10.310	4.585
629	CT-L73.0	50	47.5	0.29	10.390	4.544
629	CT-L73.0	50	47.5	0.79	10.930	4.274
630	CT-L73.0	50	47.5	0.85	11.010	4.237
630	CT-L73.0	50	47.5	1.34	11.540	4.000
631	CT-L73.0	50	47.5	1.39	11.610	3.972
631	CT-L73.0	50	47.5	1.85	12.120	3.767
632	CT-L73.0	50	47.5	1.91	12.180	3.743
632	CT-L73.0	50	47.5	2.35	12.680	3.561
633	CT-L73.0	50	47.5	2.4	12.720	3.546
633	CT-L73.0	50	47.5	2.71	13.050	3.432
634	CT-L73.0	50	47.5	2.71	13.050	3.432
634	CT-L73.0	50	47.5	2.82	13.210	3.382
635	CT-L73.0	50	47.5	2.87	13.230	3.373
635	CT-L73.0	50	47.5	3.27	13.680	3.233
636	CT-L73.0	50	47.5	3.31	13.720	3.221
636	CT-L73.0	50	47.5	3.7	14.130	3.100
637	CT-L73.0	50	47.5	3.74	14.170	3.088
637	CT-L73.0	50	47.5	4.1	14.550	2.983
638	CT-L73.0	50	47.5	4.14	14.600	2.970
638	CT-L73.0	50	47.5	4.48	14.950	2.878
639	CT-L73.0	50	47.5	4.52	14.990	2.867
639	CT-L73.0	50	47.5	4.84	15.310	2.786
640	CT-L73.0	50	47.5	4.87	15.360	2.775
640	CT-L73.0	50	47.5	5.17	15.660	2.703
641	CT-L73.0	50	47.5	5.21	15.690	2.695
641	CT-L73.0	50	47.5	5.49	15.970	2.631
642	CT-L73.0	50	47.5	5.52	16.000	2.624
642	CT-L73.0	50	47.5	5.78	16.250	2.567
643	CT-L73.0	50	47.5	5.81	16.280	2.561

643	CT-L73.0	50	47.5	6.05	16.490	2.514
644	CT-L73.0	50	47.5	6.08	16.530	2.506
644	CT-L73.0	50	47.5	6.3	16.710	2.466
645	CT-L73.0	50	47.5	6.32	16.740	2.460
645	CT-L73.0	50	47.5	6.53	16.900	2.424
646	CT-L73.0	50	47.5	6.55	16.920	2.420
646	CT-L73.0	50	47.5	6.73	17.050	2.391
647	CT-L73.0	50	47.5	6.75	17.070	2.387
647	CT-L73.0	50	47.5	6.91	17.160	2.365
648	CT-L73.0	50	47.5	6.93	17.180	2.361
648	CT-L73.0	50	47.5	7.08	17.240	2.345
649	CT-L73.0	50	47.5	7.09	17.260	2.341
649	CT-L73.0	50	47.5	7.22	17.310	2.327
650	CT-L73.0	50	47.5	7.23	17.330	2.324
650	CT-L73.0	50	47.5	7.28	17.350	2.318
651	CT-L73.0	50	47.5	7.28	17.350	2.318
651	CT-L73.0	50	47.5	7.33	17.390	2.310
652	CT-L73.0	50	47.5	7.34	17.410	2.307
652	CT-L73.0	50	47.5	7.43	17.440	2.298
653	CT-L73.0	50	47.5	7.43	17.440	2.298
653	CT-L73.0	50	47.5	7.5	17.450	2.292
654	CT-L73.0	50	47.5	7.5	17.450	2.292
654	CT-L73.0	50	47.5	7.55	17.430	2.292
655	CT-L73.0	50	47.5	7.55	17.410	2.295
655	CT-L73.0	50	47.5	7.57	17.360	2.300
656	CT-L73.0	50	47.5	7.58	17.350	2.301
656	CT-L73.0	50	47.5	7.58	17.260	2.313
657	CT-L73.0	50	47.5	7.58	17.250	2.314
657	CT-L73.0	50	47.5	7.57	17.130	2.331
658	CT-L73.0	50	47.5	7.57	17.110	2.334
658	CT-L73.0	50	47.5	7.53	16.960	2.357
659	CT-L73.0	50	47.5	7.53	16.940	2.360
659	CT-L73.0	50	47.5	7.47	16.750	2.390
660	CT-L73.0	50	47.5	7.47	16.730	2.393
660	CT-L73.0	50	47.5	7.39	16.510	2.429
661	CT-L73.0	50	47.5	7.39	16.480	2.434
661	CT-L73.0	50	47.5	7.29	16.230	2.478
662	CT-L73.0	50	47.5	7.29	16.200	2.482
662	CT-L73.0	50	47.5	7.17	15.910	2.535
663	CT-L73.0	50	47.5	7.16	15.870	2.542
663	CT-L73.0	50	47.5	7.03	15.550	2.603
664	CT-L73.0	50	47.5	7.02	15.510	2.610
664	CT-L73.0	50	47.5	6.86	15.150	2.683
665	CT-L73.0	50	47.5	6.85	15.110	2.690
665	CT-L73.0	50	47.5	6.67	14.700	2.778
666	CT-L73.0	50	47.5	6.66	14.670	2.784
666	CT-L73.0	50	47.5	6.46	14.210	2.888
667	CT-L73.0	50	47.5	6.45	14.190	2.893
667	CT-L73.0	50	47.5	6.39	14.040	2.928
668	CT-L73.0	50	47.5	6.39	14.040	2.928
668	CT-L73.0	50	47.5	6.23	13.670	3.019
669	CT-L73.0	50	47.5	6.21	13.640	3.027
669	CT-L73.0	50	47.5	5.97	13.090	3.173
670	CT-L73.0	50	47.5	5.95	13.040	3.186
670	CT-L73.0	50	47.5	5.69	12.460	3.356

671	CT-L73.0	50	47.5	5.67	12.400	3.373
671	CT-L73.0	50	47.5	5.39	11.770	3.578
672	CT-L73.0	50	47.5	5.37	11.700	3.601
672	CT-L73.0	50	47.5	5.07	11.050	3.840
673	CT-L73.0	50	47.5	5.04	10.970	3.871
673	CT-L73.0	50	47.5	4.72	10.330	4.141
674	CT-L73.0	50	47.5	4.69	10.260	4.173
674	CT-L73.0	50	47.5	4.36	9.570	4.508
675	CT-L73.0	50	47.5	4.32	9.490	4.550
675	CT-L73.0	50	47.5	3.97	8.760	4.969
676	CT-L73.0	50	47.5	3.93	8.680	5.020
676	CT-L73.0	50	47.5	3.56	7.900	5.562
677	CT-L73.0	50	47.5	3.52	7.810	5.631
677	CT-L73.0	50	47.5	3.12	6.980	6.358
678	CT-L73.0	50	47.5	3.08	6.880	6.456
678	CT-L73.0	50	47.5	2.66	6.000	7.473
679	CT-L73.0	50	47.5	2.62	5.900	7.607
679	CT-L73.0	50	47.5	2.18	4.960	9.137
680	CT-L73.0	50	47.5	2.14	4.850	9.353
680	CT-L73.0	50	47.5	1.67	3.850	11.904
681	CT-L73.0	50	47.5	1.64	3.740	12.262
681	CT-L73.0	50	47.5	1.15	2.670	17.360
682	CT-L73.0	50	47.5	1.11	2.570	18.051
682	CT-L73.0	50	47.5	0.59	1.420	33.035
683	CT-L73.0	50	47.5	0.57	1.330	35.286
683	CT-L73.0	50	47.5	0.04	0.340	139.588

LOAD RATING FIXED SPAN -GIRDER 2

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating Factor 2.396

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
392	CT-L73.0	50	47.5	0.05	-0.070	677.857
392	CT-L73.0	50	47.5	0.67	1.350	34.689
393	CT-L73.0	50	47.5	0.63	1.300	36.054
393	CT-L73.0	50	47.5	1.24	2.570	18.000
394	CT-L73.0	50	47.5	1.2	2.520	18.373
394	CT-L73.0	50	47.5	1.74	3.690	12.401
395	CT-L73.0	50	47.5	1.71	3.640	12.580
395	CT-L73.0	50	47.5	2.21	4.720	9.595
396	CT-L73.0	50	47.5	2.19	4.690	9.661
396	CT-L73.0	50	47.5	2.65	5.710	7.855
397	CT-L73.0	50	47.5	2.64	5.680	7.898
397	CT-L73.0	50	47.5	3.08	6.640	6.690
398	CT-L73.0	50	47.5	3.07	6.620	6.711
398	CT-L73.0	50	47.5	3.48	7.520	5.854
399	CT-L73.0	50	47.5	3.47	7.500	5.871
399	CT-L73.0	50	47.5	3.87	8.350	5.225
400	CT-L73.0	50	47.5	3.86	8.330	5.239
400	CT-L73.0	50	47.5	4.24	9.130	4.738
401	CT-L73.0	50	47.5	4.23	9.110	4.750
401	CT-L73.0	50	47.5	4.59	9.860	4.352
402	CT-L73.0	50	47.5	4.58	9.850	4.357
402	CT-L73.0	50	47.5	4.92	10.540	4.040
403	CT-L73.0	50	47.5	4.91	10.530	4.045
403	CT-L73.0	50	47.5	5.23	11.180	3.781
404	CT-L73.0	50	47.5	5.22	11.170	3.785
404	CT-L73.0	50	47.5	5.52	11.770	3.567
405	CT-L73.0	50	47.5	5.51	11.760	3.571
405	CT-L73.0	50	47.5	5.78	12.350	3.378
406	CT-L73.0	50	47.5	5.78	12.350	3.378
406	CT-L73.0	50	47.5	6.03	12.910	3.212
407	CT-L73.0	50	47.5	6.03	12.890	3.217
407	CT-L73.0	50	47.5	6.2	13.300	3.105
408	CT-L73.0	50	47.5	6.2	13.300	3.105
408	CT-L73.0	50	47.5	6.26	13.450	3.066
409	CT-L73.0	50	47.5	6.25	13.440	3.069
409	CT-L73.0	50	47.5	6.46	13.960	2.940
410	CT-L73.0	50	47.5	6.46	13.960	2.940
410	CT-L73.0	50	47.5	6.64	14.430	2.832
411	CT-L73.0	50	47.5	6.64	14.430	2.832
411	CT-L73.0	50	47.5	6.8	14.860	2.739
412	CT-L73.0	50	47.5	6.8	14.860	2.739
412	CT-L73.0	50	47.5	6.94	15.250	2.660
413	CT-L73.0	50	47.5	6.94	15.250	2.660
413	CT-L73.0	50	47.5	7.06	15.580	2.596
414	CT-L73.0	50	47.5	7.06	15.580	2.596
414	CT-L73.0	50	47.5	7.16	15.880	2.540

415	CT-L73.0	50	47.5	7.15	15.880	2.541
415	CT-L73.0	50	47.5	7.23	16.130	2.497
416	CT-L73.0	50	47.5	7.23	16.130	2.497
416	CT-L73.0	50	47.5	7.29	16.340	2.461
417	CT-L73.0	50	47.5	7.29	16.340	2.461
417	CT-L73.0	50	47.5	7.32	16.500	2.435
418	CT-L73.0	50	47.5	7.32	16.500	2.435
418	CT-L73.0	50	47.5	7.33	16.630	2.416
419	CT-L73.0	50	47.5	7.33	16.630	2.416
419	CT-L73.0	50	47.5	7.32	16.710	2.405
420	CT-L73.0	50	47.5	7.33	16.710	2.404
420	CT-L73.0	50	47.5	7.29	16.750	2.401
421	CT-L73.0	50	47.5	7.3	16.760	2.399
421	CT-L73.0	50	47.5	7.24	16.760	2.402
422	CT-L73.0	50	47.5	7.25	16.760	2.402
422	CT-L73.0	50	47.5	7.17	16.720	2.412
423	CT-L73.0	50	47.5	7.17	16.720	2.412
423	CT-L73.0	50	47.5	7.08	16.660	2.426
424	CT-L73.0	50	47.5	7.08	16.660	2.426
424	CT-L73.0	50	47.5	7.03	16.590	2.439
425	CT-L73.0	50	47.5	7.02	16.590	2.440
425	CT-L73.0	50	47.5	6.96	16.570	2.447
426	CT-L73.0	50	47.5	6.97	16.560	2.447
426	CT-L73.0	50	47.5	6.83	16.490	2.466
427	CT-L73.0	50	47.5	6.83	16.490	2.466
427	CT-L73.0	50	47.5	6.67	16.450	2.482
428	CT-L73.0	50	47.5	6.67	16.460	2.481
428	CT-L73.0	50	47.5	6.49	16.380	2.504
429	CT-L73.0	50	47.5	6.49	16.380	2.504
429	CT-L73.0	50	47.5	6.29	16.260	2.534
430	CT-L73.0	50	47.5	6.29	16.260	2.534
430	CT-L73.0	50	47.5	6.06	16.100	2.574
431	CT-L73.0	50	47.5	6.07	16.110	2.572
431	CT-L73.0	50	47.5	5.82	15.910	2.620
432	CT-L73.0	50	47.5	5.82	15.920	2.618
432	CT-L73.0	50	47.5	5.55	15.680	2.675
433	CT-L73.0	50	47.5	5.56	15.690	2.673
433	CT-L73.0	50	47.5	5.27	15.420	2.739
434	CT-L73.0	50	47.5	5.27	15.430	2.737
434	CT-L73.0	50	47.5	4.96	15.130	2.812
435	CT-L73.0	50	47.5	4.97	15.130	2.811
435	CT-L73.0	50	47.5	4.63	14.790	2.899
436	CT-L73.0	50	47.5	4.64	14.800	2.896
436	CT-L73.0	50	47.5	4.28	14.430	2.995
437	CT-L73.0	50	47.5	4.29	14.440	2.992
437	CT-L73.0	50	47.5	3.91	14.040	3.105
438	CT-L73.0	50	47.5	3.92	14.040	3.104
438	CT-L73.0	50	47.5	3.52	13.610	3.231
439	CT-L73.0	50	47.5	3.52	13.610	3.231
439	CT-L73.0	50	47.5	3.11	13.150	3.376
440	CT-L73.0	50	47.5	3.11	13.150	3.376
440	CT-L73.0	50	47.5	2.67	12.680	3.535
441	CT-L73.0	50	47.5	2.67	12.680	3.535
441	CT-L73.0	50	47.5	2.56	12.510	3.592
442	CT-L73.0	50	47.5	2.56	12.510	3.592

442	CT-L73.0	50	47.5	2.21	12.170	3.721
443	CT-L73.0	50	47.5	2.22	12.180	3.718
443	CT-L73.0	50	47.5	1.73	11.670	3.922
444	CT-L73.0	50	47.5	1.74	11.670	3.921
444	CT-L73.0	50	47.5	1.23	11.130	4.157
445	CT-L73.0	50	47.5	1.23	11.140	4.154
445	CT-L73.0	50	47.5	0.71	10.580	4.422
446	CT-L73.0	50	47.5	0.71	10.580	4.422
446	CT-L73.0	50	47.5	0.17	9.990	4.738
447	CT-L73.0	50	47.5	0.17	10.000	4.733
447	CT-L73.0	50	47.5	-0.4	9.390	5.016
448	CT-L73.0	50	47.5	-0.41	9.390	5.015
448	CT-L73.0	50	47.5	-0.99	8.760	5.309
449	CT-L73.0	50	47.5	-0.99	8.770	5.303
449	CT-L73.0	50	47.5	-1.6	8.120	5.653
450	CT-L73.0	50	47.5	-1.6	8.120	5.653
450	CT-L73.0	50	47.5	-2.23	7.460	6.068
451	CT-L73.0	50	47.5	-2.23	7.460	6.068
451	CT-L73.0	50	47.5	-2.88	-7.230	6.172
452	CT-L73.0	50	47.5	-2.88	-7.220	6.180
452	CT-L73.0	50	47.5	-3.55	-7.360	5.971
453	CT-L73.0	50	47.5	-3.55	-7.360	5.971
453	CT-L73.0	50	47.5	-4.24	-7.500	5.768
454	CT-L73.0	50	47.5	-4.24	-7.500	5.768
454	CT-L73.0	50	47.5	-4.95	-7.630	5.577
455	CT-L73.0	50	47.5	-4.95	-7.630	5.577
455	CT-L73.0	50	47.5	-5.69	-7.770	5.381
456	CT-L73.0	50	47.5	-5.69	-7.770	5.381
456	CT-L73.0	50	47.5	-6.45	-7.910	5.190
457	CT-L73.0	50	47.5	-6.45	-7.910	5.190
457	CT-L73.0	50	47.5	-7.22	-8.050	5.004
458	CT-L73.0	50	47.5	-7.22	-8.050	5.004
458	CT-L73.0	50	47.5	-8.03	-8.200	4.813
459	CT-L73.0	50	47.5	-8.03	-8.200	4.813
459	CT-L73.0	50	47.5	-8.85	-8.340	4.634
460	CT-L73.0	50	47.5	-8.85	-8.340	4.634
460	CT-L73.0	50	47.5	-9.69	-8.490	4.453
461	CT-L73.0	50	47.5	-9.7	-8.490	4.452
461	CT-L73.0	50	47.5	-10.56	-8.640	4.275
462	CT-L73.0	50	47.5	-10.56	-8.640	4.275
462	CT-L73.0	50	47.5	-11.44	-8.790	4.102
463	CT-L73.0	50	47.5	-11.44	-8.790	4.102
463	CT-L73.0	50	47.5	-12.33	-8.930	3.938
464	CT-L73.0	50	47.5	-12.33	-8.930	3.938
464	CT-L73.0	50	47.5	-13.23	-9.200	3.725
465	CT-L73.0	50	47.5	-13.24	-9.210	3.720
465	CT-L73.0	50	47.5	-12.34	-8.960	3.924
466	CT-L73.0	50	47.5	-12.34	-8.960	3.924
466	CT-L73.0	50	47.5	-11.45	-8.820	4.087
467	CT-L73.0	50	47.5	-11.44	-8.820	4.088
467	CT-L73.0	50	47.5	-10.56	-8.670	4.261
468	CT-L73.0	50	47.5	-10.56	-8.670	4.261
468	CT-L73.0	50	47.5	-9.7	-8.520	4.437
469	CT-L73.0	50	47.5	-9.7	-8.520	4.437
469	CT-L73.0	50	47.5	-8.86	-8.380	4.611

470	CT-L73.0	50	47.5	-8.85	-8.380	4.612
470	CT-L73.0	50	47.5	-8.03	-8.230	4.796
471	CT-L73.0	50	47.5	-8.03	-8.230	4.796
471	CT-L73.0	50	47.5	-7.23	-8.080	4.984
472	CT-L73.0	50	47.5	-7.23	-8.080	4.984
472	CT-L73.0	50	47.5	-6.45	-7.940	5.170
473	CT-L73.0	50	47.5	-6.45	-7.940	5.170
473	CT-L73.0	50	47.5	-5.69	-7.800	5.360
474	CT-L73.0	50	47.5	-5.69	-7.800	5.360
474	CT-L73.0	50	47.5	-4.96	-7.660	5.554
475	CT-L73.0	50	47.5	-4.96	-7.660	5.554
475	CT-L73.0	50	47.5	-4.24	-7.520	5.753
476	CT-L73.0	50	47.5	-4.24	-7.530	5.745
476	CT-L73.0	50	47.5	-3.55	-7.390	5.947
477	CT-L73.0	50	47.5	-3.55	-7.390	5.947
477	CT-L73.0	50	47.5	-2.88	-7.250	6.154
478	CT-L73.0	50	47.5	-2.88	-7.260	6.146
478	CT-L73.0	50	47.5	-2.23	7.480	6.052
479	CT-L73.0	50	47.5	-2.23	7.470	6.060
479	CT-L73.0	50	47.5	-1.6	8.140	5.639
480	CT-L73.0	50	47.5	-1.6	8.130	5.646
480	CT-L73.0	50	47.5	-0.99	8.780	5.297
481	CT-L73.0	50	47.5	-0.99	8.780	5.297
481	CT-L73.0	50	47.5	-0.41	9.410	5.004
482	CT-L73.0	50	47.5	-0.41	9.410	5.004
482	CT-L73.0	50	47.5	0.17	10.010	4.728
483	CT-L73.0	50	47.5	0.17	10.010	4.728
483	CT-L73.0	50	47.5	0.71	10.600	4.414
484	CT-L73.0	50	47.5	0.71	10.590	4.418
484	CT-L73.0	50	47.5	1.23	11.150	4.150
485	CT-L73.0	50	47.5	1.23	11.150	4.150
485	CT-L73.0	50	47.5	1.73	11.690	3.915
486	CT-L73.0	50	47.5	1.73	11.690	3.915
486	CT-L73.0	50	47.5	2.21	12.200	3.712
487	CT-L73.0	50	47.5	2.21	12.200	3.712
487	CT-L73.0	50	47.5	2.56	12.540	3.584
488	CT-L73.0	50	47.5	2.56	12.540	3.584
488	CT-L73.0	50	47.5	2.67	12.700	3.530
489	CT-L73.0	50	47.5	2.67	12.700	3.530
489	CT-L73.0	50	47.5	3.11	13.180	3.368
490	CT-L73.0	50	47.5	3.1	13.170	3.371
490	CT-L73.0	50	47.5	3.52	13.640	3.224
491	CT-L73.0	50	47.5	3.52	13.630	3.227
491	CT-L73.0	50	47.5	3.91	14.060	3.100
492	CT-L73.0	50	47.5	3.91	14.060	3.100
492	CT-L73.0	50	47.5	4.28	14.460	2.989
493	CT-L73.0	50	47.5	4.28	14.450	2.991
493	CT-L73.0	50	47.5	4.63	14.820	2.893
494	CT-L73.0	50	47.5	4.63	14.820	2.893
494	CT-L73.0	50	47.5	4.96	15.150	2.808
495	CT-L73.0	50	47.5	4.96	15.150	2.808
495	CT-L73.0	50	47.5	5.27	15.450	2.733
496	CT-L73.0	50	47.5	5.27	15.450	2.733
496	CT-L73.0	50	47.5	5.56	15.710	2.670
497	CT-L73.0	50	47.5	5.55	15.710	2.670

497	CT-L73.0	50	47.5	5.82	15.940	2.615
498	CT-L73.0	50	47.5	5.82	15.940	2.615
498	CT-L73.0	50	47.5	6.06	16.130	2.569
499	CT-L73.0	50	47.5	6.06	16.130	2.569
499	CT-L73.0	50	47.5	6.29	16.290	2.530
500	CT-L73.0	50	47.5	6.28	16.280	2.532
500	CT-L73.0	50	47.5	6.49	16.400	2.501
501	CT-L73.0	50	47.5	6.48	16.400	2.501
501	CT-L73.0	50	47.5	6.67	16.480	2.478
502	CT-L73.0	50	47.5	6.66	16.480	2.478
502	CT-L73.0	50	47.5	6.82	16.520	2.462
503	CT-L73.0	50	47.5	6.82	16.520	2.462
503	CT-L73.0	50	47.5	6.96	16.580	2.445
504	CT-L73.0	50	47.5	6.96	16.590	2.444
504	CT-L73.0	50	47.5	7.02	16.610	2.437
505	CT-L73.0	50	47.5	7.02	16.610	2.437
505	CT-L73.0	50	47.5	7.08	16.680	2.423
506	CT-L73.0	50	47.5	7.07	16.680	2.424
506	CT-L73.0	50	47.5	7.17	16.740	2.409
507	CT-L73.0	50	47.5	7.17	16.740	2.409
507	CT-L73.0	50	47.5	7.24	16.780	2.399
508	CT-L73.0	50	47.5	7.24	16.780	2.399
508	CT-L73.0	50	47.5	7.29	16.780	2.396
509	CT-L73.0	50	47.5	7.29	16.770	2.398
509	CT-L73.0	50	47.5	7.32	16.730	2.402
510	CT-L73.0	50	47.5	7.32	16.730	2.402
510	CT-L73.0	50	47.5	7.33	16.650	2.413
511	CT-L73.0	50	47.5	7.33	16.650	2.413
511	CT-L73.0	50	47.5	7.31	16.520	2.433
512	CT-L73.0	50	47.5	7.31	16.520	2.433
512	CT-L73.0	50	47.5	7.28	16.360	2.458
513	CT-L73.0	50	47.5	7.28	16.360	2.458
513	CT-L73.0	50	47.5	7.22	16.150	2.494
514	CT-L73.0	50	47.5	7.22	16.150	2.494
514	CT-L73.0	50	47.5	7.14	15.900	2.538
515	CT-L73.0	50	47.5	7.14	15.900	2.538
515	CT-L73.0	50	47.5	7.04	15.600	2.594
516	CT-L73.0	50	47.5	7.04	15.600	2.594
516	CT-L73.0	50	47.5	6.92	15.270	2.657
517	CT-L73.0	50	47.5	6.92	15.270	2.657
517	CT-L73.0	50	47.5	6.78	14.880	2.737
518	CT-L73.0	50	47.5	6.78	14.880	2.737
518	CT-L73.0	50	47.5	6.62	14.450	2.829
519	CT-L73.0	50	47.5	6.62	14.450	2.829
519	CT-L73.0	50	47.5	6.43	13.980	2.938
520	CT-L73.0	50	47.5	6.43	13.980	2.938
520	CT-L73.0	50	47.5	6.23	13.460	3.066
521	CT-L73.0	50	47.5	6.23	13.470	3.064
521	CT-L73.0	50	47.5	6.17	13.320	3.103
522	CT-L73.0	50	47.5	6.17	13.320	3.103
522	CT-L73.0	50	47.5	6	12.910	3.215
523	CT-L73.0	50	47.5	6	12.930	3.210
523	CT-L73.0	50	47.5	5.75	12.370	3.375
524	CT-L73.0	50	47.5	5.75	12.370	3.375
524	CT-L73.0	50	47.5	5.48	11.780	3.567

525	CT-L73.0	50	47.5	5.48	11.790	3.564
525	CT-L73.0	50	47.5	5.18	11.190	3.782
526	CT-L73.0	50	47.5	5.19	11.200	3.778
526	CT-L73.0	50	47.5	4.87	10.550	4.041
527	CT-L73.0	50	47.5	4.87	10.560	4.037
527	CT-L73.0	50	47.5	4.53	9.860	4.358
528	CT-L73.0	50	47.5	4.54	9.880	4.348
528	CT-L73.0	50	47.5	4.18	9.130	4.745
529	CT-L73.0	50	47.5	4.18	9.150	4.734
529	CT-L73.0	50	47.5	3.8	8.350	5.234
530	CT-L73.0	50	47.5	3.8	8.370	5.221
530	CT-L73.0	50	47.5	3.4	7.520	5.864
531	CT-L73.0	50	47.5	3.4	7.550	5.841
531	CT-L73.0	50	47.5	2.98	6.640	6.705
532	CT-L73.0	50	47.5	2.98	6.670	6.675
532	CT-L73.0	50	47.5	2.53	5.710	7.876
533	CT-L73.0	50	47.5	2.54	5.740	7.833
533	CT-L73.0	50	47.5	2.07	4.720	9.625
534	CT-L73.0	50	47.5	2.07	4.750	9.564
534	CT-L73.0	50	47.5	1.58	3.660	12.546
535	CT-L73.0	50	47.5	1.58	3.710	12.377
535	CT-L73.0	50	47.5	1.08	2.540	18.276
536	CT-L73.0	50	47.5	1.07	2.590	17.927
536	CT-L73.0	50	47.5	0.55	1.320	35.568
537	CT-L73.0	50	47.5	0.55	1.370	34.270
537	CT-L73.0	50	47.5	0.01	-0.070	678.429

LOAD RATING FIXED SPAN -GIRDER 3

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
246	CT-L73.0	50	47.5	0.05	-0.070	677.857
246	CT-L73.0	50	47.5	0.67	1.350	34.689
247	CT-L73.0	50	47.5	0.62	1.300	36.062
247	CT-L73.0	50	47.5	1.22	2.570	18.008
248	CT-L73.0	50	47.5	1.18	2.520	18.381
248	CT-L73.0	50	47.5	1.71	3.690	12.409
249	CT-L73.0	50	47.5	1.68	3.640	12.588
249	CT-L73.0	50	47.5	2.16	4.720	9.606
250	CT-L73.0	50	47.5	2.14	4.690	9.672
250	CT-L73.0	50	47.5	2.59	5.710	7.865
251	CT-L73.0	50	47.5	2.57	5.680	7.910
251	CT-L73.0	50	47.5	3	6.640	6.702
252	CT-L73.0	50	47.5	2.99	6.620	6.724
252	CT-L73.0	50	47.5	3.4	7.520	5.864
253	CT-L73.0	50	47.5	3.39	7.500	5.881
253	CT-L73.0	50	47.5	3.77	8.350	5.237
254	CT-L73.0	50	47.5	3.77	8.330	5.250
254	CT-L73.0	50	47.5	4.14	9.130	4.749
255	CT-L73.0	50	47.5	4.14	9.110	4.760
255	CT-L73.0	50	47.5	4.48	9.860	4.363
256	CT-L73.0	50	47.5	4.48	9.850	4.368
256	CT-L73.0	50	47.5	4.8	10.540	4.051
257	CT-L73.0	50	47.5	4.81	10.530	4.054
257	CT-L73.0	50	47.5	5.11	11.180	3.792
258	CT-L73.0	50	47.5	5.11	11.170	3.795
258	CT-L73.0	50	47.5	5.39	11.770	3.578
259	CT-L73.0	50	47.5	5.39	11.760	3.581
259	CT-L73.0	50	47.5	5.65	12.350	3.389
260	CT-L73.0	50	47.5	5.66	12.350	3.388
260	CT-L73.0	50	47.5	5.9	12.910	3.222
261	CT-L73.0	50	47.5	5.9	12.890	3.227
261	CT-L73.0	50	47.5	6.07	13.300	3.115
262	CT-L73.0	50	47.5	6.07	13.300	3.115
262	CT-L73.0	50	47.5	6.12	13.450	3.077
263	CT-L73.0	50	47.5	6.12	13.440	3.079
263	CT-L73.0	50	47.5	6.32	13.960	2.950
264	CT-L73.0	50	47.5	6.32	13.960	2.950
264	CT-L73.0	50	47.5	6.49	14.430	2.842
265	CT-L73.0	50	47.5	6.5	14.430	2.841
265	CT-L73.0	50	47.5	6.65	14.860	2.749
266	CT-L73.0	50	47.5	6.65	14.860	2.749
266	CT-L73.0	50	47.5	6.79	15.250	2.670
267	CT-L73.0	50	47.5	6.79	15.250	2.670
267	CT-L73.0	50	47.5	6.9	15.580	2.606
268	CT-L73.0	50	47.5	6.91	15.580	2.605
268	CT-L73.0	50	47.5	7	15.880	2.550

Minimum Rating Factor 2.406

269	CT-L73.0	50	47.5	7	15.880	2.550
269	CT-L73.0	50	47.5	7.08	16.130	2.506
270	CT-L73.0	50	47.5	7.08	16.130	2.506
270	CT-L73.0	50	47.5	7.13	16.330	2.472
271	CT-L73.0	50	47.5	7.13	16.340	2.471
271	CT-L73.0	50	47.5	7.16	16.500	2.445
272	CT-L73.0	50	47.5	7.16	16.500	2.445
272	CT-L73.0	50	47.5	7.18	16.620	2.426
273	CT-L73.0	50	47.5	7.18	16.630	2.425
273	CT-L73.0	50	47.5	7.17	16.710	2.414
274	CT-L73.0	50	47.5	7.17	16.710	2.414
274	CT-L73.0	50	47.5	7.14	16.750	2.410
275	CT-L73.0	50	47.5	7.14	16.750	2.410
275	CT-L73.0	50	47.5	7.09	16.760	2.411
276	CT-L73.0	50	47.5	7.09	16.760	2.411
276	CT-L73.0	50	47.5	7.02	16.720	2.421
277	CT-L73.0	50	47.5	7.01	16.720	2.422
277	CT-L73.0	50	47.5	6.92	16.660	2.436
278	CT-L73.0	50	47.5	6.92	16.660	2.436
278	CT-L73.0	50	47.5	6.87	16.590	2.449
279	CT-L73.0	50	47.5	6.87	16.590	2.449
279	CT-L73.0	50	47.5	6.81	16.570	2.456
280	CT-L73.0	50	47.5	6.81	16.560	2.457
280	CT-L73.0	50	47.5	6.67	16.490	2.476
281	CT-L73.0	50	47.5	6.67	16.490	2.476
281	CT-L73.0	50	47.5	6.52	16.450	2.491
282	CT-L73.0	50	47.5	6.51	16.460	2.490
282	CT-L73.0	50	47.5	6.34	16.370	2.514
283	CT-L73.0	50	47.5	6.33	16.380	2.513
283	CT-L73.0	50	47.5	6.14	16.260	2.544
284	CT-L73.0	50	47.5	6.13	16.260	2.544
284	CT-L73.0	50	47.5	5.92	16.100	2.583
285	CT-L73.0	50	47.5	5.91	16.110	2.582
285	CT-L73.0	50	47.5	5.68	15.910	2.629
286	CT-L73.0	50	47.5	5.67	15.910	2.629
286	CT-L73.0	50	47.5	5.42	15.680	2.684
287	CT-L73.0	50	47.5	5.41	15.690	2.683
287	CT-L73.0	50	47.5	5.14	15.420	2.747
288	CT-L73.0	50	47.5	5.13	15.430	2.746
288	CT-L73.0	50	47.5	4.83	15.120	2.822
289	CT-L73.0	50	47.5	4.82	15.130	2.821
289	CT-L73.0	50	47.5	4.51	14.790	2.907
290	CT-L73.0	50	47.5	4.5	14.800	2.905
290	CT-L73.0	50	47.5	4.16	14.430	3.003
291	CT-L73.0	50	47.5	4.15	14.440	3.002
291	CT-L73.0	50	47.5	3.8	14.040	3.113
292	CT-L73.0	50	47.5	3.79	14.040	3.113
292	CT-L73.0	50	47.5	3.41	13.610	3.240
293	CT-L73.0	50	47.5	3.4	13.610	3.240
293	CT-L73.0	50	47.5	3.01	13.150	3.383
294	CT-L73.0	50	47.5	2.99	13.150	3.385
294	CT-L73.0	50	47.5	2.58	12.680	3.543
295	CT-L73.0	50	47.5	2.57	12.680	3.543
295	CT-L73.0	50	47.5	2.46	12.510	3.600
296	CT-L73.0	50	47.5	2.46	12.510	3.600

296	CT-L73.0	50	47.5	2.13	12.170	3.728
297	CT-L73.0	50	47.5	2.12	12.180	3.726
297	CT-L73.0	50	47.5	1.66	11.670	3.928
298	CT-L73.0	50	47.5	1.65	11.670	3.929
298	CT-L73.0	50	47.5	1.16	11.130	4.164
299	CT-L73.0	50	47.5	1.15	11.130	4.164
299	CT-L73.0	50	47.5	0.65	10.580	4.428
300	CT-L73.0	50	47.5	0.64	10.580	4.429
300	CT-L73.0	50	47.5	0.12	9.990	4.743
301	CT-L73.0	50	47.5	0.11	10.000	4.739
301	CT-L73.0	50	47.5	-0.45	9.390	5.011
302	CT-L73.0	50	47.5	-0.45	9.390	5.011
302	CT-L73.0	50	47.5	-1.02	8.760	5.306
303	CT-L73.0	50	47.5	-1.02	8.770	5.300
303	CT-L73.0	50	47.5	-1.61	8.120	5.651
304	CT-L73.0	50	47.5	-1.62	8.120	5.650
304	CT-L73.0	50	47.5	-2.22	7.460	6.070
305	CT-L73.0	50	47.5	-2.23	7.460	6.068
305	CT-L73.0	50	47.5	-2.85	-7.230	6.176
306	CT-L73.0	50	47.5	-2.86	-7.220	6.183
306	CT-L73.0	50	47.5	-3.51	-7.360	5.977
307	CT-L73.0	50	47.5	-3.52	-7.360	5.976
307	CT-L73.0	50	47.5	-4.18	-7.500	5.776
308	CT-L73.0	50	47.5	-4.19	-7.500	5.775
308	CT-L73.0	50	47.5	-4.87	-7.630	5.587
309	CT-L73.0	50	47.5	-4.89	-7.630	5.585
309	CT-L73.0	50	47.5	-5.58	-7.770	5.395
310	CT-L73.0	50	47.5	-5.6	-7.770	5.393
310	CT-L73.0	50	47.5	-6.32	-7.910	5.206
311	CT-L73.0	50	47.5	-6.33	-7.910	5.205
311	CT-L73.0	50	47.5	-7.07	-8.050	5.022
312	CT-L73.0	50	47.5	-7.08	-8.050	5.021
312	CT-L73.0	50	47.5	-7.84	-8.200	4.837
313	CT-L73.0	50	47.5	-7.85	-8.200	4.835
313	CT-L73.0	50	47.5	-8.63	-8.340	4.661
314	CT-L73.0	50	47.5	-8.64	-8.340	4.659
314	CT-L73.0	50	47.5	-9.44	-8.490	4.483
315	CT-L73.0	50	47.5	-9.45	-8.490	4.482
315	CT-L73.0	50	47.5	-10.27	-8.640	4.309
316	CT-L73.0	50	47.5	-10.28	-8.640	4.308
316	CT-L73.0	50	47.5	-11.11	-8.780	4.145
317	CT-L73.0	50	47.5	-11.12	-8.790	4.139
317	CT-L73.0	50	47.5	-11.96	-8.930	3.980
318	CT-L73.0	50	47.5	-11.97	-8.930	3.979
318	CT-L73.0	50	47.5	-12.83	-9.200	3.768
319	CT-L73.0	50	47.5	-12.83	-9.210	3.764
319	CT-L73.0	50	47.5	-11.96	-8.960	3.967
320	CT-L73.0	50	47.5	-11.96	-8.960	3.967
320	CT-L73.0	50	47.5	-11.11	-8.820	4.126
321	CT-L73.0	50	47.5	-11.1	-8.820	4.127
321	CT-L73.0	50	47.5	-10.27	-8.670	4.294
322	CT-L73.0	50	47.5	-10.26	-8.670	4.295
322	CT-L73.0	50	47.5	-9.45	-8.520	4.466
323	CT-L73.0	50	47.5	-9.44	-8.520	4.467
323	CT-L73.0	50	47.5	-8.64	-8.380	4.637

324	CT-L73.0	50	47.5	-8.63	-8.370	4.644
324	CT-L73.0	50	47.5	-7.85	-8.230	4.818
325	CT-L73.0	50	47.5	-7.84	-8.230	4.819
325	CT-L73.0	50	47.5	-7.08	-8.080	5.002
326	CT-L73.0	50	47.5	-7.06	-8.080	5.005
326	CT-L73.0	50	47.5	-6.33	-7.940	5.185
327	CT-L73.0	50	47.5	-6.31	-7.940	5.188
327	CT-L73.0	50	47.5	-5.59	-7.800	5.373
328	CT-L73.0	50	47.5	-5.58	-7.800	5.374
328	CT-L73.0	50	47.5	-4.88	-7.660	5.564
329	CT-L73.0	50	47.5	-4.87	-7.660	5.565
329	CT-L73.0	50	47.5	-4.19	-7.520	5.759
330	CT-L73.0	50	47.5	-4.17	-7.530	5.754
330	CT-L73.0	50	47.5	-3.51	-7.390	5.953
331	CT-L73.0	50	47.5	-3.5	-7.390	5.954
331	CT-L73.0	50	47.5	-2.86	-7.250	6.157
332	CT-L73.0	50	47.5	-2.85	-7.250	6.159
332	CT-L73.0	50	47.5	-2.23	7.480	6.052
333	CT-L73.0	50	47.5	-2.22	7.470	6.062
333	CT-L73.0	50	47.5	-1.61	8.140	5.638
334	CT-L73.0	50	47.5	-1.61	8.130	5.645
334	CT-L73.0	50	47.5	-1.02	8.780	5.294
335	CT-L73.0	50	47.5	-1.02	8.780	5.294
335	CT-L73.0	50	47.5	-0.45	9.410	5.000
336	CT-L73.0	50	47.5	-0.44	9.410	5.001
336	CT-L73.0	50	47.5	0.11	10.010	4.734
337	CT-L73.0	50	47.5	0.12	10.010	4.733
337	CT-L73.0	50	47.5	0.65	10.600	4.420
338	CT-L73.0	50	47.5	0.65	10.590	4.424
338	CT-L73.0	50	47.5	1.16	11.150	4.156
339	CT-L73.0	50	47.5	1.17	11.150	4.155
339	CT-L73.0	50	47.5	1.65	11.690	3.922
340	CT-L73.0	50	47.5	1.66	11.690	3.921
340	CT-L73.0	50	47.5	2.12	12.200	3.720
341	CT-L73.0	50	47.5	2.13	12.200	3.719
341	CT-L73.0	50	47.5	2.46	12.540	3.592
342	CT-L73.0	50	47.5	2.46	12.540	3.592
342	CT-L73.0	50	47.5	2.57	12.700	3.538
343	CT-L73.0	50	47.5	2.58	12.700	3.537
343	CT-L73.0	50	47.5	3	13.180	3.376
344	CT-L73.0	50	47.5	3.01	13.170	3.378
344	CT-L73.0	50	47.5	3.4	13.640	3.233
345	CT-L73.0	50	47.5	3.41	13.630	3.235
345	CT-L73.0	50	47.5	3.79	14.060	3.109
346	CT-L73.0	50	47.5	3.8	14.060	3.108
346	CT-L73.0	50	47.5	4.16	14.460	2.997
347	CT-L73.0	50	47.5	4.17	14.450	2.999
347	CT-L73.0	50	47.5	4.5	14.820	2.901
348	CT-L73.0	50	47.5	4.51	14.820	2.901
348	CT-L73.0	50	47.5	4.83	15.150	2.817
349	CT-L73.0	50	47.5	4.83	15.150	2.817
349	CT-L73.0	50	47.5	5.13	15.450	2.742
350	CT-L73.0	50	47.5	5.14	15.450	2.742
350	CT-L73.0	50	47.5	5.41	15.710	2.679
351	CT-L73.0	50	47.5	5.42	15.710	2.679

351	CT-L73.0	50	47.5	5.67	15.940	2.624
352	CT-L73.0	50	47.5	5.68	15.940	2.624
352	CT-L73.0	50	47.5	5.91	16.130	2.578
353	CT-L73.0	50	47.5	5.92	16.130	2.578
353	CT-L73.0	50	47.5	6.13	16.290	2.540
354	CT-L73.0	50	47.5	6.14	16.280	2.541
354	CT-L73.0	50	47.5	6.33	16.400	2.510
355	CT-L73.0	50	47.5	6.34	16.400	2.510
355	CT-L73.0	50	47.5	6.51	16.480	2.487
356	CT-L73.0	50	47.5	6.52	16.480	2.487
356	CT-L73.0	50	47.5	6.67	16.520	2.472
357	CT-L73.0	50	47.5	6.67	16.520	2.472
357	CT-L73.0	50	47.5	6.81	16.580	2.454
358	CT-L73.0	50	47.5	6.81	16.590	2.453
358	CT-L73.0	50	47.5	6.87	16.610	2.446
359	CT-L73.0	50	47.5	6.87	16.610	2.446
359	CT-L73.0	50	47.5	6.92	16.680	2.433
360	CT-L73.0	50	47.5	6.92	16.680	2.433
360	CT-L73.0	50	47.5	7.01	16.740	2.419
361	CT-L73.0	50	47.5	7.01	16.740	2.419
361	CT-L73.0	50	47.5	7.08	16.780	2.409
362	CT-L73.0	50	47.5	7.08	16.780	2.409
362	CT-L73.0	50	47.5	7.13	16.780	2.406
363	CT-L73.0	50	47.5	7.13	16.770	2.407
363	CT-L73.0	50	47.5	7.16	16.730	2.411
364	CT-L73.0	50	47.5	7.16	16.730	2.411
364	CT-L73.0	50	47.5	7.17	16.650	2.422
365	CT-L73.0	50	47.5	7.17	16.650	2.422
365	CT-L73.0	50	47.5	7.16	16.520	2.442
366	CT-L73.0	50	47.5	7.16	16.520	2.442
366	CT-L73.0	50	47.5	7.12	16.360	2.468
367	CT-L73.0	50	47.5	7.12	16.360	2.468
367	CT-L73.0	50	47.5	7.07	16.150	2.503
368	CT-L73.0	50	47.5	7.07	16.150	2.503
368	CT-L73.0	50	47.5	6.99	15.900	2.548
369	CT-L73.0	50	47.5	6.99	15.900	2.548
369	CT-L73.0	50	47.5	6.9	15.600	2.603
370	CT-L73.0	50	47.5	6.89	15.600	2.603
370	CT-L73.0	50	47.5	6.78	15.270	2.667
371	CT-L73.0	50	47.5	6.77	15.270	2.667
371	CT-L73.0	50	47.5	6.64	14.880	2.746
372	CT-L73.0	50	47.5	6.63	14.880	2.747
372	CT-L73.0	50	47.5	6.48	14.450	2.839
373	CT-L73.0	50	47.5	6.47	14.450	2.839
373	CT-L73.0	50	47.5	6.3	13.980	2.947
374	CT-L73.0	50	47.5	6.29	13.980	2.948
374	CT-L73.0	50	47.5	6.1	13.460	3.076
375	CT-L73.0	50	47.5	6.09	13.470	3.074
375	CT-L73.0	50	47.5	6.04	13.320	3.113
376	CT-L73.0	50	47.5	6.04	13.320	3.113
376	CT-L73.0	50	47.5	5.87	12.910	3.225
377	CT-L73.0	50	47.5	5.87	12.930	3.220
377	CT-L73.0	50	47.5	5.63	12.370	3.385
378	CT-L73.0	50	47.5	5.62	12.370	3.386
378	CT-L73.0	50	47.5	5.36	11.780	3.577

379	CT-L73.0	50	47.5	5.35	11.790	3.575
379	CT-L73.0	50	47.5	5.07	11.190	3.792
380	CT-L73.0	50	47.5	5.06	11.200	3.789
380	CT-L73.0	50	47.5	4.76	10.550	4.051
381	CT-L73.0	50	47.5	4.76	10.560	4.047
381	CT-L73.0	50	47.5	4.44	9.860	4.367
382	CT-L73.0	50	47.5	4.43	9.880	4.359
382	CT-L73.0	50	47.5	4.09	9.130	4.755
383	CT-L73.0	50	47.5	4.08	9.150	4.745
383	CT-L73.0	50	47.5	3.72	8.350	5.243
384	CT-L73.0	50	47.5	3.71	8.370	5.232
384	CT-L73.0	50	47.5	3.32	7.520	5.875
385	CT-L73.0	50	47.5	3.31	7.550	5.853
385	CT-L73.0	50	47.5	2.91	6.640	6.715
386	CT-L73.0	50	47.5	2.9	6.670	6.687
386	CT-L73.0	50	47.5	2.48	5.710	7.884
387	CT-L73.0	50	47.5	2.47	5.740	7.845
387	CT-L73.0	50	47.5	2.02	4.720	9.636
388	CT-L73.0	50	47.5	2.02	4.750	9.575
388	CT-L73.0	50	47.5	1.55	3.660	12.555
389	CT-L73.0	50	47.5	1.55	3.710	12.385
389	CT-L73.0	50	47.5	1.06	2.540	18.283
390	CT-L73.0	50	47.5	1.05	2.590	17.934
390	CT-L73.0	50	47.5	0.54	1.320	35.576
391	CT-L73.0	50	47.5	0.54	1.370	34.277
391	CT-L73.0	50	47.5	0.01	-0.070	678.429

LOAD RATING FIXED SPAN -GIRDER 4

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating Factor 2.318

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
100	CT-L73.0	50	47.5	0.11	0.330	143.606
100	CT-L73.0	50	47.5	0.48	1.330	35.353
101	CT-L73.0	50	47.5	0.53	1.440	32.618
101	CT-L73.0	50	47.5	0.96	2.580	18.039
102	CT-L73.0	50	47.5	1.01	2.700	17.219
102	CT-L73.0	50	47.5	1.44	3.750	12.283
103	CT-L73.0	50	47.5	1.49	3.880	11.858
103	CT-L73.0	50	47.5	1.9	4.860	9.383
104	CT-L73.0	50	47.5	1.95	4.990	9.128
104	CT-L73.0	50	47.5	2.35	5.900	7.653
105	CT-L73.0	50	47.5	2.4	6.020	7.492
105	CT-L73.0	50	47.5	2.78	6.880	6.500
106	CT-L73.0	50	47.5	2.83	6.990	6.391
106	CT-L73.0	50	47.5	3.19	7.810	5.673
107	CT-L73.0	50	47.5	3.25	7.910	5.594
107	CT-L73.0	50	47.5	3.58	8.680	5.060
108	CT-L73.0	50	47.5	3.65	8.770	5.000
108	CT-L73.0	50	47.5	3.96	9.490	4.588
109	CT-L73.0	50	47.5	4.02	9.580	4.539
109	CT-L73.0	50	47.5	4.31	10.250	4.214
110	CT-L73.0	50	47.5	4.38	10.330	4.174
110	CT-L73.0	50	47.5	4.65	10.970	3.906
111	CT-L73.0	50	47.5	4.71	11.040	3.876
111	CT-L73.0	50	47.5	4.96	11.690	3.639
112	CT-L73.0	50	47.5	5.02	11.760	3.612
112	CT-L73.0	50	47.5	5.25	12.380	3.413
113	CT-L73.0	50	47.5	5.31	12.450	3.389
113	CT-L73.0	50	47.5	5.53	13.030	3.221
114	CT-L73.0	50	47.5	5.58	13.080	3.205
114	CT-L73.0	50	47.5	5.78	13.630	3.061
115	CT-L73.0	50	47.5	5.82	13.660	3.051
115	CT-L73.0	50	47.5	5.96	14.030	2.961
116	CT-L73.0	50	47.5	5.96	14.020	2.963
116	CT-L73.0	50	47.5	6	14.170	2.929
117	CT-L73.0	50	47.5	6.05	14.190	2.921
117	CT-L73.0	50	47.5	6.21	14.650	2.818
118	CT-L73.0	50	47.5	6.25	14.690	2.808
118	CT-L73.0	50	47.5	6.4	15.090	2.724
119	CT-L73.0	50	47.5	6.43	15.130	2.714
119	CT-L73.0	50	47.5	6.56	15.490	2.643
120	CT-L73.0	50	47.5	6.59	15.530	2.634
120	CT-L73.0	50	47.5	6.7	15.850	2.574
121	CT-L73.0	50	47.5	6.73	15.890	2.566
121	CT-L73.0	50	47.5	6.82	16.180	2.514
122	CT-L73.0	50	47.5	6.85	16.210	2.508
122	CT-L73.0	50	47.5	6.92	16.460	2.465

123	CT-L73.0	50	47.5	6.94	16.490	2.460
123	CT-L73.0	50	47.5	7	16.710	2.424
124	CT-L73.0	50	47.5	7.02	16.730	2.420
124	CT-L73.0	50	47.5	7.06	16.920	2.390
125	CT-L73.0	50	47.5	7.07	16.940	2.387
125	CT-L73.0	50	47.5	7.1	17.090	2.364
126	CT-L73.0	50	47.5	7.11	17.110	2.361
126	CT-L73.0	50	47.5	7.11	17.230	2.344
127	CT-L73.0	50	47.5	7.12	17.240	2.342
127	CT-L73.0	50	47.5	7.11	17.330	2.331
128	CT-L73.0	50	47.5	7.11	17.340	2.329
128	CT-L73.0	50	47.5	7.08	17.390	2.324
129	CT-L73.0	50	47.5	7.08	17.410	2.322
129	CT-L73.0	50	47.5	7.04	17.430	2.321
130	CT-L73.0	50	47.5	7.03	17.430	2.322
130	CT-L73.0	50	47.5	6.97	17.420	2.327
131	CT-L73.0	50	47.5	6.96	17.430	2.326
131	CT-L73.0	50	47.5	6.88	17.390	2.336
132	CT-L73.0	50	47.5	6.86	17.380	2.338
132	CT-L73.0	50	47.5	6.82	17.330	2.347
133	CT-L73.0	50	47.5	6.82	17.330	2.347
133	CT-L73.0	50	47.5	6.77	17.310	2.353
134	CT-L73.0	50	47.5	6.75	17.300	2.355
134	CT-L73.0	50	47.5	6.64	17.230	2.371
135	CT-L73.0	50	47.5	6.61	17.220	2.375
135	CT-L73.0	50	47.5	6.48	17.160	2.390
136	CT-L73.0	50	47.5	6.45	17.130	2.396
136	CT-L73.0	50	47.5	6.31	17.040	2.417
137	CT-L73.0	50	47.5	6.27	17.020	2.422
137	CT-L73.0	50	47.5	6.11	16.900	2.449
138	CT-L73.0	50	47.5	6.07	16.870	2.456
138	CT-L73.0	50	47.5	5.9	16.710	2.490
139	CT-L73.0	50	47.5	5.85	16.690	2.496
139	CT-L73.0	50	47.5	5.66	16.500	2.536
140	CT-L73.0	50	47.5	5.61	16.470	2.543
140	CT-L73.0	50	47.5	5.4	16.260	2.589
141	CT-L73.0	50	47.5	5.35	16.220	2.599
141	CT-L73.0	50	47.5	5.12	15.980	2.652
142	CT-L73.0	50	47.5	5.06	15.940	2.662
142	CT-L73.0	50	47.5	4.82	15.670	2.724
143	CT-L73.0	50	47.5	4.76	15.630	2.734
143	CT-L73.0	50	47.5	4.5	15.340	2.803
144	CT-L73.0	50	47.5	4.44	15.290	2.816
144	CT-L73.0	50	47.5	4.16	14.970	2.895
145	CT-L73.0	50	47.5	4.09	14.930	2.908
145	CT-L73.0	50	47.5	3.79	14.580	2.998
146	CT-L73.0	50	47.5	3.73	14.530	3.012
146	CT-L73.0	50	47.5	3.41	14.160	3.114
147	CT-L73.0	50	47.5	3.34	14.110	3.130
147	CT-L73.0	50	47.5	3.01	13.700	3.247
148	CT-L73.0	50	47.5	2.94	13.660	3.262
148	CT-L73.0	50	47.5	2.58	13.220	3.398
149	CT-L73.0	50	47.5	2.51	13.190	3.411
149	CT-L73.0	50	47.5	2.41	13.030	3.460
150	CT-L73.0	50	47.5	2.41	13.030	3.460

150	CT-L73.0	50	47.5	2.13	12.710	3.570
151	CT-L73.0	50	47.5	2.06	12.670	3.586
151	CT-L73.0	50	47.5	1.67	12.170	3.766
152	CT-L73.0	50	47.5	1.59	12.110	3.791
152	CT-L73.0	50	47.5	1.18	11.600	3.993
153	CT-L73.0	50	47.5	1.1	11.520	4.028
153	CT-L73.0	50	47.5	0.67	11.000	4.257
154	CT-L73.0	50	47.5	0.59	10.920	4.296
154	CT-L73.0	50	47.5	0.14	10.370	4.567
155	CT-L73.0	50	47.5	0.06	10.300	4.606
155	CT-L73.0	50	47.5	-0.45	9.730	4.836
156	CT-L73.0	50	47.5	-0.51	9.650	4.869
156	CT-L73.0	50	47.5	-1.02	9.060	5.130
157	CT-L73.0	50	47.5	-1.09	8.980	5.168
157	CT-L73.0	50	47.5	-1.61	8.370	5.483
158	CT-L73.0	50	47.5	-1.68	8.280	5.534
158	CT-L73.0	50	47.5	-2.22	7.660	5.911
159	CT-L73.0	50	47.5	-2.29	7.570	5.972
159	CT-L73.0	50	47.5	-2.84	-7.410	6.027
160	CT-L73.0	50	47.5	-2.93	-7.430	5.999
160	CT-L73.0	50	47.5	-3.49	-7.560	5.821
161	CT-L73.0	50	47.5	-3.58	-7.580	5.794
161	CT-L73.0	50	47.5	-4.16	-7.720	5.614
162	CT-L73.0	50	47.5	-4.25	-7.730	5.595
162	CT-L73.0	50	47.5	-4.85	-7.870	5.419
163	CT-L73.0	50	47.5	-4.94	-7.890	5.394
163	CT-L73.0	50	47.5	-5.55	-8.030	5.224
164	CT-L73.0	50	47.5	-5.65	-8.050	5.199
164	CT-L73.0	50	47.5	-6.27	-8.190	5.034
165	CT-L73.0	50	47.5	-6.38	-8.220	5.002
165	CT-L73.0	50	47.5	-7.02	-8.360	4.842
166	CT-L73.0	50	47.5	-7.13	-8.390	4.812
166	CT-L73.0	50	47.5	-7.78	-8.530	4.657
167	CT-L73.0	50	47.5	-7.9	-8.560	4.626
167	CT-L73.0	50	47.5	-8.57	-8.700	4.475
168	CT-L73.0	50	47.5	-8.7	-8.730	4.444
168	CT-L73.0	50	47.5	-9.39	-8.870	4.297
169	CT-L73.0	50	47.5	-9.51	-8.910	4.264
169	CT-L73.0	50	47.5	-10.23	-9.050	4.118
170	CT-L73.0	50	47.5	-10.35	-9.100	4.082
170	CT-L73.0	50	47.5	-11.08	-9.290	3.920
171	CT-L73.0	50	47.5	-11.2	-9.300	3.903
171	CT-L73.0	50	47.5	-11.96	-10.030	3.543
172	CT-L73.0	50	47.5	-12.04	-9.990	3.550
172	CT-L73.0	50	47.5	-12.85	-10.850	3.194
173	CT-L73.0	50	47.5	-12.83	-10.880	3.187
173	CT-L73.0	50	47.5	-12.02	-10.030	3.537
174	CT-L73.0	50	47.5	-11.94	-10.070	3.531
174	CT-L73.0	50	47.5	-11.18	-9.310	3.901
175	CT-L73.0	50	47.5	-11.07	-9.330	3.905
175	CT-L73.0	50	47.5	-10.33	-9.110	4.080
176	CT-L73.0	50	47.5	-10.21	-9.060	4.116
176	CT-L73.0	50	47.5	-9.5	-8.920	4.260
177	CT-L73.0	50	47.5	-9.37	-8.880	4.294
177	CT-L73.0	50	47.5	-8.68	-8.740	4.442

178	CT-L73.0	50	47.5	-8.56	-8.710	4.471
178	CT-L73.0	50	47.5	-7.89	-8.570	4.622
179	CT-L73.0	50	47.5	-7.76	-8.540	4.653
179	CT-L73.0	50	47.5	-7.12	-8.400	4.807
180	CT-L73.0	50	47.5	-7	-8.370	4.839
180	CT-L73.0	50	47.5	-6.37	-8.230	4.998
181	CT-L73.0	50	47.5	-6.26	-8.210	5.023
181	CT-L73.0	50	47.5	-5.64	-8.070	5.187
182	CT-L73.0	50	47.5	-5.54	-8.050	5.212
182	CT-L73.0	50	47.5	-4.93	-7.910	5.382
183	CT-L73.0	50	47.5	-4.83	-7.890	5.408
183	CT-L73.0	50	47.5	-4.24	-7.750	5.582
184	CT-L73.0	50	47.5	-4.15	-7.730	5.608
184	CT-L73.0	50	47.5	-3.57	-7.590	5.788
185	CT-L73.0	50	47.5	-3.48	-7.570	5.815
185	CT-L73.0	50	47.5	-2.91	-7.440	5.993
186	CT-L73.0	50	47.5	-2.83	-7.420	6.020
186	CT-L73.0	50	47.5	-2.28	7.580	5.966
187	CT-L73.0	50	47.5	-2.21	7.670	5.905
187	CT-L73.0	50	47.5	-1.67	8.290	5.528
188	CT-L73.0	50	47.5	-1.6	8.380	5.477
188	CT-L73.0	50	47.5	-1.08	8.990	5.164
189	CT-L73.0	50	47.5	-1.01	9.070	5.126
189	CT-L73.0	50	47.5	-0.5	9.660	4.865
190	CT-L73.0	50	47.5	-0.44	9.740	4.832
190	CT-L73.0	50	47.5	0.07	10.310	4.600
191	CT-L73.0	50	47.5	0.15	10.390	4.557
191	CT-L73.0	50	47.5	0.6	10.930	4.291
192	CT-L73.0	50	47.5	0.68	11.010	4.252
192	CT-L73.0	50	47.5	1.11	11.540	4.020
193	CT-L73.0	50	47.5	1.19	11.610	3.989
193	CT-L73.0	50	47.5	1.6	12.120	3.787
194	CT-L73.0	50	47.5	1.68	12.180	3.762
194	CT-L73.0	50	47.5	2.07	12.680	3.583
195	CT-L73.0	50	47.5	2.14	12.720	3.566
195	CT-L73.0	50	47.5	2.42	13.050	3.454
196	CT-L73.0	50	47.5	2.42	13.050	3.454
196	CT-L73.0	50	47.5	2.52	13.210	3.405
197	CT-L73.0	50	47.5	2.59	13.230	3.395
197	CT-L73.0	50	47.5	2.95	13.680	3.257
198	CT-L73.0	50	47.5	3.01	13.720	3.243
198	CT-L73.0	50	47.5	3.35	14.130	3.125
199	CT-L73.0	50	47.5	3.42	14.170	3.111
199	CT-L73.0	50	47.5	3.73	14.550	3.008
200	CT-L73.0	50	47.5	3.8	14.600	2.993
200	CT-L73.0	50	47.5	4.1	14.950	2.903
201	CT-L73.0	50	47.5	4.16	14.990	2.891
201	CT-L73.0	50	47.5	4.44	15.310	2.813
202	CT-L73.0	50	47.5	4.51	15.360	2.799
202	CT-L73.0	50	47.5	4.77	15.660	2.729
203	CT-L73.0	50	47.5	4.83	15.690	2.720
203	CT-L73.0	50	47.5	5.07	15.970	2.657
204	CT-L73.0	50	47.5	5.13	16.000	2.648
204	CT-L73.0	50	47.5	5.35	16.250	2.594
205	CT-L73.0	50	47.5	5.41	16.280	2.585

205	CT-L73.0	50	47.5	5.62	16.490	2.540
206	CT-L73.0	50	47.5	5.66	16.530	2.531
206	CT-L73.0	50	47.5	5.86	16.710	2.492
207	CT-L73.0	50	47.5	5.9	16.740	2.485
207	CT-L73.0	50	47.5	6.08	16.900	2.451
208	CT-L73.0	50	47.5	6.12	16.920	2.446
208	CT-L73.0	50	47.5	6.28	17.050	2.418
209	CT-L73.0	50	47.5	6.32	17.070	2.412
209	CT-L73.0	50	47.5	6.46	17.160	2.392
210	CT-L73.0	50	47.5	6.49	17.180	2.387
210	CT-L73.0	50	47.5	6.62	17.240	2.371
211	CT-L73.0	50	47.5	6.65	17.260	2.367
211	CT-L73.0	50	47.5	6.76	17.310	2.354
212	CT-L73.0	50	47.5	6.78	17.330	2.350
212	CT-L73.0	50	47.5	6.83	17.350	2.344
213	CT-L73.0	50	47.5	6.83	17.350	2.344
213	CT-L73.0	50	47.5	6.87	17.390	2.336
214	CT-L73.0	50	47.5	6.89	17.410	2.333
214	CT-L73.0	50	47.5	6.97	17.440	2.324
215	CT-L73.0	50	47.5	6.98	17.440	2.323
215	CT-L73.0	50	47.5	7.04	17.450	2.319
216	CT-L73.0	50	47.5	7.05	17.450	2.318
216	CT-L73.0	50	47.5	7.09	17.430	2.318
217	CT-L73.0	50	47.5	7.09	17.410	2.321
217	CT-L73.0	50	47.5	7.12	17.360	2.326
218	CT-L73.0	50	47.5	7.12	17.350	2.327
218	CT-L73.0	50	47.5	7.13	17.260	2.339
219	CT-L73.0	50	47.5	7.13	17.250	2.340
219	CT-L73.0	50	47.5	7.12	17.130	2.357
220	CT-L73.0	50	47.5	7.11	17.110	2.361
220	CT-L73.0	50	47.5	7.09	16.960	2.383
221	CT-L73.0	50	47.5	7.07	16.940	2.387
221	CT-L73.0	50	47.5	7.03	16.750	2.416
222	CT-L73.0	50	47.5	7.02	16.730	2.420
222	CT-L73.0	50	47.5	6.96	16.510	2.455
223	CT-L73.0	50	47.5	6.94	16.480	2.461
223	CT-L73.0	50	47.5	6.86	16.230	2.504
224	CT-L73.0	50	47.5	6.84	16.200	2.510
224	CT-L73.0	50	47.5	6.75	15.910	2.561
225	CT-L73.0	50	47.5	6.72	15.870	2.570
225	CT-L73.0	50	47.5	6.61	15.550	2.630
226	CT-L73.0	50	47.5	6.58	15.510	2.638
226	CT-L73.0	50	47.5	6.46	15.150	2.709
227	CT-L73.0	50	47.5	6.42	15.110	2.719
227	CT-L73.0	50	47.5	6.28	14.700	2.804
228	CT-L73.0	50	47.5	6.24	14.670	2.813
228	CT-L73.0	50	47.5	6.08	14.210	2.915
229	CT-L73.0	50	47.5	6.03	14.190	2.922
229	CT-L73.0	50	47.5	5.99	14.040	2.957
230	CT-L73.0	50	47.5	5.99	14.040	2.957
230	CT-L73.0	50	47.5	5.86	13.670	3.046
231	CT-L73.0	50	47.5	5.81	13.640	3.056
231	CT-L73.0	50	47.5	5.61	13.090	3.200
232	CT-L73.0	50	47.5	5.56	13.040	3.216
232	CT-L73.0	50	47.5	5.35	12.460	3.383

233	CT-L73.0	50	47.5	5.29	12.400	3.404
233	CT-L73.0	50	47.5	5.07	11.770	3.605
234	CT-L73.0	50	47.5	5	11.700	3.632
234	CT-L73.0	50	47.5	4.76	11.050	3.868
235	CT-L73.0	50	47.5	4.69	10.970	3.902
235	CT-L73.0	50	47.5	4.44	10.330	4.168
236	CT-L73.0	50	47.5	4.37	10.260	4.204
236	CT-L73.0	50	47.5	4.09	9.570	4.536
237	CT-L73.0	50	47.5	4.02	9.490	4.582
237	CT-L73.0	50	47.5	3.72	8.760	4.998
238	CT-L73.0	50	47.5	3.65	8.680	5.052
238	CT-L73.0	50	47.5	3.34	7.900	5.590
239	CT-L73.0	50	47.5	3.26	7.810	5.665
239	CT-L73.0	50	47.5	2.93	6.980	6.385
240	CT-L73.0	50	47.5	2.85	6.880	6.490
240	CT-L73.0	50	47.5	2.5	6.000	7.500
241	CT-L73.0	50	47.5	2.43	5.900	7.639
241	CT-L73.0	50	47.5	2.05	4.960	9.163
242	CT-L73.0	50	47.5	1.98	4.850	9.386
242	CT-L73.0	50	47.5	1.59	3.850	11.925
243	CT-L73.0	50	47.5	1.51	3.740	12.297
243	CT-L73.0	50	47.5	1.1	2.670	17.378
244	CT-L73.0	50	47.5	1.03	2.570	18.082
244	CT-L73.0	50	47.5	0.59	1.420	33.035
245	CT-L73.0	50	47.5	0.52	1.330	35.323
245	CT-L73.0	50	47.5	0.07	0.340	139.500

LOAD RATING FIXED SPAN -GIRDER 1

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 3.184

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
538	CT-L3S2 PLUS LANE LOAD	50	47.5	0.06	0.250	189.760
538	CT-L3S2 PLUS LANE LOAD	50	47.5	0.53	0.980	47.929
539	CT-L3S2 PLUS LANE LOAD	50	47.5	0.53	1.090	43.092
539	CT-L3S2 PLUS LANE LOAD	50	47.5	1.05	1.900	24.447
540	CT-L3S2 PLUS LANE LOAD	50	47.5	1.07	2.020	22.985
540	CT-L3S2 PLUS LANE LOAD	50	47.5	1.56	2.770	16.585
541	CT-L3S2 PLUS LANE LOAD	50	47.5	1.59	2.880	15.941
541	CT-L3S2 PLUS LANE LOAD	50	47.5	2.06	3.580	12.693
542	CT-L3S2 PLUS LANE LOAD	50	47.5	2.09	3.690	12.306
542	CT-L3S2 PLUS LANE LOAD	50	47.5	2.54	4.340	10.359
543	CT-L3S2 PLUS LANE LOAD	50	47.5	2.57	4.440	10.119
543	CT-L3S2 PLUS LANE LOAD	50	47.5	3.01	5.050	8.810
544	CT-L3S2 PLUS LANE LOAD	50	47.5	3.03	5.150	8.635
544	CT-L3S2 PLUS LANE LOAD	50	47.5	3.45	5.730	7.688
545	CT-L3S2 PLUS LANE LOAD	50	47.5	3.47	5.820	7.565
545	CT-L3S2 PLUS LANE LOAD	50	47.5	3.87	6.360	6.860
546	CT-L3S2 PLUS LANE LOAD	50	47.5	3.89	6.450	6.761
546	CT-L3S2 PLUS LANE LOAD	50	47.5	4.26	6.960	6.213
547	CT-L3S2 PLUS LANE LOAD	50	47.5	4.29	7.040	6.138
547	CT-L3S2 PLUS LANE LOAD	50	47.5	4.64	7.510	5.707
548	CT-L3S2 PLUS LANE LOAD	50	47.5	4.67	7.590	5.643
548	CT-L3S2 PLUS LANE LOAD	50	47.5	4.99	8.040	5.287
549	CT-L3S2 PLUS LANE LOAD	50	47.5	5.02	8.110	5.238
549	CT-L3S2 PLUS LANE LOAD	50	47.5	5.32	8.530	4.945
550	CT-L3S2 PLUS LANE LOAD	50	47.5	5.35	8.590	4.907
550	CT-L3S2 PLUS LANE LOAD	50	47.5	5.63	9.080	4.611
551	CT-L3S2 PLUS LANE LOAD	50	47.5	5.66	9.130	4.583
551	CT-L3S2 PLUS LANE LOAD	50	47.5	5.92	9.590	4.336
552	CT-L3S2 PLUS LANE LOAD	50	47.5	5.94	9.630	4.316
552	CT-L3S2 PLUS LANE LOAD	50	47.5	6.18	10.050	4.111
553	CT-L3S2 PLUS LANE LOAD	50	47.5	6.2	10.080	4.097
553	CT-L3S2 PLUS LANE LOAD	50	47.5	6.37	10.340	3.978
554	CT-L3S2 PLUS LANE LOAD	50	47.5	6.37	10.340	3.978
554	CT-L3S2 PLUS LANE LOAD	50	47.5	6.42	10.470	3.924
555	CT-L3S2 PLUS LANE LOAD	50	47.5	6.44	10.480	3.918
555	CT-L3S2 PLUS LANE LOAD	50	47.5	6.64	10.830	3.773
556	CT-L3S2 PLUS LANE LOAD	50	47.5	6.65	10.860	3.762
556	CT-L3S2 PLUS LANE LOAD	50	47.5	6.83	11.150	3.648
557	CT-L3S2 PLUS LANE LOAD	50	47.5	6.84	11.190	3.634
557	CT-L3S2 PLUS LANE LOAD	50	47.5	7	11.440	3.540
558	CT-L3S2 PLUS LANE LOAD	50	47.5	7.01	11.480	3.527
558	CT-L3S2 PLUS LANE LOAD	50	47.5	7.15	11.700	3.449
559	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	11.730	3.439
559	CT-L3S2 PLUS LANE LOAD	50	47.5	7.27	11.910	3.378
560	CT-L3S2 PLUS LANE LOAD	50	47.5	7.28	11.940	3.369
560	CT-L3S2 PLUS LANE LOAD	50	47.5	7.38	12.100	3.316
561	CT-L3S2 PLUS LANE LOAD	50	47.5	7.38	12.120	3.310
561	CT-L3S2 PLUS LANE LOAD	50	47.5	7.46	12.250	3.269
562	CT-L3S2 PLUS LANE LOAD	50	47.5	7.46	12.270	3.263
562	CT-L3S2 PLUS LANE LOAD	50	47.5	7.52	12.360	3.235
563	CT-L3S2 PLUS LANE LOAD	50	47.5	7.52	12.380	3.229
563	CT-L3S2 PLUS LANE LOAD	50	47.5	7.56	12.450	3.208

564	CT-L3S2 PLUS LANE LOAD	50	47.5	7.56	12.460	3.205
564	CT-L3S2 PLUS LANE LOAD	50	47.5	7.58	12.500	3.194
565	CT-L3S2 PLUS LANE LOAD	50	47.5	7.58	12.510	3.191
565	CT-L3S2 PLUS LANE LOAD	50	47.5	7.58	12.520	3.188
566	CT-L3S2 PLUS LANE LOAD	50	47.5	7.57	12.530	3.187
566	CT-L3S2 PLUS LANE LOAD	50	47.5	7.55	12.510	3.193
567	CT-L3S2 PLUS LANE LOAD	50	47.5	7.54	12.520	3.192
567	CT-L3S2 PLUS LANE LOAD	50	47.5	7.5	12.470	3.208
568	CT-L3S2 PLUS LANE LOAD	50	47.5	7.5	12.470	3.208
568	CT-L3S2 PLUS LANE LOAD	50	47.5	7.43	12.400	3.231
569	CT-L3S2 PLUS LANE LOAD	50	47.5	7.43	12.400	3.231
569	CT-L3S2 PLUS LANE LOAD	50	47.5	7.34	12.330	3.257
570	CT-L3S2 PLUS LANE LOAD	50	47.5	7.33	12.330	3.258
570	CT-L3S2 PLUS LANE LOAD	50	47.5	7.28	12.270	3.278
571	CT-L3S2 PLUS LANE LOAD	50	47.5	7.28	12.270	3.278
571	CT-L3S2 PLUS LANE LOAD	50	47.5	7.23	12.230	3.293
572	CT-L3S2 PLUS LANE LOAD	50	47.5	7.22	12.230	3.294
572	CT-L3S2 PLUS LANE LOAD	50	47.5	7.09	12.110	3.337
573	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	12.100	3.340
573	CT-L3S2 PLUS LANE LOAD	50	47.5	6.93	11.970	3.389
574	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	11.960	3.393
574	CT-L3S2 PLUS LANE LOAD	50	47.5	6.75	11.850	3.439
575	CT-L3S2 PLUS LANE LOAD	50	47.5	6.73	11.840	3.443
575	CT-L3S2 PLUS LANE LOAD	50	47.5	6.55	11.710	3.497
576	CT-L3S2 PLUS LANE LOAD	50	47.5	6.53	11.700	3.502
576	CT-L3S2 PLUS LANE LOAD	50	47.5	6.33	11.590	3.552
577	CT-L3S2 PLUS LANE LOAD	50	47.5	6.3	11.590	3.555
577	CT-L3S2 PLUS LANE LOAD	50	47.5	6.08	11.510	3.599
578	CT-L3S2 PLUS LANE LOAD	50	47.5	6.05	11.500	3.604
578	CT-L3S2 PLUS LANE LOAD	50	47.5	5.81	11.420	3.651
579	CT-L3S2 PLUS LANE LOAD	50	47.5	5.78	11.400	3.660
579	CT-L3S2 PLUS LANE LOAD	50	47.5	5.52	11.290	3.718
580	CT-L3S2 PLUS LANE LOAD	50	47.5	5.49	11.270	3.728
580	CT-L3S2 PLUS LANE LOAD	50	47.5	5.21	11.160	3.789
581	CT-L3S2 PLUS LANE LOAD	50	47.5	5.18	11.140	3.799
581	CT-L3S2 PLUS LANE LOAD	50	47.5	4.88	11.010	3.871
582	CT-L3S2 PLUS LANE LOAD	50	47.5	4.84	10.980	3.885
582	CT-L3S2 PLUS LANE LOAD	50	47.5	4.52	10.820	3.972
583	CT-L3S2 PLUS LANE LOAD	50	47.5	4.48	10.790	3.987
583	CT-L3S2 PLUS LANE LOAD	50	47.5	4.14	10.600	4.091
584	CT-L3S2 PLUS LANE LOAD	50	47.5	4.1	10.570	4.106
584	CT-L3S2 PLUS LANE LOAD	50	47.5	3.74	10.340	4.232
585	CT-L3S2 PLUS LANE LOAD	50	47.5	3.7	10.300	4.252
585	CT-L3S2 PLUS LANE LOAD	50	47.5	3.32	10.040	4.400
586	CT-L3S2 PLUS LANE LOAD	50	47.5	3.28	10.010	4.418
586	CT-L3S2 PLUS LANE LOAD	50	47.5	2.87	9.710	4.596
587	CT-L3S2 PLUS LANE LOAD	50	47.5	2.83	9.690	4.610
587	CT-L3S2 PLUS LANE LOAD	50	47.5	2.72	9.550	4.689
588	CT-L3S2 PLUS LANE LOAD	50	47.5	2.72	9.550	4.689
588	CT-L3S2 PLUS LANE LOAD	50	47.5	2.41	9.350	4.822
589	CT-L3S2 PLUS LANE LOAD	50	47.5	2.36	9.310	4.849
589	CT-L3S2 PLUS LANE LOAD	50	47.5	1.91	8.950	5.094
590	CT-L3S2 PLUS LANE LOAD	50	47.5	1.86	8.900	5.128
590	CT-L3S2 PLUS LANE LOAD	50	47.5	1.4	8.510	5.417
591	CT-L3S2 PLUS LANE LOAD	50	47.5	1.34	8.450	5.463
591	CT-L3S2 PLUS LANE LOAD	50	47.5	0.86	8.040	5.801
592	CT-L3S2 PLUS LANE LOAD	50	47.5	0.8	7.980	5.852
592	CT-L3S2 PLUS LANE LOAD	50	47.5	0.3	7.540	6.260
593	CT-L3S2 PLUS LANE LOAD	50	47.5	0.24	7.470	6.327
593	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.33	7.000	6.739
594	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.37	6.930	6.801

594	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.94	6.500	7.163
595	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.98	6.420	7.246
595	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.57	6.000	7.655
596	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.62	5.920	7.750
596	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.22	-5.650	8.014
597	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.28	-5.660	7.989
597	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.9	-5.770	7.730
598	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.96	-5.780	7.706
598	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.61	-5.890	7.452
599	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.66	-5.900	7.431
599	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.33	-6.000	7.195
600	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.39	-6.020	7.161
600	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.09	-6.130	6.918
601	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.15	-6.140	6.897
601	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.86	-6.250	6.662
602	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.93	-6.270	6.630
602	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.66	-6.370	6.411
603	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.74	-6.390	6.379
603	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.49	-6.500	6.155
604	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.57	-6.520	6.124
604	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.34	-6.630	5.906
605	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.43	-6.650	5.875
605	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.22	-7.100	5.392
606	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.33	-7.120	5.361
606	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.13	-7.590	4.924
607	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.25	-7.620	4.888
607	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.07	-8.100	4.498
608	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.2	-8.130	4.465
608	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.06	-8.700	4.074
609	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.18	-8.780	4.023
609	CT-L3S2 PLUS LANE LOAD	50	47.5	-13.08	-9.520	3.616
610	CT-L3S2 PLUS LANE LOAD	50	47.5	-13.17	-9.570	3.587
610	CT-L3S2 PLUS LANE LOAD	50	47.5	-14.14	-10.380	3.214
611	CT-L3S2 PLUS LANE LOAD	50	47.5	-14.16	-10.370	3.215
611	CT-L3S2 PLUS LANE LOAD	50	47.5	-13.19	-9.570	3.585
612	CT-L3S2 PLUS LANE LOAD	50	47.5	-13.1	-9.530	3.610
612	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.2	-8.770	4.025
613	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.08	-8.700	4.071
613	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.22	-8.160	4.446
614	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.09	-8.120	4.484
614	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.27	-7.650	4.867
615	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.14	-7.610	4.909
615	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.34	-7.150	5.337
616	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.24	-7.130	5.366
616	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.45	-6.680	5.846
617	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.36	-6.650	5.886
617	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.58	-6.550	6.095
618	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.5	-6.530	6.126
618	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.75	-6.420	6.347
619	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.68	-6.400	6.378
619	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.94	-6.290	6.607
620	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.87	-6.280	6.629
620	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.16	-6.170	6.862
621	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.1	-6.150	6.894
621	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.41	-6.050	7.122
622	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.34	-6.030	7.158
622	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.68	-5.920	7.402
623	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.62	-5.910	7.425
623	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.97	-5.810	7.664
624	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.91	-5.790	7.701
624	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.29	-5.690	7.946

625	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.23	-5.680	7.970
625	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.63	5.920	7.748
626	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.58	6.000	7.653
626	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.99	6.420	7.245
627	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.94	6.500	7.163
627	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.38	6.970	6.760
628	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.33	7.040	6.700
628	CT-L3S2 PLUS LANE LOAD	50	47.5	0.23	7.500	6.303
629	CT-L3S2 PLUS LANE LOAD	50	47.5	0.29	7.570	6.236
629	CT-L3S2 PLUS LANE LOAD	50	47.5	0.79	8.010	5.831
630	CT-L3S2 PLUS LANE LOAD	50	47.5	0.85	8.070	5.781
630	CT-L3S2 PLUS LANE LOAD	50	47.5	1.34	8.490	5.437
631	CT-L3S2 PLUS LANE LOAD	50	47.5	1.39	8.540	5.399
631	CT-L3S2 PLUS LANE LOAD	50	47.5	1.85	8.930	5.112
632	CT-L3S2 PLUS LANE LOAD	50	47.5	1.91	8.980	5.077
632	CT-L3S2 PLUS LANE LOAD	50	47.5	2.35	9.350	4.829
633	CT-L3S2 PLUS LANE LOAD	50	47.5	2.4	9.380	4.808
633	CT-L3S2 PLUS LANE LOAD	50	47.5	2.71	9.590	4.670
634	CT-L3S2 PLUS LANE LOAD	50	47.5	2.71	9.580	4.675
634	CT-L3S2 PLUS LANE LOAD	50	47.5	2.82	9.720	4.597
635	CT-L3S2 PLUS LANE LOAD	50	47.5	2.87	9.750	4.577
635	CT-L3S2 PLUS LANE LOAD	50	47.5	3.27	10.040	4.405
636	CT-L3S2 PLUS LANE LOAD	50	47.5	3.31	10.080	4.384
636	CT-L3S2 PLUS LANE LOAD	50	47.5	3.7	10.340	4.236
637	CT-L3S2 PLUS LANE LOAD	50	47.5	3.74	10.380	4.216
637	CT-L3S2 PLUS LANE LOAD	50	47.5	4.1	10.600	4.094
638	CT-L3S2 PLUS LANE LOAD	50	47.5	4.14	10.640	4.075
638	CT-L3S2 PLUS LANE LOAD	50	47.5	4.48	10.830	3.972
639	CT-L3S2 PLUS LANE LOAD	50	47.5	4.52	10.860	3.958
639	CT-L3S2 PLUS LANE LOAD	50	47.5	4.84	11.020	3.871
640	CT-L3S2 PLUS LANE LOAD	50	47.5	4.87	11.050	3.858
640	CT-L3S2 PLUS LANE LOAD	50	47.5	5.17	11.180	3.786
641	CT-L3S2 PLUS LANE LOAD	50	47.5	5.21	11.200	3.776
641	CT-L3S2 PLUS LANE LOAD	50	47.5	5.49	11.290	3.721
642	CT-L3S2 PLUS LANE LOAD	50	47.5	5.52	11.320	3.708
642	CT-L3S2 PLUS LANE LOAD	50	47.5	5.78	11.420	3.653
643	CT-L3S2 PLUS LANE LOAD	50	47.5	5.81	11.440	3.644
643	CT-L3S2 PLUS LANE LOAD	50	47.5	6.05	11.520	3.598
644	CT-L3S2 PLUS LANE LOAD	50	47.5	6.08	11.540	3.589
644	CT-L3S2 PLUS LANE LOAD	50	47.5	6.3	11.610	3.549
645	CT-L3S2 PLUS LANE LOAD	50	47.5	6.32	11.610	3.547
645	CT-L3S2 PLUS LANE LOAD	50	47.5	6.53	11.710	3.499
646	CT-L3S2 PLUS LANE LOAD	50	47.5	6.55	11.720	3.494
646	CT-L3S2 PLUS LANE LOAD	50	47.5	6.73	11.850	3.441
647	CT-L3S2 PLUS LANE LOAD	50	47.5	6.75	11.860	3.436
647	CT-L3S2 PLUS LANE LOAD	50	47.5	6.91	11.970	3.391
648	CT-L3S2 PLUS LANE LOAD	50	47.5	6.93	11.980	3.386
648	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	12.110	3.338
649	CT-L3S2 PLUS LANE LOAD	50	47.5	7.09	12.130	3.331
649	CT-L3S2 PLUS LANE LOAD	50	47.5	7.22	12.240	3.291
650	CT-L3S2 PLUS LANE LOAD	50	47.5	7.23	12.250	3.287
650	CT-L3S2 PLUS LANE LOAD	50	47.5	7.28	12.280	3.275
651	CT-L3S2 PLUS LANE LOAD	50	47.5	7.28	12.280	3.275
651	CT-L3S2 PLUS LANE LOAD	50	47.5	7.33	12.340	3.255
652	CT-L3S2 PLUS LANE LOAD	50	47.5	7.34	12.350	3.252
652	CT-L3S2 PLUS LANE LOAD	50	47.5	7.43	12.410	3.229
653	CT-L3S2 PLUS LANE LOAD	50	47.5	7.43	12.410	3.229
653	CT-L3S2 PLUS LANE LOAD	50	47.5	7.5	12.490	3.203
654	CT-L3S2 PLUS LANE LOAD	50	47.5	7.5	12.480	3.205
654	CT-L3S2 PLUS LANE LOAD	50	47.5	7.55	12.530	3.188
655	CT-L3S2 PLUS LANE LOAD	50	47.5	7.55	12.520	3.191

655	CT-L3S2 PLUS LANE LOAD	50	47.5	7.57	12.540	3.184
656	CT-L3S2 PLUS LANE LOAD	50	47.5	7.58	12.530	3.186
656	CT-L3S2 PLUS LANE LOAD	50	47.5	7.58	12.530	3.186
657	CT-L3S2 PLUS LANE LOAD	50	47.5	7.58	12.510	3.191
657	CT-L3S2 PLUS LANE LOAD	50	47.5	7.57	12.480	3.200
658	CT-L3S2 PLUS LANE LOAD	50	47.5	7.57	12.460	3.205
658	CT-L3S2 PLUS LANE LOAD	50	47.5	7.53	12.400	3.223
659	CT-L3S2 PLUS LANE LOAD	50	47.5	7.53	12.380	3.229
659	CT-L3S2 PLUS LANE LOAD	50	47.5	7.47	12.280	3.260
660	CT-L3S2 PLUS LANE LOAD	50	47.5	7.47	12.260	3.265
660	CT-L3S2 PLUS LANE LOAD	50	47.5	7.39	12.130	3.307
661	CT-L3S2 PLUS LANE LOAD	50	47.5	7.39	12.110	3.312
661	CT-L3S2 PLUS LANE LOAD	50	47.5	7.29	11.950	3.365
662	CT-L3S2 PLUS LANE LOAD	50	47.5	7.29	11.930	3.370
662	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	11.740	3.435
663	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	11.710	3.445
663	CT-L3S2 PLUS LANE LOAD	50	47.5	7.03	11.490	3.522
664	CT-L3S2 PLUS LANE LOAD	50	47.5	7.02	11.450	3.535
664	CT-L3S2 PLUS LANE LOAD	50	47.5	6.86	11.200	3.629
665	CT-L3S2 PLUS LANE LOAD	50	47.5	6.85	11.160	3.642
665	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	10.870	3.756
666	CT-L3S2 PLUS LANE LOAD	50	47.5	6.66	10.840	3.768
666	CT-L3S2 PLUS LANE LOAD	50	47.5	6.46	10.490	3.912
667	CT-L3S2 PLUS LANE LOAD	50	47.5	6.45	10.480	3.917
667	CT-L3S2 PLUS LANE LOAD	50	47.5	6.39	10.350	3.972
668	CT-L3S2 PLUS LANE LOAD	50	47.5	6.39	10.350	3.972
668	CT-L3S2 PLUS LANE LOAD	50	47.5	6.23	10.090	4.090
669	CT-L3S2 PLUS LANE LOAD	50	47.5	6.21	10.060	4.104
669	CT-L3S2 PLUS LANE LOAD	50	47.5	5.97	9.630	4.313
670	CT-L3S2 PLUS LANE LOAD	50	47.5	5.95	9.600	4.328
670	CT-L3S2 PLUS LANE LOAD	50	47.5	5.69	9.140	4.574
671	CT-L3S2 PLUS LANE LOAD	50	47.5	5.67	9.090	4.602
671	CT-L3S2 PLUS LANE LOAD	50	47.5	5.39	8.600	4.897
672	CT-L3S2 PLUS LANE LOAD	50	47.5	5.37	8.530	4.939
672	CT-L3S2 PLUS LANE LOAD	50	47.5	5.07	8.110	5.232
673	CT-L3S2 PLUS LANE LOAD	50	47.5	5.04	8.040	5.281
673	CT-L3S2 PLUS LANE LOAD	50	47.5	4.72	7.590	5.636
674	CT-L3S2 PLUS LANE LOAD	50	47.5	4.69	7.520	5.693
674	CT-L3S2 PLUS LANE LOAD	50	47.5	4.36	7.040	6.128
675	CT-L3S2 PLUS LANE LOAD	50	47.5	4.32	6.960	6.204
675	CT-L3S2 PLUS LANE LOAD	50	47.5	3.97	6.440	6.759
676	CT-L3S2 PLUS LANE LOAD	50	47.5	3.93	6.360	6.851
676	CT-L3S2 PLUS LANE LOAD	50	47.5	3.56	5.810	7.563
677	CT-L3S2 PLUS LANE LOAD	50	47.5	3.52	5.730	7.675
677	CT-L3S2 PLUS LANE LOAD	50	47.5	3.12	5.140	8.634
678	CT-L3S2 PLUS LANE LOAD	50	47.5	3.08	5.050	8.796
678	CT-L3S2 PLUS LANE LOAD	50	47.5	2.66	4.430	10.122
679	CT-L3S2 PLUS LANE LOAD	50	47.5	2.62	4.330	10.365
679	CT-L3S2 PLUS LANE LOAD	50	47.5	2.18	3.670	12.349
680	CT-L3S2 PLUS LANE LOAD	50	47.5	2.14	3.560	12.742
680	CT-L3S2 PLUS LANE LOAD	50	47.5	1.67	2.860	16.024
681	CT-L3S2 PLUS LANE LOAD	50	47.5	1.64	2.750	16.676
681	CT-L3S2 PLUS LANE LOAD	50	47.5	1.15	1.990	23.291
682	CT-L3S2 PLUS LANE LOAD	50	47.5	1.11	1.880	24.676
682	CT-L3S2 PLUS LANE LOAD	50	47.5	0.59	1.070	43.841
683	CT-L3S2 PLUS LANE LOAD	50	47.5	0.57	0.970	48.381
683	CT-L3S2 PLUS LANE LOAD	50	47.5	0.04	0.260	182.538

LOAD RATING FIXED SPAN -GIRDER 2

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating Factor 3.312

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
392	CT-L3S2 PLUS LANE LOAD	50	47.5	0.05	-0.050	949.000
392	CT-L3S2 PLUS LANE LOAD	50	47.5	0.67	1.040	45.029
393	CT-L3S2 PLUS LANE LOAD	50	47.5	0.63	1.010	46.406
393	CT-L3S2 PLUS LANE LOAD	50	47.5	1.24	1.970	23.482
394	CT-L3S2 PLUS LANE LOAD	50	47.5	1.2	1.930	23.990
394	CT-L3S2 PLUS LANE LOAD	50	47.5	1.74	2.790	16.401
395	CT-L3S2 PLUS LANE LOAD	50	47.5	1.71	2.760	16.591
395	CT-L3S2 PLUS LANE LOAD	50	47.5	2.21	3.550	12.758
396	CT-L3S2 PLUS LANE LOAD	50	47.5	2.19	3.520	12.872
396	CT-L3S2 PLUS LANE LOAD	50	47.5	2.65	4.250	10.553
397	CT-L3S2 PLUS LANE LOAD	50	47.5	2.64	4.220	10.630
397	CT-L3S2 PLUS LANE LOAD	50	47.5	3.08	4.890	9.084
398	CT-L3S2 PLUS LANE LOAD	50	47.5	3.07	4.870	9.123
398	CT-L3S2 PLUS LANE LOAD	50	47.5	3.48	5.490	8.018
399	CT-L3S2 PLUS LANE LOAD	50	47.5	3.47	5.490	8.020
399	CT-L3S2 PLUS LANE LOAD	50	47.5	3.87	6.070	7.188
400	CT-L3S2 PLUS LANE LOAD	50	47.5	3.86	6.060	7.201
400	CT-L3S2 PLUS LANE LOAD	50	47.5	4.24	6.600	6.555
401	CT-L3S2 PLUS LANE LOAD	50	47.5	4.23	6.590	6.566
401	CT-L3S2 PLUS LANE LOAD	50	47.5	4.59	7.090	6.052
402	CT-L3S2 PLUS LANE LOAD	50	47.5	4.58	7.080	6.062
402	CT-L3S2 PLUS LANE LOAD	50	47.5	4.92	7.550	5.640
403	CT-L3S2 PLUS LANE LOAD	50	47.5	4.91	7.550	5.641
403	CT-L3S2 PLUS LANE LOAD	50	47.5	5.23	8.130	5.199
404	CT-L3S2 PLUS LANE LOAD	50	47.5	5.22	8.130	5.200
404	CT-L3S2 PLUS LANE LOAD	50	47.5	5.52	8.670	4.842
405	CT-L3S2 PLUS LANE LOAD	50	47.5	5.51	8.670	4.843
405	CT-L3S2 PLUS LANE LOAD	50	47.5	5.78	9.170	4.550
406	CT-L3S2 PLUS LANE LOAD	50	47.5	5.78	9.170	4.550
406	CT-L3S2 PLUS LANE LOAD	50	47.5	6.03	9.620	4.311
407	CT-L3S2 PLUS LANE LOAD	50	47.5	6.03	9.620	4.311
407	CT-L3S2 PLUS LANE LOAD	50	47.5	6.2	9.880	4.180
408	CT-L3S2 PLUS LANE LOAD	50	47.5	6.2	9.880	4.180
408	CT-L3S2 PLUS LANE LOAD	50	47.5	6.26	10.030	4.112
409	CT-L3S2 PLUS LANE LOAD	50	47.5	6.25	10.030	4.113
409	CT-L3S2 PLUS LANE LOAD	50	47.5	6.46	10.430	3.935
410	CT-L3S2 PLUS LANE LOAD	50	47.5	6.46	10.430	3.935
410	CT-L3S2 PLUS LANE LOAD	50	47.5	6.64	10.780	3.790
411	CT-L3S2 PLUS LANE LOAD	50	47.5	6.64	10.780	3.790
411	CT-L3S2 PLUS LANE LOAD	50	47.5	6.8	11.080	3.673
412	CT-L3S2 PLUS LANE LOAD	50	47.5	6.8	11.080	3.673
412	CT-L3S2 PLUS LANE LOAD	50	47.5	6.94	11.350	3.574
413	CT-L3S2 PLUS LANE LOAD	50	47.5	6.94	11.350	3.574
413	CT-L3S2 PLUS LANE LOAD	50	47.5	7.06	11.570	3.495
414	CT-L3S2 PLUS LANE LOAD	50	47.5	7.06	11.570	3.495
414	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	11.750	3.433
415	CT-L3S2 PLUS LANE LOAD	50	47.5	7.15	11.750	3.434
415	CT-L3S2 PLUS LANE LOAD	50	47.5	7.23	11.900	3.384
416	CT-L3S2 PLUS LANE LOAD	50	47.5	7.23	11.900	3.384
416	CT-L3S2 PLUS LANE LOAD	50	47.5	7.29	12.010	3.348
417	CT-L3S2 PLUS LANE LOAD	50	47.5	7.29	12.000	3.351
417	CT-L3S2 PLUS LANE LOAD	50	47.5	7.32	12.080	3.326

418	CT-L3S2 PLUS LANE LOAD	50	47.5	7.32	12.080	3.326
418	CT-L3S2 PLUS LANE LOAD	50	47.5	7.33	12.110	3.317
419	CT-L3S2 PLUS LANE LOAD	50	47.5	7.33	12.110	3.317
419	CT-L3S2 PLUS LANE LOAD	50	47.5	7.32	12.110	3.318
420	CT-L3S2 PLUS LANE LOAD	50	47.5	7.33	12.110	3.317
420	CT-L3S2 PLUS LANE LOAD	50	47.5	7.29	12.090	3.326
421	CT-L3S2 PLUS LANE LOAD	50	47.5	7.3	12.090	3.325
421	CT-L3S2 PLUS LANE LOAD	50	47.5	7.24	12.050	3.341
422	CT-L3S2 PLUS LANE LOAD	50	47.5	7.25	12.070	3.335
422	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	11.990	3.364
423	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	12.010	3.358
423	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	11.900	3.397
424	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	11.920	3.391
424	CT-L3S2 PLUS LANE LOAD	50	47.5	7.03	11.810	3.427
425	CT-L3S2 PLUS LANE LOAD	50	47.5	7.02	11.810	3.428
425	CT-L3S2 PLUS LANE LOAD	50	47.5	6.96	11.790	3.439
426	CT-L3S2 PLUS LANE LOAD	50	47.5	6.97	11.800	3.435
426	CT-L3S2 PLUS LANE LOAD	50	47.5	6.83	11.680	3.482
427	CT-L3S2 PLUS LANE LOAD	50	47.5	6.83	11.680	3.482
427	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	11.540	3.538
428	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	11.540	3.538
428	CT-L3S2 PLUS LANE LOAD	50	47.5	6.49	11.460	3.579
429	CT-L3S2 PLUS LANE LOAD	50	47.5	6.49	11.450	3.582
429	CT-L3S2 PLUS LANE LOAD	50	47.5	6.29	11.350	3.631
430	CT-L3S2 PLUS LANE LOAD	50	47.5	6.29	11.350	3.631
430	CT-L3S2 PLUS LANE LOAD	50	47.5	6.06	11.230	3.690
431	CT-L3S2 PLUS LANE LOAD	50	47.5	6.07	11.220	3.693
431	CT-L3S2 PLUS LANE LOAD	50	47.5	5.82	11.150	3.738
432	CT-L3S2 PLUS LANE LOAD	50	47.5	5.82	11.150	3.738
432	CT-L3S2 PLUS LANE LOAD	50	47.5	5.55	11.060	3.793
433	CT-L3S2 PLUS LANE LOAD	50	47.5	5.56	11.060	3.792
433	CT-L3S2 PLUS LANE LOAD	50	47.5	5.27	10.950	3.857
434	CT-L3S2 PLUS LANE LOAD	50	47.5	5.27	10.940	3.860
434	CT-L3S2 PLUS LANE LOAD	50	47.5	4.96	10.800	3.939
435	CT-L3S2 PLUS LANE LOAD	50	47.5	4.97	10.800	3.938
435	CT-L3S2 PLUS LANE LOAD	50	47.5	4.63	10.640	4.029
436	CT-L3S2 PLUS LANE LOAD	50	47.5	4.64	10.650	4.024
436	CT-L3S2 PLUS LANE LOAD	50	47.5	4.28	10.470	4.128
437	CT-L3S2 PLUS LANE LOAD	50	47.5	4.29	10.480	4.123
437	CT-L3S2 PLUS LANE LOAD	50	47.5	3.91	10.260	4.249
438	CT-L3S2 PLUS LANE LOAD	50	47.5	3.92	10.270	4.243
438	CT-L3S2 PLUS LANE LOAD	50	47.5	3.52	10.010	4.394
439	CT-L3S2 PLUS LANE LOAD	50	47.5	3.52	10.010	4.394
439	CT-L3S2 PLUS LANE LOAD	50	47.5	3.11	9.720	4.567
440	CT-L3S2 PLUS LANE LOAD	50	47.5	3.11	9.720	4.567
440	CT-L3S2 PLUS LANE LOAD	50	47.5	2.67	9.380	4.779
441	CT-L3S2 PLUS LANE LOAD	50	47.5	2.67	9.390	4.774
441	CT-L3S2 PLUS LANE LOAD	50	47.5	2.56	9.220	4.874
442	CT-L3S2 PLUS LANE LOAD	50	47.5	2.56	9.220	4.874
442	CT-L3S2 PLUS LANE LOAD	50	47.5	2.21	9.040	5.010
443	CT-L3S2 PLUS LANE LOAD	50	47.5	2.22	9.050	5.003
443	CT-L3S2 PLUS LANE LOAD	50	47.5	1.73	8.670	5.279
444	CT-L3S2 PLUS LANE LOAD	50	47.5	1.74	8.680	5.272
444	CT-L3S2 PLUS LANE LOAD	50	47.5	1.23	8.270	5.595
445	CT-L3S2 PLUS LANE LOAD	50	47.5	1.23	8.270	5.595
445	CT-L3S2 PLUS LANE LOAD	50	47.5	0.71	7.830	5.976
446	CT-L3S2 PLUS LANE LOAD	50	47.5	0.71	7.830	5.976
446	CT-L3S2 PLUS LANE LOAD	50	47.5	0.17	7.350	6.439
447	CT-L3S2 PLUS LANE LOAD	50	47.5	0.17	7.360	6.431
447	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.4	6.850	6.876
448	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.41	6.850	6.874

448	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.99	6.320	7.359
449	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.99	6.320	7.359
449	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.6	5.820	7.887
450	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.6	5.830	7.873
450	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.23	-5.510	8.216
451	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.23	-5.510	8.216
451	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.88	-5.620	7.940
452	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.88	-5.620	7.940
452	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.55	-5.720	7.684
453	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.55	-5.720	7.684
453	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.24	-5.830	7.420
454	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.24	-5.830	7.420
454	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.95	-5.940	7.163
455	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.95	-5.940	7.163
455	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.69	-6.050	6.911
456	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.69	-6.050	6.911
456	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.45	-6.160	6.664
457	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.45	-6.160	6.664
457	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.22	-6.270	6.424
458	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.22	-6.280	6.414
458	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.03	-6.390	6.177
459	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.03	-6.390	6.177
459	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.85	-6.510	5.937
460	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.85	-6.510	5.937
460	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.69	-6.870	5.504
461	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.7	-6.890	5.486
461	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.56	-7.440	4.965
462	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.56	-7.440	4.965
462	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.44	-8.040	4.485
463	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.44	-8.040	4.485
463	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.33	-8.630	4.075
464	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.33	-8.630	4.075
464	CT-L3S2 PLUS LANE LOAD	50	47.5	-13.23	-9.240	3.709
465	CT-L3S2 PLUS LANE LOAD	50	47.5	-13.24	-9.240	3.708
465	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.34	-8.630	4.074
466	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.34	-8.630	4.074
466	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.45	-8.040	4.484
467	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.44	-8.040	4.485
467	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.56	-7.450	4.958
468	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.56	-7.450	4.958
468	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.7	-6.910	5.470
469	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.7	-6.900	5.478
469	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.86	-6.550	5.899
470	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.85	-6.550	5.901
470	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.03	-6.430	6.138
471	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.03	-6.430	6.138
471	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.23	-6.320	6.372
472	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.23	-6.310	6.382
472	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.45	-6.200	6.621
473	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.45	-6.200	6.621
473	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.69	-6.090	6.865
474	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.69	-6.090	6.865
474	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.96	-5.980	7.114
475	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.96	-5.980	7.114
475	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.24	-5.870	7.370
476	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.24	-5.870	7.370
476	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.55	-5.760	7.630
477	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.55	-5.760	7.630
477	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.88	-5.650	7.897
478	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.88	-5.660	7.883
478	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.23	-5.550	8.157

479	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.23	-5.550	8.157
479	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.6	5.840	7.860
480	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.6	5.840	7.860
480	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.99	6.360	7.313
481	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.99	6.350	7.324
481	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.41	6.890	6.835
482	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.41	6.880	6.844
482	CT-L3S2 PLUS LANE LOAD	50	47.5	0.17	7.390	6.405
483	CT-L3S2 PLUS LANE LOAD	50	47.5	0.17	7.390	6.405
483	CT-L3S2 PLUS LANE LOAD	50	47.5	0.71	7.860	5.953
484	CT-L3S2 PLUS LANE LOAD	50	47.5	0.71	7.860	5.953
484	CT-L3S2 PLUS LANE LOAD	50	47.5	1.23	8.310	5.568
485	CT-L3S2 PLUS LANE LOAD	50	47.5	1.23	8.300	5.575
485	CT-L3S2 PLUS LANE LOAD	50	47.5	1.73	8.710	5.255
486	CT-L3S2 PLUS LANE LOAD	50	47.5	1.73	8.710	5.255
486	CT-L3S2 PLUS LANE LOAD	50	47.5	2.21	9.080	4.988
487	CT-L3S2 PLUS LANE LOAD	50	47.5	2.21	9.080	4.988
487	CT-L3S2 PLUS LANE LOAD	50	47.5	2.56	9.260	4.853
488	CT-L3S2 PLUS LANE LOAD	50	47.5	2.56	9.260	4.853
488	CT-L3S2 PLUS LANE LOAD	50	47.5	2.67	9.430	4.754
489	CT-L3S2 PLUS LANE LOAD	50	47.5	2.67	9.420	4.759
489	CT-L3S2 PLUS LANE LOAD	50	47.5	3.11	9.760	4.548
490	CT-L3S2 PLUS LANE LOAD	50	47.5	3.1	9.750	4.554
490	CT-L3S2 PLUS LANE LOAD	50	47.5	3.52	10.050	4.376
491	CT-L3S2 PLUS LANE LOAD	50	47.5	3.52	10.040	4.380
491	CT-L3S2 PLUS LANE LOAD	50	47.5	3.91	10.300	4.232
492	CT-L3S2 PLUS LANE LOAD	50	47.5	3.91	10.300	4.232
492	CT-L3S2 PLUS LANE LOAD	50	47.5	4.28	10.520	4.108
493	CT-L3S2 PLUS LANE LOAD	50	47.5	4.28	10.510	4.112
493	CT-L3S2 PLUS LANE LOAD	50	47.5	4.63	10.690	4.010
494	CT-L3S2 PLUS LANE LOAD	50	47.5	4.63	10.680	4.014
494	CT-L3S2 PLUS LANE LOAD	50	47.5	4.96	10.830	3.928
495	CT-L3S2 PLUS LANE LOAD	50	47.5	4.96	10.840	3.924
495	CT-L3S2 PLUS LANE LOAD	50	47.5	5.27	10.970	3.850
496	CT-L3S2 PLUS LANE LOAD	50	47.5	5.27	10.980	3.846
496	CT-L3S2 PLUS LANE LOAD	50	47.5	5.56	11.090	3.782
497	CT-L3S2 PLUS LANE LOAD	50	47.5	5.55	11.100	3.779
497	CT-L3S2 PLUS LANE LOAD	50	47.5	5.82	11.180	3.728
498	CT-L3S2 PLUS LANE LOAD	50	47.5	5.82	11.180	3.728
498	CT-L3S2 PLUS LANE LOAD	50	47.5	6.06	11.250	3.684
499	CT-L3S2 PLUS LANE LOAD	50	47.5	6.06	11.240	3.687
499	CT-L3S2 PLUS LANE LOAD	50	47.5	6.29	11.360	3.628
500	CT-L3S2 PLUS LANE LOAD	50	47.5	6.28	11.370	3.625
500	CT-L3S2 PLUS LANE LOAD	50	47.5	6.49	11.470	3.575
501	CT-L3S2 PLUS LANE LOAD	50	47.5	6.48	11.470	3.576
501	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	11.550	3.535
502	CT-L3S2 PLUS LANE LOAD	50	47.5	6.66	11.550	3.536
502	CT-L3S2 PLUS LANE LOAD	50	47.5	6.82	11.700	3.477
503	CT-L3S2 PLUS LANE LOAD	50	47.5	6.82	11.690	3.480
503	CT-L3S2 PLUS LANE LOAD	50	47.5	6.96	11.820	3.430
504	CT-L3S2 PLUS LANE LOAD	50	47.5	6.96	11.810	3.433
504	CT-L3S2 PLUS LANE LOAD	50	47.5	7.02	11.830	3.422
505	CT-L3S2 PLUS LANE LOAD	50	47.5	7.02	11.830	3.422
505	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	11.940	3.385
506	CT-L3S2 PLUS LANE LOAD	50	47.5	7.07	11.920	3.392
506	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	12.030	3.352
507	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	12.010	3.358
507	CT-L3S2 PLUS LANE LOAD	50	47.5	7.24	12.080	3.333
508	CT-L3S2 PLUS LANE LOAD	50	47.5	7.24	12.070	3.336
508	CT-L3S2 PLUS LANE LOAD	50	47.5	7.29	12.110	3.320
509	CT-L3S2 PLUS LANE LOAD	50	47.5	7.29	12.100	3.323

509	CT-L3S2 PLUS LANE LOAD	50	47.5	7.32	12.130	3.312
510	CT-L3S2 PLUS LANE LOAD	50	47.5	7.32	12.130	3.312
510	CT-L3S2 PLUS LANE LOAD	50	47.5	7.33	12.130	3.312
511	CT-L3S2 PLUS LANE LOAD	50	47.5	7.33	12.130	3.312
511	CT-L3S2 PLUS LANE LOAD	50	47.5	7.31	12.090	3.324
512	CT-L3S2 PLUS LANE LOAD	50	47.5	7.31	12.090	3.324
512	CT-L3S2 PLUS LANE LOAD	50	47.5	7.28	12.020	3.346
513	CT-L3S2 PLUS LANE LOAD	50	47.5	7.28	12.020	3.346
513	CT-L3S2 PLUS LANE LOAD	50	47.5	7.22	11.910	3.382
514	CT-L3S2 PLUS LANE LOAD	50	47.5	7.22	11.910	3.382
514	CT-L3S2 PLUS LANE LOAD	50	47.5	7.14	11.770	3.429
515	CT-L3S2 PLUS LANE LOAD	50	47.5	7.14	11.770	3.429
515	CT-L3S2 PLUS LANE LOAD	50	47.5	7.04	11.580	3.494
516	CT-L3S2 PLUS LANE LOAD	50	47.5	7.04	11.590	3.491
516	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	11.360	3.572
517	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	11.360	3.572
517	CT-L3S2 PLUS LANE LOAD	50	47.5	6.78	11.100	3.668
518	CT-L3S2 PLUS LANE LOAD	50	47.5	6.78	11.100	3.668
518	CT-L3S2 PLUS LANE LOAD	50	47.5	6.62	10.790	3.789
519	CT-L3S2 PLUS LANE LOAD	50	47.5	6.62	10.790	3.789
519	CT-L3S2 PLUS LANE LOAD	50	47.5	6.43	10.440	3.934
520	CT-L3S2 PLUS LANE LOAD	50	47.5	6.43	10.450	3.930
520	CT-L3S2 PLUS LANE LOAD	50	47.5	6.23	10.050	4.106
521	CT-L3S2 PLUS LANE LOAD	50	47.5	6.23	10.050	4.106
521	CT-L3S2 PLUS LANE LOAD	50	47.5	6.17	9.890	4.179
522	CT-L3S2 PLUS LANE LOAD	50	47.5	6.17	9.890	4.179
522	CT-L3S2 PLUS LANE LOAD	50	47.5	6	9.640	4.305
523	CT-L3S2 PLUS LANE LOAD	50	47.5	6	9.640	4.305
523	CT-L3S2 PLUS LANE LOAD	50	47.5	5.75	9.190	4.543
524	CT-L3S2 PLUS LANE LOAD	50	47.5	5.75	9.190	4.543
524	CT-L3S2 PLUS LANE LOAD	50	47.5	5.48	8.690	4.835
525	CT-L3S2 PLUS LANE LOAD	50	47.5	5.48	8.690	4.835
525	CT-L3S2 PLUS LANE LOAD	50	47.5	5.18	8.140	5.199
526	CT-L3S2 PLUS LANE LOAD	50	47.5	5.19	8.140	5.198
526	CT-L3S2 PLUS LANE LOAD	50	47.5	4.87	7.560	5.639
527	CT-L3S2 PLUS LANE LOAD	50	47.5	4.87	7.570	5.631
527	CT-L3S2 PLUS LANE LOAD	50	47.5	4.53	7.100	6.052
528	CT-L3S2 PLUS LANE LOAD	50	47.5	4.54	7.100	6.051
528	CT-L3S2 PLUS LANE LOAD	50	47.5	4.18	6.600	6.564
529	CT-L3S2 PLUS LANE LOAD	50	47.5	4.18	6.610	6.554
529	CT-L3S2 PLUS LANE LOAD	50	47.5	3.8	6.070	7.199
530	CT-L3S2 PLUS LANE LOAD	50	47.5	3.8	6.080	7.188
530	CT-L3S2 PLUS LANE LOAD	50	47.5	3.4	5.500	8.018
531	CT-L3S2 PLUS LANE LOAD	50	47.5	3.4	5.510	8.004
531	CT-L3S2 PLUS LANE LOAD	50	47.5	2.98	4.890	9.104
532	CT-L3S2 PLUS LANE LOAD	50	47.5	2.98	4.910	9.067
532	CT-L3S2 PLUS LANE LOAD	50	47.5	2.53	4.240	10.606
533	CT-L3S2 PLUS LANE LOAD	50	47.5	2.54	4.260	10.554
533	CT-L3S2 PLUS LANE LOAD	50	47.5	2.07	3.540	12.833
534	CT-L3S2 PLUS LANE LOAD	50	47.5	2.07	3.570	12.725
534	CT-L3S2 PLUS LANE LOAD	50	47.5	1.58	2.780	16.518
535	CT-L3S2 PLUS LANE LOAD	50	47.5	1.58	2.810	16.342
535	CT-L3S2 PLUS LANE LOAD	50	47.5	1.08	1.950	23.805
536	CT-L3S2 PLUS LANE LOAD	50	47.5	1.07	1.980	23.449
536	CT-L3S2 PLUS LANE LOAD	50	47.5	0.55	1.020	46.029
537	CT-L3S2 PLUS LANE LOAD	50	47.5	0.55	1.050	44.714
537	CT-L3S2 PLUS LANE LOAD	50	47.5	0.01	-0.060	791.500

LOAD RATING FIXED SPAN -GIRDER 3

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

$f_{LL+I}=\Upsilon_{LL}$*LL

Minimum Rating Factor 3.325

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
246	CT-L3S2 PLUS LANE LOAD	50	47.5	0.05	-0.050	949.000
246	CT-L3S2 PLUS LANE LOAD	50	47.5	0.67	1.040	45.029
247	CT-L3S2 PLUS LANE LOAD	50	47.5	0.62	1.010	46.416
247	CT-L3S2 PLUS LANE LOAD	50	47.5	1.22	1.970	23.492
248	CT-L3S2 PLUS LANE LOAD	50	47.5	1.18	1.930	24.000
248	CT-L3S2 PLUS LANE LOAD	50	47.5	1.71	2.790	16.412
249	CT-L3S2 PLUS LANE LOAD	50	47.5	1.68	2.760	16.601
249	CT-L3S2 PLUS LANE LOAD	50	47.5	2.16	3.550	12.772
250	CT-L3S2 PLUS LANE LOAD	50	47.5	2.14	3.520	12.886
250	CT-L3S2 PLUS LANE LOAD	50	47.5	2.59	4.240	10.592
251	CT-L3S2 PLUS LANE LOAD	50	47.5	2.57	4.220	10.647
251	CT-L3S2 PLUS LANE LOAD	50	47.5	3	4.890	9.100
252	CT-L3S2 PLUS LANE LOAD	50	47.5	2.99	4.870	9.140
252	CT-L3S2 PLUS LANE LOAD	50	47.5	3.4	5.490	8.033
253	CT-L3S2 PLUS LANE LOAD	50	47.5	3.39	5.490	8.035
253	CT-L3S2 PLUS LANE LOAD	50	47.5	3.77	6.070	7.204
254	CT-L3S2 PLUS LANE LOAD	50	47.5	3.77	6.060	7.216
254	CT-L3S2 PLUS LANE LOAD	50	47.5	4.14	6.600	6.570
255	CT-L3S2 PLUS LANE LOAD	50	47.5	4.14	6.590	6.580
255	CT-L3S2 PLUS LANE LOAD	50	47.5	4.48	7.090	6.068
256	CT-L3S2 PLUS LANE LOAD	50	47.5	4.48	7.080	6.076
256	CT-L3S2 PLUS LANE LOAD	50	47.5	4.8	7.550	5.656
257	CT-L3S2 PLUS LANE LOAD	50	47.5	4.81	7.550	5.654
257	CT-L3S2 PLUS LANE LOAD	50	47.5	5.11	8.130	5.214
258	CT-L3S2 PLUS LANE LOAD	50	47.5	5.11	8.130	5.214
258	CT-L3S2 PLUS LANE LOAD	50	47.5	5.39	8.670	4.857
259	CT-L3S2 PLUS LANE LOAD	50	47.5	5.39	8.670	4.857
259	CT-L3S2 PLUS LANE LOAD	50	47.5	5.65	9.170	4.564
260	CT-L3S2 PLUS LANE LOAD	50	47.5	5.66	9.170	4.563
260	CT-L3S2 PLUS LANE LOAD	50	47.5	5.9	9.620	4.324
261	CT-L3S2 PLUS LANE LOAD	50	47.5	5.9	9.620	4.324
261	CT-L3S2 PLUS LANE LOAD	50	47.5	6.07	9.880	4.193
262	CT-L3S2 PLUS LANE LOAD	50	47.5	6.07	9.880	4.193
262	CT-L3S2 PLUS LANE LOAD	50	47.5	6.12	10.030	4.126
263	CT-L3S2 PLUS LANE LOAD	50	47.5	6.12	10.030	4.126
263	CT-L3S2 PLUS LANE LOAD	50	47.5	6.32	10.430	3.948
264	CT-L3S2 PLUS LANE LOAD	50	47.5	6.32	10.430	3.948
264	CT-L3S2 PLUS LANE LOAD	50	47.5	6.49	10.780	3.804
265	CT-L3S2 PLUS LANE LOAD	50	47.5	6.5	10.780	3.803
265	CT-L3S2 PLUS LANE LOAD	50	47.5	6.65	11.080	3.687
266	CT-L3S2 PLUS LANE LOAD	50	47.5	6.65	11.080	3.687
266	CT-L3S2 PLUS LANE LOAD	50	47.5	6.79	11.350	3.587
267	CT-L3S2 PLUS LANE LOAD	50	47.5	6.79	11.350	3.587
267	CT-L3S2 PLUS LANE LOAD	50	47.5	6.9	11.570	3.509
268	CT-L3S2 PLUS LANE LOAD	50	47.5	6.91	11.570	3.508
268	CT-L3S2 PLUS LANE LOAD	50	47.5	7	11.750	3.447
269	CT-L3S2 PLUS LANE LOAD	50	47.5	7	11.750	3.447
269	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	11.900	3.397
270	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	11.900	3.397
270	CT-L3S2 PLUS LANE LOAD	50	47.5	7.13	12.000	3.364
271	CT-L3S2 PLUS LANE LOAD	50	47.5	7.13	12.000	3.364
271	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	12.080	3.339

272	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	12.070	3.342
272	CT-L3S2 PLUS LANE LOAD	50	47.5	7.18	12.110	3.329
273	CT-L3S2 PLUS LANE LOAD	50	47.5	7.18	12.110	3.329
273	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	12.110	3.330
274	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	12.110	3.330
274	CT-L3S2 PLUS LANE LOAD	50	47.5	7.14	12.080	3.341
275	CT-L3S2 PLUS LANE LOAD	50	47.5	7.14	12.090	3.338
275	CT-L3S2 PLUS LANE LOAD	50	47.5	7.09	12.050	3.354
276	CT-L3S2 PLUS LANE LOAD	50	47.5	7.09	12.070	3.348
276	CT-L3S2 PLUS LANE LOAD	50	47.5	7.02	11.990	3.376
277	CT-L3S2 PLUS LANE LOAD	50	47.5	7.01	12.010	3.371
277	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	11.900	3.410
278	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	11.920	3.404
278	CT-L3S2 PLUS LANE LOAD	50	47.5	6.87	11.810	3.440
279	CT-L3S2 PLUS LANE LOAD	50	47.5	6.87	11.810	3.440
279	CT-L3S2 PLUS LANE LOAD	50	47.5	6.81	11.790	3.451
280	CT-L3S2 PLUS LANE LOAD	50	47.5	6.81	11.800	3.448
280	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	11.680	3.496
281	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	11.680	3.496
281	CT-L3S2 PLUS LANE LOAD	50	47.5	6.52	11.540	3.551
282	CT-L3S2 PLUS LANE LOAD	50	47.5	6.51	11.540	3.552
282	CT-L3S2 PLUS LANE LOAD	50	47.5	6.34	11.460	3.592
283	CT-L3S2 PLUS LANE LOAD	50	47.5	6.33	11.450	3.596
283	CT-L3S2 PLUS LANE LOAD	50	47.5	6.14	11.350	3.644
284	CT-L3S2 PLUS LANE LOAD	50	47.5	6.13	11.350	3.645
284	CT-L3S2 PLUS LANE LOAD	50	47.5	5.92	11.230	3.703
285	CT-L3S2 PLUS LANE LOAD	50	47.5	5.91	11.220	3.707
285	CT-L3S2 PLUS LANE LOAD	50	47.5	5.68	11.150	3.751
286	CT-L3S2 PLUS LANE LOAD	50	47.5	5.67	11.150	3.752
286	CT-L3S2 PLUS LANE LOAD	50	47.5	5.42	11.060	3.805
287	CT-L3S2 PLUS LANE LOAD	50	47.5	5.41	11.060	3.806
287	CT-L3S2 PLUS LANE LOAD	50	47.5	5.14	10.950	3.868
288	CT-L3S2 PLUS LANE LOAD	50	47.5	5.13	10.930	3.876
288	CT-L3S2 PLUS LANE LOAD	50	47.5	4.83	10.800	3.951
289	CT-L3S2 PLUS LANE LOAD	50	47.5	4.82	10.800	3.952
289	CT-L3S2 PLUS LANE LOAD	50	47.5	4.51	10.640	4.040
290	CT-L3S2 PLUS LANE LOAD	50	47.5	4.5	10.650	4.038
290	CT-L3S2 PLUS LANE LOAD	50	47.5	4.16	10.470	4.139
291	CT-L3S2 PLUS LANE LOAD	50	47.5	4.15	10.480	4.136
291	CT-L3S2 PLUS LANE LOAD	50	47.5	3.8	10.260	4.259
292	CT-L3S2 PLUS LANE LOAD	50	47.5	3.79	10.270	4.256
292	CT-L3S2 PLUS LANE LOAD	50	47.5	3.41	10.010	4.405
293	CT-L3S2 PLUS LANE LOAD	50	47.5	3.4	10.010	4.406
293	CT-L3S2 PLUS LANE LOAD	50	47.5	3.01	9.720	4.577
294	CT-L3S2 PLUS LANE LOAD	50	47.5	2.99	9.720	4.579
294	CT-L3S2 PLUS LANE LOAD	50	47.5	2.58	9.380	4.789
295	CT-L3S2 PLUS LANE LOAD	50	47.5	2.57	9.390	4.785
295	CT-L3S2 PLUS LANE LOAD	50	47.5	2.46	9.220	4.885
296	CT-L3S2 PLUS LANE LOAD	50	47.5	2.46	9.220	4.885
296	CT-L3S2 PLUS LANE LOAD	50	47.5	2.13	9.040	5.019
297	CT-L3S2 PLUS LANE LOAD	50	47.5	2.12	9.040	5.020
297	CT-L3S2 PLUS LANE LOAD	50	47.5	1.66	8.670	5.287
298	CT-L3S2 PLUS LANE LOAD	50	47.5	1.65	8.670	5.288
298	CT-L3S2 PLUS LANE LOAD	50	47.5	1.16	8.270	5.603
299	CT-L3S2 PLUS LANE LOAD	50	47.5	1.15	8.270	5.605
299	CT-L3S2 PLUS LANE LOAD	50	47.5	0.65	7.830	5.983
300	CT-L3S2 PLUS LANE LOAD	50	47.5	0.64	7.830	5.985
300	CT-L3S2 PLUS LANE LOAD	50	47.5	0.12	7.350	6.446
301	CT-L3S2 PLUS LANE LOAD	50	47.5	0.11	7.360	6.439
301	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.45	6.850	6.869
302	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.45	6.850	6.869

302	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.02	6.320	7.354
303	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.02	6.320	7.354
303	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.61	5.820	7.885
304	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.62	5.830	7.870
304	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.22	-5.510	8.218
305	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.23	-5.510	8.216
305	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.85	-5.620	7.945
306	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.86	-5.620	7.943
306	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.51	-5.720	7.691
307	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.52	-5.720	7.689
307	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.18	-5.830	7.431
308	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.19	-5.830	7.429
308	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.87	-5.940	7.177
309	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.89	-5.940	7.173
309	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.58	-6.050	6.929
310	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.6	-6.050	6.926
310	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.32	-6.160	6.685
311	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.33	-6.160	6.683
311	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.07	-6.270	6.448
312	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.08	-6.280	6.436
312	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.84	-6.390	6.207
313	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.85	-6.390	6.205
313	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.63	-6.510	5.971
314	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.64	-6.510	5.969
314	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.44	-6.870	5.540
315	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.45	-6.890	5.522
315	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.27	-7.440	5.004
316	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.28	-7.440	5.003
316	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.11	-8.040	4.526
317	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.12	-8.040	4.525
317	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.96	-8.630	4.118
318	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.97	-8.630	4.117
318	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.83	-9.240	3.752
319	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.83	-9.240	3.752
319	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.96	-8.630	4.118
320	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.96	-8.630	4.118
320	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.11	-8.040	4.526
321	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.1	-8.040	4.527
321	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.27	-7.450	4.997
322	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.26	-7.450	4.999
322	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.45	-6.910	5.507
323	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.44	-6.900	5.516
323	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.64	-6.550	5.933
324	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.63	-6.550	5.934
324	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.85	-6.430	6.166
325	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.84	-6.430	6.168
325	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.08	-6.320	6.396
326	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.06	-6.310	6.409
326	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.33	-6.200	6.640
327	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.31	-6.200	6.644
327	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.59	-6.090	6.882
328	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.58	-6.090	6.883
328	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.88	-5.980	7.127
329	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.87	-5.980	7.129
329	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.19	-5.870	7.378
330	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.17	-5.870	7.382
330	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.51	-5.760	7.637
331	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.5	-5.760	7.639
331	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.86	-5.650	7.901
332	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.85	-5.660	7.889
332	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.23	-5.550	8.157

333	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.22	-5.550	8.159
333	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.61	5.840	7.858
334	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.61	5.840	7.858
334	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.02	6.360	7.308
335	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.02	6.350	7.320
335	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.45	6.890	6.829
336	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.44	6.880	6.840
336	CT-L3S2 PLUS LANE LOAD	50	47.5	0.11	7.390	6.413
337	CT-L3S2 PLUS LANE LOAD	50	47.5	0.12	7.390	6.411
337	CT-L3S2 PLUS LANE LOAD	50	47.5	0.65	7.860	5.961
338	CT-L3S2 PLUS LANE LOAD	50	47.5	0.65	7.860	5.961
338	CT-L3S2 PLUS LANE LOAD	50	47.5	1.16	8.300	5.583
339	CT-L3S2 PLUS LANE LOAD	50	47.5	1.17	8.300	5.582
339	CT-L3S2 PLUS LANE LOAD	50	47.5	1.65	8.710	5.264
340	CT-L3S2 PLUS LANE LOAD	50	47.5	1.66	8.710	5.263
340	CT-L3S2 PLUS LANE LOAD	50	47.5	2.12	9.080	4.998
341	CT-L3S2 PLUS LANE LOAD	50	47.5	2.13	9.080	4.997
341	CT-L3S2 PLUS LANE LOAD	50	47.5	2.46	9.260	4.864
342	CT-L3S2 PLUS LANE LOAD	50	47.5	2.46	9.260	4.864
342	CT-L3S2 PLUS LANE LOAD	50	47.5	2.57	9.430	4.765
343	CT-L3S2 PLUS LANE LOAD	50	47.5	2.58	9.420	4.769
343	CT-L3S2 PLUS LANE LOAD	50	47.5	3	9.760	4.559
344	CT-L3S2 PLUS LANE LOAD	50	47.5	3.01	9.750	4.563
344	CT-L3S2 PLUS LANE LOAD	50	47.5	3.4	10.050	4.388
345	CT-L3S2 PLUS LANE LOAD	50	47.5	3.41	10.040	4.391
345	CT-L3S2 PLUS LANE LOAD	50	47.5	3.79	10.300	4.244
346	CT-L3S2 PLUS LANE LOAD	50	47.5	3.8	10.300	4.243
346	CT-L3S2 PLUS LANE LOAD	50	47.5	4.16	10.520	4.120
347	CT-L3S2 PLUS LANE LOAD	50	47.5	4.17	10.510	4.123
347	CT-L3S2 PLUS LANE LOAD	50	47.5	4.5	10.690	4.022
348	CT-L3S2 PLUS LANE LOAD	50	47.5	4.51	10.680	4.025
348	CT-L3S2 PLUS LANE LOAD	50	47.5	4.83	10.830	3.940
349	CT-L3S2 PLUS LANE LOAD	50	47.5	4.83	10.840	3.936
349	CT-L3S2 PLUS LANE LOAD	50	47.5	5.13	10.970	3.862
350	CT-L3S2 PLUS LANE LOAD	50	47.5	5.14	10.980	3.858
350	CT-L3S2 PLUS LANE LOAD	50	47.5	5.41	11.090	3.795
351	CT-L3S2 PLUS LANE LOAD	50	47.5	5.42	11.100	3.791
351	CT-L3S2 PLUS LANE LOAD	50	47.5	5.67	11.180	3.742
352	CT-L3S2 PLUS LANE LOAD	50	47.5	5.68	11.180	3.741
352	CT-L3S2 PLUS LANE LOAD	50	47.5	5.91	11.250	3.697
353	CT-L3S2 PLUS LANE LOAD	50	47.5	5.92	11.240	3.699
353	CT-L3S2 PLUS LANE LOAD	50	47.5	6.13	11.360	3.642
354	CT-L3S2 PLUS LANE LOAD	50	47.5	6.14	11.370	3.638
354	CT-L3S2 PLUS LANE LOAD	50	47.5	6.33	11.470	3.589
355	CT-L3S2 PLUS LANE LOAD	50	47.5	6.34	11.470	3.588
355	CT-L3S2 PLUS LANE LOAD	50	47.5	6.51	11.550	3.549
356	CT-L3S2 PLUS LANE LOAD	50	47.5	6.52	11.550	3.548
356	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	11.700	3.490
357	CT-L3S2 PLUS LANE LOAD	50	47.5	6.67	11.690	3.493
357	CT-L3S2 PLUS LANE LOAD	50	47.5	6.81	11.820	3.442
358	CT-L3S2 PLUS LANE LOAD	50	47.5	6.81	11.810	3.445
358	CT-L3S2 PLUS LANE LOAD	50	47.5	6.87	11.830	3.434
359	CT-L3S2 PLUS LANE LOAD	50	47.5	6.87	11.830	3.434
359	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	11.940	3.399
360	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	11.920	3.404
360	CT-L3S2 PLUS LANE LOAD	50	47.5	7.01	12.030	3.366
361	CT-L3S2 PLUS LANE LOAD	50	47.5	7.01	12.010	3.371
361	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	12.080	3.346
362	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	12.070	3.349
362	CT-L3S2 PLUS LANE LOAD	50	47.5	7.13	12.110	3.334
363	CT-L3S2 PLUS LANE LOAD	50	47.5	7.13	12.100	3.336

363	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	12.130	3.326
364	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	12.130	3.326
364	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	12.130	3.325
365	CT-L3S2 PLUS LANE LOAD	50	47.5	7.17	12.130	3.325
365	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	12.090	3.337
366	CT-L3S2 PLUS LANE LOAD	50	47.5	7.16	12.090	3.337
366	CT-L3S2 PLUS LANE LOAD	50	47.5	7.12	12.020	3.359
367	CT-L3S2 PLUS LANE LOAD	50	47.5	7.12	12.020	3.359
367	CT-L3S2 PLUS LANE LOAD	50	47.5	7.07	11.910	3.395
368	CT-L3S2 PLUS LANE LOAD	50	47.5	7.07	11.910	3.395
368	CT-L3S2 PLUS LANE LOAD	50	47.5	6.99	11.770	3.442
369	CT-L3S2 PLUS LANE LOAD	50	47.5	6.99	11.770	3.442
369	CT-L3S2 PLUS LANE LOAD	50	47.5	6.9	11.580	3.506
370	CT-L3S2 PLUS LANE LOAD	50	47.5	6.89	11.590	3.504
370	CT-L3S2 PLUS LANE LOAD	50	47.5	6.78	11.360	3.585
371	CT-L3S2 PLUS LANE LOAD	50	47.5	6.77	11.360	3.585
371	CT-L3S2 PLUS LANE LOAD	50	47.5	6.64	11.100	3.681
372	CT-L3S2 PLUS LANE LOAD	50	47.5	6.63	11.100	3.682
372	CT-L3S2 PLUS LANE LOAD	50	47.5	6.48	10.790	3.802
373	CT-L3S2 PLUS LANE LOAD	50	47.5	6.47	10.790	3.803
373	CT-L3S2 PLUS LANE LOAD	50	47.5	6.3	10.440	3.946
374	CT-L3S2 PLUS LANE LOAD	50	47.5	6.29	10.450	3.944
374	CT-L3S2 PLUS LANE LOAD	50	47.5	6.1	10.050	4.119
375	CT-L3S2 PLUS LANE LOAD	50	47.5	6.09	10.050	4.120
375	CT-L3S2 PLUS LANE LOAD	50	47.5	6.04	9.890	4.192
376	CT-L3S2 PLUS LANE LOAD	50	47.5	6.04	9.890	4.192
376	CT-L3S2 PLUS LANE LOAD	50	47.5	5.87	9.640	4.318
377	CT-L3S2 PLUS LANE LOAD	50	47.5	5.87	9.640	4.318
377	CT-L3S2 PLUS LANE LOAD	50	47.5	5.63	9.190	4.556
378	CT-L3S2 PLUS LANE LOAD	50	47.5	5.62	9.190	4.557
378	CT-L3S2 PLUS LANE LOAD	50	47.5	5.36	8.690	4.849
379	CT-L3S2 PLUS LANE LOAD	50	47.5	5.35	8.690	4.850
379	CT-L3S2 PLUS LANE LOAD	50	47.5	5.07	8.140	5.213
380	CT-L3S2 PLUS LANE LOAD	50	47.5	5.06	8.140	5.214
380	CT-L3S2 PLUS LANE LOAD	50	47.5	4.76	7.560	5.653
381	CT-L3S2 PLUS LANE LOAD	50	47.5	4.76	7.570	5.646
381	CT-L3S2 PLUS LANE LOAD	50	47.5	4.44	7.100	6.065
382	CT-L3S2 PLUS LANE LOAD	50	47.5	4.43	7.100	6.066
382	CT-L3S2 PLUS LANE LOAD	50	47.5	4.09	6.600	6.577
383	CT-L3S2 PLUS LANE LOAD	50	47.5	4.08	6.610	6.569
383	CT-L3S2 PLUS LANE LOAD	50	47.5	3.72	6.070	7.213
384	CT-L3S2 PLUS LANE LOAD	50	47.5	3.71	6.080	7.202
384	CT-L3S2 PLUS LANE LOAD	50	47.5	3.32	5.500	8.033
385	CT-L3S2 PLUS LANE LOAD	50	47.5	3.31	5.510	8.020
385	CT-L3S2 PLUS LANE LOAD	50	47.5	2.91	4.890	9.119
386	CT-L3S2 PLUS LANE LOAD	50	47.5	2.9	4.910	9.084
386	CT-L3S2 PLUS LANE LOAD	50	47.5	2.48	4.240	10.618
387	CT-L3S2 PLUS LANE LOAD	50	47.5	2.47	4.260	10.570
387	CT-L3S2 PLUS LANE LOAD	50	47.5	2.02	3.540	12.847
388	CT-L3S2 PLUS LANE LOAD	50	47.5	2.02	3.570	12.739
388	CT-L3S2 PLUS LANE LOAD	50	47.5	1.55	2.780	16.529
389	CT-L3S2 PLUS LANE LOAD	50	47.5	1.55	2.810	16.352
389	CT-L3S2 PLUS LANE LOAD	50	47.5	1.06	1.950	23.815
390	CT-L3S2 PLUS LANE LOAD	50	47.5	1.05	1.980	23.460
390	CT-L3S2 PLUS LANE LOAD	50	47.5	0.54	1.020	46.039
391	CT-L3S2 PLUS LANE LOAD	50	47.5	0.54	1.050	44.724
391	CT-L3S2 PLUS LANE LOAD	50	47.5	0.01	-0.060	791.500

LOAD RATING FIXED SPAN -GIRDER 4

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
100	CT-L3S2 PLUS LANE LOAD	50	47.5	0.11	0.250	189.560
100	CT-L3S2 PLUS LANE LOAD	50	47.5	0.48	0.980	47.980
101	CT-L3S2 PLUS LANE LOAD	50	47.5	0.53	1.090	43.092
101	CT-L3S2 PLUS LANE LOAD	50	47.5	0.96	1.900	24.495
102	CT-L3S2 PLUS LANE LOAD	50	47.5	1.01	2.020	23.015
102	CT-L3S2 PLUS LANE LOAD	50	47.5	1.44	2.770	16.628
103	CT-L3S2 PLUS LANE LOAD	50	47.5	1.49	2.880	15.976
103	CT-L3S2 PLUS LANE LOAD	50	47.5	1.9	3.580	12.737
104	CT-L3S2 PLUS LANE LOAD	50	47.5	1.95	3.690	12.344
104	CT-L3S2 PLUS LANE LOAD	50	47.5	2.35	4.340	10.403
105	CT-L3S2 PLUS LANE LOAD	50	47.5	2.4	4.440	10.158
105	CT-L3S2 PLUS LANE LOAD	50	47.5	2.78	5.050	8.855
106	CT-L3S2 PLUS LANE LOAD	50	47.5	2.83	5.150	8.674
106	CT-L3S2 PLUS LANE LOAD	50	47.5	3.19	5.720	7.747
107	CT-L3S2 PLUS LANE LOAD	50	47.5	3.25	5.820	7.603
107	CT-L3S2 PLUS LANE LOAD	50	47.5	3.58	6.360	6.906
108	CT-L3S2 PLUS LANE LOAD	50	47.5	3.65	6.450	6.798
108	CT-L3S2 PLUS LANE LOAD	50	47.5	3.96	6.950	6.265
109	CT-L3S2 PLUS LANE LOAD	50	47.5	4.02	7.040	6.176
109	CT-L3S2 PLUS LANE LOAD	50	47.5	4.31	7.510	5.751
110	CT-L3S2 PLUS LANE LOAD	50	47.5	4.38	7.590	5.681
110	CT-L3S2 PLUS LANE LOAD	50	47.5	4.65	8.040	5.330
111	CT-L3S2 PLUS LANE LOAD	50	47.5	4.71	8.110	5.276
111	CT-L3S2 PLUS LANE LOAD	50	47.5	4.96	8.530	4.987
112	CT-L3S2 PLUS LANE LOAD	50	47.5	5.02	8.590	4.945
112	CT-L3S2 PLUS LANE LOAD	50	47.5	5.25	9.080	4.653
113	CT-L3S2 PLUS LANE LOAD	50	47.5	5.31	9.130	4.621
113	CT-L3S2 PLUS LANE LOAD	50	47.5	5.53	9.590	4.376
114	CT-L3S2 PLUS LANE LOAD	50	47.5	5.58	9.630	4.353
114	CT-L3S2 PLUS LANE LOAD	50	47.5	5.78	10.050	4.151
115	CT-L3S2 PLUS LANE LOAD	50	47.5	5.82	10.080	4.135
115	CT-L3S2 PLUS LANE LOAD	50	47.5	5.96	10.340	4.017
116	CT-L3S2 PLUS LANE LOAD	50	47.5	5.96	10.340	4.017
116	CT-L3S2 PLUS LANE LOAD	50	47.5	6	10.470	3.964
117	CT-L3S2 PLUS LANE LOAD	50	47.5	6.05	10.480	3.955
117	CT-L3S2 PLUS LANE LOAD	50	47.5	6.21	10.830	3.813
118	CT-L3S2 PLUS LANE LOAD	50	47.5	6.25	10.860	3.798
118	CT-L3S2 PLUS LANE LOAD	50	47.5	6.4	11.150	3.686
119	CT-L3S2 PLUS LANE LOAD	50	47.5	6.43	11.190	3.670
119	CT-L3S2 PLUS LANE LOAD	50	47.5	6.56	11.440	3.579
120	CT-L3S2 PLUS LANE LOAD	50	47.5	6.59	11.470	3.567
120	CT-L3S2 PLUS LANE LOAD	50	47.5	6.7	11.700	3.487
121	CT-L3S2 PLUS LANE LOAD	50	47.5	6.73	11.730	3.476
121	CT-L3S2 PLUS LANE LOAD	50	47.5	6.82	11.910	3.416
122	CT-L3S2 PLUS LANE LOAD	50	47.5	6.85	11.940	3.405
122	CT-L3S2 PLUS LANE LOAD	50	47.5	6.92	12.090	3.356
123	CT-L3S2 PLUS LANE LOAD	50	47.5	6.94	12.120	3.347
123	CT-L3S2 PLUS LANE LOAD	50	47.5	7	12.250	3.306
124	CT-L3S2 PLUS LANE LOAD	50	47.5	7.02	12.270	3.299
124	CT-L3S2 PLUS LANE LOAD	50	47.5	7.06	12.360	3.272
125	CT-L3S2 PLUS LANE LOAD	50	47.5	7.07	12.380	3.266
125	CT-L3S2 PLUS LANE LOAD	50	47.5	7.1	12.450	3.245

Minimum Rating Factor 3.220

126	CT-L3S2 PLUS LANE LOAD	50	47.5	7.11	12.460	3.242
126	CT-L3S2 PLUS LANE LOAD	50	47.5	7.11	12.500	3.231
127	CT-L3S2 PLUS LANE LOAD	50	47.5	7.12	12.510	3.228
127	CT-L3S2 PLUS LANE LOAD	50	47.5	7.11	12.520	3.226
128	CT-L3S2 PLUS LANE LOAD	50	47.5	7.11	12.530	3.223
128	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	12.510	3.231
129	CT-L3S2 PLUS LANE LOAD	50	47.5	7.08	12.510	3.231
129	CT-L3S2 PLUS LANE LOAD	50	47.5	7.04	12.470	3.245
130	CT-L3S2 PLUS LANE LOAD	50	47.5	7.03	12.470	3.245
130	CT-L3S2 PLUS LANE LOAD	50	47.5	6.97	12.400	3.269
131	CT-L3S2 PLUS LANE LOAD	50	47.5	6.96	12.400	3.269
131	CT-L3S2 PLUS LANE LOAD	50	47.5	6.88	12.330	3.294
132	CT-L3S2 PLUS LANE LOAD	50	47.5	6.86	12.320	3.299
132	CT-L3S2 PLUS LANE LOAD	50	47.5	6.82	12.260	3.318
133	CT-L3S2 PLUS LANE LOAD	50	47.5	6.82	12.260	3.318
133	CT-L3S2 PLUS LANE LOAD	50	47.5	6.77	12.230	3.330
134	CT-L3S2 PLUS LANE LOAD	50	47.5	6.75	12.230	3.332
134	CT-L3S2 PLUS LANE LOAD	50	47.5	6.64	12.110	3.374
135	CT-L3S2 PLUS LANE LOAD	50	47.5	6.61	12.090	3.382
135	CT-L3S2 PLUS LANE LOAD	50	47.5	6.48	11.970	3.427
136	CT-L3S2 PLUS LANE LOAD	50	47.5	6.45	11.960	3.432
136	CT-L3S2 PLUS LANE LOAD	50	47.5	6.31	11.850	3.476
137	CT-L3S2 PLUS LANE LOAD	50	47.5	6.27	11.830	3.485
137	CT-L3S2 PLUS LANE LOAD	50	47.5	6.11	11.710	3.535
138	CT-L3S2 PLUS LANE LOAD	50	47.5	6.07	11.700	3.541
138	CT-L3S2 PLUS LANE LOAD	50	47.5	5.9	11.580	3.592
139	CT-L3S2 PLUS LANE LOAD	50	47.5	5.85	11.590	3.594
139	CT-L3S2 PLUS LANE LOAD	50	47.5	5.66	11.510	3.635
140	CT-L3S2 PLUS LANE LOAD	50	47.5	5.61	11.490	3.646
140	CT-L3S2 PLUS LANE LOAD	50	47.5	5.4	11.410	3.690
141	CT-L3S2 PLUS LANE LOAD	50	47.5	5.35	11.400	3.697
141	CT-L3S2 PLUS LANE LOAD	50	47.5	5.12	11.290	3.754
142	CT-L3S2 PLUS LANE LOAD	50	47.5	5.06	11.270	3.766
142	CT-L3S2 PLUS LANE LOAD	50	47.5	4.82	11.160	3.824
143	CT-L3S2 PLUS LANE LOAD	50	47.5	4.76	11.130	3.840
143	CT-L3S2 PLUS LANE LOAD	50	47.5	4.5	11.010	3.906
144	CT-L3S2 PLUS LANE LOAD	50	47.5	4.44	10.980	3.922
144	CT-L3S2 PLUS LANE LOAD	50	47.5	4.16	10.820	4.006
145	CT-L3S2 PLUS LANE LOAD	50	47.5	4.09	10.790	4.023
145	CT-L3S2 PLUS LANE LOAD	50	47.5	3.79	10.590	4.127
146	CT-L3S2 PLUS LANE LOAD	50	47.5	3.73	10.560	4.145
146	CT-L3S2 PLUS LANE LOAD	50	47.5	3.41	10.340	4.264
147	CT-L3S2 PLUS LANE LOAD	50	47.5	3.34	10.300	4.287
147	CT-L3S2 PLUS LANE LOAD	50	47.5	3.01	10.040	4.431
148	CT-L3S2 PLUS LANE LOAD	50	47.5	2.94	10.000	4.456
148	CT-L3S2 PLUS LANE LOAD	50	47.5	2.58	9.710	4.626
149	CT-L3S2 PLUS LANE LOAD	50	47.5	2.51	9.680	4.648
149	CT-L3S2 PLUS LANE LOAD	50	47.5	2.41	9.540	4.726
150	CT-L3S2 PLUS LANE LOAD	50	47.5	2.41	9.550	4.721
150	CT-L3S2 PLUS LANE LOAD	50	47.5	2.13	9.340	4.858
151	CT-L3S2 PLUS LANE LOAD	50	47.5	2.06	9.310	4.881
151	CT-L3S2 PLUS LANE LOAD	50	47.5	1.67	8.940	5.126
152	CT-L3S2 PLUS LANE LOAD	50	47.5	1.59	8.890	5.164
152	CT-L3S2 PLUS LANE LOAD	50	47.5	1.18	8.510	5.443
153	CT-L3S2 PLUS LANE LOAD	50	47.5	1.1	8.450	5.491
153	CT-L3S2 PLUS LANE LOAD	50	47.5	0.67	8.040	5.825
154	CT-L3S2 PLUS LANE LOAD	50	47.5	0.59	7.970	5.886
154	CT-L3S2 PLUS LANE LOAD	50	47.5	0.14	7.530	6.290
155	CT-L3S2 PLUS LANE LOAD	50	47.5	0.06	7.470	6.351
155	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.45	7.000	6.721
156	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.51	6.930	6.781

156	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.02	6.500	7.151
157	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.09	6.420	7.229
157	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.61	6.000	7.648
158	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.68	5.910	7.753
158	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.22	-5.650	8.014
159	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.29	-5.660	7.988
159	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.84	-5.770	7.740
160	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.93	-5.780	7.711
160	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.49	-5.880	7.485
161	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.58	-5.900	7.444
161	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.16	-6.000	7.223
162	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.25	-6.020	7.184
162	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.85	-6.130	6.958
163	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.94	-6.140	6.932
163	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.55	-6.250	6.712
164	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.65	-6.270	6.675
164	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.27	-6.370	6.473
165	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.38	-6.390	6.435
165	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.02	-6.500	6.228
166	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.13	-6.520	6.192
166	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.78	-6.630	5.991
167	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.9	-6.650	5.955
167	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.57	-7.100	5.483
168	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.7	-7.120	5.449
168	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.39	-7.590	5.021
169	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.51	-7.620	4.986
169	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.23	-8.100	4.601
170	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.35	-8.130	4.569
170	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.08	-8.700	4.186
171	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.2	-8.780	4.134
171	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.96	-9.520	3.733
172	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.04	-9.570	3.705
172	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.85	-10.380	3.338
173	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.83	-10.370	3.343
173	CT-L3S2 PLUS LANE LOAD	50	47.5	-12.02	-9.570	3.707
174	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.94	-9.530	3.731
174	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.18	-8.770	4.141
175	CT-L3S2 PLUS LANE LOAD	50	47.5	-11.07	-8.700	4.187
175	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.33	-8.160	4.555
176	CT-L3S2 PLUS LANE LOAD	50	47.5	-10.21	-8.120	4.592
176	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.5	-7.650	4.967
177	CT-L3S2 PLUS LANE LOAD	50	47.5	-9.37	-7.610	5.011
177	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.68	-7.150	5.429
178	CT-L3S2 PLUS LANE LOAD	50	47.5	-8.56	-7.130	5.461
178	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.89	-6.680	5.930
179	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.76	-6.650	5.976
179	CT-L3S2 PLUS LANE LOAD	50	47.5	-7.12	-6.550	6.165
180	CT-L3S2 PLUS LANE LOAD	50	47.5	-7	-6.530	6.202
180	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.37	-6.420	6.407
181	CT-L3S2 PLUS LANE LOAD	50	47.5	-6.26	-6.400	6.444
181	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.64	-6.290	6.655
182	CT-L3S2 PLUS LANE LOAD	50	47.5	-5.54	-6.280	6.682
182	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.93	-6.170	6.900
183	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.83	-6.150	6.938
183	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.24	-6.050	7.150
184	CT-L3S2 PLUS LANE LOAD	50	47.5	-4.15	-6.030	7.189
184	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.57	-5.920	7.421
185	CT-L3S2 PLUS LANE LOAD	50	47.5	-3.48	-5.910	7.448
185	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.91	-5.800	7.688
186	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.83	-5.790	7.715
186	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.28	-5.690	7.947

187	CT-L3S2 PLUS LANE LOAD	50	47.5	-2.21	-5.680	7.974
187	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.67	5.920	7.742
188	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.6	6.000	7.650
188	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.08	6.420	7.231
189	CT-L3S2 PLUS LANE LOAD	50	47.5	-1.01	6.500	7.152
189	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.5	6.970	6.743
190	CT-L3S2 PLUS LANE LOAD	50	47.5	-0.44	7.040	6.685
190	CT-L3S2 PLUS LANE LOAD	50	47.5	0.07	7.500	6.324
191	CT-L3S2 PLUS LANE LOAD	50	47.5	0.15	7.570	6.255
191	CT-L3S2 PLUS LANE LOAD	50	47.5	0.6	8.010	5.855
192	CT-L3S2 PLUS LANE LOAD	50	47.5	0.68	8.070	5.802
192	CT-L3S2 PLUS LANE LOAD	50	47.5	1.11	8.490	5.464
193	CT-L3S2 PLUS LANE LOAD	50	47.5	1.19	8.540	5.423
193	CT-L3S2 PLUS LANE LOAD	50	47.5	1.6	8.930	5.140
194	CT-L3S2 PLUS LANE LOAD	50	47.5	1.68	8.980	5.102
194	CT-L3S2 PLUS LANE LOAD	50	47.5	2.07	9.350	4.859
195	CT-L3S2 PLUS LANE LOAD	50	47.5	2.14	9.380	4.836
195	CT-L3S2 PLUS LANE LOAD	50	47.5	2.42	9.590	4.701
196	CT-L3S2 PLUS LANE LOAD	50	47.5	2.42	9.580	4.706
196	CT-L3S2 PLUS LANE LOAD	50	47.5	2.52	9.720	4.628
197	CT-L3S2 PLUS LANE LOAD	50	47.5	2.59	9.750	4.606
197	CT-L3S2 PLUS LANE LOAD	50	47.5	2.95	10.040	4.437
198	CT-L3S2 PLUS LANE LOAD	50	47.5	3.01	10.080	4.414
198	CT-L3S2 PLUS LANE LOAD	50	47.5	3.35	10.340	4.270
199	CT-L3S2 PLUS LANE LOAD	50	47.5	3.42	10.380	4.247
199	CT-L3S2 PLUS LANE LOAD	50	47.5	3.73	10.600	4.129
200	CT-L3S2 PLUS LANE LOAD	50	47.5	3.8	10.640	4.107
200	CT-L3S2 PLUS LANE LOAD	50	47.5	4.1	10.830	4.007
201	CT-L3S2 PLUS LANE LOAD	50	47.5	4.16	10.860	3.991
201	CT-L3S2 PLUS LANE LOAD	50	47.5	4.44	11.020	3.907
202	CT-L3S2 PLUS LANE LOAD	50	47.5	4.51	11.050	3.890
202	CT-L3S2 PLUS LANE LOAD	50	47.5	4.77	11.180	3.822
203	CT-L3S2 PLUS LANE LOAD	50	47.5	4.83	11.200	3.810
203	CT-L3S2 PLUS LANE LOAD	50	47.5	5.07	11.290	3.758
204	CT-L3S2 PLUS LANE LOAD	50	47.5	5.13	11.320	3.743
204	CT-L3S2 PLUS LANE LOAD	50	47.5	5.35	11.420	3.691
205	CT-L3S2 PLUS LANE LOAD	50	47.5	5.41	11.440	3.679
205	CT-L3S2 PLUS LANE LOAD	50	47.5	5.62	11.520	3.635
206	CT-L3S2 PLUS LANE LOAD	50	47.5	5.66	11.540	3.626
206	CT-L3S2 PLUS LANE LOAD	50	47.5	5.86	11.610	3.587
207	CT-L3S2 PLUS LANE LOAD	50	47.5	5.9	11.610	3.583
207	CT-L3S2 PLUS LANE LOAD	50	47.5	6.08	11.710	3.537
208	CT-L3S2 PLUS LANE LOAD	50	47.5	6.12	11.720	3.531
208	CT-L3S2 PLUS LANE LOAD	50	47.5	6.28	11.850	3.478
209	CT-L3S2 PLUS LANE LOAD	50	47.5	6.32	11.860	3.472
209	CT-L3S2 PLUS LANE LOAD	50	47.5	6.46	11.970	3.429
210	CT-L3S2 PLUS LANE LOAD	50	47.5	6.49	11.980	3.423
210	CT-L3S2 PLUS LANE LOAD	50	47.5	6.62	12.110	3.376
211	CT-L3S2 PLUS LANE LOAD	50	47.5	6.65	12.130	3.368
211	CT-L3S2 PLUS LANE LOAD	50	47.5	6.76	12.240	3.328
212	CT-L3S2 PLUS LANE LOAD	50	47.5	6.78	12.250	3.324
212	CT-L3S2 PLUS LANE LOAD	50	47.5	6.83	12.280	3.312
213	CT-L3S2 PLUS LANE LOAD	50	47.5	6.83	12.280	3.312
213	CT-L3S2 PLUS LANE LOAD	50	47.5	6.87	12.340	3.293
214	CT-L3S2 PLUS LANE LOAD	50	47.5	6.89	12.350	3.288
214	CT-L3S2 PLUS LANE LOAD	50	47.5	6.97	12.410	3.266
215	CT-L3S2 PLUS LANE LOAD	50	47.5	6.98	12.410	3.265
215	CT-L3S2 PLUS LANE LOAD	50	47.5	7.04	12.490	3.239
216	CT-L3S2 PLUS LANE LOAD	50	47.5	7.05	12.480	3.241
216	CT-L3S2 PLUS LANE LOAD	50	47.5	7.09	12.530	3.225
217	CT-L3S2 PLUS LANE LOAD	50	47.5	7.09	12.520	3.228

217	CT-L3S2 PLUS LANE LOAD	50	47.5	7.12	12.540	3.220
218	CT-L3S2 PLUS LANE LOAD	50	47.5	7.12	12.530	3.223
218	CT-L3S2 PLUS LANE LOAD	50	47.5	7.13	12.530	3.222
219	CT-L3S2 PLUS LANE LOAD	50	47.5	7.13	12.510	3.227
219	CT-L3S2 PLUS LANE LOAD	50	47.5	7.12	12.480	3.236
220	CT-L3S2 PLUS LANE LOAD	50	47.5	7.11	12.460	3.242
220	CT-L3S2 PLUS LANE LOAD	50	47.5	7.09	12.400	3.259
221	CT-L3S2 PLUS LANE LOAD	50	47.5	7.07	12.380	3.266
221	CT-L3S2 PLUS LANE LOAD	50	47.5	7.03	12.280	3.296
222	CT-L3S2 PLUS LANE LOAD	50	47.5	7.02	12.260	3.302
222	CT-L3S2 PLUS LANE LOAD	50	47.5	6.96	12.130	3.342
223	CT-L3S2 PLUS LANE LOAD	50	47.5	6.94	12.110	3.349
223	CT-L3S2 PLUS LANE LOAD	50	47.5	6.86	11.950	3.401
224	CT-L3S2 PLUS LANE LOAD	50	47.5	6.84	11.930	3.408
224	CT-L3S2 PLUS LANE LOAD	50	47.5	6.75	11.740	3.471
225	CT-L3S2 PLUS LANE LOAD	50	47.5	6.72	11.710	3.482
225	CT-L3S2 PLUS LANE LOAD	50	47.5	6.61	11.490	3.559
226	CT-L3S2 PLUS LANE LOAD	50	47.5	6.58	11.450	3.574
226	CT-L3S2 PLUS LANE LOAD	50	47.5	6.46	11.200	3.664
227	CT-L3S2 PLUS LANE LOAD	50	47.5	6.42	11.160	3.681
227	CT-L3S2 PLUS LANE LOAD	50	47.5	6.28	10.870	3.792
228	CT-L3S2 PLUS LANE LOAD	50	47.5	6.24	10.840	3.806
228	CT-L3S2 PLUS LANE LOAD	50	47.5	6.08	10.490	3.949
229	CT-L3S2 PLUS LANE LOAD	50	47.5	6.03	10.480	3.957
229	CT-L3S2 PLUS LANE LOAD	50	47.5	5.99	10.350	4.011
230	CT-L3S2 PLUS LANE LOAD	50	47.5	5.99	10.350	4.011
230	CT-L3S2 PLUS LANE LOAD	50	47.5	5.86	10.090	4.127
231	CT-L3S2 PLUS LANE LOAD	50	47.5	5.81	10.060	4.144
231	CT-L3S2 PLUS LANE LOAD	50	47.5	5.61	9.630	4.350
232	CT-L3S2 PLUS LANE LOAD	50	47.5	5.56	9.600	4.369
232	CT-L3S2 PLUS LANE LOAD	50	47.5	5.35	9.140	4.612
233	CT-L3S2 PLUS LANE LOAD	50	47.5	5.29	9.090	4.644
233	CT-L3S2 PLUS LANE LOAD	50	47.5	5.07	8.600	4.934
234	CT-L3S2 PLUS LANE LOAD	50	47.5	5	8.530	4.982
234	CT-L3S2 PLUS LANE LOAD	50	47.5	4.76	8.110	5.270
235	CT-L3S2 PLUS LANE LOAD	50	47.5	4.69	8.040	5.325
235	CT-L3S2 PLUS LANE LOAD	50	47.5	4.44	7.590	5.673
236	CT-L3S2 PLUS LANE LOAD	50	47.5	4.37	7.520	5.735
236	CT-L3S2 PLUS LANE LOAD	50	47.5	4.09	7.040	6.166
237	CT-L3S2 PLUS LANE LOAD	50	47.5	4.02	6.960	6.247
237	CT-L3S2 PLUS LANE LOAD	50	47.5	3.72	6.440	6.798
238	CT-L3S2 PLUS LANE LOAD	50	47.5	3.65	6.360	6.895
238	CT-L3S2 PLUS LANE LOAD	50	47.5	3.34	5.810	7.601
239	CT-L3S2 PLUS LANE LOAD	50	47.5	3.26	5.730	7.721
239	CT-L3S2 PLUS LANE LOAD	50	47.5	2.93	5.140	8.671
240	CT-L3S2 PLUS LANE LOAD	50	47.5	2.85	5.050	8.842
240	CT-L3S2 PLUS LANE LOAD	50	47.5	2.5	4.430	10.158
241	CT-L3S2 PLUS LANE LOAD	50	47.5	2.43	4.330	10.409
241	CT-L3S2 PLUS LANE LOAD	50	47.5	2.05	3.670	12.384
242	CT-L3S2 PLUS LANE LOAD	50	47.5	1.98	3.560	12.787
242	CT-L3S2 PLUS LANE LOAD	50	47.5	1.59	2.860	16.052
243	CT-L3S2 PLUS LANE LOAD	50	47.5	1.51	2.750	16.724
243	CT-L3S2 PLUS LANE LOAD	50	47.5	1.1	1.990	23.317
244	CT-L3S2 PLUS LANE LOAD	50	47.5	1.03	1.880	24.718
244	CT-L3S2 PLUS LANE LOAD	50	47.5	0.59	1.070	43.841
245	CT-L3S2 PLUS LANE LOAD	50	47.5	0.52	0.970	48.433
245	CT-L3S2 PLUS LANE LOAD	50	47.5	0.07	0.260	182.423

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>FIXED SPAN – LOAD COMBINATION ANALYSIS</u>

```
*****************************************************************************************************
**          MIDAS/Civil V.8.5.1    Modeling, Integrated Design & Analysis Software                **
**                           CIVIL STRUCTURE DESIGN SYSTEM                                        **
*****************************************************************************************************

                    XXX   XXX     XX    XXXXXXXX      XXXXXXX    XXXXXXXX
                    XXXX XXXX     XX    XX     XX     XX   XX    XX    XX
                    XX XXX XX     XX    XX     XX     XX   XX    XX
                    XX  X  XX     XX    XX     XX     XXXXXXX    XXXXXXXX
                    XXX    XX    XXX    XXX    XX     XX   XX         XXX
                    XXX    XX    XXX    XXX    XX    XXX   XX    XX   XXX
                    XXX    XX    XXX    XXX    XX    XXX   XX    XX   XXX
                    XXX    XX    XXX    XXXXXXXX     XXX   XX    XXXXXXXX  /Civil

                                     VERSION 8.5.1
```


****

ANALYSIS RESULT OUTPUT

```
LOAD SET FOR DISPLACMENT OUTPUT - Strength I HL-93 Inv.
```

```
<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

   ABBREVIATION    FULL NAME                      TYPE            DESCRIPTION
   ------------  ------------------------------ ---------- ----------------------------------------
     Self W~1       Self Weight                  Static
     Guide ~1       Guide Rail                   Static
     Wearin~1       Wearing Surface              Static
     S1 HL-~1       S1 HL-93 INV                 Gen.Comb
   ------------  ------------------------------ ---------- ----------------------------------------


<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>


[Selected Load Combinations]

    L. COMB    TYPE                             COMBINATION DETAIL
    -------- ---------- ---------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

```
LOAD SET FOR REACTION OUTPUT - Strength I HL-93 Inv.

<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

   ABBREVIATION    FULL NAME                       TYPE            DESCRIPTION
   ------------  ------------------------------ ---------- ----------------------------------------
    No Abbreviation was defined in this Load Set. All names are less than 8 char.'s
   ------------  ------------------------------ ---------- ----------------------------------------


<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>


[Selected Load Combinations]

    L. COMB    TYPE                          COMBINATION DETAIL
    -------- ---------- ----------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

```
LOAD SET FOR ELEMENT OUTPUT - Strength I HL-93 Inv.

<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

   ABBREVIATION    FULL NAME                       TYPE             DESCRIPTION
   ------------  ------------------------------ ---------- ----------------------------------------
    No Abbreviation was defined in this Load Set. All names are less than 8 char.'s
   ------------  ------------------------------ ---------- ----------------------------------------


<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>


[Selected Load Combinations]

    L. COMB    TYPE                              COMBINATION DETAIL
    -------- ---------- ----------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

NODE DISPLACEMENT AND ROTATIONS DEFAULT PRINTOUT Unit System : kips , in

NODE	LC		UX	UY	UZ	RX	RY	RZ
541	S1 HL-~1	Max	0.046	0.023	-0.186	0.0	0.0	0.0
		Min	-0.126	-0.024	-0.342	-0.0	-0.0	-0.0
542	S1 HL-~1	Max	0.046	0.023	-0.180	0.0	0.0	0.0
		Min	-0.125	-0.025	-0.456	-0.0	-0.0	-0.0
543	S1 HL-~1	Max	0.046	0.024	-0.171	0.0	0.0	0.0
		Min	-0.125	-0.028	-0.626	-0.0	-0.0	-0.0
544	S1 HL-~1	Max	0.046	0.026	-0.162	0.0	0.0	0.0
		Min	-0.125	-0.030	-0.796	-0.0	-0.0	-0.0
545	S1 HL-~1	Max	0.046	0.029	-0.153	0.0	0.0	0.0
		Min	-0.124	-0.033	-0.965	-0.0	-0.0	-0.0
546	S1 HL-~1	Max	0.046	0.031	-0.144	0.0	0.0	0.0
		Min	-0.123	-0.035	-1.132	-0.0	-0.0	-0.0
547	S1 HL-~1	Max	0.046	0.034	-0.134	0.0	0.0	0.0
		Min	-0.122	-0.038	-1.297	-0.0	-0.0	-0.0
548	S1 HL-~1	Max	0.047	0.036	-0.124	0.0	0.0	0.0
		Min	-0.120	-0.041	-1.460	-0.0	-0.0	-0.0
549	S1 HL-~1	Max	0.047	0.039	-0.113	0.0	0.0	0.0
		Min	-0.119	-0.044	-1.619	-0.0	-0.0	-0.0
550	S1 HL-~1	Max	0.047	0.042	-0.102	0.0	0.0	0.0
		Min	-0.117	-0.046	-1.775	-0.0	-0.0	-0.0
551	S1 HL-~1	Max	0.047	0.044	-0.090	0.0	0.0	0.0
		Min	-0.115	-0.049	-1.927	-0.0	-0.0	-0.0
552	S1 HL-~1	Max	0.048	0.047	-0.078	0.0	0.0	0.0
		Min	-0.113	-0.052	-2.074	-0.0	-0.0	-0.0
553	S1 HL-~1	Max	0.048	0.050	-0.065	0.0	0.0	0.0
		Min	-0.111	-0.054	-2.218	-0.0	-0.0	-0.0
554	S1 HL-~1	Max	0.048	0.052	-0.052	0.0	0.0	0.0
		Min	-0.109	-0.057	-2.356	-0.0	-0.0	-0.0
555	S1 HL-~1	Max	0.048	0.055	-0.038	0.0	0.0	0.0
		Min	-0.106	-0.060	-2.488	-0.0	-0.0	-0.0
556	S1 HL-~1	Max	0.049	0.057	-0.023	0.0	0.0	0.0
		Min	-0.104	-0.062	-2.615	-0.0	-0.0	-0.0
557	S1 HL-~1	Max	0.049	0.059	-0.012	0.0	0.0	0.0
		Min	-0.102	-0.064	-2.707	-0.0	-0.0	-0.0
558	S1 HL-~1	Max	0.049	0.059	-0.008	0.0	0.0	0.0
		Min	-0.101	-0.065	-2.737	-0.0	-0.0	-0.0

559	S1	HL-~1	Max	0.049	0.062	0.008	0.0	0.0	0.0
			Min	-0.098	-0.067	-2.852	-0.0	-0.0	-0.0
560	S1	HL-~1	Max	0.050	0.064	0.025	0.0	0.0	0.0
			Min	-0.095	-0.069	-2.960	-0.0	-0.0	-0.0
561	S1	HL-~1	Max	0.050	0.066	0.042	0.0	0.0	0.0
			Min	-0.092	-0.071	-3.062	-0.0	-0.0	-0.0
562	S1	HL-~1	Max	0.050	0.067	0.060	0.0	0.0	0.0
			Min	-0.089	-0.073	-3.157	-0.0	-0.0	-0.0
563	S1	HL-~1	Max	0.051	0.069	0.079	0.0	0.0	0.0
			Min	-0.086	-0.074	-3.244	-0.0	-0.0	-0.0
564	S1	HL-~1	Max	0.051	0.071	0.098	0.0	0.0	0.0
			Min	-0.082	-0.076	-3.323	-0.0	-0.0	-0.0
565	S1	HL-~1	Max	0.051	0.072	0.117	0.0	0.0	0.0
			Min	-0.079	-0.078	-3.394	-0.0	-0.0	-0.0
566	S1	HL-~1	Max	0.051	0.074	0.137	0.0	0.0	0.0
			Min	-0.076	-0.079	-3.458	-0.0	-0.0	-0.0
567	S1	HL-~1	Max	0.052	0.075	0.158	0.0	0.0	0.0
			Min	-0.072	-0.080	-3.514	-0.0	-0.0	-0.0
568	S1	HL-~1	Max	0.052	0.076	0.179	0.0	0.0	0.0
			Min	-0.069	-0.081	-3.563	-0.0	-0.0	-0.0
569	S1	HL-~1	Max	0.052	0.077	0.200	0.0	0.0	0.0
			Min	-0.065	-0.082	-3.603	-0.0	-0.0	-0.0
570	S1	HL-~1	Max	0.052	0.078	0.222	0.0	0.0	0.0
			Min	-0.061	-0.083	-3.637	-0.0	-0.0	-0.0
571	S1	HL-~1	Max	0.052	0.079	0.244	0.0	0.0	0.0
			Min	-0.058	-0.084	-3.662	-0.0	-0.0	-0.0
572	S1	HL-~1	Max	0.052	0.079	0.267	0.0	0.0	0.0
			Min	-0.054	-0.085	-3.679	-0.0	-0.0	-0.0
573	S1	HL-~1	Max	0.053	0.080	0.289	0.0	0.0	0.0
			Min	-0.051	-0.085	-3.689	-0.0	-0.0	-0.0
574	S1	HL-~1	Max	0.053	0.080	0.300	0.0	0.0	0.0
			Min	-0.049	-0.086	-3.691	-0.0	-0.0	-0.0
575	S1	HL-~1	Max	0.053	0.080	0.311	0.0	0.0	0.0
			Min	-0.047	-0.086	-3.691	-0.0	-0.0	-0.0
576	S1	HL-~1	Max	0.053	0.080	0.334	0.0	0.0	0.0
			Min	-0.044	-0.086	-3.685	-0.0	-0.0	-0.0
577	S1	HL-~1	Max	0.053	0.080	0.356	0.0	0.0	0.0
			Min	-0.040	-0.086	-3.672	-0.0	-0.0	-0.0

578	S1	HL-~1	Max	0.053	0.080	0.379	0.0	-0.0	0.0
			Min	-0.037	-0.085	-3.650	-0.0	-0.0	-0.0
579	S1	HL-~1	Max	0.052	0.080	0.401	0.0	-0.0	0.0
			Min	-0.033	-0.085	-3.621	-0.0	-0.0	-0.0
580	S1	HL-~1	Max	0.052	0.080	0.422	0.0	-0.0	0.0
			Min	-0.030	-0.085	-3.585	-0.0	-0.0	-0.0
581	S1	HL-~1	Max	0.052	0.079	0.443	0.0	-0.0	0.0
			Min	-0.027	-0.084	-3.542	-0.0	-0.0	-0.0
582	S1	HL-~1	Max	0.052	0.079	0.464	0.0	-0.0	0.0
			Min	-0.024	-0.083	-3.492	-0.0	-0.0	-0.0
583	S1	HL-~1	Max	0.052	0.078	0.484	0.0	-0.0	0.0
			Min	-0.020	-0.083	-3.434	-0.0	-0.0	-0.0
584	S1	HL-~1	Max	0.051	0.077	0.503	0.0	-0.0	0.0
			Min	-0.018	-0.082	-3.371	-0.0	-0.0	-0.0
585	S1	HL-~1	Max	0.051	0.076	0.521	0.0	-0.0	0.0
			Min	-0.015	-0.080	-3.300	-0.0	-0.0	-0.0
586	S1	HL-~1	Max	0.051	0.075	0.538	0.0	-0.0	0.0
			Min	-0.012	-0.079	-3.223	-0.0	-0.0	-0.0
587	S1	HL-~1	Max	0.050	0.074	0.554	0.0	-0.0	0.0
			Min	-0.010	-0.078	-3.140	-0.0	-0.0	-0.0
588	S1	HL-~1	Max	0.050	0.073	0.569	0.0	-0.0	0.0
			Min	-0.008	-0.076	-3.051	-0.0	-0.0	-0.0
589	S1	HL-~1	Max	0.049	0.071	0.582	0.0	-0.0	0.0
			Min	-0.005	-0.074	-2.956	-0.0	-0.0	-0.0
590	S1	HL-~1	Max	0.048	0.069	0.593	0.0	-0.0	0.0
			Min	-0.003	-0.073	-2.855	-0.0	-0.0	-0.0
591	S1	HL-~1	Max	0.048	0.069	0.596	0.0	-0.0	0.0
			Min	-0.003	-0.072	-2.829	-0.0	-0.0	-0.0
592	S1	HL-~1	Max	0.048	0.068	0.603	0.0	-0.0	0.0
			Min	-0.001	-0.071	-2.748	-0.0	-0.0	-0.0
593	S1	HL-~1	Max	0.047	0.066	0.611	0.0	-0.0	0.0
			Min	0.001	-0.068	-2.637	-0.0	-0.0	-0.0
594	S1	HL-~1	Max	0.046	0.064	0.617	0.0	-0.0	0.0
			Min	0.002	-0.066	-2.521	-0.0	-0.0	-0.0
595	S1	HL-~1	Max	0.045	0.061	0.621	0.0	-0.0	0.0
			Min	0.004	-0.064	-2.401	-0.0	-0.0	-0.0
596	S1	HL-~1	Max	0.044	0.059	0.622	0.0	0.0	0.0
			Min	0.005	-0.061	-2.278	-0.0	-0.0	-0.0
597	S1	HL-~1	Max	0.043	0.057	0.620	0.0	0.0	0.0
			Min	0.006	-0.058	-2.151	-0.0	-0.0	-0.0

598	S1	HL-~1	Max	0.042	0.054	0.616	0.0	0.0	0.0
			Min	0.007	-0.056	-2.022	-0.0	-0.0	-0.0
599	S1	HL-~1	Max	0.040	0.051	0.609	0.0	0.0	0.0
			Min	0.007	-0.053	-1.890	-0.0	-0.0	-0.0
600	S1	HL-~1	Max	0.039	0.049	0.599	0.0	0.0	0.0
			Min	0.008	-0.050	-1.757	-0.0	-0.0	-0.0
601	S1	HL-~1	Max	0.037	0.046	0.585	0.0	0.0	0.0
			Min	0.008	-0.047	-1.622	-0.0	-0.0	-0.0
602	S1	HL-~1	Max	0.035	0.043	0.568	0.0	0.0	0.0
			Min	0.009	-0.043	-1.487	-0.0	-0.0	-0.0
603	S1	HL-~1	Max	0.033	0.039	0.547	0.0	0.0	0.0
			Min	0.009	-0.040	-1.352	-0.0	-0.0	-0.0
604	S1	HL-~1	Max	0.031	0.036	0.522	0.0	0.0	0.0
			Min	0.008	-0.037	-1.216	-0.0	-0.0	-0.0
605	S1	HL-~1	Max	0.029	0.033	0.493	0.0	0.0	0.0
			Min	0.008	-0.033	-1.082	-0.0	-0.0	-0.0
606	S1	HL-~1	Max	0.027	0.029	0.459	0.0	0.0	0.0
			Min	0.008	-0.030	-0.948	-0.0	-0.0	-0.0
607	S1	HL-~1	Max	0.024	0.026	0.421	0.0	0.0	0.0
			Min	0.007	-0.026	-0.817	-0.0	-0.0	-0.0
608	S1	HL-~1	Max	0.022	0.022	0.377	0.0	0.0	0.0
			Min	0.007	-0.023	-0.688	-0.0	-0.0	-0.0
609	S1	HL-~1	Max	0.019	0.019	0.329	0.0	0.0	0.0
			Min	0.006	-0.019	-0.562	-0.0	-0.0	-0.0
610	S1	HL-~1	Max	0.016	0.015	0.275	0.0	0.0	0.0
			Min	0.005	-0.016	-0.440	-0.0	-0.0	-0.0
611	S1	HL-~1	Max	0.012	0.011	0.215	0.0	0.0	0.0
			Min	0.004	-0.012	-0.322	-0.0	-0.0	-0.0
612	S1	HL-~1	Max	0.008	0.007	0.150	0.0	0.0	0.0
			Min	0.003	-0.008	-0.209	-0.0	-0.0	-0.0
613	S1	HL-~1	Max	0.004	0.003	0.078	0.0	0.0	0.0
			Min	0.001	-0.004	-0.102	-0.0	-0.0	-0.0
614	S1	HL-~1	Max	0.000	0.000	-0.000	0.0	0.0	0.0
			Min	-0.000	-0.000	-0.000	-0.0	-0.0	-0.0
615	S1	HL-~1	Max	-0.001	0.003	0.081	0.0	0.0	0.0
			Min	-0.004	-0.004	-0.098	-0.0	-0.0	-0.0
616	S1	HL-~1	Max	-0.003	0.007	0.156	0.0	0.0	0.0
			Min	-0.008	-0.008	-0.203	-0.0	-0.0	-0.0

617 S1 HL--~1	Max	-0.004	0.011	0.225	0.0	0.0	0.0
	Min	-0.012	-0.012	-0.312	-0.0	-0.0	-0.0
618 S1 HL--~1	Max	-0.005	0.015	0.287	0.0	0.0	0.0
	Min	-0.016	-0.015	-0.427	-0.0	-0.0	-0.0
619 S1 HL--~1	Max	-0.006	0.018	0.344	0.0	0.0	0.0
	Min	-0.019	-0.019	-0.546	-0.0	-0.0	-0.0
620 S1 HL--~1	Max	-0.007	0.022	0.396	0.0	0.0	0.0
	Min	-0.022	-0.022	-0.668	-0.0	-0.0	-0.0
621 S1 HL--~1	Max	-0.007	0.025	0.442	0.0	0.0	0.0
	Min	-0.024	-0.026	-0.794	-0.0	-0.0	-0.0
622 S1 HL--~1	Max	-0.008	0.029	0.484	0.0	0.0	0.0
	Min	-0.027	-0.029	-0.922	-0.0	-0.0	-0.0
623 S1 HL--~1	Max	-0.008	0.032	0.520	0.0	0.0	0.0
	Min	-0.029	-0.033	-1.052	-0.0	-0.0	-0.0
624 S1 HL--~1	Max	-0.008	0.035	0.553	0.0	0.0	0.0
	Min	-0.031	-0.036	-1.183	-0.0	-0.0	-0.0
625 S1 HL--~1	Max	-0.008	0.038	0.581	0.0	0.0	0.0
	Min	-0.033	-0.039	-1.315	-0.0	-0.0	-0.0
626 S1 HL--~1	Max	-0.008	0.041	0.605	0.0	0.0	0.0
	Min	-0.035	-0.042	-1.447	-0.0	-0.0	-0.0
627 S1 HL--~1	Max	-0.008	0.044	0.625	0.0	0.0	0.0
	Min	-0.037	-0.045	-1.579	-0.0	-0.0	-0.0
628 S1 HL--~1	Max	-0.008	0.047	0.641	0.0	0.0	0.0
	Min	-0.039	-0.048	-1.710	-0.0	-0.0	-0.0
629 S1 HL--~1	Max	-0.007	0.050	0.654	0.0	0.0	0.0
	Min	-0.040	-0.051	-1.840	-0.0	-0.0	-0.0
630 S1 HL--~1	Max	-0.007	0.052	0.664	0.0	0.0	0.0
	Min	-0.041	-0.053	-1.968	-0.0	-0.0	-0.0
631 S1 HL--~1	Max	-0.006	0.055	0.671	0.0	0.0	0.0
	Min	-0.043	-0.056	-2.093	-0.0	-0.0	-0.0
632 S1 HL--~1	Max	-0.005	0.057	0.676	0.0	0.0	0.0
	Min	-0.044	-0.058	-2.217	-0.0	-0.0	-0.0
633 S1 HL--~1	Max	-0.004	0.059	0.677	0.0	0.0	0.0
	Min	-0.045	-0.061	-2.336	-0.0	-0.0	-0.0
634 S1 HL--~1	Max	-0.002	0.061	0.676	0.0	0.0	0.0
	Min	-0.046	-0.063	-2.452	-0.0	-0.0	-0.0
635 S1 HL--~1	Max	-0.001	0.063	0.673	0.0	0.0	0.0
	Min	-0.047	-0.065	-2.564	-0.0	0.0	-0.0
636 S1 HL--~1	Max	0.001	0.065	0.668	0.0	0.0	0.0
	Min	-0.047	-0.067	-2.672	-0.0	0.0	-0.0

637	S1	HL-~1	Max	0.003	0.066	0.663	0.0	0.0	0.0
			Min	-0.048	-0.068	-2.750	-0.0	0.0	-0.0
638	S1	HL-~1	Max	0.003	0.066	0.661	0.0	0.0	0.0
			Min	-0.048	-0.069	-2.775	-0.0	0.0	-0.0
639	S1	HL-~1	Max	0.005	0.068	0.652	0.0	0.0	0.0
			Min	-0.049	-0.070	-2.873	-0.0	0.0	-0.0
640	S1	HL-~1	Max	0.007	0.069	0.642	0.0	0.0	0.0
			Min	-0.049	-0.072	-2.964	-0.0	0.0	-0.0
641	S1	HL-~1	Max	0.010	0.070	0.630	0.0	0.0	0.0
			Min	-0.050	-0.073	-3.049	-0.0	0.0	-0.0
642	S1	HL-~1	Max	0.012	0.071	0.617	0.0	0.0	0.0
			Min	-0.050	-0.074	-3.128	-0.0	0.0	-0.0
643	S1	HL-~1	Max	0.015	0.072	0.602	0.0	0.0	0.0
			Min	-0.051	-0.075	-3.201	-0.0	0.0	-0.0
644	S1	HL-~1	Max	0.017	0.073	0.587	0.0	0.0	0.0
			Min	-0.051	-0.076	-3.268	-0.0	0.0	-0.0
645	S1	HL-~1	Max	0.020	0.074	0.570	0.0	0.0	0.0
			Min	-0.051	-0.077	-3.328	-0.0	0.0	-0.0
646	S1	HL-~1	Max	0.023	0.074	0.553	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.381	-0.0	0.0	-0.0
647	S1	HL-~1	Max	0.026	0.074	0.535	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.428	-0.0	0.0	-0.0
648	S1	HL-~1	Max	0.030	0.075	0.517	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.467	-0.0	0.0	-0.0
649	S1	HL-~1	Max	0.033	0.075	0.498	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.499	-0.0	0.0	-0.0
650	S1	HL-~1	Max	0.036	0.075	0.478	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.524	-0.0	-0.0	-0.0
651	S1	HL-~1	Max	0.040	0.074	0.459	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.541	-0.0	-0.0	-0.0
652	S1	HL-~1	Max	0.043	0.074	0.439	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.551	-0.0	-0.0	-0.0
653	S1	HL-~1	Max	0.047	0.074	0.419	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.552	-0.0	-0.0	-0.0
654	S1	HL-~1	Max	0.049	0.073	0.409	0.0	0.0	0.0
			Min	-0.052	-0.078	-3.550	-0.0	-0.0	-0.0
655	S1	HL-~1	Max	0.051	0.073	0.399	0.0	0.0	0.0
			Min	-0.052	-0.077	-3.546	-0.0	-0.0	-0.0

656 S1 HL--~1	Max	0.054	0.072	0.379	0.0	0.0	0.0
	Min	-0.052	-0.076	-3.532	-0.0	-0.0	-0.0
657 S1 HL--~1	Max	0.058	0.071	0.360	0.0	0.0	0.0
	Min	-0.052	-0.075	-3.511	-0.0	-0.0	-0.0
658 S1 HL--~1	Max	0.061	0.070	0.340	0.0	0.0	0.0
	Min	-0.052	-0.074	-3.482	-0.0	-0.0	-0.0
659 S1 HL--~1	Max	0.065	0.069	0.321	0.0	0.0	0.0
	Min	-0.052	-0.073	-3.444	-0.0	-0.0	-0.0
660 S1 HL--~1	Max	0.069	0.068	0.302	0.0	0.0	0.0
	Min	-0.052	-0.072	-3.399	-0.0	-0.0	-0.0
661 S1 HL--~1	Max	0.072	0.067	0.283	0.0	0.0	0.0
	Min	-0.051	-0.070	-3.346	-0.0	-0.0	-0.0
662 S1 HL--~1	Max	0.076	0.065	0.265	0.0	0.0	0.0
	Min	-0.051	-0.069	-3.286	-0.0	-0.0	-0.0
663 S1 HL--~1	Max	0.079	0.064	0.248	0.0	0.0	0.0
	Min	-0.051	-0.067	-3.218	-0.0	-0.0	-0.0
664 S1 HL--~1	Max	0.082	0.062	0.231	0.0	0.0	0.0
	Min	-0.051	-0.065	-3.142	-0.0	-0.0	-0.0
665 S1 HL--~1	Max	0.086	0.060	0.214	0.0	0.0	0.0
	Min	-0.050	-0.063	-3.059	-0.0	-0.0	-0.0
666 S1 HL--~1	Max	0.089	0.058	0.198	0.0	0.0	0.0
	Min	-0.050	-0.061	-2.967	-0.0	-0.0	-0.0
667 S1 HL--~1	Max	0.092	0.056	0.183	0.0	0.0	0.0
	Min	-0.050	-0.059	-2.868	-0.0	-0.0	-0.0
668 S1 HL--~1	Max	0.095	0.054	0.168	0.0	0.0	0.0
	Min	-0.049	-0.057	-2.761	-0.0	-0.0	-0.0
669 S1 HL--~1	Max	0.098	0.051	0.154	0.0	0.0	0.0
	Min	-0.049	-0.054	-2.648	-0.0	-0.0	-0.0
670 S1 HL--~1	Max	0.101	0.049	0.140	0.0	0.0	0.0
	Min	-0.049	-0.052	-2.529	-0.0	-0.0	-0.0
671 S1 HL--~1	Max	0.102	0.048	0.137	0.0	0.0	0.0
	Min	-0.049	-0.051	-2.498	-0.0	-0.0	-0.0
672 S1 HL--~1	Max	0.104	0.047	0.127	0.0	0.0	0.0
	Min	-0.049	-0.049	-2.404	-0.0	-0.0	-0.0
673 S1 HL--~1	Max	0.107	0.044	0.115	0.0	0.0	0.0
	Min	-0.048	-0.046	-2.272	-0.0	-0.0	-0.0
674 S1 HL--~1	Max	0.109	0.041	0.103	0.0	0.0	0.0
	Min	-0.048	-0.043	-2.135	-0.0	-0.0	-0.0
675 S1 HL--~1	Max	0.111	0.038	0.092	0.0	0.0	0.0
	Min	-0.048	-0.040	-1.992	-0.0	-0.0	-0.0

676	S1	HL-~1	Max	0.114	0.035	0.082	0.0	0.0	0.0
			Min	-0.047	-0.037	-1.845	-0.0	-0.0	-0.0
677	S1	HL-~1	Max	0.116	0.033	0.072	0.0	0.0	0.0
			Min	-0.047	-0.034	-1.693	-0.0	-0.0	-0.0
678	S1	HL-~1	Max	0.118	0.030	0.063	0.0	0.0	0.0
			Min	-0.047	-0.031	-1.536	-0.0	-0.0	-0.0
679	S1	HL-~1	Max	0.119	0.026	0.054	0.0	0.0	0.0
			Min	-0.047	-0.028	-1.376	-0.0	-0.0	-0.0
680	S1	HL-~1	Max	0.121	0.023	0.046	0.0	0.0	0.0
			Min	-0.046	-0.024	-1.212	-0.0	-0.0	-0.0
681	S1	HL-~1	Max	0.122	0.020	0.039	0.0	0.0	0.0
			Min	-0.046	-0.021	-1.045	-0.0	-0.0	-0.0
682	S1	HL-~1	Max	0.123	0.017	0.031	0.0	0.0	0.0
			Min	-0.046	-0.018	-0.875	-0.0	-0.0	-0.0
683	S1	HL-~1	Max	0.124	0.013	0.025	0.0	0.0	0.0
			Min	-0.046	-0.014	-0.703	-0.0	-0.0	-0.0
684	S1	HL-~1	Max	0.125	0.010	0.018	0.0	0.0	0.0
			Min	-0.046	-0.011	-0.529	-0.0	-0.0	-0.0
685	S1	HL-~1	Max	0.126	0.007	0.012	0.0	0.0	0.0
			Min	-0.046	-0.007	-0.354	-0.0	-0.0	-0.0
686	S1	HL-~1	Max	0.126	0.004	0.006	0.0	0.0	0.0
			Min	-0.046	-0.004	-0.177	-0.0	-0.0	-0.0
687	S1	HL-~1	Max	0.126	0.000	0.000	0.0	0.0	0.0
			Min	-0.046	-0.000	-0.000	-0.0	-0.0	-0.0

BEAM ELEMENT FORCES & MOMENTS DEFAULT PRINTOUT Unit System : kips , in

ELEM	MAT	SEC	LC	PT	AXIAL	SHEAR-y	SHEAR-z	TORSION	MOMENT-y	MOMENT-z
538	13	13	S1 HL-~1 Max	I	4.2	-2.1	-9.3	63.6	302.4	-49.8
				J	4.2	-2.1	-8.2	63.6	1402.5	234.8
			Min	I	-0.7	-35.2	-118.6	-72.8	-274.2	-222.7
				J	-0.7	-35.2	-117.5	-72.8	127.4	-54.7
539	13	13	S1 HL-~1 Max	I	9.1	2.4	-10.8	69.9	1456.7	75.1
				J	9.1	2.4	-9.7	69.9	2759.8	280.4
			Min	I	-1.1	-23.4	-111.4	-68.9	139.6	-201.9
				J	-1.1	-23.4	-110.3	-68.9	277.4	-116.7
540	13	13	S1 HL-~1 Max	I	14.2	4.2	-11.3	70.0	2826.2	118.1
				J	14.2	4.2	-10.1	70.0	4064.5	262.0
			Min	I	-1.4	-19.6	-107.3	-70.8	291.4	-249.0
				J	-1.4	-19.6	-106.2	-70.8	431.0	-171.6
541	13	13	S1 HL-~1 Max	I	19.4	4.2	-11.0	68.9	4132.8	114.3
				J	19.4	4.2	-9.9	68.9	5308.7	233.2
			Min	I	-1.5	-19.5	-103.9	-71.2	443.0	-302.0
				J	-1.5	-19.5	-102.8	-71.2	578.1	-213.2
542	13	13	S1 HL-~1 Max	I	24.5	3.8	-10.4	67.5	5372.7	97.0
				J	24.5	3.8	-9.3	67.5	6490.2	216.1
			Min	I	-1.4	-19.9	-100.8	-70.9	587.9	-341.3
				J	-1.4	-19.9	-99.7	-70.9	714.8	-242.9
543	13	13	S1 HL-~1 Max	I	29.4	3.3	-9.4	67.0	6548.3	79.8
				J	29.4	3.3	-8.3	67.0	7609.3	206.4
			Min	I	-1.2	-20.5	-97.7	-70.2	722.7	-366.6
				J	-1.2	-20.5	-96.6	-70.2	839.5	-261.7
544	13	13	S1 HL-~1 Max	I	34.1	3.0	-7.8	66.1	7661.4	66.2
				J	34.1	3.0	-6.6	66.1	8668.2	202.6
			Min	I	-0.9	-20.9	-94.7	-69.3	845.9	-381.4
				J	-0.9	-20.9	-93.6	-69.3	951.3	-273.2
545	13	13	S1 HL-~1 Max	I	38.5	2.8	-6.1	65.1	8715.7	57.8
				J	38.5	2.8	-5.0	65.1	9669.4	203.6
			Min	I	-0.6	-21.1	-91.7	-68.2	956.8	-389.6
				J	-0.6	-21.1	-90.6	-68.2	1050.3	-281.2
546	13	13	S1 HL-~1 Max	I	42.6	2.6	-4.5	63.8	9711.9	62.1
				J	42.6	2.6	-3.4	63.8	10612.8	207.3
			Min	I	-0.3	-21.1	-88.7	-67.0	1055.2	-392.7
				J	-0.3	-21.1	-87.6	-67.0	1136.6	-288.8
547	13	13	S1 HL-~1 Max	I	46.4	2.5	-2.9	62.3	10650.9	75.1
				J	46.4	2.5	-1.8	62.3	11502.3	212.9
			Min	I	-0.0	-21.0	-85.8	-65.6	1139.9	-393.4
				J	-0.0	-21.0	-84.7	-65.6	1210.4	-301.0
548	13	13	S1 HL-~1 Max	I	50.0	2.4	-1.3	60.8	11537.3	90.4
				J	50.0	2.4	-0.2	60.8	12337.6	221.3
			Min	I	0.2	-20.9	-82.9	-64.1	1212.5	-392.5
				J	0.2	-20.9	-81.7	-64.1	1272.1	-310.9
549	13	13	S1 HL-~1 Max	I	53.2	2.3	0.2	59.1	12368.1	106.6
				J	53.2	2.3	1.4	59.1	13120.9	233.8
			Min	I	0.4	-20.8	-80.0	-62.4	1273.1	-397.5
				J	0.4	-20.8	-78.8	-62.4	1321.6	-318.2
550	13	13	S1 HL-~1 Max	I	56.2	2.1	1.8	57.3	13149.3	123.6
				J	56.2	2.1	2.9	57.3	13852.4	249.0
			Min	I	0.6	-20.8	-77.1	-60.7	1321.7	-400.0
				J	0.6	-20.8	-76.0	-60.7	1359.3	-322.4
551	13	13	S1 HL-~1 Max	I	59.0	1.7	3.4	55.4	13876.6	141.9
				J	59.0	1.7	4.5	55.4	14534.0	266.7
			Min	I	0.7	-21.1	-74.2	-58.8	1358.5	-398.8
				J	0.7	-21.1	-73.1	-58.8	1385.2	-320.4
552	13	13	S1 HL-~1 Max	I	61.5	2.2	5.1	53.5	14556.3	163.5

				J	61.5	2.2	6.2	53.5	15163.9	290.6
			Min	I	0.7	-21.8	-71.3	-57.0	1383.6	-391.3
				J	0.7	-21.8	-70.2	-57.0	1399.3	-307.1
553	13	13 S1 HL-~1	Max	I	63.8	2.8	7.2	53.2	15183.1	192.8
				J	63.8	2.8	8.1	53.2	15548.9	289.1
			Min	I	0.7	-22.9	-68.5	-61.9	1396.8	-370.4
				J	0.7	-22.9	-67.6	-61.9	1401.7	-285.4
554	13	13 S1 HL-~1	Max	I	63.8	8.6	8.2	84.4	15548.2	281.9
				J	63.8	8.6	8.5	84.4	15741.4	302.3
			Min	I	0.7	-12.8	-67.3	-45.0	1401.8	-281.1
				J	0.7	-12.8	-67.0	-45.0	1401.4	-294.6
555	13	13 S1 HL-~1	Max	I	65.9	8.0	9.4	51.0	15756.9	213.1
				J	65.9	8.0	10.6	51.0	16263.6	286.2
			Min	I	0.6	-12.5	-65.4	-50.2	1398.0	-346.5
				J	0.6	-12.5	-64.3	-50.2	1391.1	-336.0
556	13	13 S1 HL-~1	Max	I	67.7	6.8	11.6	48.5	16275.4	204.5
				J	67.7	6.8	12.7	48.5	16733.5	280.1
			Min	I	0.5	-13.5	-62.7	-48.6	1386.8	-378.9
				J	0.5	-13.5	-61.6	-48.6	1369.0	-357.0
557	13	13 S1 HL-~1	Max	I	69.6	6.4	13.7	46.8	16742.3	204.1
				J	69.6	6.4	14.8	46.8	17158.2	278.8
			Min	I	0.3	-14.0	-60.0	-46.4	1364.0	-393.8
				J	0.3	-14.0	-58.9	-46.4	1335.3	-368.4
558	13	13 S1 HL-~1	Max	I	71.1	6.3	15.8	45.1	17164.9	207.7
				J	71.1	6.3	16.9	45.1	17538.2	279.4
			Min	I	0.0	-14.0	-57.4	-44.3	1329.6	-400.4
				J	0.0	-14.0	-56.3	-44.3	1290.1	-375.8
559	13	13 S1 HL-~1	Max	I	72.5	6.5	17.8	43.5	17546.9	213.1
				J	72.5	6.5	19.0	43.5	17908.3	280.6
			Min	I	-0.3	-13.8	-54.8	-42.1	1283.6	-402.8
				J	-0.3	-13.8	-53.7	-42.1	1233.4	-381.2
560	13	13 S1 HL-~1	Max	I	73.7	6.8	19.9	41.9	17913.7	219.2
				J	73.7	6.8	21.0	41.9	18231.1	281.9
			Min	I	-0.6	-13.5	-52.3	-39.9	1226.2	-403.2
				J	-0.6	-13.5	-51.2	-39.9	1165.2	-385.9
561	13	13 S1 HL-~1	Max	I	74.7	7.1	21.9	40.4	18235.5	225.4
				J	74.7	7.1	23.0	40.4	18509.4	282.9
			Min	I	-1.0	-13.1	-49.8	-37.7	1157.3	-402.5
				J	-1.0	-13.1	-48.6	-37.7	1085.6	-390.5
562	13	13 S1 HL-~1	Max	I	75.5	7.6	24.0	39.0	18511.0	231.5
				J	75.5	7.6	25.1	39.0	18742.0	283.7
			Min	I	-1.5	-12.6	-47.3	-35.5	1077.0	-401.6
				J	-1.5	-12.6	-46.2	-35.5	994.5	-395.4
563	13	13 S1 HL-~1	Max	I	76.1	8.0	26.2	37.7	18742.7	237.3
				J	76.1	8.0	27.3	37.7	18931.3	284.4
			Min	I	-2.0	-12.2	-44.8	-33.9	985.2	-400.8
				J	-2.0	-12.2	-43.7	-33.9	892.1	-400.4
564	13	13 S1 HL-~1	Max	I	76.6	8.4	28.3	36.6	18929.7	243.1
				J	76.6	8.4	29.5	36.6	19075.5	284.9
			Min	I	-2.6	-11.7	-42.4	-32.8	882.1	-400.2
				J	-2.6	-11.7	-41.3	-32.8	778.2	-405.1
565	13	13 S1 HL-~1	Max	I	76.9	8.8	30.5	35.5	19073.1	248.8
				J	76.9	8.8	31.6	35.5	19178.0	285.8
			Min	I	-3.2	-11.4	-40.0	-31.7	767.5	-399.5
				J	-3.2	-11.4	-38.9	-31.7	652.9	-409.4
566	13	13 S1 HL-~1	Max	I	77.2	9.0	32.7	34.4	19173.6	254.8
				J	77.2	9.0	33.8	34.4	19235.8	287.7
			Min	I	-3.8	-11.2	-37.6	-31.3	641.4	-398.4
				J	-3.8	-11.2	-36.5	-31.3	516.1	-412.1
567	13	13 S1 HL-~1	Max	I	77.3	9.2	34.9	33.4	19230.3	262.2
				J	77.3	9.2	36.1	33.4	19252.6	291.7
			Min	I	-4.5	-11.2	-35.4	-31.6	503.9	-396.0
				J	-4.5	-11.2	-34.3	-31.6	367.8	-411.4

568	13	13 S1 HL-~1	Max	I	77.3	9.2	37.5	32.4	19245.7	272.0
				J	77.3	9.2	38.6	32.4	19225.3	300.2
			Min	I	-5.3	-11.5	-33.2	-32.1	354.9	-390.1
				J	-5.3	-11.5	-32.1	-32.1	208.0	-403.9
569	13	13 S1 HL-~1	Max	I	77.1	8.9	40.1	30.6	19216.3	286.7
				J	77.1	8.9	41.2	30.6	19155.7	317.1
			Min	I	-6.0	-12.4	-31.1	-33.3	194.3	-376.6
				J	-6.0	-12.4	-29.9	-33.3	36.5	-382.4
570	13	13 S1 HL-~1	Max	I	76.7	8.9	42.6	28.9	19144.3	311.5
				J	76.7	8.9	43.2	28.9	19048.3	324.6
			Min	I	-6.9	-13.4	-29.0	-61.3	21.9	-346.7
				J	-6.9	-13.4	-28.5	-61.3	-60.6	-318.2
571	13	13 S1 HL-~1	Max	I	76.7	17.8	43.5	61.1	19048.2	323.9
				J	76.7	17.8	44.1	61.1	19038.0	311.7
			Min	I	-6.9	-3.7	-28.2	-28.3	-60.5	-317.3
				J	-6.9	-3.7	-27.7	-28.3	-147.0	-389.2
572	13	13 S1 HL-~1	Max	I	76.1	16.8	45.6	34.0	19021.6	316.8
				J	76.1	16.8	46.7	34.0	18900.6	288.1
			Min	I	-7.8	-3.9	-26.8	-29.4	-162.6	-340.2
				J	-7.8	-3.9	-25.6	-29.4	-342.9	-421.0
573	13	13 S1 HL-~1	Max	I	75.4	16.1	48.2	32.7	18890.3	301.0
				J	75.4	16.1	49.4	32.7	18740.9	274.4
			Min	I	-8.7	-4.8	-24.6	-31.0	-359.5	-363.4
				J	-8.7	-4.8	-23.5	-31.0	-550.6	-435.9
574	13	13 S1 HL-~1	Max	I	74.5	15.8	50.9	32.2	18728.2	293.4
				J	74.5	15.8	52.1	32.2	18538.2	265.7
			Min	I	-9.6	-5.4	-22.5	-31.9	-568.0	-372.7
				J	-9.6	-5.4	-21.4	-31.9	-770.0	-443.3
575	13	13 S1 HL-~1	Max	I	73.4	15.8	53.6	31.7	18524.8	290.2
				J	73.4	15.8	54.7	31.7	18292.4	259.4
			Min	I	-10.6	-5.5	-20.5	-32.8	-788.3	-375.3
				J	-10.6	-5.5	-19.3	-32.8	-1001.1	-447.1
576	13	13 S1 HL-~1	Max	I	72.2	16.0	56.2	31.4	18277.9	289.2
				J	72.2	16.0	57.4	31.4	18007.5	255.4
			Min	I	-11.7	-5.4	-18.4	-33.6	-1020.2	-374.3
				J	-11.7	-5.4	-17.3	-33.6	-1243.9	-449.4
577	13	13 S1 HL-~1	Max	I	70.9	16.4	58.8	31.2	17992.4	289.1
				J	70.9	16.4	60.0	31.2	17680.9	253.1
			Min	I	-12.8	-5.2	-16.4	-34.5	-1263.8	-371.7
				J	-12.8	-5.2	-15.2	-34.5	-1498.3	-451.2
578	13	13 S1 HL-~1	Max	I	69.3	16.8	61.4	32.0	17663.7	289.5
				J	69.3	16.8	62.6	32.0	17313.5	251.0
			Min	I	-13.9	-4.9	-14.3	-35.5	-1519.2	-368.4
				J	-13.9	-4.9	-13.2	-35.5	-1764.6	-453.0
579	13	13 S1 HL-~1	Max	I	67.7	17.3	64.1	33.0	17295.5	292.1
				J	67.7	17.3	65.2	33.0	16904.6	248.9
			Min	I	-15.0	-4.6	-12.3	-36.4	-1786.3	-364.7
				J	-15.0	-4.6	-11.2	-36.4	-2042.6	-455.0
580	13	13 S1 HL-~1	Max	I	65.9	17.7	66.7	34.0	16884.8	294.7
				J	65.9	17.7	67.8	34.0	16456.6	246.8
			Min	I	-16.2	-4.3	-10.3	-37.5	-2065.2	-361.0
				J	-16.2	-4.3	-9.2	-37.5	-2332.4	-458.7
581	13	13 S1 HL-~1	Max	I	64.0	18.1	69.3	35.6	16435.4	297.3
				J	64.0	18.1	70.5	35.6	15967.4	244.8
			Min	I	-17.4	-4.0	-8.3	-38.5	-2356.1	-359.1
				J	-17.4	-4.0	-7.2	-38.5	-2634.2	-461.8
582	13	13 S1 HL-~1	Max	I	62.2	18.4	72.0	37.5	15945.2	299.9
				J	62.2	18.4	73.1	37.5	15439.5	243.5
			Min	I	-18.7	-3.8	-6.4	-39.7	-2658.8	-357.2
				J	-18.7	-3.8	-5.3	-39.7	-2948.0	-463.9
583	13	13 S1 HL-~1	Max	I	60.3	18.6	74.7	39.4	15414.7	303.0
				J	60.3	18.6	75.8	39.4	14870.9	243.4

			Min	I	-20.0	-3.8	-4.5	-40.8	-2973.6	-354.5
				J	-20.0	-3.8	-3.3	-40.8	-3273.9	-463.8
584	13	13 S1 HL-~1	Max	I	58.3	18.6	77.3	41.2	14845.3	306.9
				J	58.3	18.6	78.5	41.2	14261.6	245.3
			Min	I	-21.3	-4.0	-2.6	-42.1	-3300.5	-349.8
				J	-21.3	-4.0	-1.4	-42.1	-3612.0	-459.0
585	13	13 S1 HL-~1	Max	I	56.3	18.4	80.1	43.0	14234.4	313.2
				J	56.3	18.4	81.2	43.0	13613.2	251.6
			Min	I	-22.7	-4.7	-0.6	-43.4	-3639.7	-341.0
				J	-22.7	-4.7	0.5	-43.4	-3962.3	-446.0
586	13	13 S1 HL-~1	Max	I	54.5	17.7	82.8	44.3	13583.5	324.3
				J	54.5	17.7	83.9	44.3	12923.0	266.2
			Min	I	-24.1	-6.1	1.3	-45.6	-3991.2	-322.7
				J	-24.1	-6.1	2.4	-45.6	-4325.1	-415.1
587	13	13 S1 HL-~1	Max	I	53.0	17.9	85.5	39.5	12890.0	345.4
				J	53.0	17.9	85.8	39.5	12663.5	329.3
			Min	I	-26.1	-6.8	3.0	-81.3	-4355.3	-284.1
				J	-26.1	-6.8	3.3	-81.3	-4440.3	-291.0
588	13	13 S1 HL-~1	Max	I	52.9	27.0	86.2	57.5	12664.1	334.1
				J	52.9	27.0	87.0	57.5	12185.1	252.8
			Min	I	-26.0	2.4	3.5	-45.8	-4440.1	-293.4
				J	-26.0	2.4	4.4	-45.8	-4701.1	-440.1
589	13	13 S1 HL-~1	Max	I	51.2	25.8	88.7	50.0	12148.1	339.4
				J	51.2	25.8	89.8	50.0	11403.3	232.9
			Min	I	-28.3	1.7	5.1	-46.1	-4732.6	-298.7
				J	-28.3	1.7	6.2	-46.1	-5090.1	-462.8
590	13	13 S1 HL-~1	Max	I	49.3	25.0	91.5	51.4	11362.6	324.4
				J	49.3	25.0	92.7	51.4	10581.6	220.3
			Min	I	-30.8	0.8	7.0	-47.6	-5123.0	-315.4
				J	-30.8	0.8	8.1	-47.6	-5492.0	-471.5
591	13	13 S1 HL-~1	Max	I	47.4	24.6	94.3	53.0	10538.1	315.5
				J	47.4	24.6	95.5	53.0	9720.9	211.2
			Min	I	-33.5	0.4	8.8	-49.1	-5526.1	-320.4
				J	-33.5	0.4	10.0	-49.1	-5906.7	-473.2
592	13	13 S1 HL-~1	Max	I	45.3	24.5	97.1	54.4	9675.9	309.7
				J	45.3	24.5	98.3	54.4	8823.0	203.6
			Min	I	-36.7	0.2	10.7	-50.5	-5942.2	-319.7
				J	-36.7	0.2	11.8	-50.5	-6334.4	-471.8
593	13	13 S1 HL-~1	Max	I	43.1	24.5	99.9	55.7	8780.3	305.3
				J	43.1	24.5	101.1	55.7	7894.9	196.7
			Min	I	-40.0	0.2	12.6	-51.8	-6371.3	-316.1
				J	-40.0	0.2	13.7	-51.8	-6775.5	-468.6
594	13	13 S1 HL-~1	Max	I	40.7	24.6	102.7	56.8	7850.5	301.4
				J	40.7	24.6	103.8	56.8	6929.0	190.1
			Min	I	-43.6	0.2	14.4	-53.0	-6813.7	-311.1
				J	-43.6	0.2	15.6	-53.0	-7230.5	-464.5
595	13	13 S1 HL-~1	Max	I	38.3	24.7	105.5	57.9	6882.5	297.6
				J	38.3	24.7	106.6	57.9	5929.5	183.4
			Min	I	-47.4	0.3	16.3	-54.0	-7269.8	-305.8
				J	-47.4	0.3	17.4	-54.0	-7703.3	-459.7
596	13	13 S1 HL-~1	Max	I	35.8	24.9	108.3	58.7	5879.4	293.5
				J	35.8	24.9	109.4	58.7	4904.0	177.1
			Min	I	-51.5	0.3	18.1	-54.9	-7742.4	-300.7
				J	-51.5	0.3	19.2	-54.9	-8201.3	-454.0
597	13	13 S1 HL-~1	Max	I	33.3	24.9	111.1	59.4	4849.4	288.8
				J	33.3	24.9	112.2	59.4	3864.4	171.4
			Min	I	-55.8	0.3	19.6	-55.9	-8239.6	-295.3
				J	-55.8	0.3	20.8	-55.9	-8731.9	-447.5
598	13	13 S1 HL-~1	Max	I	30.6	24.8	114.0	59.9	3801.8	284.0
				J	30.6	24.8	115.1	59.9	2837.5	165.8
			Min	I	-60.5	0.2	21.2	-57.1	-8770.3	-295.1
				J	-60.5	0.2	22.3	-57.1	-9300.1	-442.4

599	13	13	S1 HL-~1	Max	I	28.9	24.6	116.8	60.1	2771.3	278.4
					J	28.9	24.6	117.9	60.1	1802.9	160.9
				Min	I	-65.5	-0.0	22.7	-58.3	-9339.9	-296.8
					J	-65.5	-0.0	23.9	-58.3	-9908.6	-437.7
600	13	13	S1 HL-~1	Max	I	27.5	24.0	119.7	60.1	1735.4	273.2
					J	27.5	24.0	120.9	60.1	767.1	157.8
				Min	I	-70.9	-0.4	24.3	-59.5	-9951.8	-297.5
					J	-70.9	-0.4	25.4	-59.5	-10559.7	-429.0
601	13	13	S1 HL-~1	Max	I	26.0	23.2	122.7	59.9	704.7	269.3
					J	26.0	23.2	123.8	59.9	-233.5	158.0
				Min	I	-76.6	-1.1	25.8	-60.6	-10607.3	-295.5
					J	-76.6	-1.1	27.0	-60.6	-11254.5	-414.5
602	13	13	S1 HL-~1	Max	I	24.5	21.8	125.7	60.1	-312.8	269.1
					J	24.5	21.8	126.8	60.1	-1088.3	167.8
				Min	I	-82.7	-2.3	27.1	-61.8	-11307.1	-288.6
					J	-82.7	-2.3	28.2	-61.8	-11992.9	-390.2
603	13	13	S1 HL-~1	Max	I	23.0	20.1	128.7	60.6	-1168.4	282.8
					J	23.0	20.1	129.9	60.6	-1941.8	200.9
				Min	I	-89.1	-4.1	28.3	-63.9	-12051.0	-273.5
					J	-89.1	-4.1	29.4	-63.9	-12774.8	-346.0
604	13	13	S1 HL-~1	Max	I	21.2	24.7	132.1	62.0	-2015.7	315.2
					J	21.2	24.7	133.2	62.0	-2732.4	207.0
				Min	I	-95.6	-0.3	29.3	-61.2	-12838.6	-229.5
					J	-95.6	-0.3	30.4	-61.2	-13602.1	-364.2
605	13	13	S1 HL-~1	Max	I	19.6	21.8	135.2	62.1	-2792.8	310.5
					J	19.6	21.8	136.4	62.1	-3502.6	228.7
				Min	I	-102.8	-3.0	30.3	-62.3	-13672.9	-247.2
					J	-102.8	-3.0	31.4	-62.3	-14474.5	-341.6
606	13	13	S1 HL-~1	Max	I	18.1	19.0	138.4	62.3	-3542.3	323.0
					J	18.1	19.0	139.6	62.3	-4241.7	266.0
				Min	I	-110.2	-5.7	31.3	-63.2	-14553.6	-232.3
					J	-110.2	-5.7	32.4	-63.2	-15394.0	-296.2
607	13	13	S1 HL-~1	Max	I	16.7	16.3	141.8	62.2	-4287.6	353.2
					J	16.7	16.3	142.9	62.2	-4992.3	318.0
				Min	I	-117.8	-8.5	32.2	-63.9	-15482.6	-205.1
					J	-117.8	-8.5	33.3	-63.9	-16363.5	-245.9
608	13	13	S1 HL-~1	Max	I	15.6	14.2	145.6	61.7	-5043.8	402.0
					J	15.6	14.2	146.7	61.7	-5756.0	382.1
				Min	I	-125.4	-10.8	33.1	-64.6	-16461.6	-163.2
					J	-125.4	-10.8	34.2	-64.6	-17388.3	-184.0
609	13	13	S1 HL-~1	Max	I	14.9	16.4	150.9	60.5	-5809.3	465.5
					J	14.9	16.4	152.0	60.5	-6526.7	436.1
				Min	I	-132.9	-11.4	34.4	-65.4	-17488.8	-110.2
					J	-132.9	-11.4	35.5	-65.4	-18544.5	-173.5
610	13	13	S1 HL-~1	Max	I	15.1	26.4	160.6	66.6	-6578.3	505.6
					J	15.1	26.4	161.8	66.6	-7235.8	419.8
				Min	I	-139.6	-8.5	36.2	-61.8	-18555.3	-89.0
					J	-139.6	-8.5	37.3	-61.8	-20082.6	-359.8
611	13	13	S1 HL-~1	Max	I	21.7	8.7	-37.6	61.3	-7276.6	441.2
					J	21.7	8.7	-36.4	61.3	-6582.9	489.7
				Min	I	-153.7	-26.2	-161.7	-65.6	-20062.5	-335.6
					J	-153.7	-26.2	-160.6	-65.6	-18581.5	-109.2
612	13	13	S1 HL-~1	Max	I	19.4	11.5	-35.7	65.4	-6531.9	458.1
					J	19.4	11.5	-34.6	65.4	-5812.9	461.6
				Min	I	-146.6	-16.4	-152.0	-60.2	-18523.8	-165.9
					J	-146.6	-16.4	-150.8	-60.2	-17514.9	-115.4
613	13	13	S1 HL-~1	Max	I	19.1	10.9	-34.4	64.6	-5759.6	403.6
					J	19.1	10.9	-33.3	64.6	-5046.5	412.6
				Min	I	-138.9	-14.1	-146.7	-61.4	-17413.8	-179.9
					J	-138.9	-14.1	-145.5	-61.4	-16487.7	-167.8
614	13	13	S1 HL-~1	Max	I	19.9	8.6	-33.5	63.9	-4994.9	340.4
					J	19.9	8.6	-32.3	63.9	-4289.4	370.0
				Min	I	-131.0	-16.3	-142.8	-61.9	-16388.9	-247.9

				J	-131.0	-16.3	-141.7	-61.9	-15508.7	-209.3
615	13	13 S1 HL-~1	Max	I	21.3	5.8	-32.6	63.1	-4243.5	288.4
				J	21.3	5.8	-31.4	63.1	-3543.1	339.8
			Min	I	-123.1	-19.0	-139.5	-62.0	-15419.4	-303.8
				J	-123.1	-19.0	-138.4	-62.0	-14579.7	-238.0
616	13	13 S1 HL-~1	Max	I	23.1	3.2	-31.6	62.2	-3503.4	251.6
				J	23.1	3.2	-30.5	62.2	-2792.6	330.0
			Min	I	-115.3	-21.8	-136.3	-61.8	-14499.8	-349.3
				J	-115.3	-21.8	-135.2	-61.8	-13699.0	-253.0
617	13	13 S1 HL-~1	Max	I	25.1	0.4	-30.5	61.0	-2732.2	229.9
				J	25.1	0.4	-29.4	61.0	-2014.4	334.5
			Min	I	-107.8	-24.7	-133.1	-61.6	-13627.4	-371.9
				J	-107.8	-24.7	-132.0	-61.6	-12864.8	-235.1
618	13	13 S1 HL-~1	Max	I	27.5	4.7	-29.5	63.7	-1939.5	224.8
				J	27.5	4.7	-28.4	63.7	-1164.9	301.7
			Min	I	-100.9	-20.1	-129.8	-60.2	-12800.3	-353.7
				J	-100.9	-20.1	-128.7	-60.2	-12077.4	-278.9
619	13	13 S1 HL-~1	Max	I	29.6	2.8	-28.3	61.5	-1084.7	193.0
				J	29.6	2.8	-27.2	61.5	-304.5	288.4
			Min	I	-94.0	-21.9	-126.7	-59.7	-12018.5	-400.3
				J	-94.0	-21.9	-125.6	-59.7	-11333.8	-294.1
620	13	13 S1 HL-~1	Max	I	31.7	1.7	-27.0	60.3	-228.7	186.9
				J	31.7	1.7	-25.9	60.3	719.4	290.2
			Min	I	-87.5	-23.2	-123.7	-59.4	-11280.3	-425.2
				J	-87.5	-23.2	-122.6	-59.4	-10634.4	-301.0
621	13	13 S1 HL-~1	Max	I	33.6	1.0	-25.4	59.1	781.6	187.0
				J	33.6	1.0	-24.3	59.1	1752.3	294.1
			Min	I	-81.2	-24.1	-120.8	-59.6	-10585.7	-439.7
				J	-81.2	-24.1	-119.7	-59.6	-9979.1	-302.9
622	13	13 S1 HL-~1	Max	I	35.6	0.6	-23.9	57.9	1819.5	190.1
				J	35.6	0.6	-22.7	57.9	2790.4	299.0
			Min	I	-75.3	-24.6	-117.9	-59.5	-9935.0	-448.2
				J	-75.3	-24.6	-116.8	-59.5	-9368.4	-302.0
623	13	13 S1 HL-~1	Max	I	37.4	0.4	-22.3	56.7	2856.2	194.7
				J	37.4	0.4	-21.2	56.7	3826.7	304.2
			Min	I	-69.8	-24.8	-115.0	-59.2	-9327.5	-453.9
				J	-69.8	-24.8	-113.9	-59.2	-8800.6	-300.6
624	13	13 S1 HL-~1	Max	I	39.2	0.3	-20.8	55.5	3886.0	200.1
				J	39.2	0.3	-19.7	55.5	4877.9	308.6
			Min	I	-64.6	-24.9	-112.2	-58.7	-8761.2	-461.6
				J	-64.6	-24.9	-111.1	-58.7	-8272.7	-304.8
625	13	13 S1 HL-~1	Max	I	40.9	0.3	-19.3	54.4	4932.1	206.0
				J	40.9	0.3	-18.1	54.4	5911.9	312.8
			Min	I	-59.6	-24.9	-109.4	-58.0	-8233.1	-467.8
				J	-59.6	-24.9	-108.2	-58.0	-7778.7	-309.9
626	13	13 S1 HL-~1	Max	I	43.1	0.3	-17.4	53.4	5961.2	212.1
				J	43.1	0.3	-16.3	53.4	6917.6	316.5
			Min	I	-55.0	-24.8	-106.6	-57.1	-7738.0	-473.1
				J	-55.0	-24.8	-105.4	-57.1	-7307.9	-314.8
627	13	13 S1 HL-~1	Max	I	45.3	0.4	-15.6	52.3	6963.7	218.3
				J	45.3	0.4	-14.4	52.3	7886.1	319.8
			Min	I	-50.6	-24.6	-103.8	-56.1	-7267.5	-477.6
				J	-50.6	-24.6	-102.7	-56.1	-6851.6	-320.0
628	13	13 S1 HL-~1	Max	I	47.5	0.5	-13.7	51.1	7930.5	224.3
				J	47.5	0.5	-12.6	51.1	8815.9	323.1
			Min	I	-46.5	-24.5	-101.0	-54.9	-6812.7	-481.1
				J	-46.5	-24.5	-99.9	-54.9	-6408.7	-324.5
629	13	13 S1 HL-~1	Max	I	49.5	0.4	-11.9	49.8	8858.8	230.5
				J	49.5	0.4	-10.7	49.8	9709.0	326.9
			Min	I	-42.7	-24.5	-98.2	-53.6	-6371.3	-483.7
				J	-42.7	-24.5	-97.1	-53.6	-5978.9	-327.7
630	13	13 S1 HL-~1	Max	I	51.4	0.3	-10.0	48.4	9754.1	237.4

				J	51.4	0.3	-8.9	48.4	10571.2	332.0
			Min	I	-39.1	-24.6	-95.4	-52.1	-5942.9	-484.7
				J	-39.1	-24.6	-94.3	-52.1	-5562.1	-328.0
631	13	13 S1 HL-~1	Max	I	53.2	-0.1	-8.1	46.9	10614.8	245.9
				J	53.2	-0.1	-7.0	46.9	11395.4	340.2
			Min	I	-35.7	-25.0	-92.6	-50.6	-5527.4	-482.4
				J	-35.7	-25.0	-91.5	-50.6	-5158.1	-322.7
632	13	13 S1 HL-~1	Max	I	54.8	-1.0	-6.2	45.3	11436.5	257.8
				J	54.8	-1.0	-5.1	45.3	12180.9	354.6
			Min	I	-34.0	-25.8	-89.8	-49.1	-5124.8	-473.2
				J	-34.0	-25.8	-88.6	-49.1	-4767.0	-305.5
633	13	13 S1 HL-~1	Max	I	56.4	-2.0	-4.4	45.0	12218.0	277.1
				J	56.4	-2.0	-3.5	45.0	12697.0	351.1
			Min	I	-32.3	-27.0	-87.0	-57.0	-4734.9	-450.0
				J	-32.3	-27.0	-86.1	-57.0	-4473.8	-300.6
634	13	13 S1 HL-~1	Max	I	56.5	7.0	-3.3	80.7	12696.4	346.5
				J	56.5	7.0	-3.0	80.7	12922.7	360.3
			Min	I	-32.4	-18.0	-85.7	-38.5	-4474.0	-298.3
				J	-32.4	-18.0	-85.4	-38.5	-4388.9	-290.6
635	13	13 S1 HL-~1	Max	I	57.9	6.3	-2.4	45.0	12955.8	290.0
				J	57.9	6.3	-1.3	45.0	13615.9	338.5
			Min	I	-30.8	-17.8	-83.9	-43.3	-4358.2	-424.5
				J	-30.8	-17.8	-82.7	-43.3	-4024.0	-328.8
636	13	13 S1 HL-~1	Max	I	59.2	4.9	-0.5	42.7	13645.9	274.8
				J	59.2	4.9	0.6	42.7	14266.4	326.8
			Min	I	-29.3	-18.5	-81.1	-42.0	-3994.7	-454.8
				J	-29.3	-18.5	-80.0	-42.0	-3671.8	-346.6
637	13	13 S1 HL-~1	Max	I	60.3	4.3	1.4	41.4	14294.1	267.7
				J	60.3	4.3	2.6	41.4	14877.2	319.9
			Min	I	-27.8	-18.6	-78.4	-40.2	-3643.5	-467.3
				J	-27.8	-18.6	-77.3	-40.2	-3331.8	-355.2
638	13	13 S1 HL-~1	Max	I	61.5	4.0	3.3	40.1	14903.1	265.0
				J	61.5	4.0	4.5	40.1	15446.4	315.4
			Min	I	-26.3	-18.6	-75.7	-38.4	-3304.7	-471.5
				J	-26.3	-18.6	-74.6	-38.4	-3004.2	-359.4
639	13	13 S1 HL-~1	Max	I	63.5	4.1	5.3	39.0	15471.4	265.0
				J	63.5	4.1	6.4	39.0	15976.4	311.7
			Min	I	-24.9	-18.4	-73.0	-36.5	-2978.1	-471.0
				J	-24.9	-18.4	-71.9	-36.5	-2688.6	-361.6
640	13	13 S1 HL-~1	Max	I	65.5	4.2	7.2	37.8	15999.0	266.0
				J	65.5	4.2	8.3	37.8	16466.3	308.5
			Min	I	-23.5	-18.1	-70.4	-34.6	-2663.5	-468.5
				J	-23.5	-18.1	-69.3	-34.6	-2385.1	-363.2
641	13	13 S1 HL-~1	Max	I	67.3	4.5	9.2	36.7	16487.9	267.4
				J	67.3	4.5	10.3	36.7	16915.3	305.3
			Min	I	-22.2	-17.7	-67.7	-33.2	-2361.0	-464.7
				J	-22.2	-17.7	-66.6	-33.2	-2093.5	-365.0
642	13	13 S1 HL-~1	Max	I	69.0	4.8	11.2	35.7	16935.7	268.8
				J	69.0	4.8	12.3	35.7	17325.7	302.1
			Min	I	-20.8	-17.3	-65.1	-32.1	-2070.3	-460.3
				J	-20.8	-17.3	-64.0	-32.1	-1813.8	-368.4
643	13	13 S1 HL-~1	Max	I	70.6	5.1	13.2	34.7	17344.1	270.3
				J	70.6	5.1	14.4	34.7	17693.5	298.9
			Min	I	-19.5	-16.8	-62.5	-31.1	-1791.6	-457.8
				J	-19.5	-16.8	-61.4	-31.1	-1545.9	-371.9
644	13	13 S1 HL-~1	Max	I	72.0	5.4	15.3	33.8	17711.2	271.9
				J	72.0	5.4	16.4	33.8	18021.7	295.8
			Min	I	-18.3	-16.4	-59.9	-30.8	-1524.6	-455.5
				J	-18.3	-16.4	-58.7	-30.8	-1289.8	-375.0
645	13	13 S1 HL-~1	Max	I	73.5	5.7	17.3	32.9	18037.3	273.4
				J	73.5	5.7	18.4	32.9	18306.8	293.1
			Min	I	-17.1	-16.0	-57.3	-31.1	-1269.4	-453.3
				J	-17.1	-16.0	-56.1	-31.1	-1045.4	-377.4

646	13	13 S1 HL-~1	Max	I	74.9	5.8	19.4	32.0	18321.9	275.5
				J	74.9	5.8	20.5	32.0	18553.0	292.1
			Min	I	-15.9	-15.8	-54.6	-31.4	-1025.8	-450.7
				J	-15.9	-15.8	-53.5	-31.4	-812.7	-378.1
647	13	13 S1 HL-~1	Max	I	76.1	5.6	21.5	31.1	18567.1	278.5
				J	76.1	5.6	22.6	31.1	18756.1	294.9
			Min	I	-14.7	-15.8	-51.9	-31.9	-794.0	-446.5
				J	-14.7	-15.8	-50.8	-31.9	-591.6	-375.4
648	13	13 S1 HL-~1	Max	I	77.1	5.1	23.6	30.3	18769.5	283.6
				J	77.1	5.1	24.7	30.3	18917.6	302.2
			Min	I	-13.6	-16.0	-49.3	-32.4	-573.8	-439.0
				J	-13.6	-16.0	-48.1	-32.4	-382.3	-366.0
649	13	13 S1 HL-~1	Max	I	77.9	4.2	25.7	28.8	18928.7	293.3
				J	77.9	4.2	26.8	28.8	19046.6	317.7
			Min	I	-12.5	-16.8	-46.6	-33.8	-365.3	-423.8
				J	-12.5	-16.8	-45.5	-33.8	-184.6	-342.5
650	13	13 S1 HL-~1	Max	I	78.5	4.1	27.7	27.7	19063.1	316.2
				J	78.5	4.1	28.3	27.7	19073.1	326.7
			Min	I	-11.5	-17.7	-44.0	-60.7	-168.6	-391.8
				J	-11.5	-17.7	-43.4	-60.7	-81.9	-319.8
651	13	13 S1 HL-~1	Max	I	78.4	13.7	28.5	61.1	19073.2	327.6
				J	78.4	13.7	29.1	61.1	19168.7	312.3
			Min	I	-11.4	-9.1	-43.0	-28.4	-82.0	-320.9
				J	-11.4	-9.1	-42.5	-28.4	0.7	-348.9
652	13	13 S1 HL-~1	Max	I	78.9	12.6	30.0	32.7	19180.4	321.4
				J	78.9	12.6	31.1	32.7	19240.4	287.3
			Min	I	-10.4	-8.8	-41.1	-30.5	15.8	-385.0
				J	-10.4	-8.8	-39.9	-30.5	173.9	-378.6
653	13	13 S1 HL-~1	Max	I	79.1	11.7	32.2	31.5	19249.7	304.1
				J	79.1	11.7	33.3	31.5	19269.4	272.3
			Min	I	-9.5	-9.2	-38.5	-32.2	188.0	-406.3
				J	-9.5	-9.2	-37.4	-32.2	335.4	-392.0
654	13	13 S1 HL-~1	Max	I	79.2	11.4	34.4	31.0	19276.6	295.3
				J	79.2	11.4	35.5	31.0	19253.5	262.6
			Min	I	-8.5	-9.1	-35.9	-33.3	348.7	-413.6
				J	-8.5	-9.1	-34.8	-33.3	485.4	-397.7
655	13	13 S1 HL-~1	Max	I	79.1	11.4	36.6	31.1	19259.5	290.9
				J	79.1	11.4	37.7	31.1	19196.6	255.3
			Min	I	-7.6	-9.0	-33.6	-34.4	497.9	-414.0
				J	-7.6	-9.0	-32.4	-34.4	623.8	-399.9
656	13	13 S1 HL-~1	Max	I	78.9	11.6	38.9	31.7	19201.4	288.7
				J	78.9	11.6	40.0	31.7	19095.6	249.1
			Min	I	-6.8	-8.7	-31.4	-35.4	635.6	-410.9
				J	-6.8	-8.7	-30.3	-35.4	750.8	-401.0
657	13	13 S1 HL-~1	Max	I	78.4	12.0	41.3	32.8	19098.4	287.5
				J	78.4	12.0	42.5	32.8	18951.9	243.2
			Min	I	-6.0	-8.3	-29.2	-36.6	761.9	-406.3
				J	-6.0	-8.3	-28.1	-36.6	866.4	-401.6
658	13	13 S1 HL-~1	Max	I	77.8	12.4	43.8	34.0	18954.0	286.8
				J	77.8	12.4	44.9	34.0	18764.5	237.3
			Min	I	-5.2	-7.9	-27.0	-37.7	876.7	-401.3
				J	-5.2	-7.9	-25.9	-37.7	970.7	-401.9
659	13	13 S1 HL-~1	Max	I	77.0	12.8	46.2	36.2	18764.4	285.9
				J	77.0	12.8	47.4	36.2	18532.5	231.4
			Min	I	-4.5	-7.5	-25.0	-39.0	980.2	-395.9
				J	-4.5	-7.5	-23.8	-39.0	1063.5	-402.5
660	13	13 S1 HL-~1	Max	I	76.2	13.3	48.7	38.4	18531.5	284.9
				J	76.2	13.3	49.8	38.4	18256.7	225.2
			Min	I	-3.8	-7.0	-22.9	-40.5	1072.3	-390.5
				J	-3.8	-7.0	-21.8	-40.5	1145.0	-403.3
661	13	13 S1 HL-~1	Max	I	75.3	13.8	51.2	40.7	18252.9	283.8
				J	75.3	13.8	52.3	40.7	17934.7	218.9

			Min	I	-3.2	-6.6	-20.9	-42.0	1153.0	-385.3
				J	-3.2	-6.6	-19.7	-42.0	1215.0	-403.9
662	13	13 S1 HL-~1	Max	I	74.1	14.1	53.7	42.9	17930.0	282.4
				J	74.1	14.1	54.9	42.9	17567.6	212.8
			Min	I	-2.7	-6.3	-18.8	-43.6	1222.4	-380.2
				J	-2.7	-6.3	-17.7	-43.6	1273.7	-403.4
663	13	13 S1 HL-~1	Max	I	72.8	14.3	56.3	45.2	17559.6	281.1
				J	72.8	14.3	57.4	45.2	17185.1	207.4
			Min	I	-2.1	-6.2	-16.8	-45.2	1280.3	-374.3
				J	-2.1	-6.2	-15.6	-45.2	1321.0	-400.9
664	13	13 S1 HL-~1	Max	I	71.3	14.3	58.9	47.4	17178.8	280.6
				J	71.3	14.3	60.1	47.4	16762.3	203.8
			Min	I	-1.6	-6.2	-14.7	-46.9	1326.9	-366.7
				J	-1.6	-6.2	-13.5	-46.9	1356.8	-394.1
665	13	13 S1 HL-~1	Max	I	69.5	13.8	61.6	49.6	16754.1	282.0
				J	69.5	13.8	62.7	49.6	16295.4	204.4
			Min	I	-1.2	-6.7	-12.6	-48.6	1362.0	-354.7
				J	-1.2	-6.7	-11.4	-48.6	1381.1	-379.0
666	13	13 S1 HL-~1	Max	I	67.5	12.9	64.3	51.3	16284.2	288.7
				J	67.5	12.9	65.5	51.3	15776.8	213.3
			Min	I	-0.8	-8.0	-10.4	-51.2	1385.5	-333.3
				J	-0.8	-8.0	-9.3	-51.2	1393.9	-346.2
667	13	13 S1 HL-~1	Max	I	65.5	13.4	67.0	45.7	15761.9	305.1
				J	65.5	13.4	67.3	45.7	15568.6	284.0
			Min	I	-0.4	-8.6	-8.4	-84.6	1397.4	-291.2
				J	-0.4	-8.6	-8.1	-84.6	1398.1	-278.4
668	13	13 S1 HL-~1	Max	I	65.6	23.3	67.7	63.1	15569.3	291.7
				J	65.6	23.3	68.5	63.1	15203.1	193.0
			Min	I	-0.3	-2.6	-8.0	-53.9	1398.1	-282.8
				J	-0.3	-2.6	-7.1	-53.9	1394.4	-370.7
669	13	13 S1 HL-~1	Max	I	63.4	22.2	70.2	58.3	15184.5	293.7
				J	63.4	22.2	71.4	58.3	14576.3	163.3
			Min	I	-0.0	-2.0	-6.1	-54.3	1396.9	-303.5
				J	-0.0	-2.0	-5.0	-54.3	1383.0	-392.0
670	13	13 S1 HL-~1	Max	I	60.9	21.5	73.1	60.1	14554.7	269.7
				J	60.9	21.5	74.2	60.1	13896.6	141.4
			Min	I	0.3	-1.5	-4.6	-56.2	1384.6	-316.9
				J	0.3	-1.5	-3.4	-56.2	1359.9	-399.8
671	13	13 S1 HL-~1	Max	I	58.2	21.3	76.0	62.0	13873.2	251.9
				J	58.2	21.3	77.1	62.0	13169.5	122.6
			Min	I	0.5	-1.7	-3.0	-58.0	1360.8	-319.0
				J	0.5	-1.7	-1.9	-58.0	1325.3	-401.9
672	13	13 S1 HL-~1	Max	I	55.3	21.3	78.9	63.8	13141.9	236.5
				J	55.3	21.3	80.0	63.8	12388.5	104.9
			Min	I	0.7	-1.8	-1.5	-59.8	1325.5	-315.3
				J	0.7	-1.8	-0.3	-59.8	1279.2	-400.7
673	13	13 S1 HL-~1	Max	I	52.1	21.5	81.8	65.5	12359.0	225.1
				J	52.1	21.5	82.9	65.5	11558.0	87.4
			Min	I	0.8	-1.8	0.1	-61.5	1278.6	-308.8
				J	0.8	-1.8	1.2	-61.5	1221.6	-397.5
674	13	13 S1 HL-~1	Max	I	48.6	21.7	84.7	67.1	11524.2	215.9
				J	48.6	21.7	85.8	67.1	10672.1	70.1
			Min	I	0.9	-1.7	1.7	-63.0	1220.2	-300.5
				J	0.9	-1.7	2.8	-63.0	1152.4	-400.2
675	13	13 S1 HL-~1	Max	I	44.8	21.9	87.6	68.6	10635.4	208.5
				J	44.8	21.9	88.8	68.6	9733.8	53.9
			Min	I	1.0	-1.6	3.3	-64.5	1150.3	-291.0
				J	1.0	-1.6	4.4	-64.5	1071.8	-403.0
676	13	13 S1 HL-~1	Max	I	40.7	22.0	90.6	69.8	9693.0	201.4
				J	40.7	22.0	91.7	69.8	8738.5	40.9
			Min	I	1.0	-1.6	4.9	-65.8	1068.9	-288.2
				J	1.0	-1.6	6.0	-65.8	978.6	-404.7

677	13	13 S1 HL-~1	Max	I	36.4	22.0	93.6	70.9	8693.3	195.3
				J	36.4	22.0	94.8	70.9	7685.4	34.4
			Min	I	1.0	-1.6	6.5	-66.9	975.8	-288.5
				J	1.0	-1.6	7.7	-66.9	873.3	-402.8
678	13	13 S1 HL-~1	Max	I	31.6	21.6	96.7	71.8	7636.2	191.5
				J	31.6	21.6	97.9	71.8	6573.6	31.4
			Min	I	0.9	-1.9	8.2	-67.9	871.1	-287.5
				J	0.9	-1.9	9.4	-67.9	756.3	-396.2
679	13	13 S1 HL-~1	Max	I	26.6	21.0	99.9	72.4	6519.4	191.2
				J	26.6	21.0	101.0	72.4	5399.2	33.2
			Min	I	0.8	-2.6	9.3	-68.7	754.7	-282.8
				J	0.8	-2.6	10.4	-68.7	627.4	-380.0
680	13	13 S1 HL-~1	Max	I	21.3	20.1	103.2	72.6	5340.2	195.4
				J	21.3	20.1	104.3	72.6	4159.4	39.0
			Min	I	0.7	-3.6	10.3	-69.9	626.5	-270.6
				J	0.7	-3.6	11.4	-69.9	486.4	-349.0
681	13	13 S1 HL-~1	Max	I	15.8	19.2	107.0	71.9	4097.6	204.6
				J	15.8	19.2	108.1	71.9	2849.6	42.7
			Min	I	0.4	-5.0	11.3	-71.6	486.2	-245.3
				J	0.4	-5.0	12.4	-71.6	332.8	-304.7
682	13	13 S1 HL-~1	Max	I	10.2	21.2	111.9	69.5	2791.8	209.3
				J	10.2	21.2	113.0	69.5	1472.0	22.0
			Min	I	0.2	-6.1	12.3	-72.5	333.9	-199.1
				J	0.2	-6.1	13.4	-72.5	165.3	-238.8
683	13	13 S1 HL-~1	Max	I	4.8	29.3	121.3	70.0	1426.8	174.1
				J	4.8	29.3	122.4	70.0	291.5	-6.1
			Min	I	-0.1	-7.0	13.4	-70.5	171.8	-128.4
				J	-0.1	-7.0	14.5	-70.5	-291.6	-202.9

BEAM ELEMENT FORCES & MOMENTS MIN/MAX SUMMARY BY PROPERTY PRINTOUT   Unit System : kips , in

* LENGTH : the length between two nodes

[SECTION NAME : W27X146 , SECTION ID : 13]

** MAX

ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-z	TORSION	MOMENT-y	MOMENT-z	LENGTH
654	AXL	S1 HL-~1	1	I	79.2	11.4	34.4	31.0	19276.6	295.3	12.00
683	SHY	S1 HL-~1	1	I	4.8	29.3	121.3	70.0	1426.8	174.1	12.00
610	SHZ	S1 HL-~1	1	J	15.1	26.4	161.8	66.6	-7235.8	419.8	12.00
554	TOR	S1 HL-~1	1	I	63.8	8.6	8.2	84.4	15548.2	281.9	3.00
654	MTY	S1 HL-~1	1	I	79.2	11.4	34.4	31.0	19276.6	295.3	12.00
610	MTZ	S1 HL-~1	1	I	15.1	26.4	160.6	66.6	-6578.3	505.6	12.00

** MIN

ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-z	TORSION	MOMENT-y	MOMENT-z	LENGTH
611	AXL	S1 HL-~1	1	I	-153.7	-26.2	-161.7	-65.6	-20062.5	-335.6	12.00
538	SHY	S1 HL-~1	1	I	-0.7	-35.2	-118.6	-72.8	-274.2	-222.7	12.00
611	SHZ	S1 HL-~1	1	I	-153.7	-26.2	-161.7	-65.6	-20062.5	-335.6	12.00
667	TOR	S1 HL-~1	1	I	-0.4	-8.6	-8.4	-84.6	1397.4	-291.2	3.00
610	MTY	S1 HL-~1	1	J	-139.6	-8.5	37.3	-61.8	-20082.6	-359.8	12.00
630	MTZ	S1 HL-~1	1	I	-39.1	-24.6	-95.4	-52.1	-5942.9	-484.7	12.00

BEAM ELEMENT STRESSES DEFAULT PRINTOUT   Unit System : kips , in

ELEM	MAT	SEC	LC	PT	AXIAL	SHEAR-y	SHEAR-z	(+y)-BENDING-(-y)		(+z)-BENDING-(-z)	
538	13	13	S1 HL-~1 Max	I	0.0	0.0	0.0	0.1	-0.0	0.1	0.6
				J	0.0	0.0	0.0	0.0	0.1	-0.1	2.6
			Min	I	-0.0	0.0	0.0	0.0	-0.1	-0.1	-0.5
				J	-0.0	0.0	0.0	-0.1	-0.0	-0.6	0.2
539	13	13	S1 HL-~1 Max	I	0.1	0.0	0.0	0.1	0.0	-0.1	2.7
				J	0.1	0.0	0.0	0.1	0.1	-0.1	5.2
			Min	I	-0.0	0.0	0.0	-0.0	-0.1	-0.6	0.3
				J	-0.0	0.0	0.0	-0.1	-0.1	-1.2	0.5
540	13	13	S1 HL-~1 Max	I	0.2	0.0	0.0	0.1	0.1	-0.1	5.3
				J	0.2	0.0	0.0	0.1	0.1	-0.2	7.6
			Min	I	-0.0	0.0	0.0	-0.1	-0.1	-1.2	0.5
				J	-0.0	0.0	0.0	-0.1	-0.1	-1.8	0.8
541	13	13	S1 HL-~1 Max	I	0.2	0.0	0.0	0.2	0.1	-0.2	7.8
				J	0.2	0.0	0.0	0.1	0.1	-0.2	10.0
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-1.8	0.8
				J	-0.0	0.0	0.0	-0.1	-0.1	-2.3	1.1
542	13	13	S1 HL-~1 Max	I	0.3	0.0	0.0	0.2	0.0	-0.3	10.1
				J	0.3	0.0	0.0	0.1	0.1	-0.3	12.2
			Min	I	-0.0	0.0	0.0	-0.0	-0.2	-2.3	1.1
				J	-0.0	0.0	0.0	-0.1	-0.1	-2.8	1.3
543	13	13	S1 HL-~1 Max	I	0.3	0.0	0.0	0.2	0.0	-0.3	12.3
				J	0.3	0.0	0.0	0.1	0.1	-0.4	14.3
			Min	I	-0.0	0.0	0.0	-0.0	-0.2	-2.8	1.4
				J	-0.0	0.0	0.0	-0.1	-0.1	-3.3	1.6
544	13	13	S1 HL-~1 Max	I	0.4	0.0	0.0	0.2	0.0	-0.4	14.4
				J	0.4	0.0	0.0	0.1	0.1	-0.4	16.3
			Min	I	-0.0	0.0	0.0	-0.0	-0.2	-3.3	1.6
				J	-0.0	0.0	0.0	-0.1	-0.1	-3.7	1.8
545	13	13	S1 HL-~1 Max	I	0.4	0.0	0.0	0.2	0.0	-0.4	16.4
				J	0.4	0.0	0.0	0.1	0.1	-0.5	18.2
			Min	I	-0.0	0.0	0.0	-0.0	-0.2	-3.8	1.8
				J	-0.0	0.0	0.0	-0.1	-0.1	-4.2	2.0

546	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.0	-0.5	18.3
				J	0.5	0.0	0.0	0.1	0.1	-0.5	19.9
			Min	I	-0.0	0.0	0.0	-0.0	-0.2	-4.2	2.0
				J	-0.0	0.0	0.0	-0.1	-0.1	-4.6	2.1
547	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.0	-0.5	20.0
				J	0.5	0.0	0.0	0.2	0.1	-0.5	21.6
			Min	I	-0.0	0.0	0.0	-0.0	-0.2	-4.6	2.1
				J	-0.0	0.0	0.0	-0.1	-0.2	-5.0	2.3
548	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.0	-0.5	21.7
				J	0.6	0.0	0.0	0.2	0.1	-0.5	23.2
			Min	I	0.0	0.0	0.0	-0.0	-0.2	-5.0	2.3
				J	0.0	0.0	0.0	-0.1	-0.2	-5.3	2.4
549	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	-0.5	23.2
				J	0.6	0.0	0.0	0.2	0.1	-0.6	24.7
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-5.3	2.4
				J	0.0	0.0	0.0	-0.1	-0.2	-5.7	2.5
550	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	-0.6	24.7
				J	0.6	0.0	0.0	0.2	0.1	-0.6	26.0
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-5.7	2.5
				J	0.0	0.0	0.0	-0.1	-0.2	-6.0	2.6
551	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	-0.6	26.1
				J	0.7	0.0	0.0	0.2	0.1	-0.6	27.3
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-6.0	2.6
				J	0.0	0.0	0.0	-0.1	-0.2	-6.3	2.6
552	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	-0.6	27.4
				J	0.7	0.0	0.0	0.2	0.1	-0.6	28.5
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-6.3	2.6
				J	0.0	0.0	0.0	-0.1	-0.2	-6.5	2.6
553	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	-0.6	28.5
				J	0.7	0.0	0.0	0.1	0.1	-0.6	29.2
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-6.5	2.6
				J	0.0	0.0	0.0	-0.1	-0.1	-6.7	2.6
554	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.1	0.1	-0.6	29.2
				J	0.7	0.0	0.0	0.1	0.2	-0.6	29.6
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-6.7	2.6
				J	0.0	0.0	0.0	-0.2	-0.1	-6.8	2.6
555	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	-0.6	29.6
				J	0.7	0.0	0.0	0.2	0.1	-0.6	30.6
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-6.8	2.6
				J	0.0	0.0	0.0	-0.1	-0.2	-7.0	2.6
556	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	30.6
				J	0.8	0.0	0.0	0.2	0.1	-0.6	31.4
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-7.0	2.6
				J	0.0	0.0	0.0	-0.1	-0.2	-7.2	2.6
557	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	31.5
				J	0.8	0.0	0.0	0.2	0.1	-0.6	32.2
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-7.2	2.6
				J	0.0	0.0	0.0	-0.1	-0.2	-7.4	2.5
558	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	32.3
				J	0.8	0.0	0.0	0.2	0.1	-0.6	33.0
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-7.4	2.5
				J	0.0	0.0	0.0	-0.1	-0.2	-7.6	2.4
559	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	33.0
				J	0.8	0.0	0.0	0.2	0.1	-0.5	33.7
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.6	2.4
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.7	2.3
560	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.5	33.7
				J	0.8	0.0	0.0	0.2	0.1	-0.5	34.3
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.7	2.3
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.9	2.2
561	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.5	34.3
				J	0.8	0.0	0.0	0.2	0.1	-0.5	34.8

			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.9	2.2
				J	-0.0	0.0	0.0	-0.1	-0.2	-8.0	2.0
562	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.5	34.8
				J	0.9	0.0	0.0	0.2	0.1	-0.4	35.2
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-8.0	2.0
				J	-0.0	0.0	0.0	-0.1	-0.2	-8.1	1.9
563	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.4	35.2
				J	0.9	0.0	0.0	0.2	0.1	-0.4	35.6
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-8.1	1.9
				J	-0.0	0.0	0.0	-0.1	-0.2	-8.2	1.7
564	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.4	35.6
				J	0.9	0.0	0.0	0.2	0.1	-0.3	35.9
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-8.2	1.7
				J	-0.0	0.0	0.0	-0.1	-0.2	-8.2	1.5
565	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.3	35.8
				J	0.9	0.0	0.0	0.2	0.1	-0.3	36.0
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-8.2	1.4
				J	-0.0	0.0	0.0	-0.1	-0.2	-8.3	1.2
566	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.3	36.0
				J	0.9	0.0	0.0	0.2	0.1	-0.2	36.2
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-8.3	1.2
				J	-0.0	0.0	0.0	-0.1	-0.2	-8.3	1.0
567	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.2	36.1
				J	0.9	0.0	0.0	0.2	0.1	-0.2	36.2
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.9
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.7
568	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.2	36.2
				J	0.9	0.0	0.0	0.2	0.1	-0.1	36.1
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.7
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.4
569	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.1	36.1
				J	0.9	0.0	0.0	0.2	0.2	-0.0	36.0
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.4
				J	-0.1	0.0	0.0	-0.2	-0.2	-8.3	0.1
570	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	-0.0	36.0
				J	0.9	0.0	0.0	0.2	0.2	0.0	35.8
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.2	0.0
				J	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.1
571	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	0.0	35.8
				J	0.9	0.0	0.0	0.2	0.2	0.1	35.8
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.1
				J	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.3
572	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	0.1	35.7
				J	0.9	0.0	0.0	0.2	0.1	0.1	35.5
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.3
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.1	-0.6
573	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	0.2	35.5
				J	0.9	0.0	0.0	0.2	0.1	0.2	35.2
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.1	-0.7
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.1	-1.0
574	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.2	35.2
				J	0.8	0.0	0.0	0.2	0.1	0.3	34.8
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.1	-1.1
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.0	-1.4
575	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.3	34.8
				J	0.8	0.0	0.0	0.2	0.1	0.4	34.4
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.0	-1.5
				J	-0.1	0.0	0.0	-0.1	-0.2	-7.9	-1.9
576	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.4	34.4
				J	0.8	0.0	0.0	0.2	0.1	0.5	33.8
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-7.9	-1.9
				J	-0.1	0.0	0.0	-0.1	-0.2	-7.8	-2.3

577	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.5	33.8
				J	0.8	0.0	0.0	0.2	0.1	0.6	33.2
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-7.7	-2.4
				J	-0.1	0.0	0.0	-0.1	-0.2	-7.6	-2.8
578	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.7	33.2
				J	0.8	0.0	0.0	0.2	0.1	0.8	32.5
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.6	-2.9
				J	-0.2	0.0	0.0	-0.1	-0.2	-7.5	-3.3
579	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.8	32.5
				J	0.8	0.0	0.0	0.2	0.1	0.9	31.8
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.4	-3.4
				J	-0.2	0.0	0.0	-0.1	-0.2	-7.3	-3.8
580	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	0.9	31.7
				J	0.7	0.0	0.0	0.2	0.1	1.0	30.9
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.3	-3.9
				J	-0.2	0.0	0.0	-0.1	-0.2	-7.1	-4.4
581	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.0	30.9
				J	0.7	0.0	0.0	0.2	0.1	1.1	30.0
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.1	-4.4
				J	-0.2	0.0	0.0	-0.1	-0.2	-6.9	-5.0
582	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.1	30.0
				J	0.7	0.0	0.0	0.2	0.1	1.3	29.0
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-6.9	-5.0
				J	-0.2	0.0	0.0	-0.1	-0.2	-6.7	-5.5
583	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.2	1.3	29.0
				J	0.7	0.0	0.0	0.2	0.1	1.4	27.9
			Min	I	-0.2	0.0	0.0	-0.2	-0.2	-6.6	-5.6
				J	-0.2	0.0	0.0	-0.1	-0.2	-6.4	-6.2
584	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.2	1.4	27.9
				J	0.7	0.0	0.0	0.2	0.1	1.6	26.8
			Min	I	-0.2	0.0	0.0	-0.2	-0.2	-6.4	-6.2
				J	-0.2	0.0	0.0	-0.1	-0.2	-6.1	-6.8
585	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.2	1.6	26.8
				J	0.6	0.0	0.0	0.2	0.1	1.7	25.6
			Min	I	-0.3	0.0	0.0	-0.2	-0.2	-6.1	-6.8
				J	-0.3	0.0	0.0	-0.1	-0.2	-5.9	-7.4
586	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.2	1.7	25.5
				J	0.6	0.0	0.0	0.2	0.1	1.9	24.3
			Min	I	-0.3	0.0	0.0	-0.2	-0.2	-5.9	-7.5
				J	-0.3	0.0	0.0	-0.1	-0.2	-5.6	-8.1
587	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.1	0.2	1.9	24.2
				J	0.6	0.0	0.0	0.1	0.2	1.9	23.8
			Min	I	-0.3	0.0	0.0	-0.2	-0.1	-5.6	-8.2
				J	-0.3	0.0	0.0	-0.2	-0.1	-5.5	-8.3
588	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.1	0.2	1.9	23.8
				J	0.6	0.0	0.0	0.2	0.1	2.0	22.9
			Min	I	-0.3	0.0	0.0	-0.2	-0.1	-5.5	-8.3
				J	-0.3	0.0	0.0	-0.1	-0.2	-5.2	-8.8
589	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.1	0.2	2.0	22.8
				J	0.6	0.0	0.0	0.2	0.1	2.2	21.4
			Min	I	-0.3	0.0	0.0	-0.2	-0.1	-5.2	-8.9
				J	-0.3	0.0	0.0	-0.1	-0.2	-4.9	-9.6
590	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.2	2.2	21.4
				J	0.6	0.0	0.0	0.2	0.1	2.4	19.9
			Min	I	-0.4	0.0	0.0	-0.2	-0.2	-4.9	-9.6
				J	-0.4	0.0	0.0	-0.1	-0.2	-4.6	-10.3
591	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.2	2.4	19.8
				J	0.5	0.0	0.0	0.2	0.1	2.5	18.3
			Min	I	-0.4	0.0	0.0	-0.2	-0.2	-4.5	-10.4
				J	-0.4	0.0	0.0	-0.1	-0.2	-4.2	-11.1
592	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.2	2.6	18.2
				J	0.5	0.0	0.0	0.2	0.1	2.7	16.6
			Min	I	-0.4	0.0	0.0	-0.2	-0.2	-4.2	-11.2

				J	-0.4	0.0	0.0	-0.1	-0.2	-3.8	-11.9
593	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.2	2.7	16.5
				J	0.5	0.0	0.0	0.2	0.1	2.9	14.8
			Min	I	-0.5	0.0	0.0	-0.2	-0.2	-3.8	-12.0
				J	-0.5	0.0	0.0	-0.1	-0.2	-3.4	-12.7
594	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.2	2.9	14.8
				J	0.5	0.0	0.0	0.2	0.1	3.1	13.0
			Min	I	-0.5	0.0	0.0	-0.2	-0.2	-3.4	-12.8
				J	-0.5	0.0	0.0	-0.1	-0.2	-3.0	-13.6
595	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.2	0.1	3.1	12.9
				J	0.4	0.0	0.0	0.2	0.1	3.3	11.1
			Min	I	-0.5	0.0	0.0	-0.1	-0.2	-3.0	-13.7
				J	-0.5	0.0	0.0	-0.1	-0.2	-2.6	-14.5
596	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.2	0.1	3.3	11.0
				J	0.4	0.0	0.0	0.2	0.1	3.5	9.2
			Min	I	-0.6	0.0	0.0	-0.1	-0.2	-2.5	-14.6
				J	-0.6	0.0	0.0	-0.1	-0.2	-2.1	-15.4
597	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.1	0.1	3.5	9.1
				J	0.4	0.0	0.0	0.2	0.1	3.8	7.3
			Min	I	-0.6	0.0	0.0	-0.1	-0.1	-2.1	-15.5
				J	-0.6	0.0	0.0	-0.1	-0.2	-1.7	-16.4
598	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.1	0.1	3.8	7.1
				J	0.3	0.0	0.0	0.2	0.1	4.0	5.3
			Min	I	-0.7	0.0	0.0	-0.1	-0.1	-1.6	-16.5
				J	-0.7	0.0	0.0	-0.1	-0.2	-1.2	-17.5
599	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.1	0.1	4.0	5.2
				J	0.3	0.0	0.0	0.2	0.1	4.3	3.4
			Min	I	-0.7	0.0	0.0	-0.1	-0.1	-1.2	-17.6
				J	-0.7	0.0	0.0	-0.1	-0.2	-0.8	-18.6
600	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.1	0.1	4.3	3.3
				J	0.3	0.0	0.0	0.2	0.1	4.5	1.4
			Min	I	-0.8	0.0	0.0	-0.1	-0.1	-0.7	-18.7
				J	-0.8	0.0	0.0	-0.1	-0.2	-0.3	-19.8
601	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.1	0.1	4.6	1.3
				J	0.3	0.0	0.0	0.2	0.1	4.8	-0.4
			Min	I	-0.9	0.0	0.0	-0.1	-0.1	-0.3	-19.9
				J	-0.9	0.0	0.0	-0.1	-0.2	0.1	-21.2
602	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.1	0.1	4.9	-0.6
				J	0.3	0.0	0.0	0.2	0.1	5.2	-2.0
			Min	I	-0.9	0.0	0.0	-0.1	-0.1	0.1	-21.3
				J	-0.9	0.0	0.0	-0.1	-0.2	0.5	-22.5
603	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.1	0.1	5.2	-2.2
				J	0.3	0.0	0.0	0.2	0.1	5.5	-3.6
			Min	I	-1.0	0.0	0.0	-0.1	-0.1	0.5	-22.6
				J	-1.0	0.0	0.0	-0.1	-0.2	0.8	-24.0
604	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	5.5	-3.8
				J	0.2	0.0	0.0	0.2	0.1	5.9	-5.1
			Min	I	-1.1	0.0	0.0	-0.2	-0.1	0.9	-24.1
				J	-1.1	0.0	0.0	-0.1	-0.2	1.2	-25.6
605	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	5.9	-5.2
				J	0.2	0.0	0.0	0.2	0.1	6.2	-6.6
			Min	I	-1.2	0.0	0.0	-0.2	-0.1	1.2	-25.7
				J	-1.2	0.0	0.0	-0.1	-0.2	1.5	-27.2
606	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	6.3	-6.7
				J	0.2	0.0	0.0	0.1	0.1	6.6	-8.0
			Min	I	-1.3	0.0	0.0	-0.2	-0.1	1.5	-27.4
				J	-1.3	0.0	0.0	-0.1	-0.1	1.8	-28.9
607	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	6.7	-8.1
				J	0.2	0.0	0.0	0.1	0.2	7.0	-9.4
			Min	I	-1.3	0.0	0.0	-0.2	-0.1	1.8	-29.1
				J	-1.3	0.0	0.0	-0.2	-0.1	2.2	-30.8
608	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	7.1	-9.5

				J	0.2	0.0	0.0	0.1	0.2	7.5	-10.8
			Min	I	-1.4	0.0	0.0	-0.2	-0.1	2.2	-30.9
				J	-1.4	0.0	0.0	-0.2	-0.1	2.5	-32.7
609	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	7.5	-10.9
				J	0.2	0.0	0.0	0.1	0.2	8.0	-12.3
			Min	I	-1.5	0.0	0.0	-0.2	-0.1	2.5	-32.9
				J	-1.5	0.0	0.0	-0.2	-0.1	2.8	-34.9
610	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.0	0.3	8.0	-12.4
				J	0.2	0.0	0.0	0.2	0.2	8.7	-13.6
			Min	I	-1.6	0.0	0.0	-0.3	-0.0	2.8	-34.9
				J	-1.6	0.0	0.0	-0.2	-0.2	3.1	-37.7
611	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.2	0.2	8.6	-13.7
				J	0.2	0.0	0.0	0.1	0.2	8.0	-12.4
			Min	I	-1.7	0.0	0.0	-0.2	-0.2	3.1	-37.7
				J	-1.7	0.0	0.0	-0.2	-0.1	2.8	-34.9
612	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	8.0	-12.3
				J	0.2	0.0	0.0	0.1	0.2	7.5	-10.9
			Min	I	-1.7	0.0	0.0	-0.2	-0.1	2.8	-34.8
				J	-1.7	0.0	0.0	-0.2	-0.1	2.5	-32.9
613	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	7.5	-10.8
				J	0.2	0.0	0.0	0.1	0.2	7.1	-9.5
			Min	I	-1.6	0.0	0.0	-0.2	-0.1	2.5	-32.7
				J	-1.6	0.0	0.0	-0.2	-0.1	2.2	-31.0
614	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.2	7.1	-9.4
				J	0.2	0.0	0.0	0.1	0.2	6.7	-8.1
			Min	I	-1.5	0.0	0.0	-0.2	-0.1	2.2	-30.8
				J	-1.5	0.0	0.0	-0.2	-0.1	1.8	-29.1
615	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.2	0.1	6.6	-8.0
				J	0.2	0.0	0.0	0.1	0.2	6.3	-6.7
			Min	I	-1.4	0.0	0.0	-0.1	-0.2	1.8	-29.0
				J	-1.4	0.0	0.0	-0.2	-0.1	1.5	-27.4
616	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.2	0.1	6.2	-6.6
				J	0.3	0.0	0.0	0.1	0.2	5.9	-5.2
			Min	I	-1.3	0.0	0.0	-0.1	-0.2	1.5	-27.3
				J	-1.3	0.0	0.0	-0.2	-0.1	1.2	-25.7
617	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.2	0.1	5.9	-5.1
				J	0.3	0.0	0.0	0.1	0.2	5.5	-3.8
			Min	I	-1.2	0.0	0.0	-0.1	-0.2	1.2	-25.6
				J	-1.2	0.0	0.0	-0.2	-0.1	0.9	-24.2
618	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.2	0.1	5.5	-3.6
				J	0.3	0.0	0.0	0.1	0.2	5.2	-2.2
			Min	I	-1.1	0.0	0.0	-0.1	-0.2	0.8	-24.1
				J	-1.1	0.0	0.0	-0.2	-0.1	0.5	-22.7
619	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.2	0.1	5.2	-2.0
				J	0.3	0.0	0.0	0.1	0.1	4.9	-0.6
			Min	I	-1.1	0.0	0.0	-0.1	-0.2	0.5	-22.6
				J	-1.1	0.0	0.0	-0.1	-0.1	0.1	-21.3
620	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.2	0.1	4.9	-0.4
				J	0.4	0.0	0.0	0.2	0.1	4.6	1.4
			Min	I	-1.0	0.0	0.0	-0.1	-0.2	0.1	-21.2
				J	-1.0	0.0	0.0	-0.1	-0.2	-0.3	-20.0
621	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.2	0.1	4.6	1.5
				J	0.4	0.0	0.0	0.2	0.1	4.3	3.3
			Min	I	-0.9	0.0	0.0	-0.1	-0.2	-0.3	-19.9
				J	-0.9	0.0	0.0	-0.1	-0.2	-0.8	-18.8
622	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.2	0.1	4.3	3.4
				J	0.4	0.0	0.0	0.2	0.1	4.0	5.2
			Min	I	-0.9	0.0	0.0	-0.1	-0.2	-0.8	-18.7
				J	-0.9	0.0	0.0	-0.1	-0.2	-1.2	-17.6
623	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.2	0.1	4.0	5.4
				J	0.4	0.0	0.0	0.2	0.2	3.8	7.2
			Min	I	-0.8	0.0	0.0	-0.1	-0.2	-1.2	-17.5
				J	-0.8	0.0	0.0	-0.2	-0.2	-1.6	-16.5

624	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.2	0.1	3.8	7.3
				J	0.4	0.0	0.0	0.2	0.2	3.6	9.2
			Min	I	-0.7	0.0	0.0	-0.1	-0.2	-1.7	-16.5
				J	-0.7	0.0	0.0	-0.2	-0.2	-2.1	-15.5
625	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.1	3.5	9.3
				J	0.5	0.0	0.0	0.2	0.2	3.4	11.1
			Min	I	-0.7	0.0	0.0	-0.1	-0.2	-2.1	-15.5
				J	-0.7	0.0	0.0	-0.2	-0.2	-2.5	-14.6
626	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.1	3.3	11.2
				J	0.5	0.0	0.0	0.2	0.2	3.1	13.0
			Min	I	-0.6	0.0	0.0	-0.1	-0.2	-2.6	-14.5
				J	-0.6	0.0	0.0	-0.2	-0.2	-3.0	-13.7
627	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.1	3.1	13.1
				J	0.5	0.0	0.0	0.2	0.2	3.0	14.8
			Min	I	-0.6	0.0	0.0	-0.1	-0.2	-3.0	-13.7
				J	-0.6	0.0	0.0	-0.2	-0.2	-3.4	-12.9
628	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.2	0.1	2.9	14.9
				J	0.5	0.0	0.0	0.2	0.2	2.8	16.6
			Min	I	-0.5	0.0	0.0	-0.1	-0.2	-3.4	-12.8
				J	-0.5	0.0	0.0	-0.2	-0.2	-3.8	-12.0
629	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	2.7	16.6
				J	0.6	0.0	0.0	0.2	0.2	2.6	18.2
			Min	I	-0.5	0.0	0.0	-0.1	-0.2	-3.8	-12.0
				J	-0.5	0.0	0.0	-0.2	-0.2	-4.2	-11.2
630	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	2.6	18.3
				J	0.6	0.0	0.0	0.2	0.2	2.4	19.9
			Min	I	-0.4	0.0	0.0	-0.1	-0.2	-4.2	-11.2
				J	-0.4	0.0	0.0	-0.2	-0.2	-4.6	-10.5
631	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	2.4	19.9
				J	0.6	0.0	0.0	0.2	0.2	2.2	21.4
			Min	I	-0.4	0.0	0.0	-0.1	-0.2	-4.6	-10.4
				J	-0.4	0.0	0.0	-0.2	-0.2	-4.9	-9.7
632	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	2.2	21.5
				J	0.6	0.0	0.0	0.2	0.2	2.1	22.9
			Min	I	-0.4	0.0	0.0	-0.1	-0.2	-4.9	-9.6
				J	-0.4	0.0	0.0	-0.2	-0.2	-5.2	-9.0
633	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	2.0	23.0
				J	0.6	0.0	0.0	0.2	0.2	1.9	23.9
			Min	I	-0.4	0.0	0.0	-0.1	-0.2	-5.3	-8.9
				J	-0.4	0.0	0.0	-0.2	-0.2	-5.5	-8.4
634	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.1	0.2	1.9	23.9
				J	0.6	0.0	0.0	0.1	0.2	1.9	24.3
			Min	I	-0.4	0.0	0.0	-0.2	-0.1	-5.5	-8.4
				J	-0.4	0.0	0.0	-0.2	-0.1	-5.6	-8.2
635	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.9	24.3
				J	0.7	0.0	0.0	0.2	0.2	1.7	25.6
			Min	I	-0.4	0.0	0.0	-0.1	-0.2	-5.6	-8.2
				J	-0.4	0.0	0.0	-0.2	-0.2	-5.9	-7.6
636	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.7	25.6
				J	0.7	0.0	0.0	0.2	0.2	1.6	26.8
			Min	I	-0.3	0.0	0.0	-0.1	-0.2	-5.9	-7.5
				J	-0.3	0.0	0.0	-0.2	-0.2	-6.1	-6.9
637	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.6	26.9
				J	0.7	0.0	0.0	0.2	0.2	1.4	28.0
			Min	I	-0.3	0.0	0.0	-0.1	-0.2	-6.2	-6.8
				J	-0.3	0.0	0.0	-0.2	-0.2	-6.4	-6.3
638	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.4	28.0
				J	0.7	0.0	0.0	0.2	0.2	1.3	29.0
			Min	I	-0.3	0.0	0.0	-0.1	-0.2	-6.4	-6.2
				J	-0.3	0.0	0.0	-0.2	-0.2	-6.7	-5.6
639	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.3	29.1
				J	0.7	0.0	0.0	0.2	0.2	1.2	30.0

			Min	I	-0.3	0.0	0.0	-0.1	-0.2	-6.7	-5.6
				J	-0.3	0.0	0.0	-0.2	-0.2	-6.9	-5.1
640	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	1.1	30.1
				J	0.7	0.0	0.0	0.2	0.2	1.0	30.9
			Min	I	-0.3	0.0	0.0	-0.1	-0.2	-6.9	-5.0
				J	-0.3	0.0	0.0	-0.2	-0.2	-7.1	-4.5
641	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	1.0	31.0
				J	0.8	0.0	0.0	0.2	0.2	0.9	31.8
			Min	I	-0.3	0.0	0.0	-0.1	-0.2	-7.1	-4.4
				J	-0.3	0.0	0.0	-0.2	-0.2	-7.3	-3.9
642	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.9	31.8
				J	0.8	0.0	0.0	0.2	0.2	0.8	32.6
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.3	-3.9
				J	-0.2	0.0	0.0	-0.2	-0.2	-7.5	-3.4
643	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.8	32.6
				J	0.8	0.0	0.0	0.2	0.1	0.7	33.3
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.5	-3.4
				J	-0.2	0.0	0.0	-0.1	-0.2	-7.6	-2.9
644	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.7	33.3
				J	0.8	0.0	0.0	0.2	0.1	0.6	33.9
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.6	-2.9
				J	-0.2	0.0	0.0	-0.1	-0.2	-7.8	-2.4
645	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	0.5	33.9
				J	0.8	0.0	0.0	0.2	0.1	0.5	34.4
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.8	-2.4
				J	-0.2	0.0	0.0	-0.1	-0.2	-7.9	-2.0
646	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	0.4	34.4
				J	0.9	0.0	0.0	0.2	0.1	0.4	34.9
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-7.9	-1.9
				J	-0.2	0.0	0.0	-0.1	-0.2	-8.0	-1.5
647	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	0.3	34.9
				J	0.9	0.0	0.0	0.2	0.1	0.3	35.3
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-8.0	-1.5
				J	-0.2	0.0	0.0	-0.1	-0.2	-8.1	-1.1
648	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	0.2	35.3
				J	0.9	0.0	0.0	0.2	0.2	0.2	35.6
			Min	I	-0.2	0.0	0.0	-0.1	-0.2	-8.1	-1.1
				J	-0.2	0.0	0.0	-0.2	-0.2	-8.1	-0.7
649	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	0.2	35.6
				J	0.9	0.0	0.0	0.2	0.2	0.1	35.8
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.2	-0.7
				J	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.3
650	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	0.1	35.8
				J	0.9	0.0	0.0	0.2	0.2	0.0	35.8
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.3
				J	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.2
651	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	0.0	35.8
				J	0.9	0.0	0.0	0.2	0.2	-0.0	36.0
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.2	-0.2
				J	-0.1	0.0	0.0	-0.2	-0.2	-8.3	0.0
652	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	-0.0	36.0
				J	0.9	0.0	0.0	0.2	0.1	-0.1	36.2
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.3	0.0
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.3
653	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.2	-0.1	36.2
				J	0.9	0.0	0.0	0.2	0.1	-0.1	36.2
			Min	I	-0.1	0.0	0.0	-0.2	-0.2	-8.3	0.4
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.6
654	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.2	36.2
				J	0.9	0.0	0.0	0.2	0.1	-0.2	36.2
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.7
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.9

655	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.2	36.2
				J	0.9	0.0	0.0	0.2	0.1	-0.3	36.1
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.9
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.3	1.2
656	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.3	36.1
				J	0.9	0.0	0.0	0.2	0.1	-0.3	35.9
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.3	1.2
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.2	1.4
657	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.3	35.9
				J	0.9	0.0	0.0	0.2	0.1	-0.4	35.6
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.2	1.4
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.2	1.6
658	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.4	35.6
				J	0.9	0.0	0.0	0.2	0.1	-0.4	35.3
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.2	1.6
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.1	1.8
659	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.4	35.3
				J	0.9	0.0	0.0	0.2	0.1	-0.5	34.8
			Min	I	-0.1	0.0	0.0	-0.1	-0.2	-8.1	1.8
				J	-0.1	0.0	0.0	-0.1	-0.2	-8.0	2.0
660	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.5	34.8
				J	0.9	0.0	0.0	0.2	0.1	-0.5	34.3
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-8.0	2.0
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.9	2.2
661	13	13 S1 HL-~1	Max	I	0.9	0.0	0.0	0.2	0.1	-0.5	34.3
				J	0.9	0.0	0.0	0.2	0.1	-0.5	33.7
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.9	2.2
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.7	2.3
662	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.5	33.7
				J	0.8	0.0	0.0	0.2	0.1	-0.5	33.0
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.7	2.3
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.6	2.4
663	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	33.0
				J	0.8	0.0	0.0	0.2	0.1	-0.6	32.3
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.6	2.4
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.4	2.5
664	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	32.3
				J	0.8	0.0	0.0	0.2	0.1	-0.6	31.5
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.4	2.5
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.2	2.6
665	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	31.5
				J	0.8	0.0	0.0	0.2	0.1	-0.6	30.6
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.2	2.6
				J	-0.0	0.0	0.0	-0.1	-0.2	-7.0	2.6
666	13	13 S1 HL-~1	Max	I	0.8	0.0	0.0	0.2	0.1	-0.6	30.6
				J	0.8	0.0	0.0	0.2	0.1	-0.6	29.7
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-7.0	2.6
				J	-0.0	0.0	0.0	-0.1	-0.2	-6.8	2.6
667	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.1	0.2	-0.6	29.6
				J	0.7	0.0	0.0	0.1	0.1	-0.6	29.3
			Min	I	-0.0	0.0	0.0	-0.2	-0.1	-6.8	2.6
				J	-0.0	0.0	0.0	-0.1	-0.1	-6.7	2.6
668	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.1	0.1	-0.6	29.3
				J	0.7	0.0	0.0	0.2	0.1	-0.6	28.6
			Min	I	-0.0	0.0	0.0	-0.1	-0.1	-6.7	2.6
				J	-0.0	0.0	0.0	-0.1	-0.2	-6.5	2.6
669	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	-0.6	28.5
				J	0.7	0.0	0.0	0.2	0.1	-0.6	27.4
			Min	I	-0.0	0.0	0.0	-0.1	-0.2	-6.5	2.6
				J	-0.0	0.0	0.0	-0.1	-0.2	-6.3	2.6
670	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	-0.6	27.4
				J	0.7	0.0	0.0	0.2	0.1	-0.6	26.1
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-6.3	2.6

				J	0.0	0.0	0.0	-0.1	-0.2	-6.0	2.6
671	13	13 S1 HL-~1	Max	I	0.7	0.0	0.0	0.2	0.1	-0.6	26.1
				J	0.7	0.0	0.0	0.2	0.1	-0.6	24.8
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-6.0	2.6
				J	0.0	0.0	0.0	-0.1	-0.2	-5.7	2.5
672	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	-0.6	24.7
				J	0.6	0.0	0.0	0.2	0.1	-0.6	23.3
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-5.7	2.5
				J	0.0	0.0	0.0	-0.1	-0.2	-5.3	2.4
673	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	-0.6	23.2
				J	0.6	0.0	0.0	0.2	0.0	-0.5	21.7
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-5.3	2.4
				J	0.0	0.0	0.0	-0.0	-0.2	-5.0	2.3
674	13	13 S1 HL-~1	Max	I	0.6	0.0	0.0	0.2	0.1	-0.5	21.7
				J	0.6	0.0	0.0	0.2	0.0	-0.5	20.1
			Min	I	0.0	0.0	0.0	-0.1	-0.2	-5.0	2.3
				J	0.0	0.0	0.0	-0.0	-0.2	-4.6	2.2
675	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.1	0.1	-0.5	20.0
				J	0.5	0.0	0.0	0.2	0.0	-0.5	18.3
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-4.6	2.2
				J	0.0	0.0	0.0	-0.0	-0.2	-4.2	2.0
676	13	13 S1 HL-~1	Max	I	0.5	0.0	0.0	0.1	0.1	-0.5	18.2
				J	0.5	0.0	0.0	0.2	0.0	-0.4	16.4
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-4.2	2.0
				J	0.0	0.0	0.0	-0.0	-0.2	-3.8	1.8
677	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.1	0.1	-0.4	16.3
				J	0.4	0.0	0.0	0.2	0.0	-0.4	14.4
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-3.7	1.8
				J	0.0	0.0	0.0	-0.0	-0.2	-3.3	1.6
678	13	13 S1 HL-~1	Max	I	0.4	0.0	0.0	0.1	0.1	-0.4	14.4
				J	0.4	0.0	0.0	0.2	0.0	-0.3	12.4
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-3.3	1.6
				J	0.0	0.0	0.0	-0.0	-0.2	-2.8	1.4
679	13	13 S1 HL-~1	Max	I	0.3	0.0	0.0	0.1	0.1	-0.3	12.3
				J	0.3	0.0	0.0	0.2	0.0	-0.3	10.1
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-2.8	1.4
				J	0.0	0.0	0.0	-0.0	-0.2	-2.3	1.2
680	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.1	-0.3	10.0
				J	0.2	0.0	0.0	0.2	0.0	-0.2	7.8
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-2.3	1.2
				J	0.0	0.0	0.0	-0.0	-0.2	-1.8	0.9
681	13	13 S1 HL-~1	Max	I	0.2	0.0	0.0	0.1	0.1	-0.2	7.7
				J	0.2	0.0	0.0	0.2	0.0	-0.1	5.4
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-1.8	0.9
				J	0.0	0.0	0.0	-0.0	-0.2	-1.2	0.6
682	13	13 S1 HL-~1	Max	I	0.1	0.0	0.0	0.1	0.1	-0.1	5.2
				J	0.1	0.0	0.0	0.1	0.0	-0.1	2.8
			Min	I	0.0	0.0	0.0	-0.1	-0.1	-1.2	0.6
				J	0.0	0.0	0.0	-0.0	-0.1	-0.6	0.3
683	13	13 S1 HL-~1	Max	I	0.1	0.0	0.0	0.1	0.1	-0.1	2.7
				J	0.1	0.0	0.0	0.1	-0.0	0.1	0.5
			Min	I	-0.0	0.0	0.0	-0.1	-0.1	-0.6	0.3
				J	-0.0	0.0	0.0	0.0	-0.1	-0.1	-0.5

BEAM ELEMENT STRESSES MIN/MAX SUMMARY BY PROPERTY PRINTOUT Unit System : kips , in

[SECTION NAME : W27X146 , SECTION ID : 13]

** MAX

ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-Z	(+y)-BENDING	-(-y)	(+z)-BENDING	-(-z)
654	AXL	S1 HL-~1	1	J	0.9	0.0	0.0	0.2	0.1	-0.2	36.2
538	SHY	S1 HL-~1	1	I	0.0	0.0	0.0	0.1	-0.0	0.1	0.6
538	SHZ	S1 HL-~1	1	I	0.0	0.0	0.0	0.1	-0.0	0.1	0.6
630	BY+	S1 HL-~1	1	I	0.6	0.0	0.0	0.2	0.1	2.6	18.3
610	BY-	S1 HL-~1	1	I	0.2	0.0	0.0	0.0	0.3	8.0	-12.4
610	BZ+	S1 HL-~1	1	J	0.2	0.0	0.0	0.2	0.2	8.7	-13.6
654	BZ-	S1 HL-~1	1	I	0.9	0.0	0.0	0.2	0.1	-0.2	36.2

** MIN

ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-Z	(+y)-BENDING	-(-y)	(+z)-BENDING	-(-z)
611	AXL	S1 HL-~1	1	I	-1.7	0.0	0.0	-0.2	-0.2	3.1	-37.7
538	SHY	S1 HL-~1	1	I	0.0	0.0	0.0	0.1	-0.0	0.1	0.6
538	SHZ	S1 HL-~1	1	I	0.0	0.0	0.0	0.1	-0.0	0.1	0.6
610	BY+	S1 HL-~1	1	I	-1.6	0.0	0.0	-0.3	-0.0	2.8	-34.9
630	BY-	S1 HL-~1	1	I	-0.4	0.0	0.0	-0.1	-0.2	-4.2	-11.2
654	BZ+	S1 HL-~1	1	I	-0.1	0.0	0.0	-0.1	-0.2	-8.3	0.7
610	BZ-	S1 HL-~1	1	J	-1.6	0.0	0.0	-0.2	-0.2	3.1	-37.7

REACTION FORCES & MOMENTS DEFAULT PRINTOUT Unit System : kips , in

Node	LC		FX	FY	FZ	MX	MY	MZ

SUMMATION OF REACTION FORCES

LC		SUM-FX	SUM-FY	SUM-FZ

REACTION FORCES & MOMENTS LOCAL PRINTOUT Unit System : kips , in

Node	LC		FX	FY	FZ	MX	MY	MZ

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

FIXED SPAN

ALLOWABLE WIND SPEED ANALYSIS OF TRUSS

Rehabilitaion of Bridge 01349, Route 136 Over Saugatuck River, Westport, CT

Client: CT DOT
Date: 3/24/2016

Company: Close, Jensen, and Miller PC
Engineer: Danielle Coutu

Fixed truss - Fixed Moment Connections

Fixed Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (70 mph) (Strength III, Combine)
Cross Bracing	35.17 ksi	24.56 ksi	20.97 ksi	18.36 ksi	17.58 ksi
Main Members	30.83 ksi	20.80 ksi	17.41 ksi	14.39 ksi	11.67 ksi

Displacement (Strength III)	Allowable Wind Speed
1.85 in	90 mph
2.05 in	100mph

25.5 ksi Steel

Fixed Truss - Release Top and Bottom Cords Moment Connections

Fixed Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (70 mph) (Strength III, Combine)
Cross Bracing	31.29 ksi	21.10 ksi	19.24 ksi	18.37 ksi	17.59 ksi
Main Members	31.29 ksi	21.10 ksi	17.65 ksi	14.59 ksi	11.82 ksi

Displacement (Strength III)	Allowable Wind Speed
3.54 in	100 mph
2.08 in	100 mph

25.5 ksi Steel

Fixed Span - Proposed Widening (Fixed Moment Connections)

Fixed Truss	Factored Dead Load and Wind Load (125 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (100 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (90 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (80 mph) (Strength III, Combine)	Factored Dead Load and Wind Load (70 mph) (Strength III, Combine)
Cross Bracing	20.66 ksi	19.93 ksi	19.68 ksi	19.46 ksi	19.26 ksi
Main Members	16.83 ksi	14.30 ksi	13.45 ksi	12.69 ksi	10.97 ksi

Displacement (Strength III)	Allowable Wind Speed
1.69 in	125 mph
1.12 in	125 mph

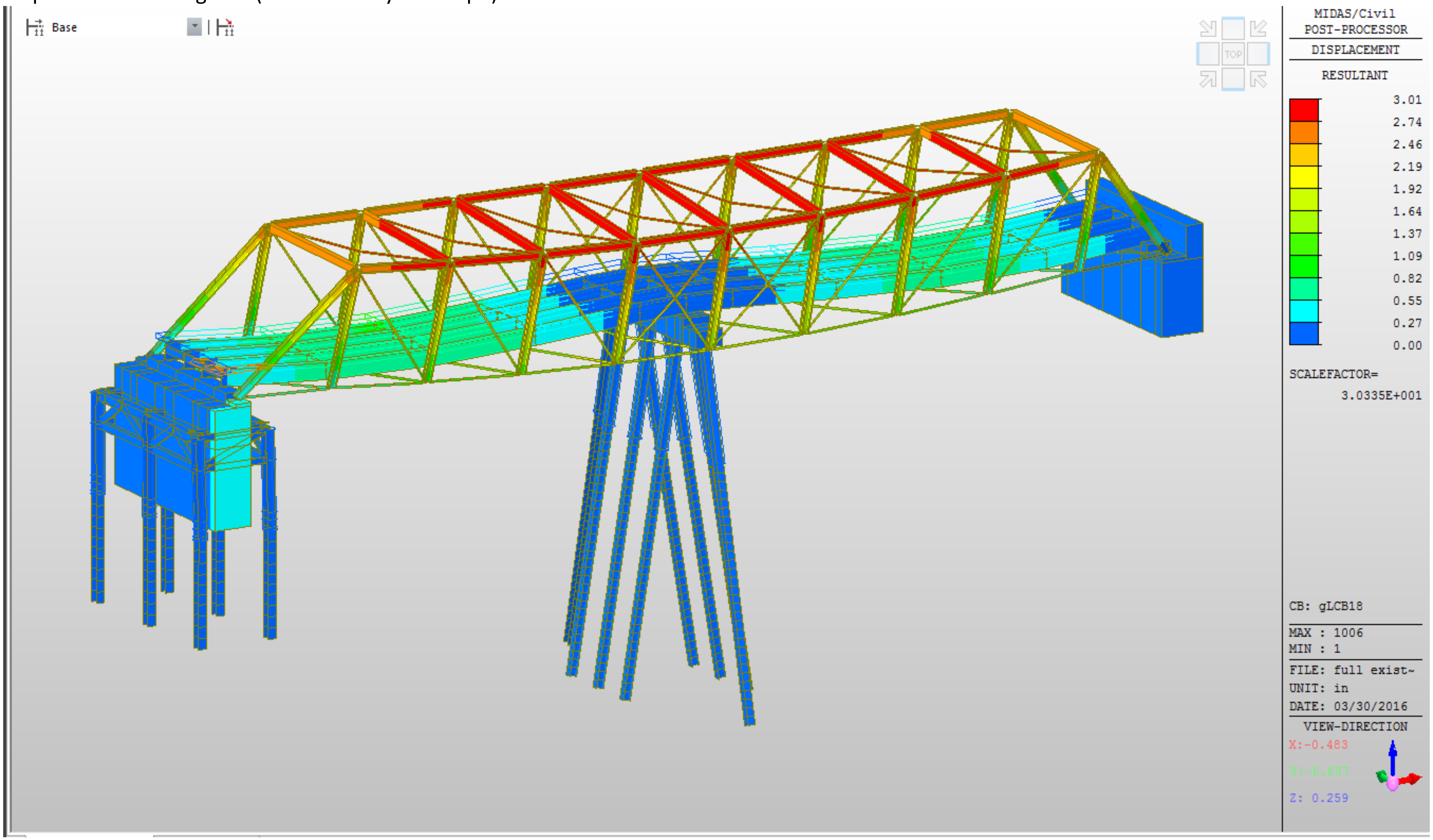
25.5 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ± Sbz ± Sax (Warping).

LRFD ANALYSIS

Fixed Truss: Entire Truss

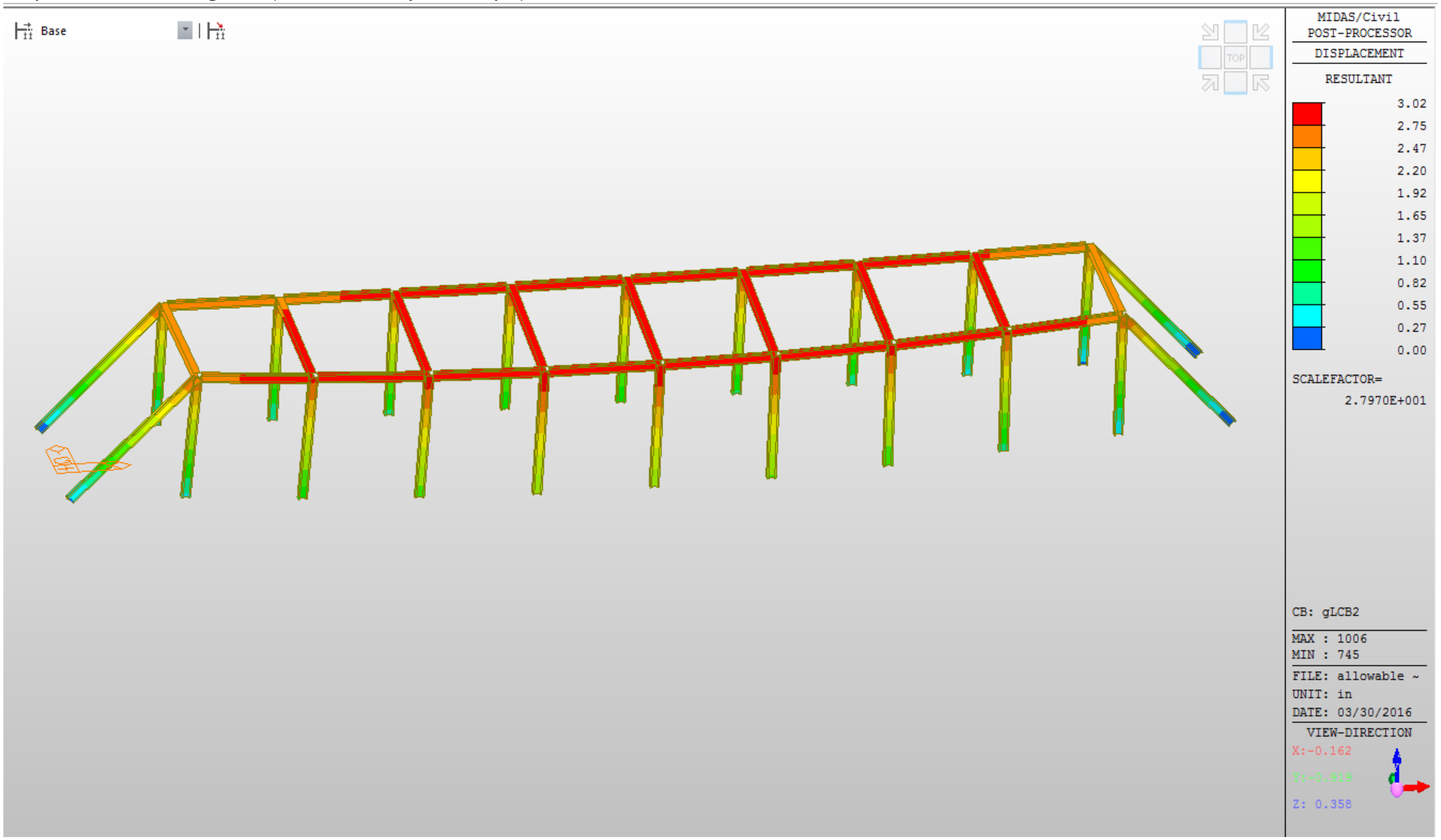
Displacement: Strength III (Wind Velocity=125 mph)



LRFD ANALYSIS

Fixed Truss: Main Members

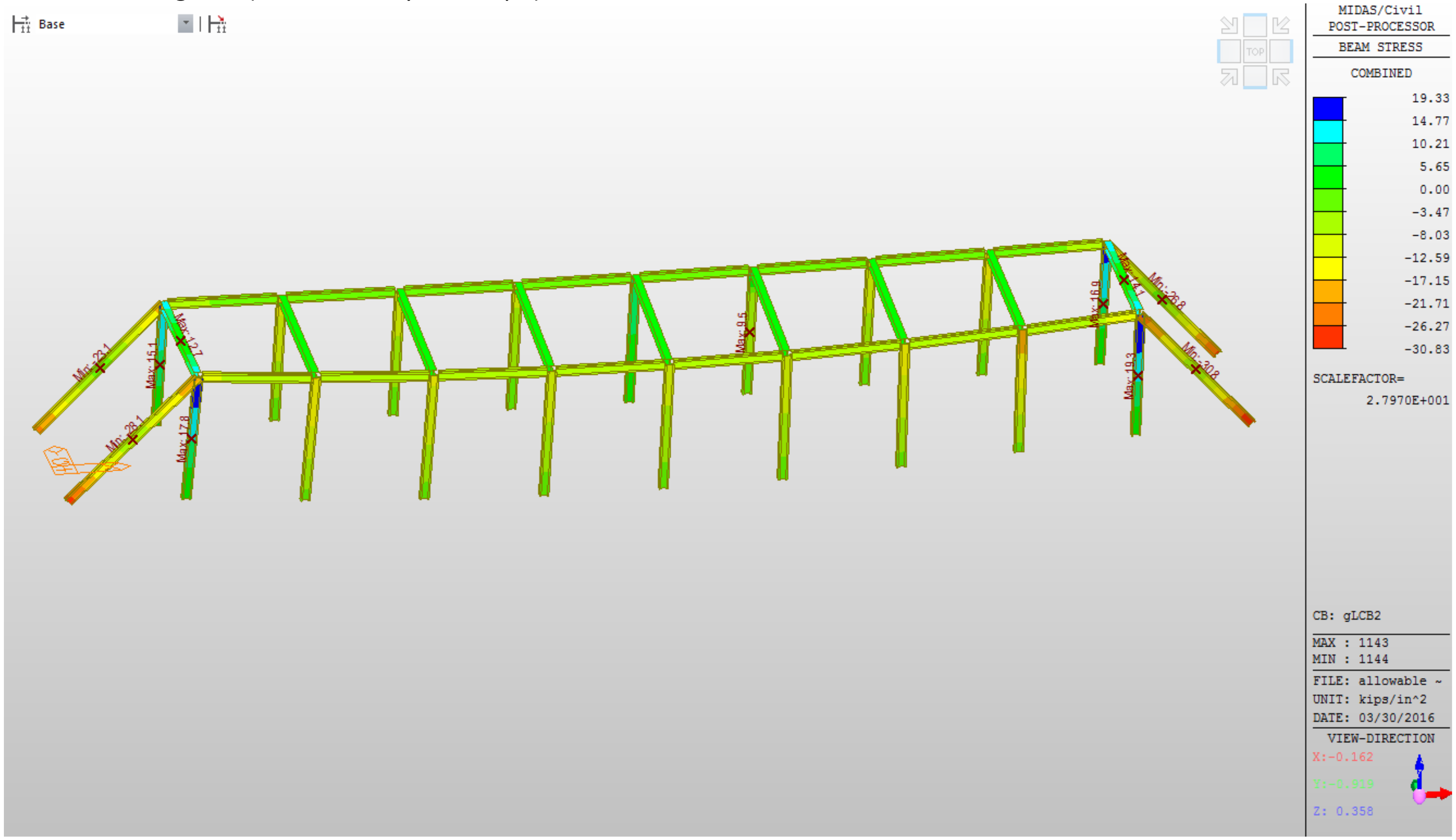
Displacement: Strength III (Wind Velocity=125 mph)



LRFD ANALYSIS

Fixed Truss: Main Members

Stresses: Strength III (Wind Velocity=125 mph)



Stress = 30.83 ksi

25.5 ksi Steel

Windward load = .08 ksf

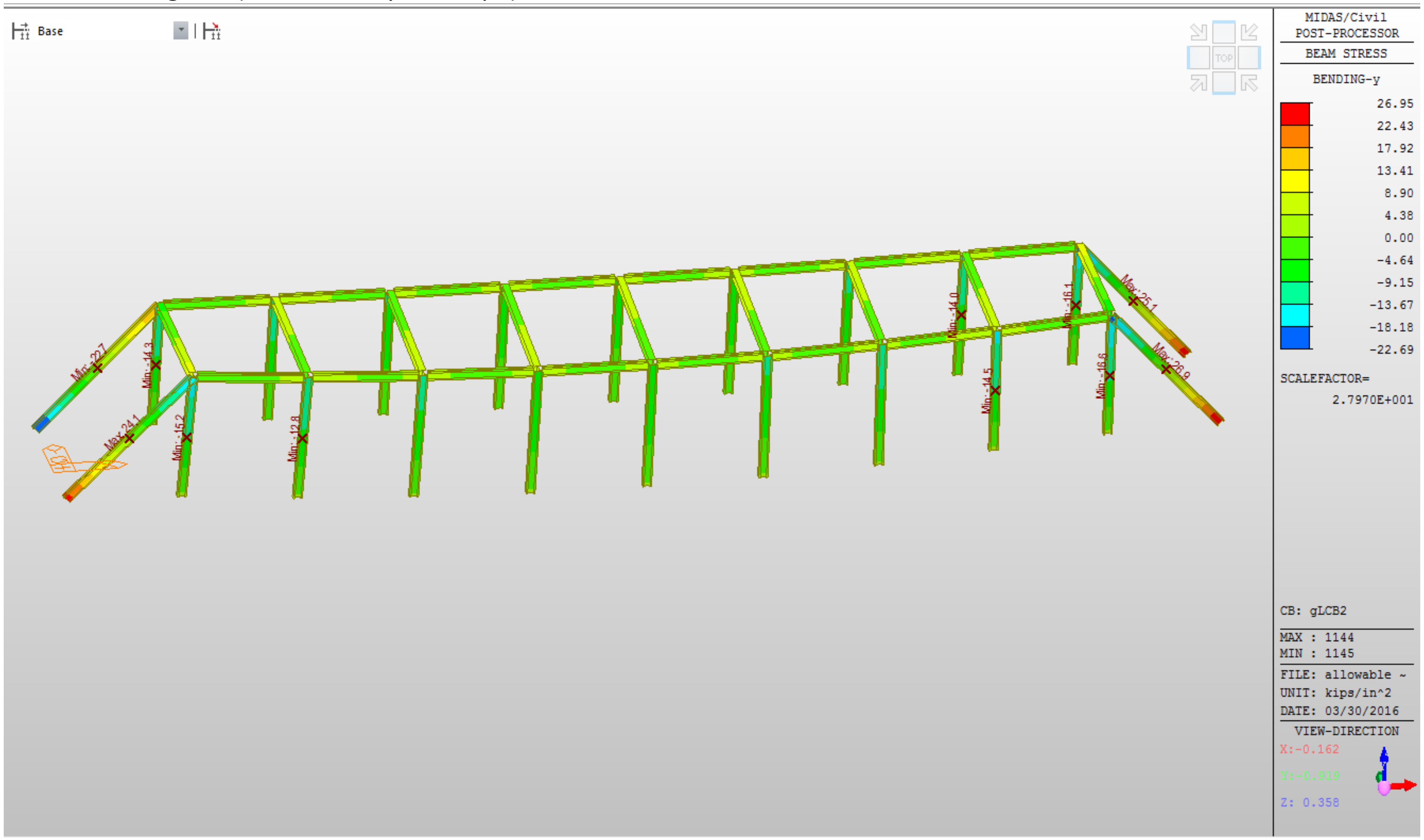
Leeward load = .04 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Truss: Main Members

Stresses: Strength III (Wind Velocity=125 mph)



Stress = 26.95 ksi

25.5 ksi Steel

Windward load = .08 ksf

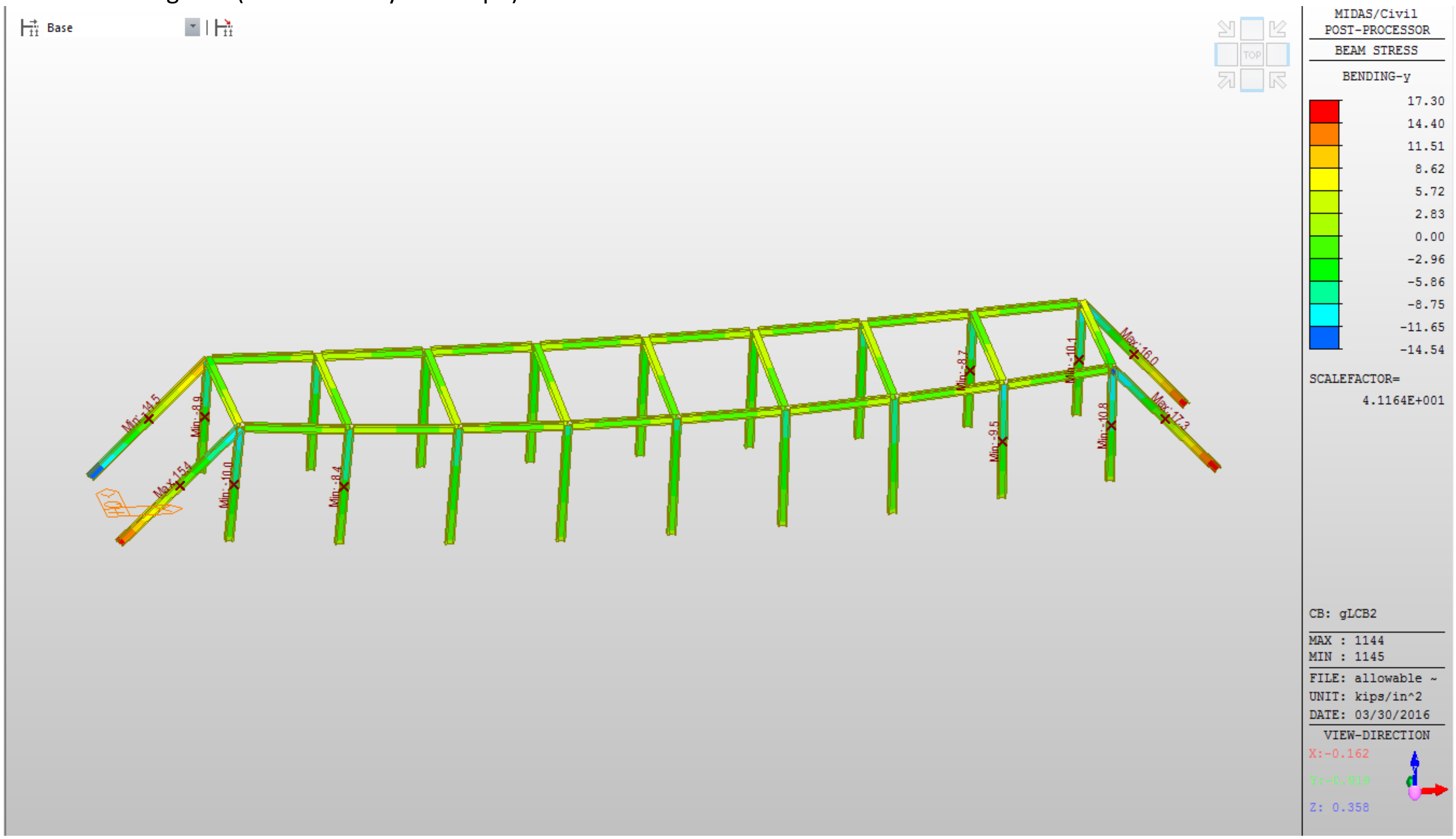
Leeward load = .04 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Main Members

Stresses: Strength III (Wind Velocity=100 mph)



Stress = 17.30 ksi

25.5 ksi Steel

Windward load = .0512 ksf

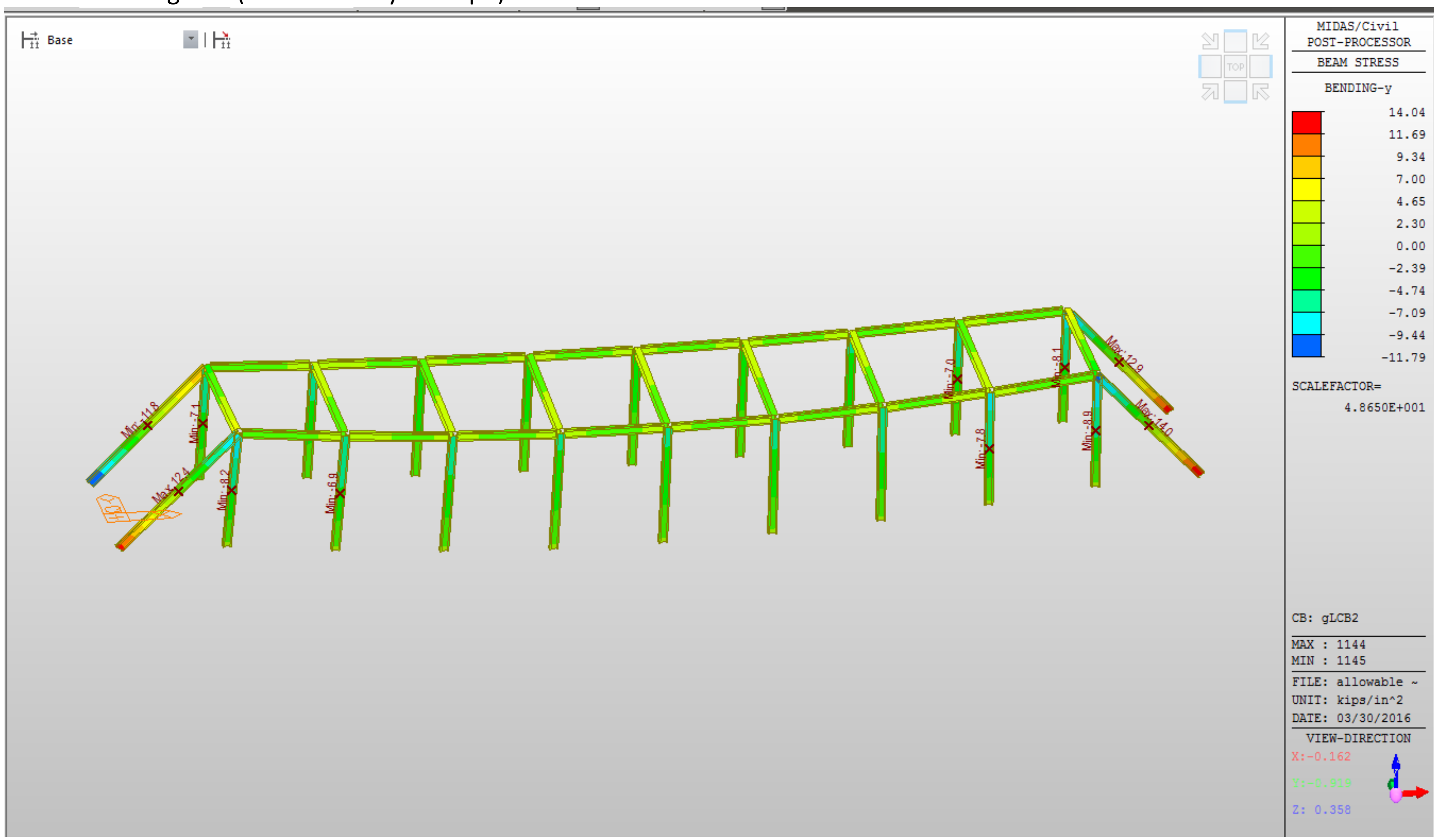
Leeward load = .0256 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Main Members

Stresses: Strength III (Wind Velocity=90 mph)



Stress = 14.04 ksi

25.5 ksi Steel

Windward load = .0415 ksf

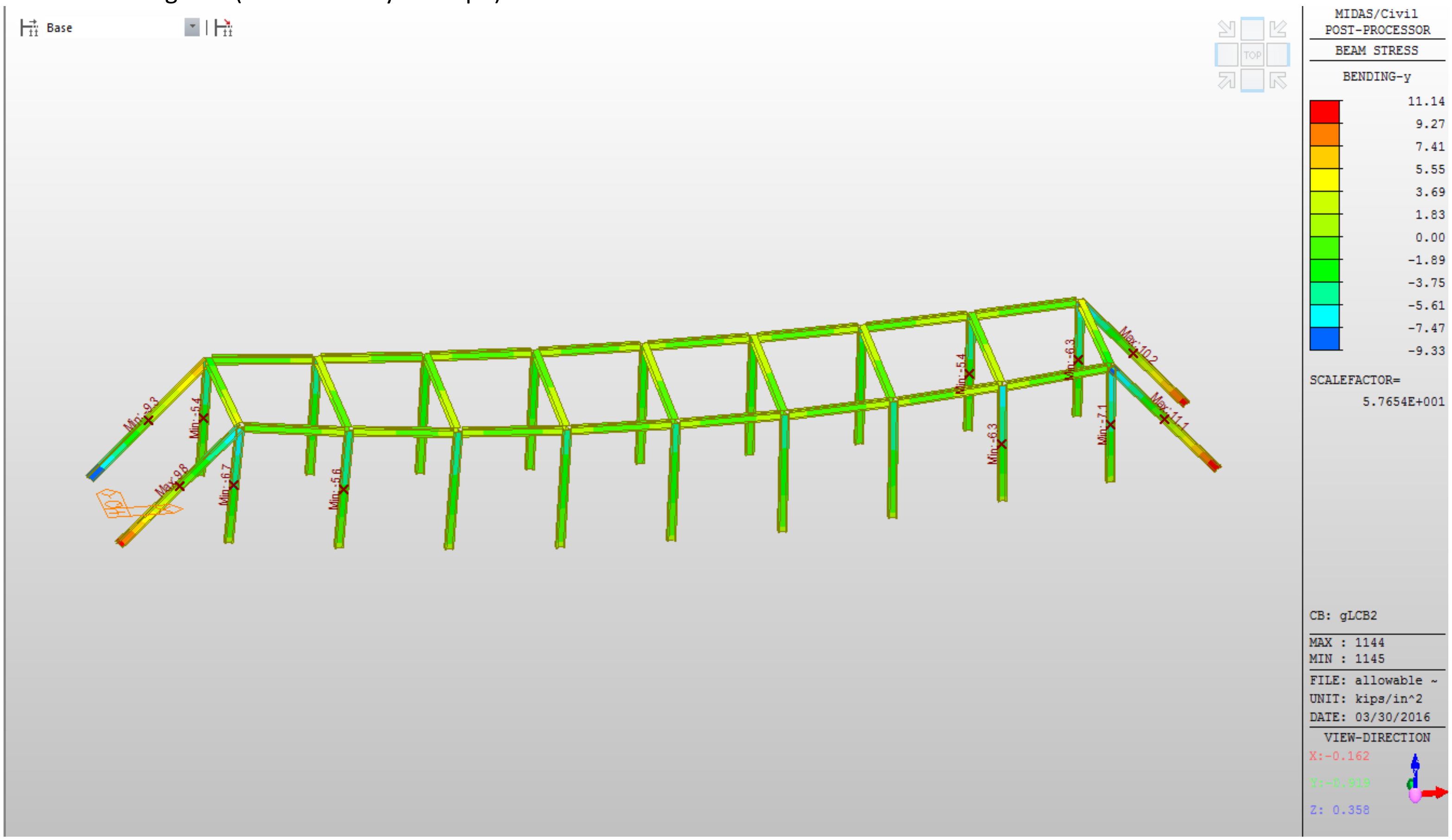
Leeward load = .0207 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Main Members

Stresses: Strength III (Wind Velocity=80 mph)



Stress = 11.14 ksi

25.5 ksi Steel

Windward load = .0328 ksf

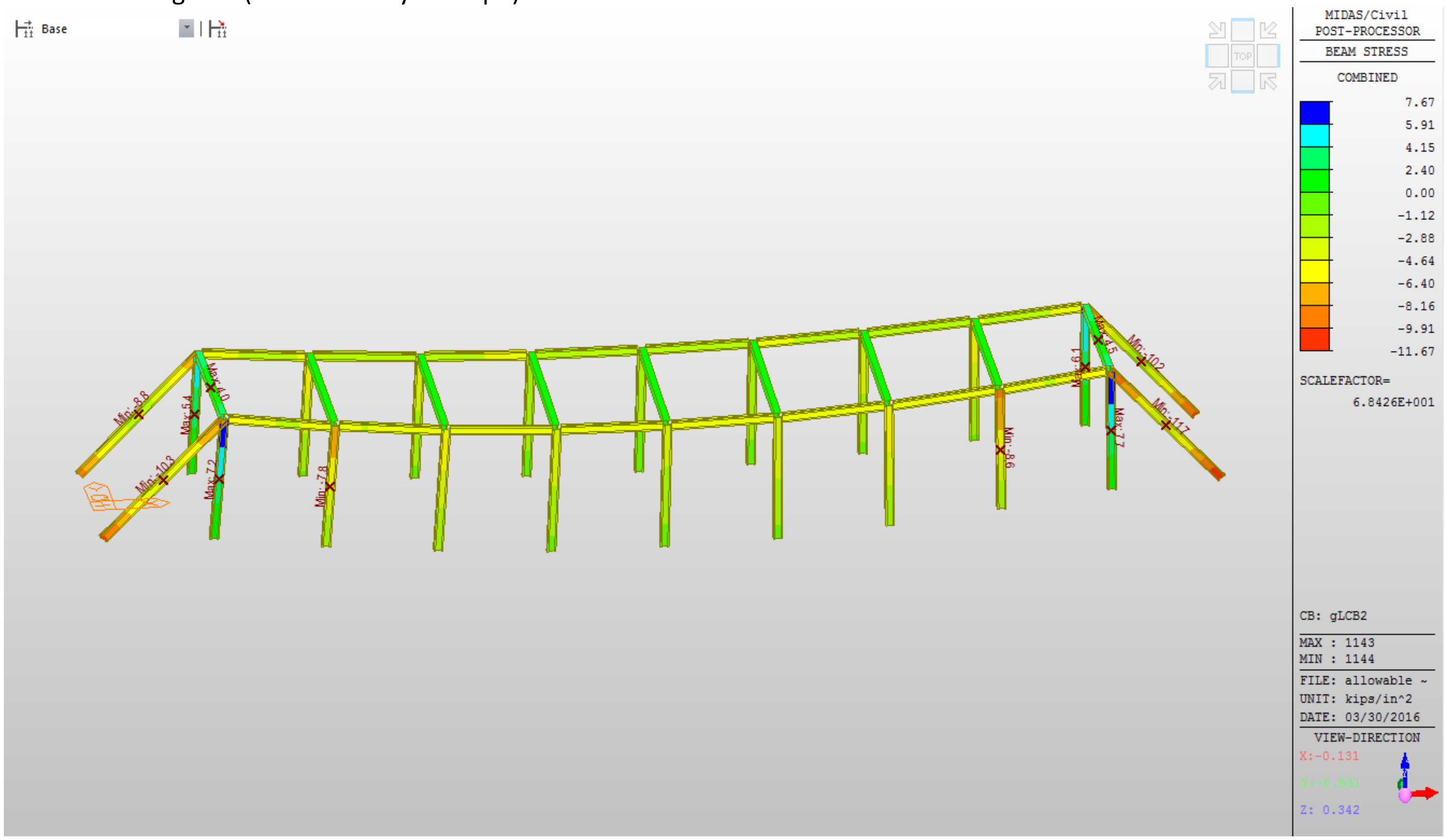
Leeward load = .0164 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Main Members

Stresses: Strength III (Wind Velocity=70 mph)



Stress = 11.67 ksi 25.5 ksi Steel

Windward load = .025 ksf

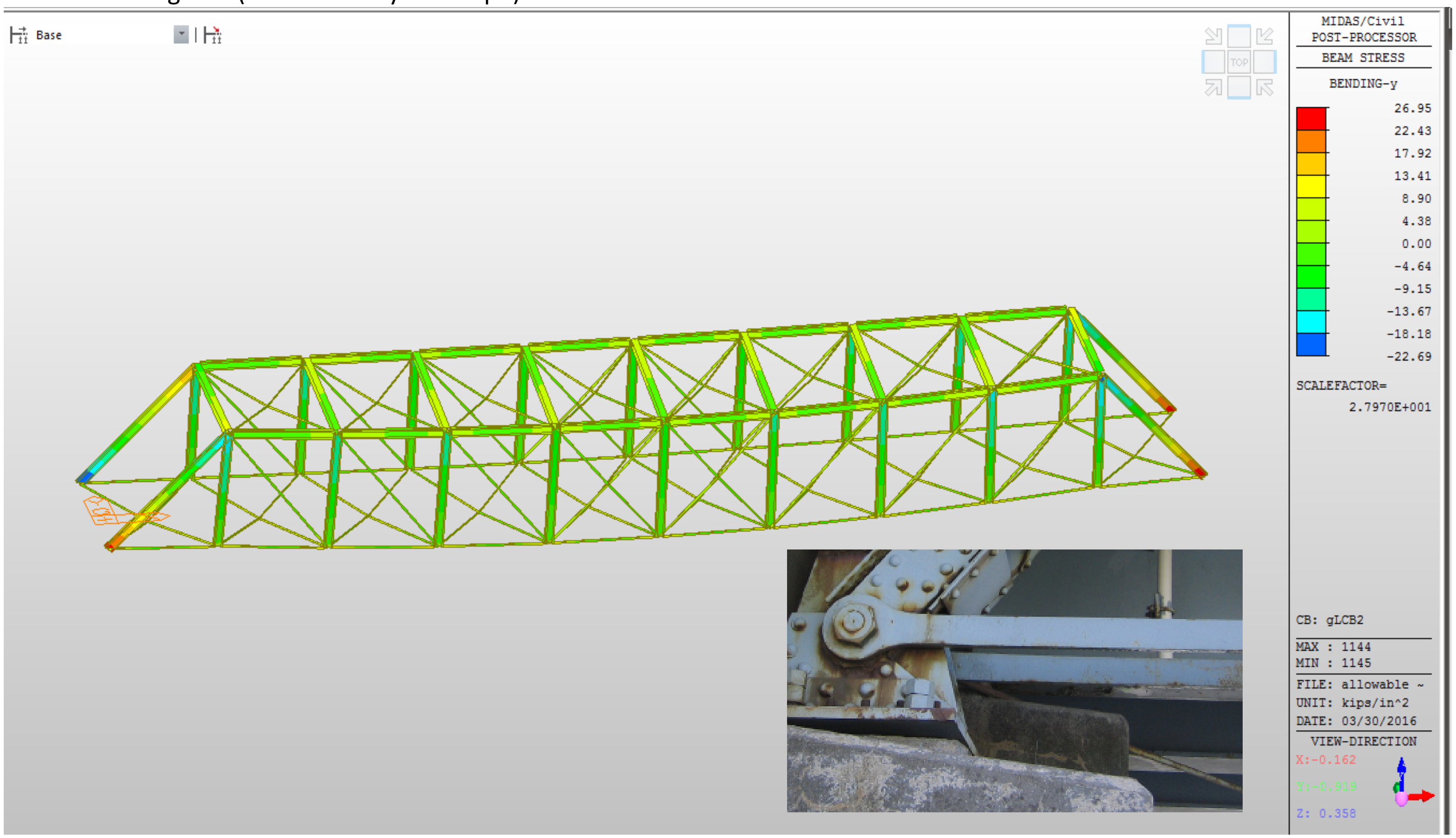
Leeward load = .0125 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=125 mph)



Stress = 26.95 ksi

25.5 ksi Steel

Windward load = .08 ksf

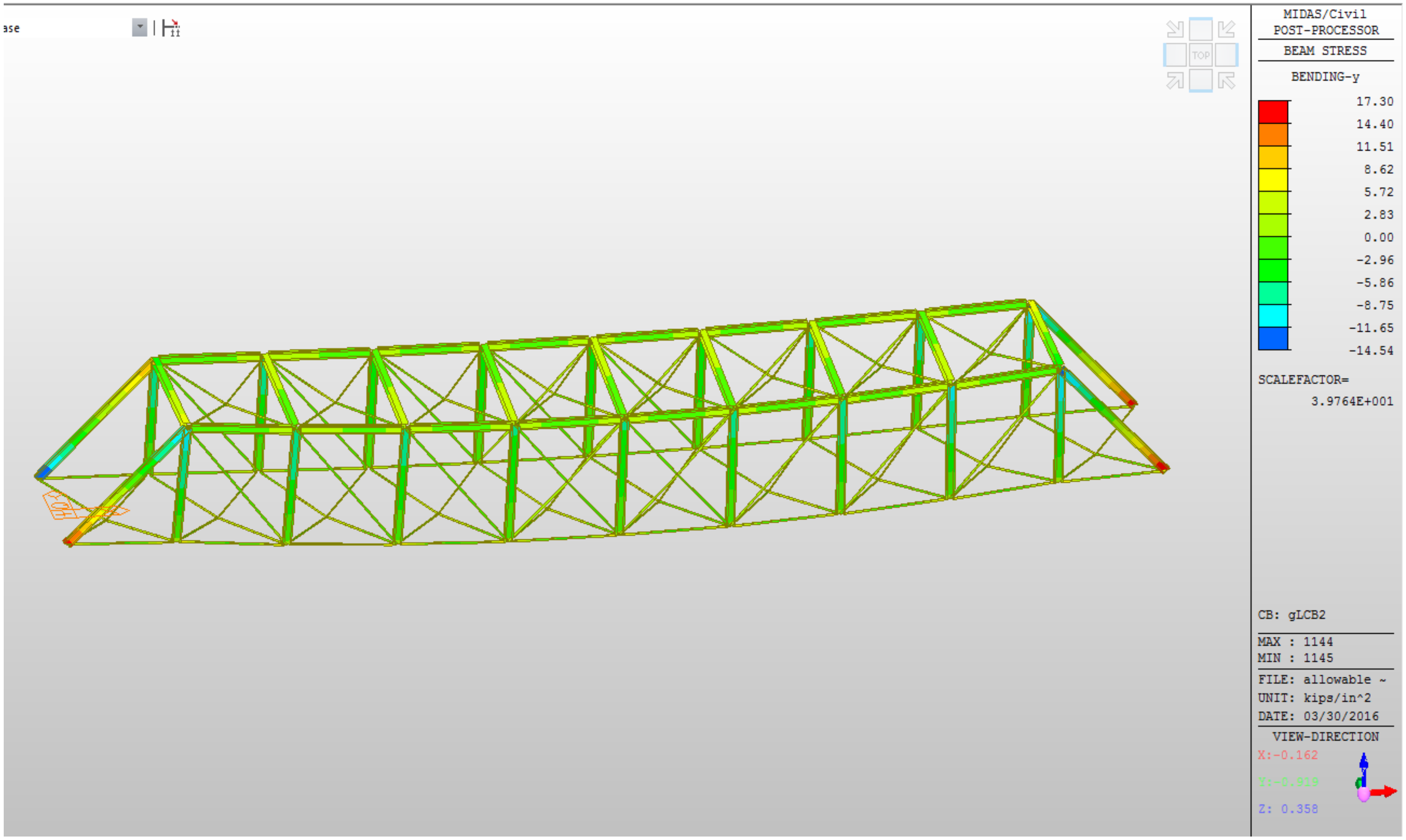
Leeward load = .04 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=100 mph)



Stress = 17.30 ksi

25.5 ksi Steel

Windward load = .0512 ksf

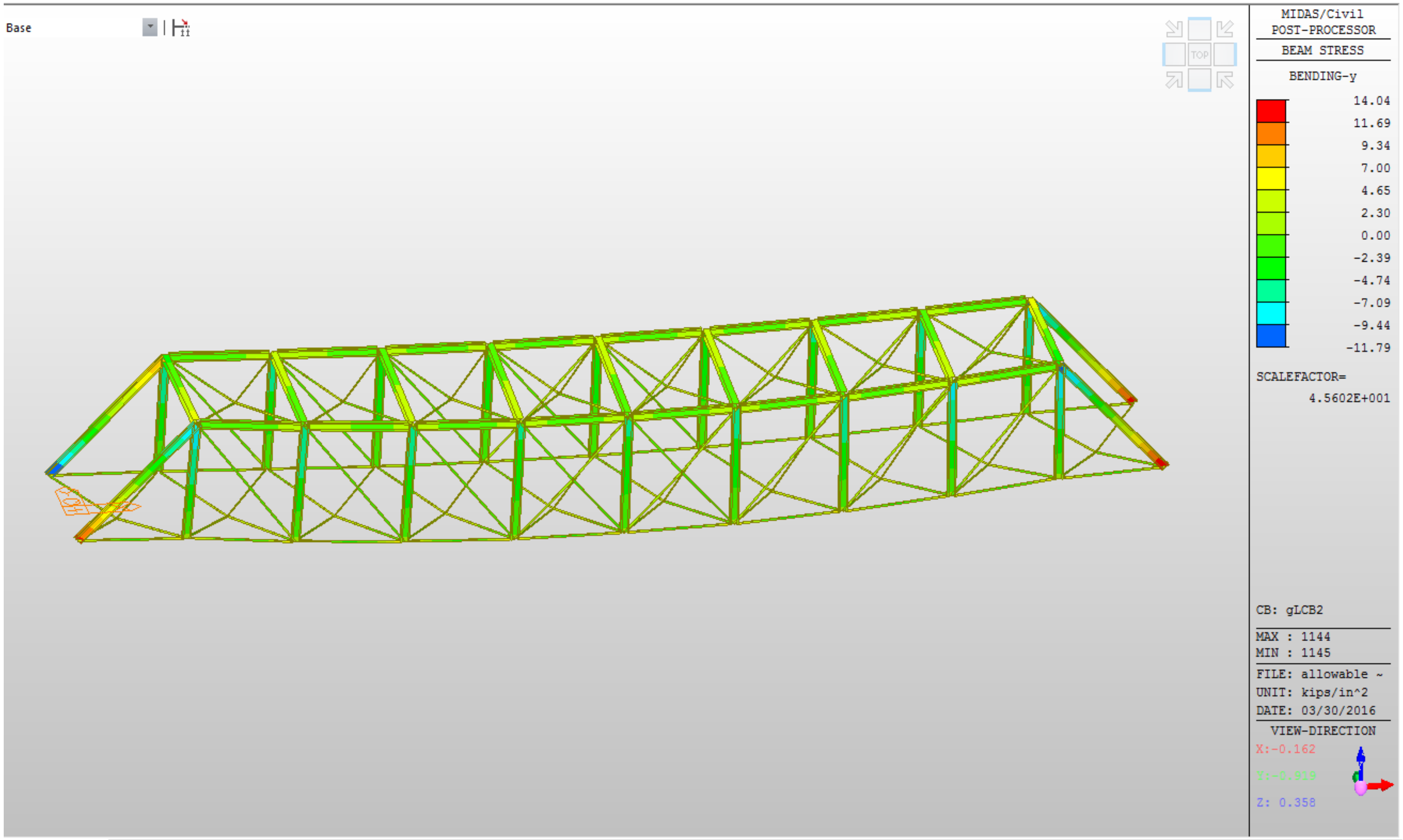
Leeward load = .0256 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=90 mph)



Stress = 14.04 ksi

25.5 ksi Steel

Windward load = .0415 ksf

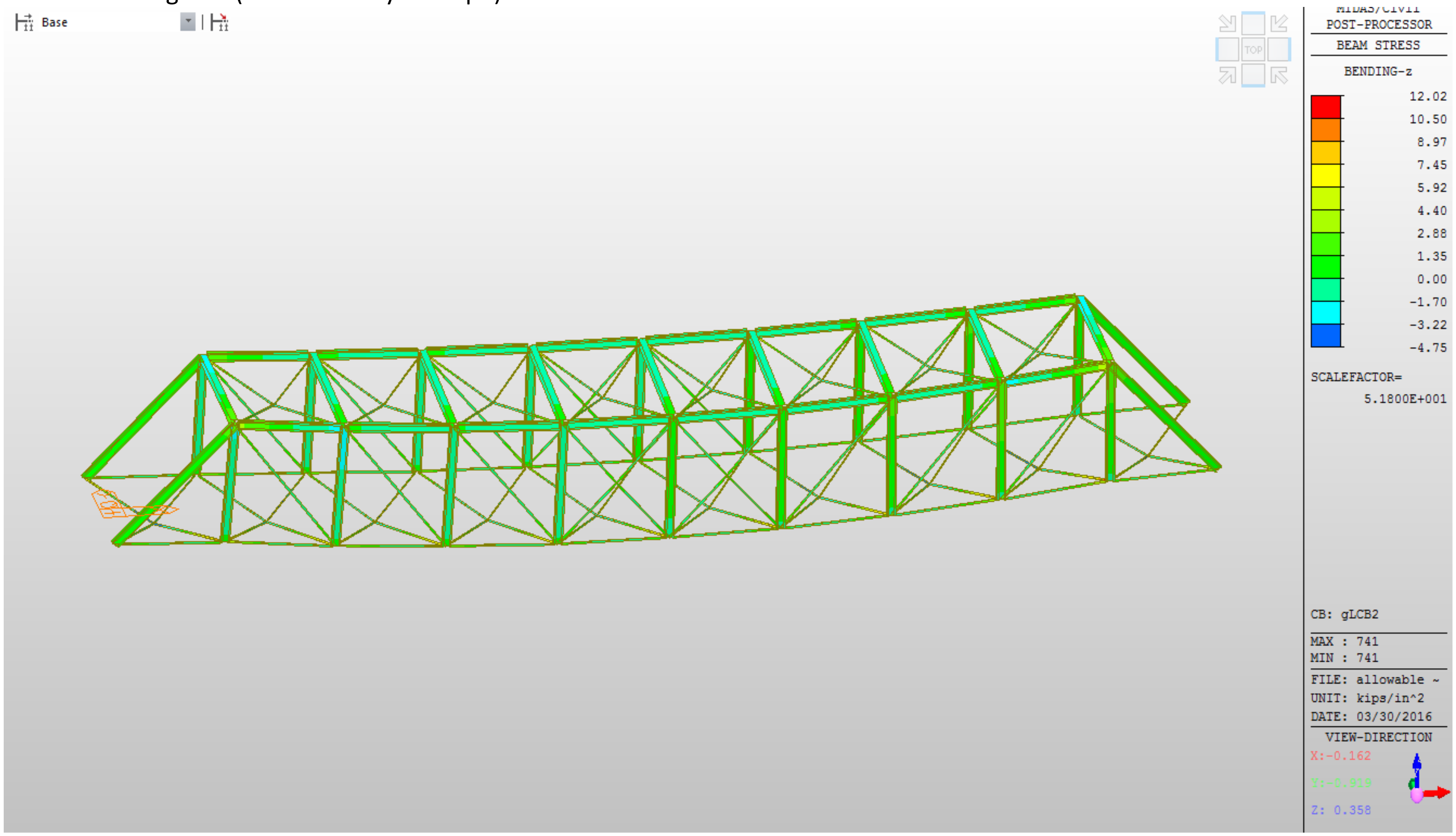
Leeward load = .0207 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=80 mph)



Stress = 12.02 ksi

25.5 ksi Steel

Windward load = .0328 ksf

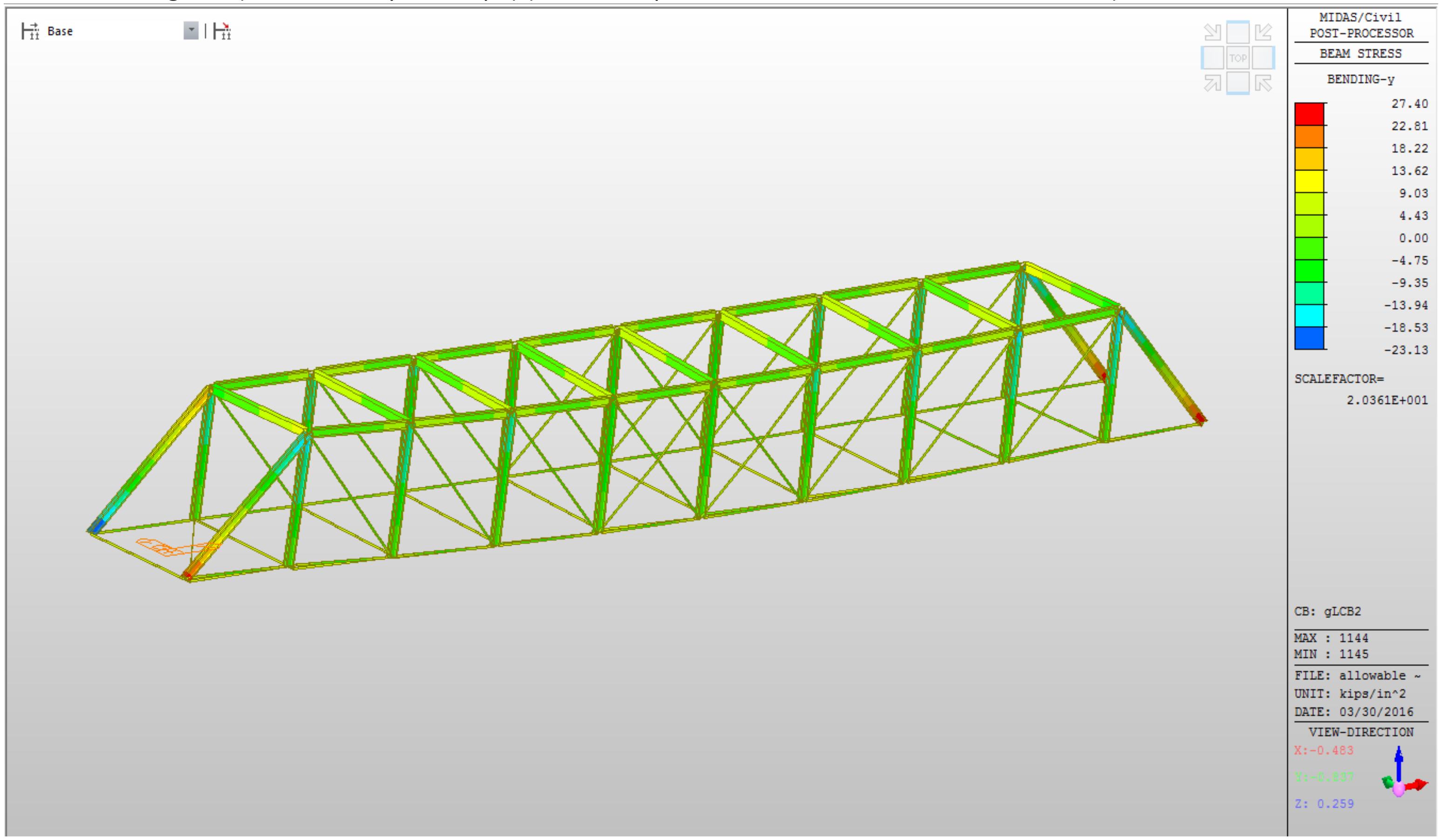
Leeward load = .0164 ksf

Sbz: Normal stress resulting from the moment (My) about the element's local y-axis

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=125 mph) (Release Top and Bottom Cords Moment Connection)



Stress = 27.4 ksi

25.5 ksi Steel

Windward load = .08 ksf

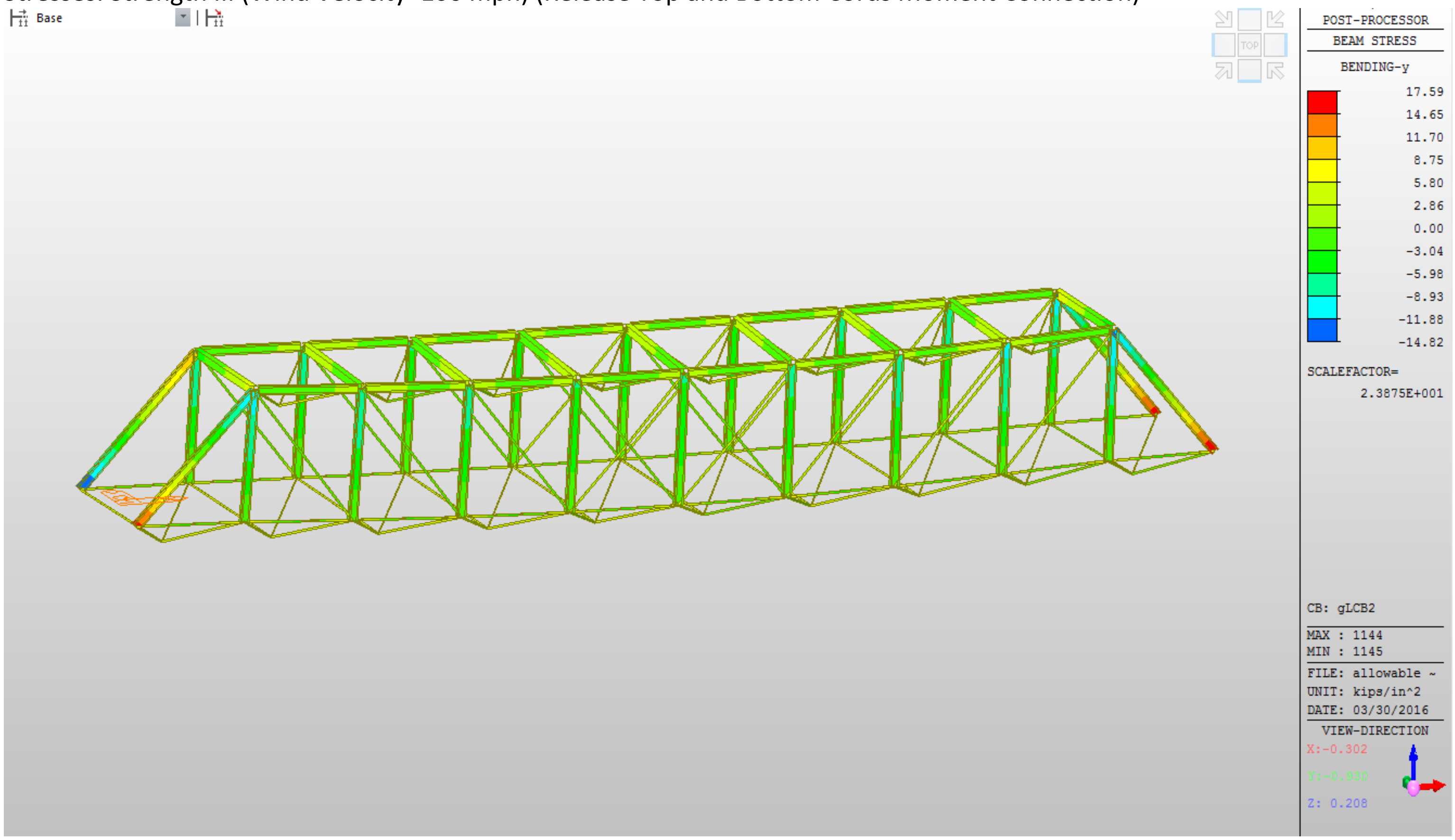
Leeward load = .04 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=100 mph) (Release Top and Bottom Cords Moment Connection)



Stress = 17.59 ksi

25.5 ksi Steel

Windward load = .0512 ksf

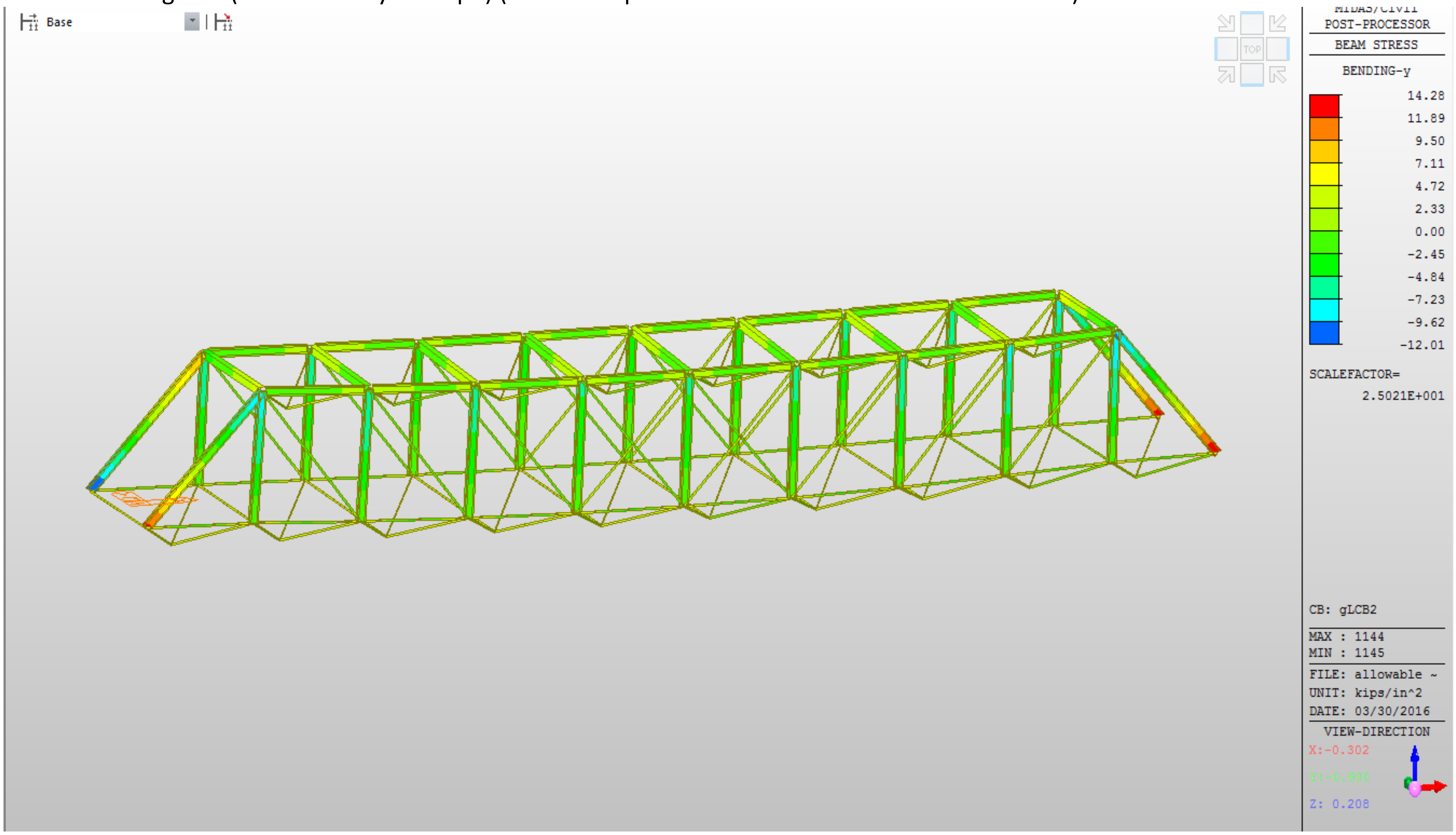
Leeward load = .0256 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=90 mph) (Release Top and Bottom Cords Moment Connection)



Stress = 14.28 ksi

25.5 ksi Steel

Windward load = .0415 ksf

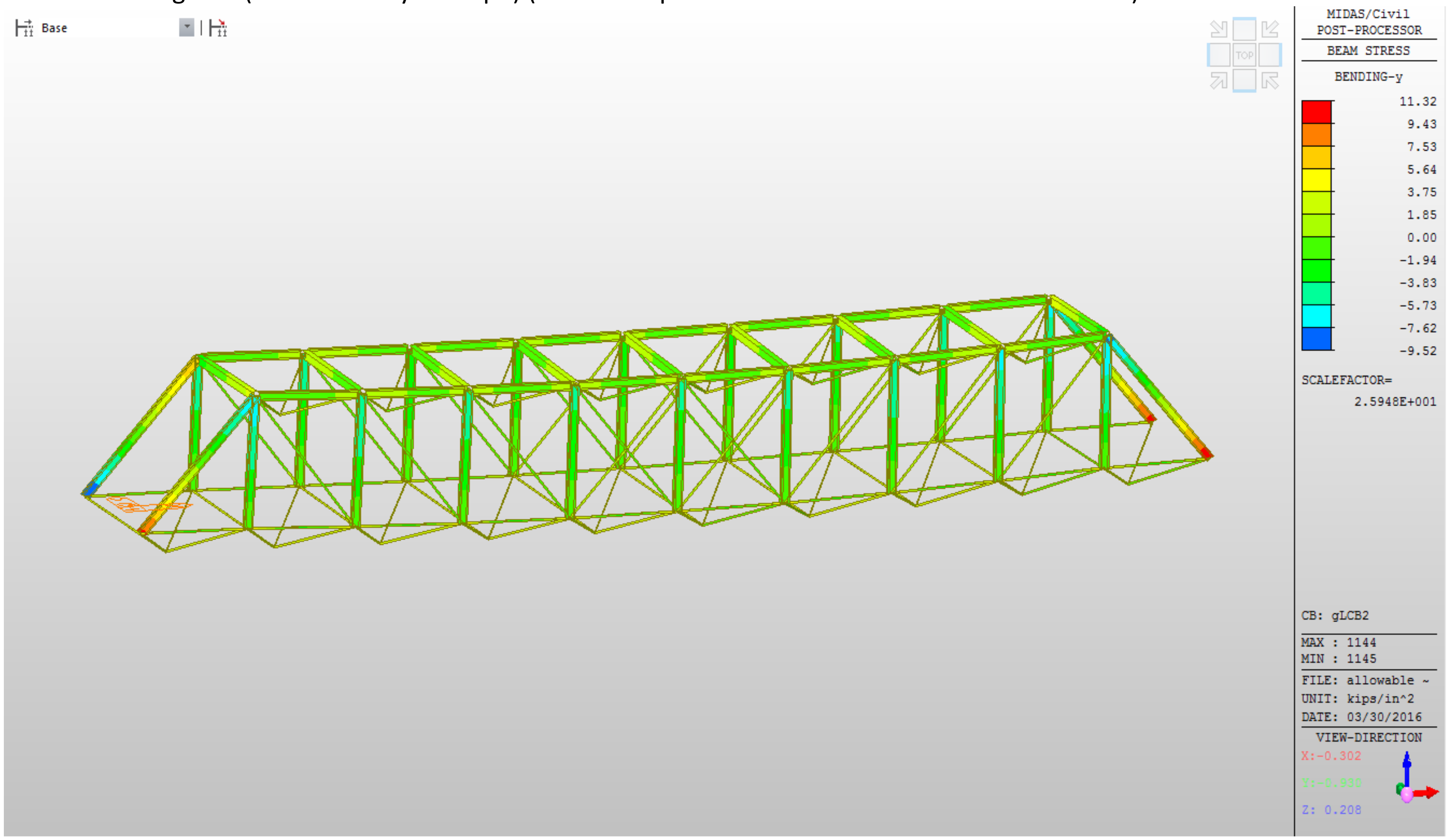
Leeward load = .0207 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

LRFD ANALYSIS

Fixed Truss: Entire Truss

Stresses: Strength III (Wind Velocity=80 mph) (Release Top and Bottom Cords Moment Connection)



Stress = 11.32 ksi 25.5 ksi Steel

Windward load = .0328 ksf

Leeward load = .0164 ksf

Sby: Normal stress resulting from the moment (Mz) about the element's local z-axis

Design wind Velocity

Allowable stress = 12 ksi

wind speed = 125 mph

$P_z = (2.56 \times 10^{-6})(V)^2 K_z G C_D$ (AASHTO 3.8.1.2.1-1)

$V = 125$ mph (AASHTO Figure 3.8.1.2.1-1)

$K_z = 1.0$ (AASHTO Table C3.8.1.2.1-1)

category C

$G = 1.0$ (AASHTO Table 3.8.1.2.1-1)

windward

$C_D = 2.0$ (AASHTO Table 3.8.1.2.1-2)

leeward

$C_D = 1.0$ (AASHTO Table 3.8.1.2.1-2)

windward pressure

$P_D = (2.56 \times 10^{-6})(125)^2(1.0)(1.0)(2) = .08$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-6})(125)^2(1.0)(1.0)(1.0) = .04$ ksf

wind speed = 100 mph

$V = 100$ mph

windward pressure

$P_D = (2.56 \times 10^{-6})(100)^2(1.0)(1.0)(2) = .0512$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-6})(100)^2(1.0)(1.0)(1.0) = .0256$ ksf

Close, Jensen and Miller, P.C.

BY DC DATE 3/30/16 SUBJECT Bridge 01349 midas Analysis SHEET NO. OF
CHKD. BY DATE Truss Analysis wind speed JOB NO.
Calculations

Design wind velocity

wind speed = 90 mph

windward pressure

$P_D = (2.56 \times 10^{-4})(90)^2(1.0)(1.0)(2.0) = .0415$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-4})(90)^2(1.0)(1.0)(1.0) = .0207$ ksf

wind speed = 80 mph

windward pressure

$P_D = (2.56 \times 10^{-4})(80)^2(1.0)(1.0)(2.0) = .0328$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-4})(80)^2(1.0)(1.0)(1.0) = .0164$ ksf

windspeed = 70 mph

windward pressure

$P_D = (2.56 \times 10^{-4})(70)^2(1.0)(1.0)(2.0) = .025$ ksf

leeward pressure

$P_D = (2.56 \times 10^{-4})(70)^2(1.0)(1.0)(1.0) = .0125$ ksf

- Ground Surface Roughness D: Flat, unobstructed areas and water surfaces; this category includes smooth mud flats, salt flats, and unbroken ice.

3.8.1.1.5—Wind Exposure Categories

The exposure category of the structure shall be determined as follows:

- Wind Exposure Category B: Wind Exposure Category B shall apply where the Ground Surface Roughness Category B, as defined in Article 3.8.1.1.4, prevails in the upwind direction for a distance greater than 1,500 ft for structures with a mean height of less than or equal to 33 ft, and for a distance greater than 2,600 ft or 20 times the height of the structure, whichever is greater, for structures with a mean height greater than 33 ft.
- Wind Exposure Category C: Wind Exposure Category C shall apply for all cases where Wind Exposure Categories B or D do not apply.
- Wind Exposure Category D: Wind Exposure Category D shall apply where the Ground Surface Roughness Category D, as defined in Article 3.8.1.1.4, prevails in the upwind direction for a distance greater than 5,000 ft or 20 times the height of the structure, whichever is greater. Wind Exposure Category D shall also apply where the structure is within a distance of 600 ft or 20 times the height of the structure, whichever is greater, from a Ground Surface Roughness Category D condition, even if Ground Surface Roughness Category B or C exist immediately upwind of the structure.

C3.8.1.1.5

Where Ground Surface Roughness Category D prevails in the upwind direction—except when Ground Surface Roughness Category B or C exist for a relatively short distance immediately upwind from the structure—the effect of the presence of Ground Surface Roughness Category B or C may not be significant. Ground Surface Roughness Category D is conservatively specified for these situations.

3.8.1.2—Wind Load on Structures: *WS*

3.8.1.2.1—General

The wind pressure shall be determined as:

$$P_Z = 2.56 \times 10^{-6} V^2 K_z G C_D \quad (3.8.1.2.1\text{-}1)$$

where:

P_Z = design wind pressure (ksf)
V = design 3-second gust wind speed specified in Table 3.8.1.1.2-1 (mph)
K_Z = pressure exposure and elevation coefficient to be taken equal to K_Z *(B)*, K_Z *(C)*, or K_Z *(D)* determined using Eqs. 3.8.1.2.1-2, 3.8.1.2.1-3, or 3.8.1.2.1-4, respectively, for Strength III and Service IV load combinations and to be taken as 1.0 for other load combinations

C3.8.1.2.1

The basis for the development of wind load provisions exists in Wassef (2014).

For structure heights less than 33 ft, the proximity to the ground surface causes turbulence for which the effect on wind pressure cannot be accurately determined. Therefore, no reduction in the value of K_Z is shown in Table C3.8.1.2.1-1 for structure heights less than 33 ft.

G = gust effect factor determined using a structure-specific study or as specified in Table 3.8.1.2.1-1 for Strength III and Service IV load combinations and 1.0 for other load combinations

C_D = drag coefficient determined using a structure-specific study or as specified in Table 3.8.1.2.1-2

Strength V and Service I load combinations are based on constant wind speeds that are not functionsp of the bridge type, bridge height, or the wind exposure category at the location of the bridge. Therefore, the pressure exposure and elevation coefficient, K_Z, is taken as 1.0 for these load combinations.

Unlike ASCE 7-10 (2010), which is based on power law wind profiles, these Specifications have always been based on logarithmic wind profiles. Therefore, logarithmic wind profiles were assumed in the development of Eqs. 3.8.1.2.1-2, 3.8.1.2.1-3, and 3.8.1.2.1-4.

The value of K_z at different elevations for different wind exposure categories are shown in Table C3.8.1.2.1-1.

The gust effect factor, G, is a function of the size and dynamic characteristics of the structure including bridge natural frequency and damping. The values specified in Table 3.8.1.2.1-1 are average values for sound barriers and typical bridge structures. For long-span arches, and cable-stayed and suspension bridges, the use of wind tunnel testing to determine a project-specific gust effect factor is warranted.

The 0.85 gust effect factor specified for sound barriers in Table 3.8.1.2.1-1 is consistent with the gust effect factor in ASCE 7-10 (2010) for walls and implies that wind gusts are not likely to engulf the entire barrier. However, the loaded area required to produce the maximum wind load on a sound barrier panel and the panel's vertical supports, if used, is relatively small. A higher gust effect factor may be justifiable because wind gusts may engulf the entire panel.

Table C3.8.1.2.1-1—Pressure Exposure and Elevation Coefficients, K_Z

Structure Height, Z (ft)	Wind Exposure Category B	Wind Exposure Category C	Wind Exposure Category D
≤33	0.71	1.00	1.15
40	0.75	1.05	1.20
50	0.81	1.10	1.25
60	0.85	1.14	1.29
70	0.89	1.18	1.32
80	0.92	1.21	1.35
90	0.95	1.24	1.38
100	0.98	1.27	1.41
120	1.03	1.32	1.45
140	1.07	1.36	1.49
160	1.11	1.40	1.52
180	1.15	1.43	1.55
200	1.18	1.46	1.58
250	1.24	1.52	1.63
300	1.30	1.57	1.68

When the wind speed, K_Z, and G specified for Strength V and Service I load combinations are substituted in Eq. 3.8.1.2.1-1, the resulting wind pressure on bridge structures, P_Z, becomes a multiple of the drag coefficient, C_D, for the structure being considered. The wind pressure in these cases may be calculated using Table C3.8.1.2.1-2.

Table C3.8.1.2.1-2—Wind Pressure on the Bridge Structures for Strength V and Service I Load Combinations

Load Combination	Wind Pressure on the Structure, P_Z, for the Specified Wind Speed (ksf)
Strength V	0.0163 C_D
Service I	0.0125 C_D

The pressure exposure and elevation coefficient, K_Z, for Strength III and Service IV load combinations shall be determined as follows:

$$K_Z(B) = \frac{\left[2.5\ln\left(\frac{Z}{0.9834}\right)+6.87\right]^2}{345.6} \quad (3.8.1.2.1\text{-}2)$$

$$K_Z(C) = \frac{\left[2.5\ln\left(\frac{Z}{0.0984}\right)+7.35\right]^2}{478.4} \quad (3.8.1.2.1\text{-}3)$$

$$K_Z(D) = \frac{\left[2.5\ln\left(\frac{Z}{0.0164}\right)+7.65\right]^2}{616.1} \quad (3.8.1.2.1\text{-}4)$$

where:

K_Z (B), K_Z (C), and K_Z (D) are K_Z for wind exposure Category B, C, and D, respectively.

The structure height, Z, used in determining the pressure exposure and elevation coefficient, K_z, shall be taken as:

- For bridge superstructures: The average height of the top of the superstructure above the surrounding ground or water surface.

- For bridge substructures not extending above the elevation of the superstructure: Unless otherwise approved by the Owner, the height used in determining the wind pressure on the superstructure.

In the case of a long multi-span bridge with large variation in the ground surface elevation under the bridge, such as a bridge crossing a valley, the structure height, Z, may be varied from a span to span. For each span, the structure height, Z, may be taken as the largest value in the span.

Determining the wind pressure on substructures not extending above the elevation of the superstructure using the structure height used to determine the wind pressure on the superstructure results in slightly conservative values for most substructures. For

- For bridge substructures extending above the elevation of the superstructure: Unless otherwise approved by the Owner, the height of the top of the substructure.

- For ground-mounted sound barriers: The height of the top of the sound barrier above the lower surrounding ground surface.

- For structure- or traffic-barrier-mounted sound barriers: The height of the top of the sound barrier above the low ground or water surface surrounding the support structure.

In no case shall the structure height, Z, used in calculating K_Z be taken less than 33 ft.

extremely tall substructures, using a different height, including varying the height used for different segments of the substructure, may be allowed with the approval of the Owner.

Substructures extending above the elevation of the superstructure are typically associated with cable-stayed bridges and suspension bridges. Wind loads on such structures are typically determined using a structure-specific wind tunnel test.

Where the sound barrier is constructed directly atop an embankment, the height of the sound barrier should be measured from the lower ground surface surrounding the embankment.

Table 3.8.1.2.1-1—Gust Effect Factor, *G*

Structure Type	Gust Effect Factor, G
Sound Barriers	0.85
All other structures	1.00

Table 3.8.1.2.1-2—Drag Coefficient, C_D

Component		Drag Coefficient, C_D Windward	Leeward
I-Girder and Box-Girder Bridge Superstructures		1.3	N/A
Trusses, Columns, and Arches	Sharp-Edged Member	2.0	1.0
	Round Member	1.0	0.5
Bridge Substructure		1.6	N/A
Sound Barriers		1.2	N/A

The term "columns" in Table 3.8.1.2.1-2 refers to columns in superstructures such as spandrel columns in arches.

3.8.1.2.2—Loads on the Superstructure

In the general case of wind analysis, the wind load shall be determined as specified in Article 3.8.1.1 and the wind direction shall be varied. The wind loads shall be taken as the algebraic transverse and longitudinal components of the wind load. The wind direction for design shall be that which produces the maximum force effect in the component under investigation. The transverse and longitudinal components of the wind load shall be applied simultaneously.

C3.8.1.2.2

For superstructure components, the wind load on different members should be calculated separately and used in designing the members themselves. For trusses, the wind loads from different members and from the flooring system are transferred to the top and bottom planes of wind bracing and are used in designing the wind bracing system, including the end portals and cross-frames.

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>SUBSTRUCTURE ANALYSIS</u>

ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>PIER 2 ANALYSIS</u>

Pier 2 (36 ksi steel) (carying Beams 33ksi)

	Midas Civil 2016 V2.1				
	Displacement (in)	Stress (ksi)	Rating Factor	Tonnage	Limit State
No Section Loss					
HL-93 Inventory	0.37	28.48	1.2609	N/A	Strength I
HL-93 Operating	0.34	26.04	1.6336	N/A	Strength I
HS-20	0.33	25.85	1.6772	60.38	Strength I
H20	0.29	23.01	2.6628	53.26	Strength I
CT-L3S2	0.28	22.58	2.8973	114.92	Strength I
CT-L73.0	0.31	24.11	2.1628	78.94	Strength I
CT-L3S2 + Lane Load	0.28	22.58	2.8973	N/A	Strength I
10% Section Loss					
HL-93 Inventory	0.42	32.90	**0.8713**	N/A	Strength I
HL-93 Operating	0.38	30.12	1.1285	N/A	Strength I
HS-20	0.37	29.90	1.1575	41.67	Strength I
H20	0.32	26.62	1.8336	36.67	Strength I
CT-L3S2	0.31	26.13	2.0078	80.31	Strength I
CT-L73.0	0.34	27.90	1.4928	54.49	Strength I
CT-L3S2 + Lane Load	0.31	26.13	2.0078	N/A	Strength I

PIER 2 - Pile Ananlysis No Section Loss

	Midas Civil 2016 V2.1		L-pile V2015		A-Pile		Allowable				
Live load	Shear (kip)	Axial (kip)	Max Moment in Pile (in-kip)	Max Deflection (in)	Bearing Capacity (kips)	Pile Type	Axial (kips)	Moment (kip-in)	C/D Ratio Axial	C_{Ma}=Combined Compressive and Flexural Resistance Factor* < 1	Rating Tons
HL-93 Inv.	10.5	379.8	1471.52	1.5026	520.0	HP14X89	567.3	2371	**0.896**	**1.508**	N/A
HL-93 Oper.	8.4	350.8	1144.859	1.1369	520.0	HP14X89	567.3	2371	0.970	1.313	N/A
HS-20	8.4	350.4	1131.133	1.1231	520.0	HP14X89	567.3	2371	0.971	1.306	27.72
H20	6.0	314.2	804.911	0.7968	520.0	HP14X89	567.3	2371	1.083	1.093	18.20
CT-L3S2	5.6	309.2	833.655	0.8256	520.0	HP14X89	567.3	2371	1.101	1.091	36.80
CT-L73.0	7.1	328.3	1085.494	1.0771	520.0	HP14X89	567.3	2371	1.037	1.234	29.57
CT-L3S2 + Lane Load	5.9	314.4	889.204	0.8810	520.0	HP14X89	567.3	2371	1.083	1.125	N/A

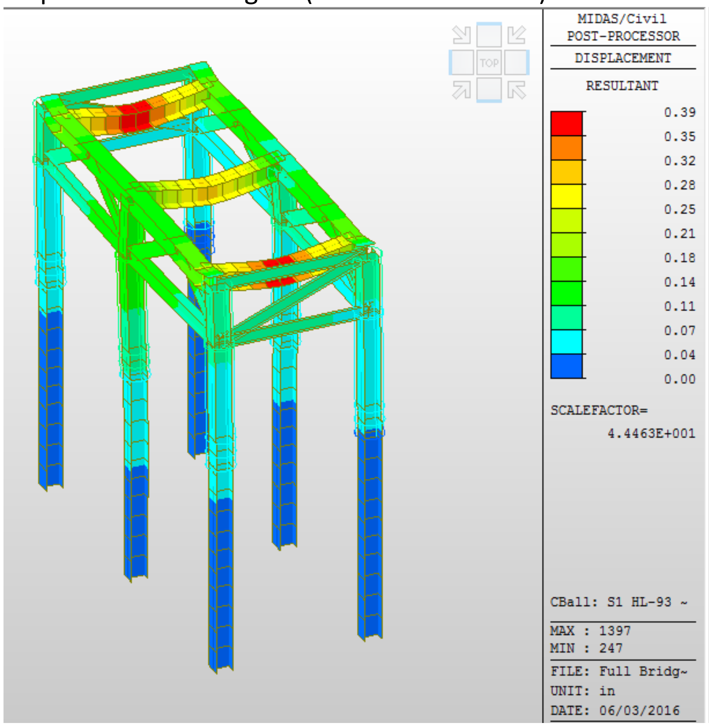
*$C_{Ma}=P_U/P_R+\gamma((M_{Ux}/M_{rx)})+(M_{Uy}/M_{ry})) < 1.0$ AASHTO 6.9.2.2-2

*C/D Ratio AASHTO 6.9.4

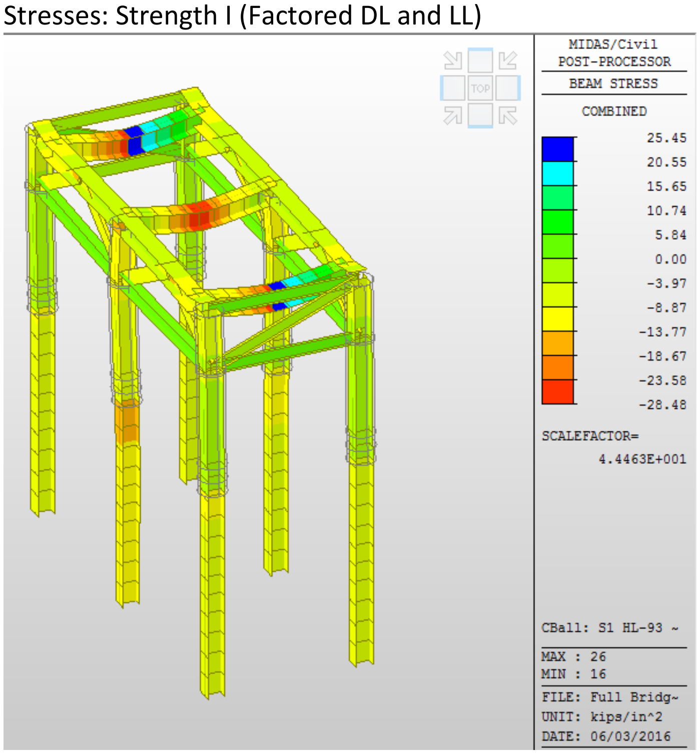
LRFD ANALYSIS

Pier 2 (No Section Loss)

Displacement: Strength I (Factored DL and LL)



Stresses: Strength I (Factored DL and LL)



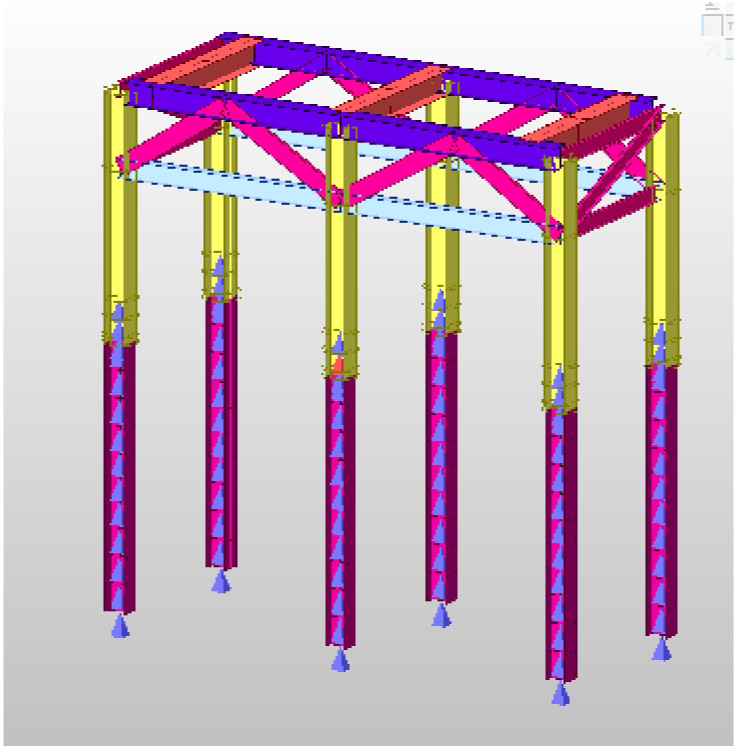
36 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ± Sax (Warping).

LRFD ANALYSIS

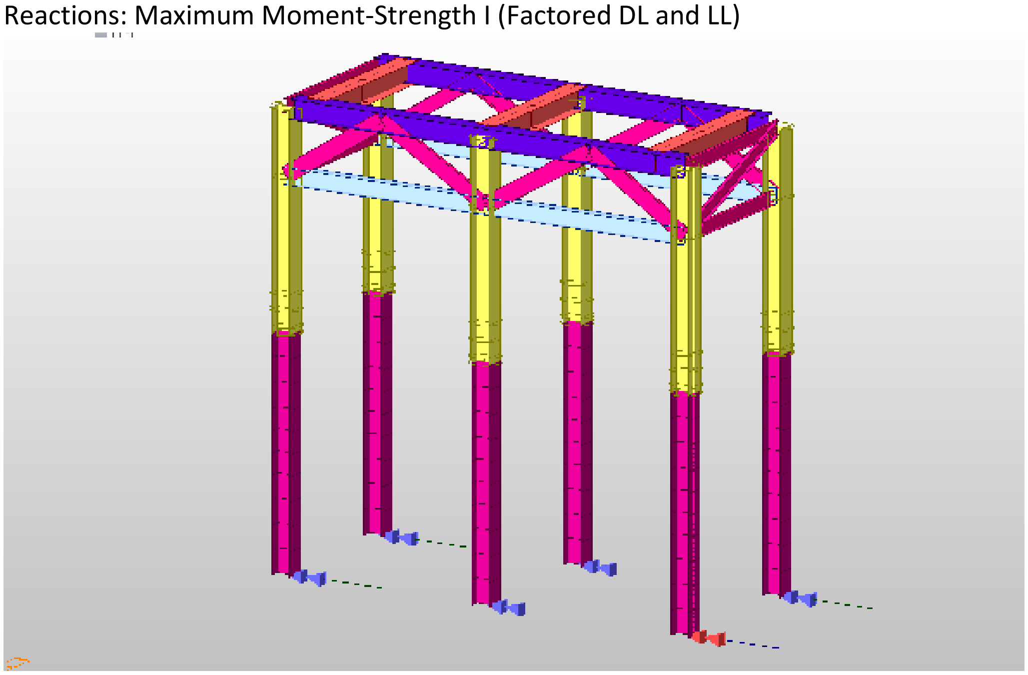
Pier 2 (No Section Loss)

Reactions: Maximum Axial Load-Strength I (Factored DL and LL)



Maximum Axial Load = 379.8 kips (Midas)

Reactions: Maximum Moment-Strength I (Factored DL and LL)



Maximum Moment = 1471.52 in-kips (L-Pile)

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH NO SECTION LOSS

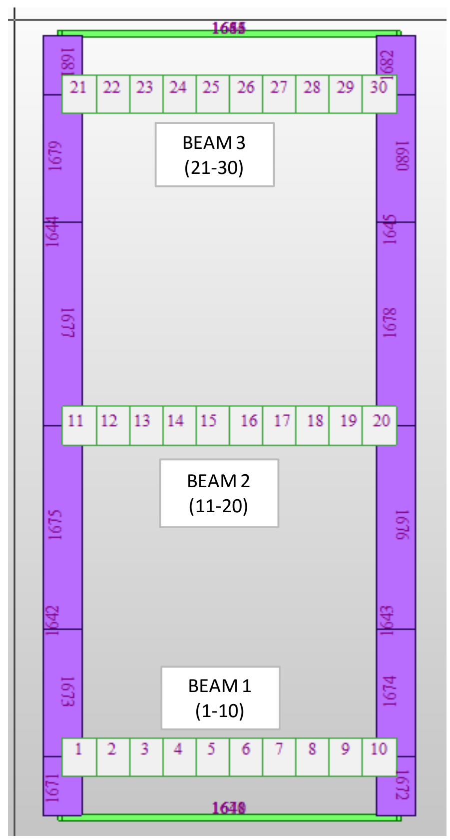
RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

$f_{DL+SDL} = 1.25*DL + 1.5*DW$

$f_{LL+I} = \Upsilon_{LL}*LL$

Minimum Rating factor 2.663



ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	H-20	33	31.35	-3.000	1.120	25.313
1	H-20	33	31.35	-0.350	-0.170	182.353
2	H-20	33	31.35	-5.660	2.210	11.624
2	H-20	33	31.35	-3.000	1.120	25.313
3	H-20	33	31.35	-8.440	3.310	6.921
3	H-20	33	31.35	-5.660	2.210	11.624
4	H-20	33	31.35	-11.340	4.420	4.527
4	H-20	33	31.35	-8.440	3.310	6.921
5	H-20	33	31.35	-14.220	5.540	3.092
5	H-20	33	31.35	-11.340	4.420	4.527
6	H-20	33	31.35	10.600	4.430	4.684
6	H-20	33	31.35	13.230	5.550	3.265
7	H-20	33	31.35	8.140	3.310	7.012
7	H-20	33	31.35	10.600	4.430	4.684
8	H-20	33	31.35	5.680	2.190	11.721
8	H-20	33	31.35	8.140	3.310	7.012
9	H-20	33	31.35	3.200	1.110	25.360
9	H-20	33	31.35	5.680	2.190	11.721
10	H-20	33	31.35	0.730	0.160	191.375
10	H-20	33	31.35	3.200	1.110	25.360
11	H-20	33	31.35	-1.960	-0.520	56.519
11	H-20	33	31.35	-6.900	-1.450	16.862
12	H-20	33	31.35	-3.460	-1.240	22.492
12	H-20	33	31.35	-1.960	-0.520	56.519
13	H-20	33	31.35	-8.360	-2.450	9.384
13	H-20	33	31.35	-3.460	-1.240	22.492
14	H-20	33	31.35	-13.260	-3.670	4.929
14	H-20	33	31.35	-8.360	-2.450	9.384
15	H-20	33	31.35	-18.140	-4.880	2.707
15	H-20	33	31.35	-13.260	-3.670	4.929
16	H-20	33	31.35	-13.090	-3.900	4.682
16	H-20	33	31.35	-17.530	-5.190	2.663
17	H-20	33	31.35	-8.630	-2.600	8.738
17	H-20	33	31.35	-13.090	-3.900	4.682
18	H-20	33	31.35	-4.180	-1.300	20.900
18	H-20	33	31.35	-8.630	-2.600	8.738
19	H-20	33	31.35	-0.630	-0.520	59.077
19	H-20	33	31.35	-4.180	-1.300	20.900
20	H-20	33	31.35	-5.120	-1.480	17.723
20	H-20	33	31.35	-0.630	-0.520	59.077
21	H-20	33	31.35	-3.410	1.140	24.509
21	H-20	33	31.35	-0.780	-0.180	169.833
22	H-20	33	31.35	-6.060	2.220	11.392
22	H-20	33	31.35	-3.410	1.140	24.509
23	H-20	33	31.35	-8.700	3.300	6.864
23	H-20	33	31.35	-6.060	2.220	11.392
24	H-20	33	31.35	-11.470	4.420	4.498
24	H-20	33	31.35	-8.700	3.300	6.864
25	H-20	33	31.35	-14.470	5.540	3.047
25	H-20	33	31.35	-11.470	4.420	4.498
26	H-20	33	31.35	10.840	4.440	4.619
26	H-20	33	31.35	13.590	5.570	3.189
27	H-20	33	31.35	8.130	3.320	6.994
27	H-20	33	31.35	10.840	4.440	4.619
28	H-20	33	31.35	5.530	2.200	11.736
28	H-20	33	31.35	8.130	3.320	6.994
29	H-20	33	31.35	2.930	1.120	25.375
29	H-20	33	31.35	5.530	2.200	11.736
30	H-20	33	31.35	0.330	-0.170	182.471
30	H-20	33	31.35	2.930	1.120	25.375

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH NO SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	HS-20	33	31.35	-3.000	1.790	15.838
1	HS-20	33	31.35	-0.350	-0.290	106.897
2	HS-20	33	31.35	-5.660	3.500	7.340
2	HS-20	33	31.35	-3.000	1.790	15.838
3	HS-20	33	31.35	-8.440	5.260	4.356
3	HS-20	33	31.35	-5.660	3.500	7.340
4	HS-20	33	31.35	-11.340	7.040	2.842
4	HS-20	33	31.35	-8.440	5.260	4.356
5	HS-20	33	31.35	-14.220	8.820	1.942
5	HS-20	33	31.35	-11.340	7.040	2.842
6	HS-20	33	31.35	10.600	7.060	2.939
6	HS-20	33	31.35	13.230	8.850	2.047
7	HS-20	33	31.35	8.140	5.270	4.404
7	HS-20	33	31.35	10.600	7.060	2.939
8	HS-20	33	31.35	5.680	3.480	7.376
8	HS-20	33	31.35	8.140	5.270	4.404
9	HS-20	33	31.35	3.200	1.780	15.815
9	HS-20	33	31.35	5.680	3.480	7.376
10	HS-20	33	31.35	0.730	0.280	109.357
10	HS-20	33	31.35	3.200	1.780	15.815
11	HS-20	33	31.35	-1.960	-0.830	35.410
11	HS-20	33	31.35	-6.900	-2.310	10.584
12	HS-20	33	31.35	-3.460	-1.960	14.230
12	HS-20	33	31.35	-1.960	-0.830	35.410
13	HS-20	33	31.35	-8.360	-3.880	5.925
13	HS-20	33	31.35	-3.460	-1.960	14.230
14	HS-20	33	31.35	-13.260	-5.810	3.114
14	HS-20	33	31.35	-8.360	-3.880	5.925
15	HS-20	33	31.35	-18.140	-7.730	1.709
15	HS-20	33	31.35	-13.260	-5.810	3.114
16	HS-20	33	31.35	-13.090	-6.180	2.955
16	HS-20	33	31.35	-17.530	-8.240	1.677
17	HS-20	33	31.35	-8.630	-4.120	5.515
17	HS-20	33	31.35	-13.090	-6.180	2.955
18	HS-20	33	31.35	-4.180	-2.060	13.189
18	HS-20	33	31.35	-8.630	-4.120	5.515
19	HS-20	33	31.35	-0.630	-0.820	37.463
19	HS-20	33	31.35	-4.180	-2.060	13.189
20	HS-20	33	31.35	-5.120	-2.380	11.021
20	HS-20	33	31.35	-0.630	-0.820	37.463
21	HS-20	33	31.35	-3.410	1.820	15.352
21	HS-20	33	31.35	-0.780	-0.310	98.613
22	HS-20	33	31.35	-6.060	3.520	7.185
22	HS-20	33	31.35	-3.410	1.820	15.352
23	HS-20	33	31.35	-8.700	5.250	4.314
23	HS-20	33	31.35	-6.060	3.520	7.185
24	HS-20	33	31.35	-11.470	7.040	2.824
24	HS-20	33	31.35	-8.700	5.250	4.314
25	HS-20	33	31.35	-14.470	8.830	1.912
25	HS-20	33	31.35	-11.470	7.040	2.824
26	HS-20	33	31.35	10.840	7.080	2.897
26	HS-20	33	31.35	13.590	8.870	2.002
27	HS-20	33	31.35	8.130	5.280	4.398
27	HS-20	33	31.35	10.840	7.080	2.897
28	HS-20	33	31.35	5.530	3.490	7.398
28	HS-20	33	31.35	8.130	5.280	4.398
29	HS-20	33	31.35	2.930	1.790	15.877
29	HS-20	33	31.35	5.530	3.490	7.398
30	HS-20	33	31.35	0.330	-0.290	106.966
30	HS-20	33	31.35	2.930	1.790	15.877

Minimum Rating factor 1.677

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH NO SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating factor 1.261

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	HL-93 Inventory	33	31.35	-3.000	2.400	11.813
1	HL-93 Inventory	33	31.35	-0.350	-0.430	72.093
2	HL-93 Inventory	33	31.35	-5.660	4.650	5.525
2	HL-93 Inventory	33	31.35	-3.000	2.400	11.813
3	HL-93 Inventory	33	31.35	-8.440	7.010	3.268
3	HL-93 Inventory	33	31.35	-5.660	4.650	5.525
4	HL-93 Inventory	33	31.35	-11.340	9.400	2.129
4	HL-93 Inventory	33	31.35	-8.440	7.010	3.268
5	HL-93 Inventory	33	31.35	-14.220	11.790	1.453
5	HL-93 Inventory	33	31.35	-11.340	9.400	2.129
6	HL-93 Inventory	33	31.35	10.600	9.430	2.200
6	HL-93 Inventory	33	31.35	13.230	11.830	1.532
7	HL-93 Inventory	33	31.35	8.140	7.030	3.302
7	HL-93 Inventory	33	31.35	10.600	9.430	2.200
8	HL-93 Inventory	33	31.35	5.680	4.630	5.544
8	HL-93 Inventory	33	31.35	8.140	7.030	3.302
9	HL-93 Inventory	33	31.35	3.200	2.380	11.828
9	HL-93 Inventory	33	31.35	5.680	4.630	5.544
10	HL-93 Inventory	33	31.35	0.730	-0.410	74.683
10	HL-93 Inventory	33	31.35	3.200	2.380	11.828
11	HL-93 Inventory	33	31.35	-1.960	-1.120	26.241
11	HL-93 Inventory	33	31.35	-6.900	-3.080	7.938
12	HL-93 Inventory	33	31.35	-3.460	-2.600	10.727
12	HL-93 Inventory	33	31.35	-1.960	-1.120	26.241
13	HL-93 Inventory	33	31.35	-8.360	-5.160	4.455
13	HL-93 Inventory	33	31.35	-3.460	-2.600	10.727
14	HL-93 Inventory	33	31.35	-13.260	-7.710	2.346
14	HL-93 Inventory	33	31.35	-8.360	-5.160	4.455
15	HL-93 Inventory	33	31.35	-18.140	-10.270	1.286
15	HL-93 Inventory	33	31.35	-13.260	-7.710	2.346
16	HL-93 Inventory	33	31.35	-13.090	-8.220	2.221
16	HL-93 Inventory	33	31.35	-17.530	-10.960	1.261
17	HL-93 Inventory	33	31.35	-8.630	-5.480	4.146
17	HL-93 Inventory	33	31.35	-13.090	-8.220	2.221
18	HL-93 Inventory	33	31.35	-4.180	-2.740	9.916
18	HL-93 Inventory	33	31.35	-8.630	-5.480	4.146
19	HL-93 Inventory	33	31.35	-0.630	-1.090	28.183
19	HL-93 Inventory	33	31.35	-4.180	-2.740	9.916
20	HL-93 Inventory	33	31.35	-5.120	-3.200	8.197
20	HL-93 Inventory	33	31.35	-0.630	-1.090	28.183
21	HL-93 Inventory	33	31.35	-3.410	2.440	11.451
21	HL-93 Inventory	33	31.35	-0.780	-0.460	66.457
22	HL-93 Inventory	33	31.35	-6.060	4.670	5.415
22	HL-93 Inventory	33	31.35	-3.410	2.440	11.451
23	HL-93 Inventory	33	31.35	-8.700	7.000	3.236
23	HL-93 Inventory	33	31.35	-6.060	4.670	5.415
24	HL-93 Inventory	33	31.35	-11.470	9.400	2.115
24	HL-93 Inventory	33	31.35	-8.700	7.000	3.236
25	HL-93 Inventory	33	31.35	-14.470	11.800	1.431
25	HL-93 Inventory	33	31.35	-11.470	9.400	2.115
26	HL-93 Inventory	33	31.35	10.840	9.450	2.170
26	HL-93 Inventory	33	31.35	13.590	11.860	1.497
27	HL-93 Inventory	33	31.35	8.130	7.040	3.298
27	HL-93 Inventory	33	31.35	10.840	9.450	2.170
28	HL-93 Inventory	33	31.35	5.530	4.630	5.577
28	HL-93 Inventory	33	31.35	8.130	7.040	3.298
29	HL-93 Inventory	33	31.35	2.930	2.400	11.842
29	HL-93 Inventory	33	31.35	5.530	4.630	5.577
30	HL-93 Inventory	33	31.35	0.330	-0.430	72.140
30	HL-93 Inventory	33	31.35	2.930	2.400	11.842

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH NO SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	HL-93 Operating	33	31.35	-3.000	1.850	15.324
1	HL-93 Operating	33	31.35	-0.350	-0.330	93.939
2	HL-93 Operating	33	31.35	-5.660	3.580	7.176
2	HL-93 Operating	33	31.35	-3.000	1.850	15.324
3	HL-93 Operating	33	31.35	-8.440	5.410	4.235
3	HL-93 Operating	33	31.35	-5.660	3.580	7.176
4	HL-93 Operating	33	31.35	-11.340	7.250	2.760
4	HL-93 Operating	33	31.35	-8.440	5.410	4.235
5	HL-93 Operating	33	31.35	-14.220	9.090	1.884
5	HL-93 Operating	33	31.35	-11.340	7.250	2.760
6	HL-93 Operating	33	31.35	10.600	7.280	2.850
6	HL-93 Operating	33	31.35	13.230	9.130	1.985
7	HL-93 Operating	33	31.35	8.140	5.420	4.282
7	HL-93 Operating	33	31.35	10.600	7.280	2.850
8	HL-93 Operating	33	31.35	5.680	3.570	7.190
8	HL-93 Operating	33	31.35	8.140	5.420	4.282
9	HL-93 Operating	33	31.35	3.200	1.830	15.383
9	HL-93 Operating	33	31.35	5.680	3.570	7.190
10	HL-93 Operating	33	31.35	0.730	-0.310	98.774
10	HL-93 Operating	33	31.35	3.200	1.830	15.383
11	HL-93 Operating	33	31.35	-1.960	-0.860	34.174
11	HL-93 Operating	33	31.35	-6.900	-2.380	10.273
12	HL-93 Operating	33	31.35	-3.460	-2.010	13.876
12	HL-93 Operating	33	31.35	-1.960	-0.860	34.174
13	HL-93 Operating	33	31.35	-8.360	-3.980	5.776
13	HL-93 Operating	33	31.35	-3.460	-2.010	13.876
14	HL-93 Operating	33	31.35	-13.260	-5.950	3.040
14	HL-93 Operating	33	31.35	-8.360	-3.980	5.776
15	HL-93 Operating	33	31.35	-18.140	-7.920	1.668
15	HL-93 Operating	33	31.35	-13.260	-5.950	3.040
16	HL-93 Operating	33	31.35	-13.090	-6.340	2.880
16	HL-93 Operating	33	31.35	-17.530	-8.460	1.634
17	HL-93 Operating	33	31.35	-8.630	-4.230	5.371
17	HL-93 Operating	33	31.35	-13.090	-6.340	2.880
18	HL-93 Operating	33	31.35	-4.180	-2.110	12.877
18	HL-93 Operating	33	31.35	-8.630	-4.230	5.371
19	HL-93 Operating	33	31.35	-0.630	-0.840	36.571
19	HL-93 Operating	33	31.35	-4.180	-2.110	12.877
20	HL-93 Operating	33	31.35	-5.120	-2.470	10.619
20	HL-93 Operating	33	31.35	-0.630	-0.840	36.571
21	HL-93 Operating	33	31.35	-3.410	1.880	14.862
21	HL-93 Operating	33	31.35	-0.780	-0.360	84.917
22	HL-93 Operating	33	31.35	-6.060	3.600	7.025
22	HL-93 Operating	33	31.35	-3.410	1.880	14.862
23	HL-93 Operating	33	31.35	-8.700	5.400	4.194
23	HL-93 Operating	33	31.35	-6.060	3.600	7.025
24	HL-93 Operating	33	31.35	-11.470	7.250	2.742
24	HL-93 Operating	33	31.35	-8.700	5.400	4.194
25	HL-93 Operating	33	31.35	-14.470	9.100	1.855
25	HL-93 Operating	33	31.35	-11.470	7.250	2.742
26	HL-93 Operating	33	31.35	10.840	7.290	2.813
26	HL-93 Operating	33	31.35	13.590	9.150	1.941
27	HL-93 Operating	33	31.35	8.130	5.430	4.276
27	HL-93 Operating	33	31.35	10.840	7.290	2.813
28	HL-93 Operating	33	31.35	5.530	3.570	7.232
28	HL-93 Operating	33	31.35	8.130	5.430	4.276
29	HL-93 Operating	33	31.35	2.930	1.850	15.362
29	HL-93 Operating	33	31.35	5.530	3.570	7.232
30	HL-93 Operating	33	31.35	0.330	-0.330	94.000
30	HL-93 Operating	33	31.35	2.930	1.850	15.362

Minimum Rating factor 1.634

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH NO SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating factor 2.897

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	CT-L3S2	33	31.35	-3.000	1.050	27.000
1	CT-L3S2	33	31.35	-0.350	-0.200	155.000
2	CT-L3S2	33	31.35	-5.660	2.010	12.781
2	CT-L3S2	33	31.35	-3.000	1.050	27.000
3	CT-L3S2	33	31.35	-8.440	3.050	7.511
3	CT-L3S2	33	31.35	-5.660	2.010	12.781
4	CT-L3S2	33	31.35	-11.340	4.100	4.880
4	CT-L3S2	33	31.35	-8.440	3.050	7.511
5	CT-L3S2	33	31.35	-14.220	5.150	3.326
5	CT-L3S2	33	31.35	-11.340	4.100	4.880
6	CT-L3S2	33	31.35	10.600	4.120	5.036
6	CT-L3S2	33	31.35	13.230	5.170	3.505
7	CT-L3S2	33	31.35	8.140	3.060	7.585
7	CT-L3S2	33	31.35	10.600	4.120	5.036
8	CT-L3S2	33	31.35	5.680	2.010	12.771
8	CT-L3S2	33	31.35	8.140	3.060	7.585
9	CT-L3S2	33	31.35	3.200	1.040	27.067
9	CT-L3S2	33	31.35	5.680	2.010	12.771
10	CT-L3S2	33	31.35	0.730	-0.180	170.111
10	CT-L3S2	33	31.35	3.200	1.040	27.067
11	CT-L3S2	33	31.35	-1.960	-0.490	59.980
11	CT-L3S2	33	31.35	-6.900	-1.350	18.111
12	CT-L3S2	33	31.35	-3.460	-1.130	24.681
12	CT-L3S2	33	31.35	-1.960	-0.490	59.980
13	CT-L3S2	33	31.35	-8.360	-2.240	10.263
13	CT-L3S2	33	31.35	-3.460	-1.130	24.681
14	CT-L3S2	33	31.35	-13.260	-3.350	5.400
14	CT-L3S2	33	31.35	-8.360	-2.240	10.263
15	CT-L3S2	33	31.35	-18.140	-4.450	2.969
15	CT-L3S2	33	31.35	-13.260	-3.350	5.400
16	CT-L3S2	33	31.35	-13.090	-3.580	5.101
16	CT-L3S2	33	31.35	-17.530	-4.770	2.897
17	CT-L3S2	33	31.35	-8.630	-2.380	9.546
17	CT-L3S2	33	31.35	-13.090	-3.580	5.101
18	CT-L3S2	33	31.35	-4.180	-1.190	22.832
18	CT-L3S2	33	31.35	-8.630	-2.380	9.546
19	CT-L3S2	33	31.35	-0.630	-0.470	65.362
19	CT-L3S2	33	31.35	-4.180	-1.190	22.832
20	CT-L3S2	33	31.35	-5.120	-1.410	18.603
20	CT-L3S2	33	31.35	-0.630	-0.470	65.362
21	CT-L3S2	33	31.35	-3.410	1.070	26.112
21	CT-L3S2	33	31.35	-0.780	-0.210	145.571
22	CT-L3S2	33	31.35	-6.060	2.020	12.520
22	CT-L3S2	33	31.35	-3.410	1.070	26.112
23	CT-L3S2	33	31.35	-8.700	3.050	7.426
23	CT-L3S2	33	31.35	-6.060	2.020	12.520
24	CT-L3S2	33	31.35	-11.470	4.100	4.849
24	CT-L3S2	33	31.35	-8.700	3.050	7.426
25	CT-L3S2	33	31.35	-14.470	5.150	3.278
25	CT-L3S2	33	31.35	-11.470	4.100	4.849
26	CT-L3S2	33	31.35	10.840	4.120	4.978
26	CT-L3S2	33	31.35	13.590	5.180	3.429
27	CT-L3S2	33	31.35	8.130	3.070	7.564
27	CT-L3S2	33	31.35	10.840	4.120	4.978
28	CT-L3S2	33	31.35	5.530	2.010	12.846
28	CT-L3S2	33	31.35	8.130	3.070	7.564
29	CT-L3S2	33	31.35	2.930	1.050	27.067
29	CT-L3S2	33	31.35	5.530	2.010	12.846
30	CT-L3S2	33	31.35	0.330	-0.200	155.100
30	CT-L3S2	33	31.35	2.930	1.050	27.067

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH NO SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	CT-L73.0	33	31.35	-3.000	1.390	20.396
1	CT-L73.0	33	31.35	-0.350	-0.230	134.783
2	CT-L73.0	33	31.35	-5.660	2.710	9.480
2	CT-L73.0	33	31.35	-3.000	1.390	20.396
3	CT-L73.0	33	31.35	-8.440	4.070	5.629
3	CT-L73.0	33	31.35	-5.660	2.710	9.480
4	CT-L73.0	33	31.35	-11.340	5.450	3.672
4	CT-L73.0	33	31.35	-8.440	4.070	5.629
5	CT-L73.0	33	31.35	-14.220	6.830	2.508
5	CT-L73.0	33	31.35	-11.340	5.450	3.672
6	CT-L73.0	33	31.35	10.600	5.470	3.793
6	CT-L73.0	33	31.35	13.230	6.850	2.645
7	CT-L73.0	33	31.35	8.140	4.080	5.689
7	CT-L73.0	33	31.35	10.600	5.470	3.793
8	CT-L73.0	33	31.35	5.680	2.700	9.507
8	CT-L73.0	33	31.35	8.140	4.080	5.689
9	CT-L73.0	33	31.35	3.200	1.370	20.547
9	CT-L73.0	33	31.35	5.680	2.700	9.507
10	CT-L73.0	33	31.35	0.730	0.220	139.182
10	CT-L73.0	33	31.35	3.200	1.370	20.547
11	CT-L73.0	33	31.35	-1.960	-0.640	45.922
11	CT-L73.0	33	31.35	-6.900	-1.790	13.659
12	CT-L73.0	33	31.35	-3.460	-1.520	18.349
12	CT-L73.0	33	31.35	-1.960	-0.640	45.922
13	CT-L73.0	33	31.35	-8.360	-3.010	7.638
13	CT-L73.0	33	31.35	-3.460	-1.520	18.349
14	CT-L73.0	33	31.35	-13.260	-4.500	4.020
14	CT-L73.0	33	31.35	-8.360	-3.010	7.638
15	CT-L73.0	33	31.35	-18.140	-5.990	2.205
15	CT-L73.0	33	31.35	-13.260	-4.500	4.020
16	CT-L73.0	33	31.35	-13.090	-4.790	3.812
16	CT-L73.0	33	31.35	-17.530	-6.390	2.163
17	CT-L73.0	33	31.35	-8.630	-3.190	7.122
17	CT-L73.0	33	31.35	-13.090	-4.790	3.812
18	CT-L73.0	33	31.35	-4.180	-1.600	16.981
18	CT-L73.0	33	31.35	-8.630	-3.190	7.122
19	CT-L73.0	33	31.35	-0.630	-0.640	48.000
19	CT-L73.0	33	31.35	-4.180	-1.600	16.981
20	CT-L73.0	33	31.35	-5.120	-1.840	14.255
20	CT-L73.0	33	31.35	-0.630	-0.640	48.000
21	CT-L73.0	33	31.35	-3.410	1.410	19.816
21	CT-L73.0	33	31.35	-0.780	-0.240	127.375
22	CT-L73.0	33	31.35	-6.060	2.730	9.264
22	CT-L73.0	33	31.35	-3.410	1.410	19.816
23	CT-L73.0	33	31.35	-8.700	4.070	5.565
23	CT-L73.0	33	31.35	-6.060	2.730	9.264
24	CT-L73.0	33	31.35	-11.470	5.450	3.648
24	CT-L73.0	33	31.35	-8.700	4.070	5.565
25	CT-L73.0	33	31.35	-14.470	6.840	2.468
25	CT-L73.0	33	31.35	-11.470	5.450	3.648
26	CT-L73.0	33	31.35	10.840	5.480	3.743
26	CT-L73.0	33	31.35	13.590	6.870	2.585
27	CT-L73.0	33	31.35	8.130	4.090	5.677
27	CT-L73.0	33	31.35	10.840	5.480	3.743
28	CT-L73.0	33	31.35	5.530	2.700	9.563
28	CT-L73.0	33	31.35	8.130	4.090	5.677
29	CT-L73.0	33	31.35	2.930	1.390	20.446
29	CT-L73.0	33	31.35	5.530	2.700	9.563
30	CT-L73.0	33	31.35	0.330	-0.230	134.870
30	CT-L73.0	33	31.35	2.930	1.390	20.446

Minimum Rating factor 2.163

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH NO SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

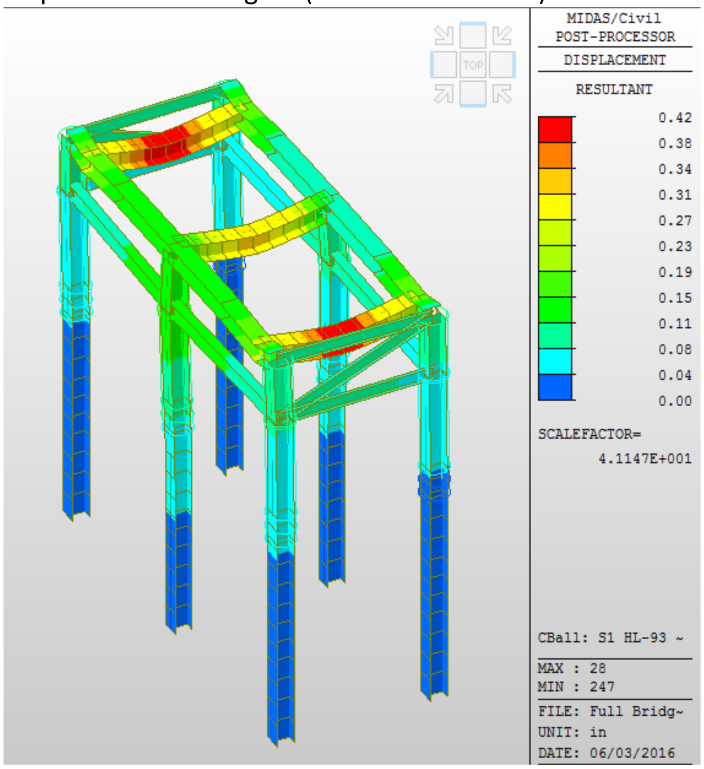
Minimum Rating factor 2.897

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	CT-L3S2 + Lane Load	33	31.35	-3.000	1.050	27.000
1	CT-L3S2 + Lane Load	33	31.35	-0.350	-0.200	155.000
2	CT-L3S2 + Lane Load	33	31.35	-5.660	2.010	12.781
2	CT-L3S2 + Lane Load	33	31.35	-3.000	1.050	27.000
3	CT-L3S2 + Lane Load	33	31.35	-8.440	3.050	7.511
3	CT-L3S2 + Lane Load	33	31.35	-5.660	2.010	12.781
4	CT-L3S2 + Lane Load	33	31.35	-11.340	4.100	4.880
4	CT-L3S2 + Lane Load	33	31.35	-8.440	3.050	7.511
5	CT-L3S2 + Lane Load	33	31.35	-14.220	5.150	3.326
5	CT-L3S2 + Lane Load	33	31.35	-11.340	4.100	4.880
6	CT-L3S2 + Lane Load	33	31.35	10.600	4.120	5.036
6	CT-L3S2 + Lane Load	33	31.35	13.230	5.170	3.505
7	CT-L3S2 + Lane Load	33	31.35	8.140	3.060	7.585
7	CT-L3S2 + Lane Load	33	31.35	10.600	4.120	5.036
8	CT-L3S2 + Lane Load	33	31.35	5.680	2.010	12.771
8	CT-L3S2 + Lane Load	33	31.35	8.140	3.060	7.585
9	CT-L3S2 + Lane Load	33	31.35	3.200	1.040	27.067
9	CT-L3S2 + Lane Load	33	31.35	5.680	2.010	12.771
10	CT-L3S2 + Lane Load	33	31.35	0.730	-0.180	170.111
10	CT-L3S2 + Lane Load	33	31.35	3.200	1.040	27.067
11	CT-L3S2 + Lane Load	33	31.35	-1.960	-0.490	59.980
11	CT-L3S2 + Lane Load	33	31.35	-6.900	-1.350	18.111
12	CT-L3S2 + Lane Load	33	31.35	-3.460	-1.130	24.681
12	CT-L3S2 + Lane Load	33	31.35	-1.960	-0.490	59.980
13	CT-L3S2 + Lane Load	33	31.35	-8.360	-2.240	10.263
13	CT-L3S2 + Lane Load	33	31.35	-3.460	-1.130	24.681
14	CT-L3S2 + Lane Load	33	31.35	-13.260	-3.350	5.400
14	CT-L3S2 + Lane Load	33	31.35	-8.360	-2.240	10.263
15	CT-L3S2 + Lane Load	33	31.35	-18.140	-4.450	2.969
15	CT-L3S2 + Lane Load	33	31.35	-13.260	-3.350	5.400
16	CT-L3S2 + Lane Load	33	31.35	-13.090	-3.580	5.101
16	CT-L3S2 + Lane Load	33	31.35	-17.530	-4.770	2.897
17	CT-L3S2 + Lane Load	33	31.35	-8.630	-2.380	9.546
17	CT-L3S2 + Lane Load	33	31.35	-13.090	-3.580	5.101
18	CT-L3S2 + Lane Load	33	31.35	-4.180	-1.190	22.832
18	CT-L3S2 + Lane Load	33	31.35	-8.630	-2.380	9.546
19	CT-L3S2 + Lane Load	33	31.35	-0.630	-0.470	65.362
19	CT-L3S2 + Lane Load	33	31.35	-4.180	-1.190	22.832
20	CT-L3S2 + Lane Load	33	31.35	-5.120	-1.410	18.603
20	CT-L3S2 + Lane Load	33	31.35	-0.630	-0.470	65.362
21	CT-L3S2 + Lane Load	33	31.35	-3.410	1.070	26.112
21	CT-L3S2 + Lane Load	33	31.35	-0.780	-0.210	145.571
22	CT-L3S2 + Lane Load	33	31.35	-6.060	2.020	12.520
22	CT-L3S2 + Lane Load	33	31.35	-3.410	1.070	26.112
23	CT-L3S2 + Lane Load	33	31.35	-8.700	3.050	7.426
23	CT-L3S2 + Lane Load	33	31.35	-6.060	2.020	12.520
24	CT-L3S2 + Lane Load	33	31.35	-11.470	4.100	4.849
24	CT-L3S2 + Lane Load	33	31.35	-8.700	3.050	7.426
25	CT-L3S2 + Lane Load	33	31.35	-14.470	5.150	3.278
25	CT-L3S2 + Lane Load	33	31.35	-11.470	4.100	4.849
26	CT-L3S2 + Lane Load	33	31.35	10.840	4.120	4.978
26	CT-L3S2 + Lane Load	33	31.35	13.590	5.180	3.429
27	CT-L3S2 + Lane Load	33	31.35	8.130	3.070	7.564
27	CT-L3S2 + Lane Load	33	31.35	10.840	4.120	4.978
28	CT-L3S2 + Lane Load	33	31.35	5.530	2.010	12.846
28	CT-L3S2 + Lane Load	33	31.35	8.130	3.070	7.564
29	CT-L3S2 + Lane Load	33	31.35	2.930	1.050	27.067
29	CT-L3S2 + Lane Load	33	31.35	5.530	2.010	12.846
30	CT-L3S2 + Lane Load	33	31.35	0.330	-0.200	155.100
30	CT-L3S2 + Lane Load	33	31.35	2.930	1.050	27.067

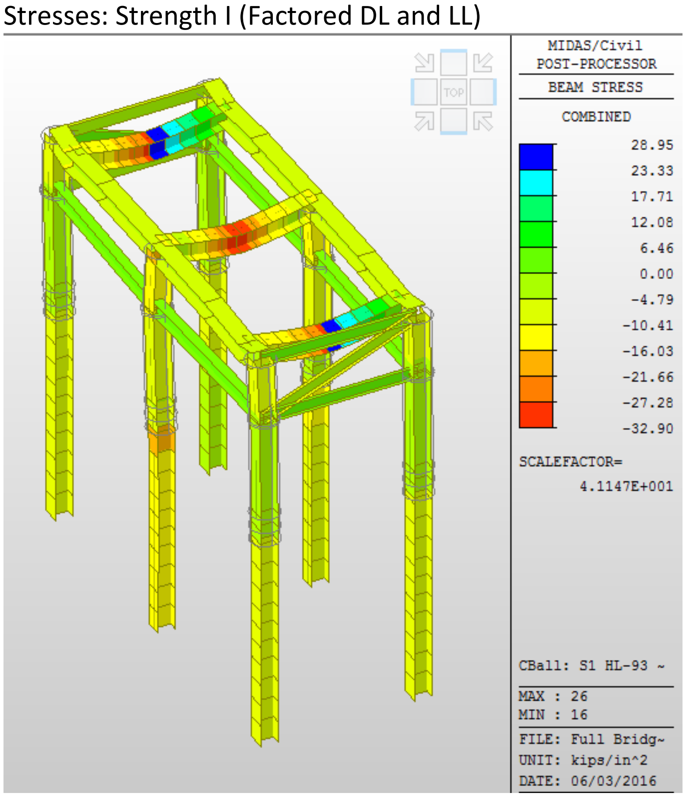
LRFD ANALYSIS

Pier 2 (With Section Loss)

Displacement: Strength I (Factored DL and LL)



Stresses: Strength I (Factored DL and LL)



36 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ± Sax (Warping).

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH 10% SECTION LOSS

RF= RATING FACTOR

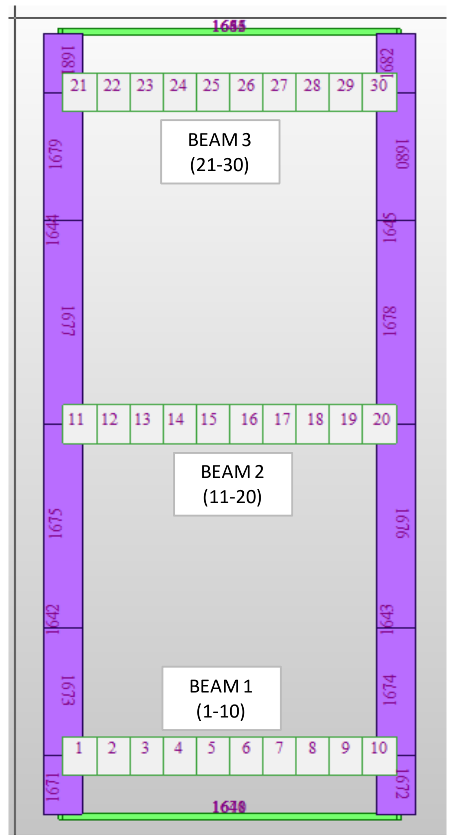
$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	H-20	33	31.35	-3.440	1.290	21.636
1	H-20	33	31.35	-0.460	-0.210	147.095
2	H-20	33	31.35	-6.440	2.540	9.807
2	H-20	33	31.35	-3.440	1.290	21.636
3	H-20	33	31.35	-9.520	3.780	5.775
3	H-20	33	31.35	-6.440	2.540	9.807
4	H-20	33	31.35	-12.810	5.060	3.664
4	H-20	33	31.35	-9.520	3.780	5.775
5	H-20	33	31.35	-16.090	6.340	2.407
5	H-20	33	31.35	-12.810	5.060	3.664
6	H-20	33	31.35	11.950	5.060	3.834
6	H-20	33	31.35	15.020	6.340	2.576
7	H-20	33	31.35	9.220	3.780	5.854
7	H-20	33	31.35	11.950	5.060	3.834
8	H-20	33	31.35	6.470	2.520	9.873
8	H-20	33	31.35	9.220	3.780	5.854
9	H-20	33	31.35	3.710	1.280	21.594
9	H-20	33	31.35	6.470	2.520	9.873
10	H-20	33	31.35	0.960	0.210	144.714
10	H-20	33	31.35	3.710	1.280	21.594
11	H-20	33	31.35	-2.800	-0.730	39.110
11	H-20	33	31.35	-8.630	-1.830	12.415
12	H-20	33	31.35	-3.670	-1.350	20.504
12	H-20	33	31.35	-2.800	-0.730	39.110
13	H-20	33	31.35	-9.430	-2.780	7.885
13	H-20	33	31.35	-3.670	-1.350	20.504
14	H-20	33	31.35	-15.210	-4.220	3.825
14	H-20	33	31.35	-9.430	-2.780	7.885
15	H-20	33	31.35	-20.990	-5.650	1.834
15	H-20	33	31.35	-15.210	-4.220	3.825
16	H-20	33	31.35	-15.000	-4.460	3.666
16	H-20	33	31.35	-20.280	-5.990	1.848
17	H-20	33	31.35	-9.710	-2.940	7.361
17	H-20	33	31.35	-15.000	-4.460	3.666
18	H-20	33	31.35	-4.460	-1.420	18.937
18	H-20	33	31.35	-9.710	-2.940	7.361
19	H-20	33	31.35	-1.320	-0.730	41.137
19	H-20	33	31.35	-4.460	-1.420	18.937
20	H-20	33	31.35	-6.640	-1.870	13.214
20	H-20	33	31.35	-1.320	-0.730	41.137
21	H-20	33	31.35	-3.930	1.310	20.931
21	H-20	33	31.35	-0.980	-0.220	138.045
22	H-20	33	31.35	-6.900	2.550	9.588
22	H-20	33	31.35	-3.930	1.310	20.931
23	H-20	33	31.35	-9.870	3.790	5.668
23	H-20	33	31.35	-6.900	2.550	9.588
24	H-20	33	31.35	-12.980	5.060	3.630
24	H-20	33	31.35	-9.870	3.790	5.668
25	H-20	33	31.35	-16.410	6.340	2.356
25	H-20	33	31.35	-12.980	5.060	3.630
26	H-20	33	31.35	12.270	5.070	3.763
26	H-20	33	31.35	15.410	6.360	2.506
27	H-20	33	31.35	9.200	3.790	5.844
27	H-20	33	31.35	12.270	5.070	3.763
28	H-20	33	31.35	6.300	2.530	9.901
28	H-20	33	31.35	9.200	3.790	5.844
29	H-20	33	31.35	3.380	1.290	21.682
29	H-20	33	31.35	6.300	2.530	9.901
30	H-20	33	31.35	0.480	-0.210	147.000
30	H-20	33	31.35	3.380	1.290	21.682

Minimum Rating factor 1.834



LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH 10% SECTION LOSS

RF= RATING FACTOR

RF = (.95 F_Y - f_{DL+SDL}) / (f_{LL+I}) MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	HS-20	33	31.35	-3.440	2.060	13.549
1	HS-20	33	31.35	-0.460	-0.360	85.806
2	HS-20	33	31.35	-6.440	4.020	6.197
2	HS-20	33	31.35	-3.440	2.060	13.549
3	HS-20	33	31.35	-9.520	6.020	3.626
3	HS-20	33	31.35	-6.440	4.020	6.197
4	HS-20	33	31.35	-12.810	8.060	2.300
4	HS-20	33	31.35	-9.520	6.020	3.626
5	HS-20	33	31.35	-16.090	10.100	1.511
5	HS-20	33	31.35	-12.810	8.060	2.300
6	HS-20	33	31.35	11.950	8.070	2.404
6	HS-20	33	31.35	15.020	10.110	1.615
7	HS-20	33	31.35	9.220	6.020	3.676
7	HS-20	33	31.35	11.950	8.070	2.404
8	HS-20	33	31.35	6.470	3.990	6.236
8	HS-20	33	31.35	9.220	6.020	3.676
9	HS-20	33	31.35	3.710	2.050	13.483
9	HS-20	33	31.35	6.470	3.990	6.236
10	HS-20	33	31.35	0.960	0.360	84.417
10	HS-20	33	31.35	3.710	2.050	13.483
11	HS-20	33	31.35	-2.800	-1.170	24.402
11	HS-20	33	31.35	-8.630	-2.910	7.808
12	HS-20	33	31.35	-3.670	-2.140	12.935
12	HS-20	33	31.35	-2.800	-1.170	24.402
13	HS-20	33	31.35	-9.430	-4.410	4.971
13	HS-20	33	31.35	-3.670	-2.140	12.935
14	HS-20	33	31.35	-15.210	-6.680	2.416
14	HS-20	33	31.35	-9.430	-4.410	4.971
15	HS-20	33	31.35	-20.990	-8.950	1.158
15	HS-20	33	31.35	-15.210	-6.680	2.416
16	HS-20	33	31.35	-15.000	-7.080	2.309
16	HS-20	33	31.35	-20.280	-9.500	1.165
17	HS-20	33	31.35	-9.710	-4.660	4.644
17	HS-20	33	31.35	-15.000	-7.080	2.309
18	HS-20	33	31.35	-4.460	-2.240	12.004
18	HS-20	33	31.35	-9.710	-4.660	4.644
19	HS-20	33	31.35	-1.320	-1.150	26.113
19	HS-20	33	31.35	-4.460	-2.240	12.004
20	HS-20	33	31.35	-6.640	-2.990	8.264
20	HS-20	33	31.35	-1.320	-1.150	26.113
21	HS-20	33	31.35	-3.930	2.090	13.120
21	HS-20	33	31.35	-0.980	-0.380	79.921
22	HS-20	33	31.35	-6.900	4.040	6.052
22	HS-20	33	31.35	-3.930	2.090	13.120
23	HS-20	33	31.35	-9.870	6.010	3.574
23	HS-20	33	31.35	-6.900	4.040	6.052
24	HS-20	33	31.35	-12.980	8.060	2.279
24	HS-20	33	31.35	-9.870	6.010	3.574
25	HS-20	33	31.35	-16.410	10.110	1.478
25	HS-20	33	31.35	-12.980	8.060	2.279
26	HS-20	33	31.35	12.270	8.080	2.361
26	HS-20	33	31.35	15.410	10.130	1.574
27	HS-20	33	31.35	9.200	6.030	3.673
27	HS-20	33	31.35	12.270	8.080	2.361
28	HS-20	33	31.35	6.300	4.010	6.247
28	HS-20	33	31.35	9.200	6.030	3.673
29	HS-20	33	31.35	3.380	2.060	13.578
29	HS-20	33	31.35	6.300	4.010	6.247
30	HS-20	33	31.35	0.480	-0.360	85.750
30	HS-20	33	31.35	3.380	2.060	13.578

Minimum Rating factor 1.158

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH 10% SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating factor 0.871

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	HL-93 Inventory	33	31.35	-3.440	2.770	10.076
1	HL-93 Inventory	33	31.35	-0.460	-0.530	58.283
2	HL-93 Inventory	33	31.35	-6.440	5.350	4.656
2	HL-93 Inventory	33	31.35	-3.440	2.770	10.076
3	HL-93 Inventory	33	31.35	-9.520	8.020	2.722
3	HL-93 Inventory	33	31.35	-6.440	5.350	4.656
4	HL-93 Inventory	33	31.35	-12.810	10.760	1.723
4	HL-93 Inventory	33	31.35	-9.520	8.020	2.722
5	HL-93 Inventory	33	31.35	-16.090	13.500	1.130
5	HL-93 Inventory	33	31.35	-12.810	10.760	1.723
6	HL-93 Inventory	33	31.35	11.950	10.770	1.801
6	HL-93 Inventory	33	31.35	15.020	13.510	1.209
7	HL-93 Inventory	33	31.35	9.220	8.020	2.759
7	HL-93 Inventory	33	31.35	11.950	10.770	1.801
8	HL-93 Inventory	33	31.35	6.470	5.300	4.694
8	HL-93 Inventory	33	31.35	9.220	8.020	2.759
9	HL-93 Inventory	33	31.35	3.710	2.740	10.088
9	HL-93 Inventory	33	31.35	6.470	5.300	4.694
10	HL-93 Inventory	33	31.35	0.960	0.520	58.442
10	HL-93 Inventory	33	31.35	3.710	2.740	10.088
11	HL-93 Inventory	33	31.35	-2.800	-1.560	18.301
11	HL-93 Inventory	33	31.35	-8.630	-3.880	5.856
12	HL-93 Inventory	33	31.35	-3.670	-2.840	9.746
12	HL-93 Inventory	33	31.35	-2.800	-1.560	18.301
13	HL-93 Inventory	33	31.35	-9.430	-5.860	3.741
13	HL-93 Inventory	33	31.35	-3.670	-2.840	9.746
14	HL-93 Inventory	33	31.35	-15.210	-8.880	1.818
14	HL-93 Inventory	33	31.35	-9.430	-5.860	3.741
15	HL-93 Inventory	33	31.35	-20.990	-11.890	0.871
15	HL-93 Inventory	33	31.35	-15.210	-8.880	1.818
16	HL-93 Inventory	33	31.35	-15.000	-9.420	1.736
16	HL-93 Inventory	33	31.35	-20.280	-12.640	0.876
17	HL-93 Inventory	33	31.35	-9.710	-6.190	3.496
17	HL-93 Inventory	33	31.35	-15.000	-9.420	1.736
18	HL-93 Inventory	33	31.35	-4.460	-2.970	9.054
18	HL-93 Inventory	33	31.35	-9.710	-6.190	3.496
19	HL-93 Inventory	33	31.35	-1.320	-1.530	19.627
19	HL-93 Inventory	33	31.35	-4.460	-2.970	9.054
20	HL-93 Inventory	33	31.35	-6.640	-4.020	6.147
20	HL-93 Inventory	33	31.35	-1.320	-1.530	19.627
21	HL-93 Inventory	33	31.35	-3.930	2.810	9.758
21	HL-93 Inventory	33	31.35	-0.980	-0.560	54.232
22	HL-93 Inventory	33	31.35	-6.900	5.370	4.553
22	HL-93 Inventory	33	31.35	-3.930	2.810	9.758
23	HL-93 Inventory	33	31.35	-9.870	8.010	2.682
23	HL-93 Inventory	33	31.35	-6.900	5.370	4.553
24	HL-93 Inventory	33	31.35	-12.980	10.760	1.707
24	HL-93 Inventory	33	31.35	-9.870	8.010	2.682
25	HL-93 Inventory	33	31.35	-16.410	13.510	1.106
25	HL-93 Inventory	33	31.35	-12.980	10.760	1.707
26	HL-93 Inventory	33	31.35	12.270	10.790	1.768
26	HL-93 Inventory	33	31.35	15.410	13.540	1.177
27	HL-93 Inventory	33	31.35	9.200	8.040	2.755
27	HL-93 Inventory	33	31.35	12.270	10.790	1.768
28	HL-93 Inventory	33	31.35	6.300	5.330	4.700
28	HL-93 Inventory	33	31.35	9.200	8.040	2.755
29	HL-93 Inventory	33	31.35	3.380	2.770	10.097
29	HL-93 Inventory	33	31.35	6.300	5.330	4.700
30	HL-93 Inventory	33	31.35	0.480	-0.530	58.245
30	HL-93 Inventory	33	31.35	3.380	2.770	10.097

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH 10% SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

Minimum Rating factor 1.129

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	HL-93 Operating	33	31.35	-3.440	2.130	13.103
1	HL-93 Operating	33	31.35	-0.460	-0.410	75.341
2	HL-93 Operating	33	31.35	-6.440	4.120	6.046
2	HL-93 Operating	33	31.35	-3.440	2.130	13.103
3	HL-93 Operating	33	31.35	-9.520	6.190	3.527
3	HL-93 Operating	33	31.35	-6.440	4.120	6.046
4	HL-93 Operating	33	31.35	-12.810	8.300	2.234
4	HL-93 Operating	33	31.35	-9.520	6.190	3.527
5	HL-93 Operating	33	31.35	-16.090	10.420	1.464
5	HL-93 Operating	33	31.35	-12.810	8.300	2.234
6	HL-93 Operating	33	31.35	11.950	8.310	2.335
6	HL-93 Operating	33	31.35	15.020	10.420	1.567
7	HL-93 Operating	33	31.35	9.220	6.190	3.575
7	HL-93 Operating	33	31.35	11.950	8.310	2.335
8	HL-93 Operating	33	31.35	6.470	4.090	6.083
8	HL-93 Operating	33	31.35	9.220	6.190	3.575
9	HL-93 Operating	33	31.35	3.710	2.120	13.038
9	HL-93 Operating	33	31.35	6.470	4.090	6.083
10	HL-93 Operating	33	31.35	0.960	0.400	75.975
10	HL-93 Operating	33	31.35	3.710	2.120	13.038
11	HL-93 Operating	33	31.35	-2.800	-1.200	23.792
11	HL-93 Operating	33	31.35	-8.630	-3.000	7.573
12	HL-93 Operating	33	31.35	-3.670	-2.190	12.639
12	HL-93 Operating	33	31.35	-2.800	-1.200	23.792
13	HL-93 Operating	33	31.35	-9.430	-4.520	4.850
13	HL-93 Operating	33	31.35	-3.670	-2.190	12.639
14	HL-93 Operating	33	31.35	-15.210	-6.850	2.356
14	HL-93 Operating	33	31.35	-9.430	-4.520	4.850
15	HL-93 Operating	33	31.35	-20.990	-9.180	1.129
15	HL-93 Operating	33	31.35	-15.210	-6.850	2.356
16	HL-93 Operating	33	31.35	-15.000	-7.260	2.252
16	HL-93 Operating	33	31.35	-20.280	-9.750	1.135
17	HL-93 Operating	33	31.35	-9.710	-4.780	4.527
17	HL-93 Operating	33	31.35	-15.000	-7.260	2.252
18	HL-93 Operating	33	31.35	-4.460	-2.290	11.742
18	HL-93 Operating	33	31.35	-9.710	-4.780	4.527
19	HL-93 Operating	33	31.35	-1.320	-1.180	25.449
19	HL-93 Operating	33	31.35	-4.460	-2.290	11.742
20	HL-93 Operating	33	31.35	-6.640	-3.100	7.971
20	HL-93 Operating	33	31.35	-1.320	-1.180	25.449
21	HL-93 Operating	33	31.35	-3.930	2.160	12.694
21	HL-93 Operating	33	31.35	-0.980	-0.440	69.023
22	HL-93 Operating	33	31.35	-6.900	4.140	5.906
22	HL-93 Operating	33	31.35	-3.930	2.160	12.694
23	HL-93 Operating	33	31.35	-9.870	6.180	3.476
23	HL-93 Operating	33	31.35	-6.900	4.140	5.906
24	HL-93 Operating	33	31.35	-12.980	8.300	2.213
24	HL-93 Operating	33	31.35	-9.870	6.180	3.476
25	HL-93 Operating	33	31.35	-16.410	10.420	1.434
25	HL-93 Operating	33	31.35	-12.980	8.300	2.213
26	HL-93 Operating	33	31.35	12.270	8.330	2.291
26	HL-93 Operating	33	31.35	15.410	10.450	1.525
27	HL-93 Operating	33	31.35	9.200	6.200	3.573
27	HL-93 Operating	33	31.35	12.270	8.330	2.291
28	HL-93 Operating	33	31.35	6.300	4.110	6.095
28	HL-93 Operating	33	31.35	9.200	6.200	3.573
29	HL-93 Operating	33	31.35	3.380	2.130	13.131
29	HL-93 Operating	33	31.35	6.300	4.110	6.095
30	HL-93 Operating	33	31.35	0.480	-0.410	75.293
30	HL-93 Operating	33	31.35	3.380	2.130	13.131

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH 10% SECTION LOSS

RF= RATING FACTOR

RF = (.95 F_Y - f_{DL+SDL}) / (f_{LL+I}) MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	CT-L3S2	33	31.35	-3.440	1.210	23.066
1	CT-L3S2	33	31.35	-0.460	-0.240	128.708
2	CT-L3S2	33	31.35	-6.440	2.320	10.737
2	CT-L3S2	33	31.35	-3.440	1.210	23.066
3	CT-L3S2	33	31.35	-9.520	3.490	6.255
3	CT-L3S2	33	31.35	-6.440	2.320	10.737
4	CT-L3S2	33	31.35	-12.810	4.700	3.945
4	CT-L3S2	33	31.35	-9.520	3.490	6.255
5	CT-L3S2	33	31.35	-16.090	5.900	2.586
5	CT-L3S2	33	31.35	-12.810	4.700	3.945
6	CT-L3S2	33	31.35	11.950	4.700	4.128
6	CT-L3S2	33	31.35	15.020	5.900	2.768
7	CT-L3S2	33	31.35	9.220	3.490	6.341
7	CT-L3S2	33	31.35	11.950	4.700	4.128
8	CT-L3S2	33	31.35	6.470	2.290	10.865
8	CT-L3S2	33	31.35	9.220	3.490	6.341
9	CT-L3S2	33	31.35	3.710	1.200	23.033
9	CT-L3S2	33	31.35	6.470	2.290	10.865
10	CT-L3S2	33	31.35	0.960	0.230	132.130
10	CT-L3S2	33	31.35	3.710	1.200	23.033
11	CT-L3S2	33	31.35	-2.800	-0.680	41.985
11	CT-L3S2	33	31.35	-8.630	-1.700	13.365
12	CT-L3S2	33	31.35	-3.670	-1.230	22.504
12	CT-L3S2	33	31.35	-2.800	-0.680	41.985
13	CT-L3S2	33	31.35	-9.430	-2.540	8.630
13	CT-L3S2	33	31.35	-3.670	-1.230	22.504
14	CT-L3S2	33	31.35	-15.210	-3.850	4.192
14	CT-L3S2	33	31.35	-9.430	-2.540	8.630
15	CT-L3S2	33	31.35	-20.990	-5.160	2.008
15	CT-L3S2	33	31.35	-15.210	-3.850	4.192
16	CT-L3S2	33	31.35	-15.000	-4.090	3.998
16	CT-L3S2	33	31.35	-20.280	-5.500	2.013
17	CT-L3S2	33	31.35	-9.710	-2.690	8.045
17	CT-L3S2	33	31.35	-15.000	-4.090	3.998
18	CT-L3S2	33	31.35	-4.460	-1.290	20.845
18	CT-L3S2	33	31.35	-9.710	-2.690	8.045
19	CT-L3S2	33	31.35	-1.320	-0.660	45.500
19	CT-L3S2	33	31.35	-4.460	-1.290	20.845
20	CT-L3S2	33	31.35	-6.640	-1.770	13.960
20	CT-L3S2	33	31.35	-1.320	-0.660	45.500
21	CT-L3S2	33	31.35	-3.930	1.230	22.293
21	CT-L3S2	33	31.35	-0.980	-0.260	116.808
22	CT-L3S2	33	31.35	-6.900	2.330	10.494
22	CT-L3S2	33	31.35	-3.930	1.230	22.293
23	CT-L3S2	33	31.35	-9.870	3.490	6.155
23	CT-L3S2	33	31.35	-6.900	2.330	10.494
24	CT-L3S2	33	31.35	-12.980	4.700	3.909
24	CT-L3S2	33	31.35	-9.870	3.490	6.155
25	CT-L3S2	33	31.35	-16.410	5.900	2.532
25	CT-L3S2	33	31.35	-12.980	4.700	3.909
26	CT-L3S2	33	31.35	12.270	4.710	4.051
26	CT-L3S2	33	31.35	15.410	5.920	2.693
27	CT-L3S2	33	31.35	9.200	3.500	6.329
27	CT-L3S2	33	31.35	12.270	4.710	4.051
28	CT-L3S2	33	31.35	6.300	2.310	10.844
28	CT-L3S2	33	31.35	9.200	3.500	6.329
29	CT-L3S2	33	31.35	3.380	1.210	23.116
29	CT-L3S2	33	31.35	6.300	2.310	10.844
30	CT-L3S2	33	31.35	0.480	-0.240	128.625
30	CT-L3S2	33	31.35	3.380	1.210	23.116

Minimum Rating factor 2.008

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH 10% SECTION LOSS

RF= RATING FACTOR

$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

$f_{DL+SDL}=1.25*DL+1.5*DW$

$f_{LL+I}=\Upsilon_{LL}*LL$

Minimum Rating factor 1.493

ELEMENT	LOADING	F_Y (ksi)	$.95F_Y$ (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	CT-L73.0	33	31.35	-3.440	1.600	17.444
1	CT-L73.0	33	31.35	-0.460	-0.280	110.321
2	CT-L73.0	33	31.35	-6.440	3.120	7.984
2	CT-L73.0	33	31.35	-3.440	1.600	17.444
3	CT-L73.0	33	31.35	-9.520	4.660	4.685
3	CT-L73.0	33	31.35	-6.440	3.120	7.984
4	CT-L73.0	33	31.35	-12.810	6.240	2.971
4	CT-L73.0	33	31.35	-9.520	4.660	4.685
5	CT-L73.0	33	31.35	-16.090	7.820	1.951
5	CT-L73.0	33	31.35	-12.810	6.240	2.971
6	CT-L73.0	33	31.35	11.950	6.240	3.109
6	CT-L73.0	33	31.35	15.020	7.830	2.086
7	CT-L73.0	33	31.35	9.220	4.660	4.749
7	CT-L73.0	33	31.35	11.950	6.240	3.109
8	CT-L73.0	33	31.35	6.470	3.090	8.052
8	CT-L73.0	33	31.35	9.220	4.660	4.749
9	CT-L73.0	33	31.35	3.710	1.580	17.494
9	CT-L73.0	33	31.35	6.470	3.090	8.052
10	CT-L73.0	33	31.35	0.960	0.280	108.536
10	CT-L73.0	33	31.35	3.710	1.580	17.494
11	CT-L73.0	33	31.35	-2.800	-0.900	31.722
11	CT-L73.0	33	31.35	-8.630	-2.250	10.098
12	CT-L73.0	33	31.35	-3.670	-1.660	16.675
12	CT-L73.0	33	31.35	-2.800	-0.900	31.722
13	CT-L73.0	33	31.35	-9.430	-3.420	6.409
13	CT-L73.0	33	31.35	-3.670	-1.660	16.675
14	CT-L73.0	33	31.35	-15.210	-5.180	3.116
14	CT-L73.0	33	31.35	-9.430	-3.420	6.409
15	CT-L73.0	33	31.35	-20.990	-6.940	1.493
15	CT-L73.0	33	31.35	-15.210	-5.180	3.116
16	CT-L73.0	33	31.35	-15.000	-5.490	2.978
16	CT-L73.0	33	31.35	-20.280	-7.360	1.504
17	CT-L73.0	33	31.35	-9.710	-3.610	5.994
17	CT-L73.0	33	31.35	-15.000	-5.490	2.978
18	CT-L73.0	33	31.35	-4.460	-1.740	15.454
18	CT-L73.0	33	31.35	-9.710	-3.610	5.994
19	CT-L73.0	33	31.35	-1.320	-0.890	33.742
19	CT-L73.0	33	31.35	-4.460	-1.740	15.454
20	CT-L73.0	33	31.35	-6.640	-2.310	10.697
20	CT-L73.0	33	31.35	-1.320	-0.890	33.742
21	CT-L73.0	33	31.35	-3.930	1.620	16.926
21	CT-L73.0	33	31.35	-0.980	-0.300	101.233
22	CT-L73.0	33	31.35	-6.900	3.130	7.812
22	CT-L73.0	33	31.35	-3.930	1.620	16.926
23	CT-L73.0	33	31.35	-9.870	4.650	4.619
23	CT-L73.0	33	31.35	-6.900	3.130	7.812
24	CT-L73.0	33	31.35	-12.980	6.240	2.944
24	CT-L73.0	33	31.35	-9.870	4.650	4.619
25	CT-L73.0	33	31.35	-16.410	7.830	1.908
25	CT-L73.0	33	31.35	-12.980	6.240	2.944
26	CT-L73.0	33	31.35	12.270	6.260	3.048
26	CT-L73.0	33	31.35	15.410	7.850	2.031
27	CT-L73.0	33	31.35	9.200	4.670	4.743
27	CT-L73.0	33	31.35	12.270	6.260	3.048
28	CT-L73.0	33	31.35	6.300	3.110	8.055
28	CT-L73.0	33	31.35	9.200	4.670	4.743
29	CT-L73.0	33	31.35	3.380	1.600	17.481
29	CT-L73.0	33	31.35	6.300	3.110	8.055
30	CT-L73.0	33	31.35	0.480	-0.280	110.250
30	CT-L73.0	33	31.35	3.380	1.600	17.481

LOAD RATING CARRYING BEAMS

WF 14 x 219 WITH 10% SECTION LOSS

RF= RATING FACTOR

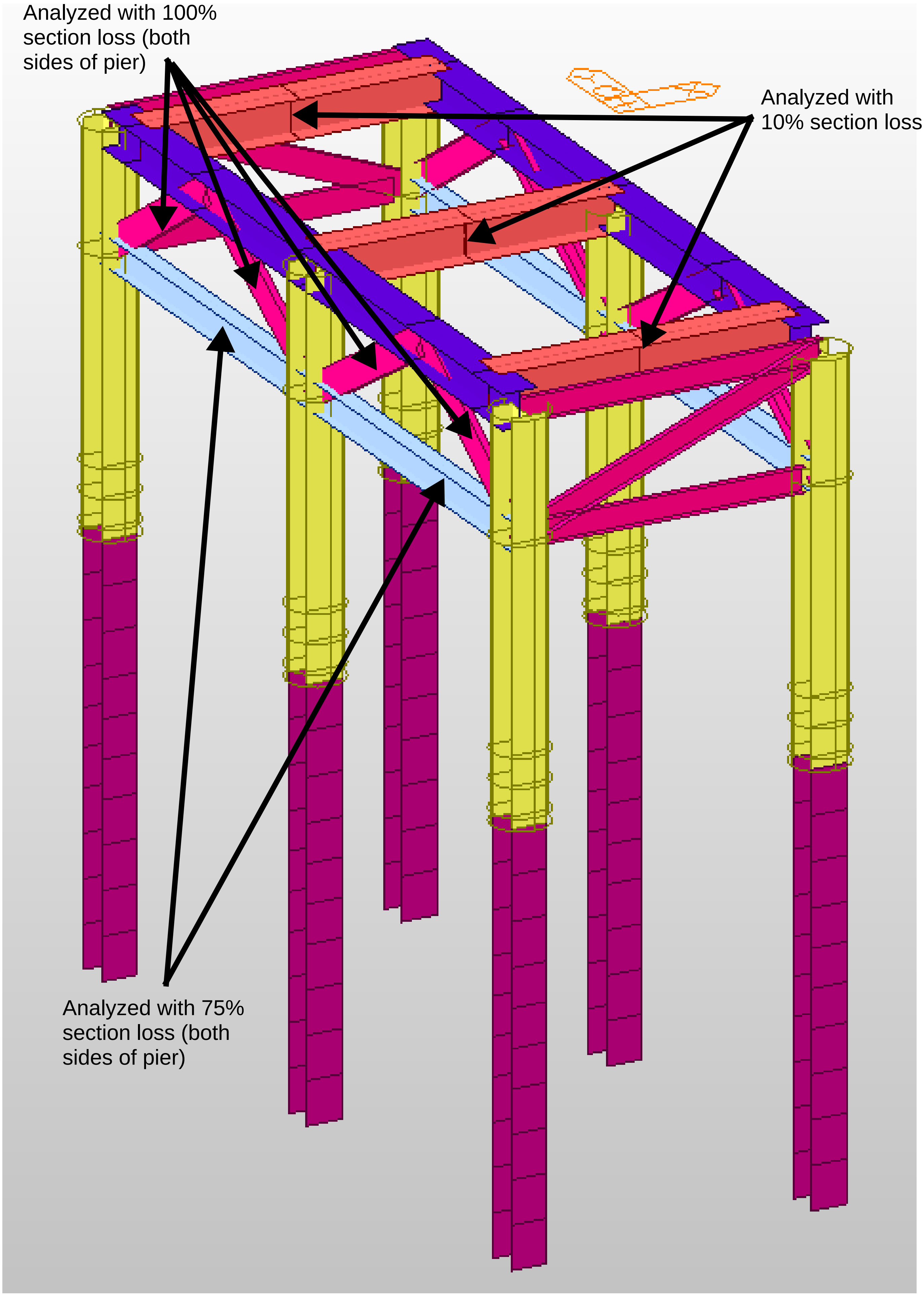
$RF = (.95\ F_Y - f_{DL+SDL}) / (f_{LL+I})$ MBE A1A.1.8.1

f_{DL+SDL}=1.25*DL+1.5*DW

f_{LL+I}=Υ_{LL}*LL

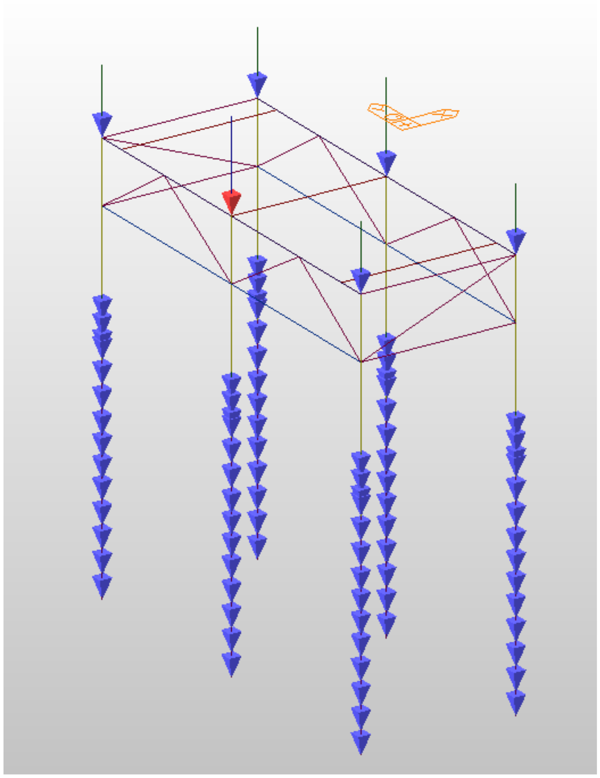
Minimum Rating factor 2.008

ELEMENT	LOADING	F_Y (ksi)	.95F_Y (ksi)	f_{DL+SDL} (ksi)	f_{LL+I} (ksi)	RF
1	CT-L3S2 + Lane Load	33	31.35	-3.440	1.210	23.066
1	CT-L3S2 + Lane Load	33	31.35	-0.460	-0.240	128.708
2	CT-L3S2 + Lane Load	33	31.35	-6.440	2.320	10.737
2	CT-L3S2 + Lane Load	33	31.35	-3.440	1.210	23.066
3	CT-L3S2 + Lane Load	33	31.35	-9.520	3.490	6.255
3	CT-L3S2 + Lane Load	33	31.35	-6.440	2.320	10.737
4	CT-L3S2 + Lane Load	33	31.35	-12.810	4.700	3.945
4	CT-L3S2 + Lane Load	33	31.35	-9.520	3.490	6.255
5	CT-L3S2 + Lane Load	33	31.35	-16.090	5.900	2.586
5	CT-L3S2 + Lane Load	33	31.35	-12.810	4.700	3.945
6	CT-L3S2 + Lane Load	33	31.35	11.950	4.700	4.128
6	CT-L3S2 + Lane Load	33	31.35	15.020	5.900	2.768
7	CT-L3S2 + Lane Load	33	31.35	9.220	3.490	6.341
7	CT-L3S2 + Lane Load	33	31.35	11.950	4.700	4.128
8	CT-L3S2 + Lane Load	33	31.35	6.470	2.290	10.865
8	CT-L3S2 + Lane Load	33	31.35	9.220	3.490	6.341
9	CT-L3S2 + Lane Load	33	31.35	3.710	1.200	23.033
9	CT-L3S2 + Lane Load	33	31.35	6.470	2.290	10.865
10	CT-L3S2 + Lane Load	33	31.35	0.960	0.230	132.130
10	CT-L3S2 + Lane Load	33	31.35	3.710	1.200	23.033
11	CT-L3S2 + Lane Load	33	31.35	-2.800	-0.680	41.985
11	CT-L3S2 + Lane Load	33	31.35	-8.630	-1.700	13.365
12	CT-L3S2 + Lane Load	33	31.35	-3.670	-1.230	22.504
12	CT-L3S2 + Lane Load	33	31.35	-2.800	-0.680	41.985
13	CT-L3S2 + Lane Load	33	31.35	-9.430	-2.540	8.630
13	CT-L3S2 + Lane Load	33	31.35	-3.670	-1.230	22.504
14	CT-L3S2 + Lane Load	33	31.35	-15.210	-3.850	4.192
14	CT-L3S2 + Lane Load	33	31.35	-9.430	-2.540	8.630
15	CT-L3S2 + Lane Load	33	31.35	-20.990	-5.160	2.008
15	CT-L3S2 + Lane Load	33	31.35	-15.210	-3.850	4.192
16	CT-L3S2 + Lane Load	33	31.35	-15.000	-4.090	3.998
16	CT-L3S2 + Lane Load	33	31.35	-20.280	-5.500	2.013
17	CT-L3S2 + Lane Load	33	31.35	-9.710	-2.690	8.045
17	CT-L3S2 + Lane Load	33	31.35	-15.000	-4.090	3.998
18	CT-L3S2 + Lane Load	33	31.35	-4.460	-1.290	20.845
18	CT-L3S2 + Lane Load	33	31.35	-9.710	-2.690	8.045
19	CT-L3S2 + Lane Load	33	31.35	-1.320	-0.660	45.500
19	CT-L3S2 + Lane Load	33	31.35	-4.460	-1.290	20.845
20	CT-L3S2 + Lane Load	33	31.35	-6.640	-1.770	13.960
20	CT-L3S2 + Lane Load	33	31.35	-1.320	-0.660	45.500
21	CT-L3S2 + Lane Load	33	31.35	-3.930	1.230	22.293
21	CT-L3S2 + Lane Load	33	31.35	-0.980	-0.260	116.808
22	CT-L3S2 + Lane Load	33	31.35	-6.900	2.330	10.494
22	CT-L3S2 + Lane Load	33	31.35	-3.930	1.230	22.293
23	CT-L3S2 + Lane Load	33	31.35	-9.870	3.490	6.155
23	CT-L3S2 + Lane Load	33	31.35	-6.900	2.330	10.494
24	CT-L3S2 + Lane Load	33	31.35	-12.980	4.700	3.909
24	CT-L3S2 + Lane Load	33	31.35	-9.870	3.490	6.155
25	CT-L3S2 + Lane Load	33	31.35	-16.410	5.900	2.532
25	CT-L3S2 + Lane Load	33	31.35	-12.980	4.700	3.909
26	CT-L3S2 + Lane Load	33	31.35	12.270	4.710	4.051
26	CT-L3S2 + Lane Load	33	31.35	15.410	5.920	2.693
27	CT-L3S2 + Lane Load	33	31.35	9.200	3.500	6.329
27	CT-L3S2 + Lane Load	33	31.35	12.270	4.710	4.051
28	CT-L3S2 + Lane Load	33	31.35	6.300	2.310	10.844
28	CT-L3S2 + Lane Load	33	31.35	9.200	3.500	6.329
29	CT-L3S2 + Lane Load	33	31.35	3.380	1.210	23.116
29	CT-L3S2 + Lane Load	33	31.35	6.300	2.310	10.844
30	CT-L3S2 + Lane Load	33	31.35	0.480	-0.240	128.625
30	CT-L3S2 + Lane Load	33	31.35	3.380	1.210	23.116

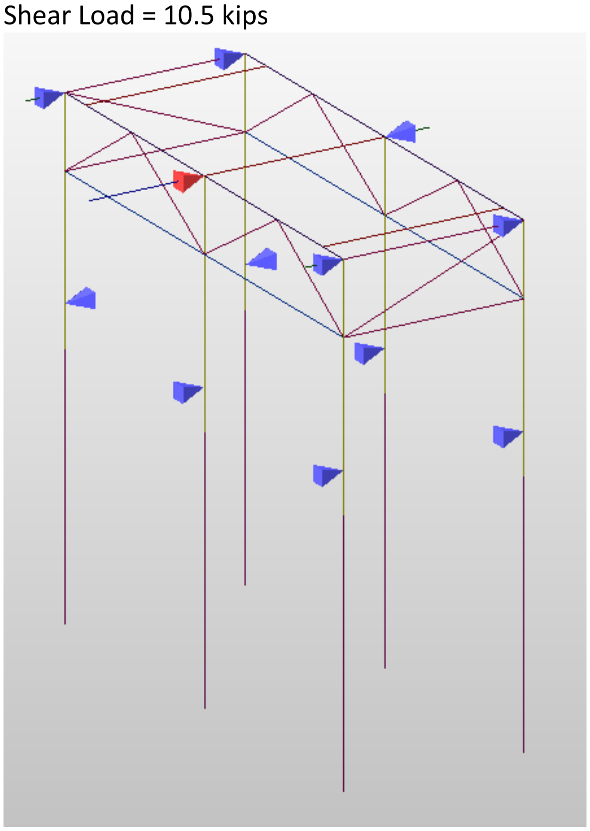

Analyzed with 100% section loss (both sides of pier)
Analyzed with 10% section loss
Analyzed with 75% section loss (both sides of pier)

L-Pile loads – HL-93 Inventory

Axial Load = 379.8 kips



Shear Load = 10.5 kips



==

LPile for Windows, Version 2015-08.007

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

==

This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Files Used for Analysis

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
HL-93 Inventory 01349 pier 2.lp8d

Name of output report file:
HL-93 Inventory 01349 pier 2.lp8o

Name of plot output file:
HL-93 Inventory 01349 pier 2.lp8p

Name of runtime message file:
HL-93 Inventory 01349 pier 2.lp8r

Date and Time of Analysis

Date: June 1, 2016 Time: 14:48:53

Problem Title

Project Name: Rehabilitation of Bridge 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis Under Existing Condition

Program Options and Settings

Computational Options:
- Use unfactored loads in computations (conventional analysis)

Engineering Units Used for Data Input and Computations:
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- Analysis includes loading by one distributed lateral load acting on pile
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 29.000 ft
Depth of ground surface below top of pile = 11.0000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	13.8300
2	29.000	13.8300

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is an elastic pile

Cross-sectional Shape	=	Weak H-Pile
Length of section	=	29.000000 ft
Flange Width	=	14.695000 in
Section Depth	=	13.830000 in
Flange Thickness	=	0.615000 in
Web Thickness	=	0.615000 in
Section Area	=	25.823850 sq. in
Moment of Inertia	=	325.505721 in^4
Elastic Modulus	=	29000000. psi

Ground Slope and Pile Batter Angles

Ground Slope Angle	=	0.000 degrees
	=	0.000 radians
Pile Batter Angle	=	0.000 degrees
	=	0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

Distance from top of pile to top of layer	=	11.000000 ft
Distance from top of pile to bottom of layer	=	13.000000 ft
Effective unit weight at top of layer	=	120.000000 pcf
Effective unit weight at bottom of layer	=	120.000000 pcf
Undrained cohesion at top of layer	=	500.000000 psf
Undrained cohesion at bottom of layer	=	500.000000 psf
Friction angle at top of layer	=	10.000000 deg.
Friction angle at bottom of layer	=	10.000000 deg.
Epsilon-50 at top of layer	=	0.010000
Epsilon-50 at bottom of layer	=	0.010000
Subgrade k at top of layer	=	18.000000 pci
Subgrade k at bottom of layer	=	18.000000 pci

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	13.000000 ft
Distance from top of pile to bottom of layer	=	22.000000 ft
Effective unit weight at top of layer	=	125.000000 pcf
Effective unit weight at bottom of layer	=	125.000000 pcf
Friction angle at top of layer	=	38.000000 deg.
Friction angle at bottom of layer	=	38.000000 deg.
Subgrade k at top of layer	=	25.000000 pci
Subgrade k at bottom of layer	=	25.000000 pci

Layer 3 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer	=	22.000000 ft

```
   Distance from top of pile to bottom of layer       =    29.000000 ft
   Effective unit weight at top of layer              =   125.000000 pcf
   Effective unit weight at bottom of layer           =   125.000000 pcf
   Uniaxial compressive strength at top of layer      =   500.000000 psi
   Uniaxial compressive strength at bottom of layer   =   500.000000 psi
   Initial modulus of rock at top of layer            =     1050000. psi
   Initial modulus of rock at bottom of layer         =     1050000. psi
   RQD of rock at top of layer                        =       0.0000 %
   RQD of rock at bottom of layer                     =       0.0000 %
   k rm of rock at top of layer                       =    0.0005000
   k rm of rock at bottom of layer                    =    0.0005000
```

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

```
   Distance from top of pile to top of layer          =    29.000000 ft
   Distance from top of pile to bottom of layer       =    30.000000 ft
   Effective unit weight at top of layer              =   139.000000 pcf
   Effective unit weight at bottom of layer           =   139.000000 pcf
   Uniaxial compressive strength at top of layer      =       11600. psi
   Uniaxial compressive strength at bottom of layer   =       11600. psi
   Poisson's ratio at top of layer                    =     0.250000
   Poisson's ratio at bottom of layer                 =     0.250000
   Option 1: Intact rock modulus at top of layer      =     1500000. psi
             Intact rock modulus at bottom of layer   =     1500000. psi
   Option 1: Geologic Strength Index for layer        =    50.000000
   Option 2: Rock mass modulus at top of layer        =       0.0000 psi
             Rock mass modulus at bottom of layer     =       0.0000 psi
   Option 1 will be used to compute values of rock mass modulus for the p-y curve
         in massive rock.
   The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28
```

(Depth of the lowest soil layer extends 1.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	11.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	13.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	13.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	22.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	22.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	29.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	29.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	30.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	2	V = 10500. lbs	S = 0.0000 in/in	379800.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	549.7454
2	13.0000	0.7518	No	No	549.7454	193067.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head	=	10500.0 lbs
Rotation of pile head	=	0.000E+00 radians
Axial load at pile head	=	379800.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	1.5026	-1471520.	10500.	0.00	45968.	9.44E+09	0.00	0.00	0.00
0.2900	1.5016	-1434622.	10500.	-5.36E-04	45184.	9.44E+09	0.00	0.00	0.00
0.5800	1.4989	-1397024.	10500.	-0.00106	44386.	9.44E+09	0.00	0.00	0.00
0.8700	1.4943	-1358746.	10500.	-0.00157	43572.	9.44E+09	0.00	0.00	0.00
1.1600	1.4880	-1319806.	10500.	-0.00206	42745.	9.44E+09	0.00	0.00	0.00
1.4500	1.4799	-1280222.	10500.	-0.00254	41904.	9.44E+09	0.00	0.00	0.00
1.7400	1.4703	-1240015.	10500.	-0.00300	41050.	9.44E+09	0.00	0.00	0.00
2.0300	1.4590	-1199204.	10500.	-0.00345	40183.	9.44E+09	0.00	0.00	0.00
2.3200	1.4463	-1157808.	10500.	-0.00389	39304.	9.44E+09	0.00	0.00	0.00
2.6100	1.4320	-1115848.	10500.	-0.00431	38412.	9.44E+09	0.00	0.00	0.00
2.9000	1.4163	-1073345.	10500.	-0.00471	37509.	9.44E+09	0.00	0.00	0.00
3.1900	1.3992	-1030318.	10500.	-0.00510	36595.	9.44E+09	0.00	0.00	0.00
3.4800	1.3808	-986790.	10500.	-0.00547	35671.	9.44E+09	0.00	0.00	0.00
3.7700	1.3611	-942780.	10500.	-0.00583	34736.	9.44E+09	0.00	0.00	0.00
4.0600	1.3403	-898311.	10500.	-0.00616	33791.	9.44E+09	0.00	0.00	0.00
4.3500	1.3182	-853405.	10500.	-0.00649	32837.	9.44E+09	0.00	0.00	0.00
4.6400	1.2951	-808083.	10500.	-0.00679	31874.	9.44E+09	0.00	0.00	0.00
4.9300	1.2710	-762367.	10500.	-0.00708	30903.	9.44E+09	0.00	0.00	0.00
5.2200	1.2458	-716279.	10500.	-0.00736	29924.	9.44E+09	0.00	0.00	0.00
5.5100	1.2198	-669843.	10500.	-0.00761	28937.	9.44E+09	0.00	0.00	0.00
5.8000	1.1928	-623080.	10500.	-0.00785	27944.	9.44E+09	0.00	0.00	0.00
6.0900	1.1651	-576013.	10500.	-0.00807	26944.	9.44E+09	0.00	0.00	0.00
6.3800	1.1367	-528666.	10500.	-0.00827	25938.	9.44E+09	0.00	0.00	0.00
6.6700	1.1075	-481061.	10500.	-0.00846	24927.	9.44E+09	0.00	0.00	0.00
6.9600	1.0778	-433222.	10500.	-0.00863	23911.	9.44E+09	0.00	0.00	0.00
7.2500	1.0475	-385172.	10500.	-0.00878	22890.	9.44E+09	0.00	0.00	0.00
7.5400	1.0167	-336934.	10500.	-0.00891	21865.	9.44E+09	0.00	0.00	0.00
7.8300	0.9854	-288532.	10500.	-0.00903	20837.	9.44E+09	0.00	0.00	0.00
8.1200	0.9538	-239989.	10500.	-0.00913	19806.	9.44E+09	0.00	0.00	0.00

8.4100	0.9219	-191329.	10500.	-0.00920	18772.	9.44E+09	0.00	0.00	0.00
8.7000	0.8898	-142577.	10500.	-0.00927	17736.	9.44E+09	0.00	0.00	0.00
8.9900	0.8574	-93754.	10500.	-0.00931	16699.	9.44E+09	0.00	0.00	0.00
9.2800	0.8250	-44886.	10500.	-0.00934	15661.	9.44E+09	0.00	0.00	0.00
9.5700	0.7925	4004.	10500.	-0.00934	14792.	9.44E+09	0.00	0.00	0.00
9.8600	0.7599	52892.	10500.	-0.00933	15831.	9.44E+09	0.00	0.00	0.00
10.1500	0.7275	101754.	10500.	-0.00930	16869.	9.44E+09	0.00	0.00	0.00
10.4400	0.6952	150566.	10500.	-0.00926	17906.	9.44E+09	0.00	0.00	0.00
10.7300	0.6631	199305.	10500.	-0.00919	18941.	9.44E+09	0.00	0.00	0.00
11.0200	0.6312	247948.	10499.	-0.00911	19975.	9.44E+09	-0.4678	2.5793	0.00
11.3100	0.5997	296463.	10486.	-0.00901	21005.	9.44E+09	-7.3572	42.6959	0.00
11.6000	0.5685	344745.	10448.	-0.00889	22031.	9.44E+09	-14.2955	87.5085	0.00
11.8900	0.5378	392686.	10387.	-0.00876	23050.	9.44E+09	-20.9874	135.8125	0.00
12.1800	0.5076	440182.	10291.	-0.00860	24058.	9.44E+09	-33.9607	232.8493	0.00
12.4700	0.4779	487051.	10129.	-0.00843	25054.	9.44E+09	-59.0910	430.2948	0.00
12.7600	0.4489	532968.	9877.	-0.00824	26030.	9.44E+09	-85.4495	662.4781	0.00
13.0500	0.4205	577590.	9279.	-0.00804	26978.	9.44E+09	-258.6199	2140.	0.00
13.3400	0.3929	618799.	8349.	-0.00782	27853.	9.44E+09	-275.8261	2443.	0.00
13.6300	0.3661	656366.	7366.	-0.00758	28651.	9.44E+09	-288.8553	2746.	0.00
13.9200	0.3401	690115.	6345.	-0.00734	29368.	9.44E+09	-297.9569	3048.	0.00
14.2100	0.3150	719919.	5299.	-0.00708	30001.	9.44E+09	-303.3923	3351.	0.00
14.5000	0.2909	745699.	4240.	-0.00681	30549.	9.44E+09	-305.4329	3654.	0.00
14.7900	0.2677	767416.	3179.	-0.00653	31010.	9.44E+09	-304.3573	3957.	0.00
15.0800	0.2455	785073.	2126.	-0.00624	31385.	9.44E+09	-300.4493	4260.	0.00
15.3700	0.2243	798709.	1092.	-0.00595	31675.	9.44E+09	-293.9956	4562.	0.00
15.6600	0.2041	808396.	83.8849	-0.00565	31881.	9.44E+09	-285.2834	4865.	0.00
15.9500	0.1849	814234.	-890.3099	-0.00535	32005.	9.44E+09	-274.5987	5168.	0.00
16.2400	0.1668	816349.	-1824.	-0.00505	32050.	9.44E+09	-262.2239	5471.	0.00
16.5300	0.1498	814891.	-2713.	-0.00475	32019.	9.44E+09	-248.4362	5773.	0.00
16.8200	0.1337	810028.	-3552.	-0.00445	31915.	9.44E+09	-233.5057	6076.	0.00
17.1100	0.1188	801942.	-4337.	-0.00416	31744.	9.44E+09	-217.6938	6379.	0.00
17.4000	0.1048	790829.	-5066.	-0.00386	31508.	9.44E+09	-201.2518	6682.	0.00
17.6900	0.09189	776893.	-5737.	-0.00357	31212.	9.44E+09	-184.4196	6984.	0.00
17.9800	0.07995	760345.	-6349.	-0.00329	30860.	9.44E+09	-167.4246	7287.	0.00
18.2700	0.06900	741399.	-6902.	-0.00301	30458.	9.44E+09	-150.4806	7590.	0.00
18.5600	0.05899	720270.	-7397.	-0.00274	30009.	9.44E+09	-133.7871	7893.	0.00
18.8500	0.04991	697169.	-7834.	-0.00248	29518.	9.44E+09	-117.5285	8195.	0.00
19.1400	0.04172	672306.	-8216.	-0.00223	28990.	9.44E+09	-101.8736	8498.	0.00
19.4300	0.03439	645881.	-8544.	-0.00199	28428.	9.44E+09	-86.9752	8801.	0.00
19.7200	0.02789	618088.	-8823.	-0.00175	27838.	9.44E+09	-72.9697	9104.	0.00
20.0100	0.02219	589110.	-9054.	-0.00153	27222.	9.44E+09	-59.9770	9406.	0.00
20.3000	0.01724	559119.	-9242.	-0.00132	26585.	9.44E+09	-48.1004	9709.	0.00
20.5900	0.01301	528273.	-9391.	-0.00112	25930.	9.44E+09	-37.4264	10012.	0.00
20.8800	0.00946	496716.	-9505.	-9.30E-04	25260.	9.44E+09	-28.0249	10315.	0.00
21.1700	0.00654	464578.	-9588.	-7.52E-04	24577.	9.44E+09	-19.9493	10617.	0.00
21.4600	0.00422	431972.	-9646.	-5.87E-04	23884.	9.44E+09	-13.2365	10920.	0.00
21.7500	0.00245	398995.	-9683.	-4.34E-04	23184.	9.44E+09	-7.9073	11223.	0.00
22.0400	0.00120	365727.	-13768.	-2.93E-04	22477.	9.44E+09	-2340.	6800166.	0.00
22.3300	4.12E-04	303944.	-22007.	-1.70E-04	21164.	9.44E+09	-2395.	2.02E+07	0.00
22.6200	1.70E-05	213004.	-28532.	-7.43E-05	19232.	9.44E+09	-1354.	2.77E+08	0.00
22.9100	-1.05E-04	105558.	-26434.	-1.56E-05	16950.	9.44E+09	2560.	8.49E+07	0.00
23.2000	-9.15E-05	29066.	-16945.	9.22E-06	15325.	9.44E+09	2893.	1.10E+08	0.00
23.4900	-4.08E-05	-12406.	-7194.	1.23E-05	14971.	9.44E+09	2711.	2.31E+08	0.00
23.7800	-5.97E-06	-21038.	833.1535	6.13E-06	15154.	9.44E+09	1902.	1.11E+09	0.00
24.0700	1.86E-06	-6623.	2991.	1.03E-06	14848.	9.44E+09	-662.2781	1.24E+09	0.00
24.3600	1.18E-06	-225.8555	1031.	-2.35E-07	14712.	9.44E+09	-463.7280	1.36E+09	0.00
24.6500	2.20E-07	555.7109	60.9404	-1.75E-07	14719.	9.44E+09	-93.9899	1.49E+09	0.00
24.9400	-3.07E-08	198.7514	-77.9327	-3.54E-08	14712.	9.44E+09	14.1777	1.61E+09	0.00
25.2300	-2.65E-08	13.3931	-30.2972	3.66E-09	14708.	9.44E+09	13.1989	1.73E+09	0.00
25.5200	-5.21E-09	-12.1271	-2.5677	3.89E-09	14708.	9.44E+09	2.7376	1.83E+09	0.00
25.8100	5.51E-10	-4.4884	1.6926	8.29E-10	14707.	9.44E+09	-0.2891	1.83E+09	0.00
26.1000	5.58E-10	-0.3490	0.6801	-6.23E-11	14707.	9.44E+09	-0.2928	1.83E+09	0.00
26.3900	1.17E-10	0.2452	0.06401	-8.15E-11	14707.	9.44E+09	-0.06131	1.83E+09	0.00
26.6800	-9.51E-12	0.09675	-0.03397	-1.85E-11	14707.	9.44E+09	0.00500	1.83E+09	0.00
26.9700	-1.17E-11	0.00877	-0.01461	0.00	14707.	9.44E+09	0.00613	1.83E+09	0.00
27.2600	-2.60E-12	-0.00493	-0.00156	1.70E-12	14707.	9.44E+09	0.00137	1.83E+09	0.00
27.5500	0.00	-0.00208	6.78E-04	0.00	14707.	9.44E+09	-8.14E-05	1.83E+09	0.00
27.8400	0.00	-2.15E-04	3.13E-04	0.00	14707.	9.44E+09	-1.28E-04	1.83E+09	0.00
28.1300	0.00	9.85E-05	3.72E-05	0.00	14707.	9.44E+09	-3.03E-05	1.83E+09	0.00
28.4200	0.00	4.45E-05	-1.34E-05	0.00	14707.	9.44E+09	1.22E-06	1.83E+09	0.00
28.7100	0.00	5.24E-06	-6.39E-06	0.00	14707.	9.44E+09	2.81E-06	1.83E+09	0.00
29.0000	0.00	0.00	0.00	0.00	14707.	9.44E+09	8.65E-07	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     1.50258198 inches
Computed slope at pile head      =       0.000000 radians
Maximum bending moment           =      -1471520. inch-lbs
Maximum shear force              =        -28532. lbs
Depth of maximum bending moment  =       0.000000 feet below pile head
Depth of maximum shear force     =    22.62000000 feet below pile head
Number of iterations             =             10
Number of zero deflection points =              8
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =           10500. lbs
Slope      =          0.00000
Axial Load =          379800. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	1.50258198	-1471520.	-28532.
27.55000	1.51964871	-1479191.	-28990.
26.10000	1.50504512	-1472236.	-28329.
24.65000	1.50715026	-1473171.	-28214.
23.20000	1.53462337	-1482546.	-31136.
21.75000	2.13921593	-1771869.	-16098.
20.30000	3.03172707	-2244490.	-18555.
18.85000	4.67077243	-3190274.	-17419.
17.40000	5.48386017	-3855662.	10500.
15.95000	4.74602858	-3630189.	10500.

Summary of Pile-head Responses for Conventional Analyses

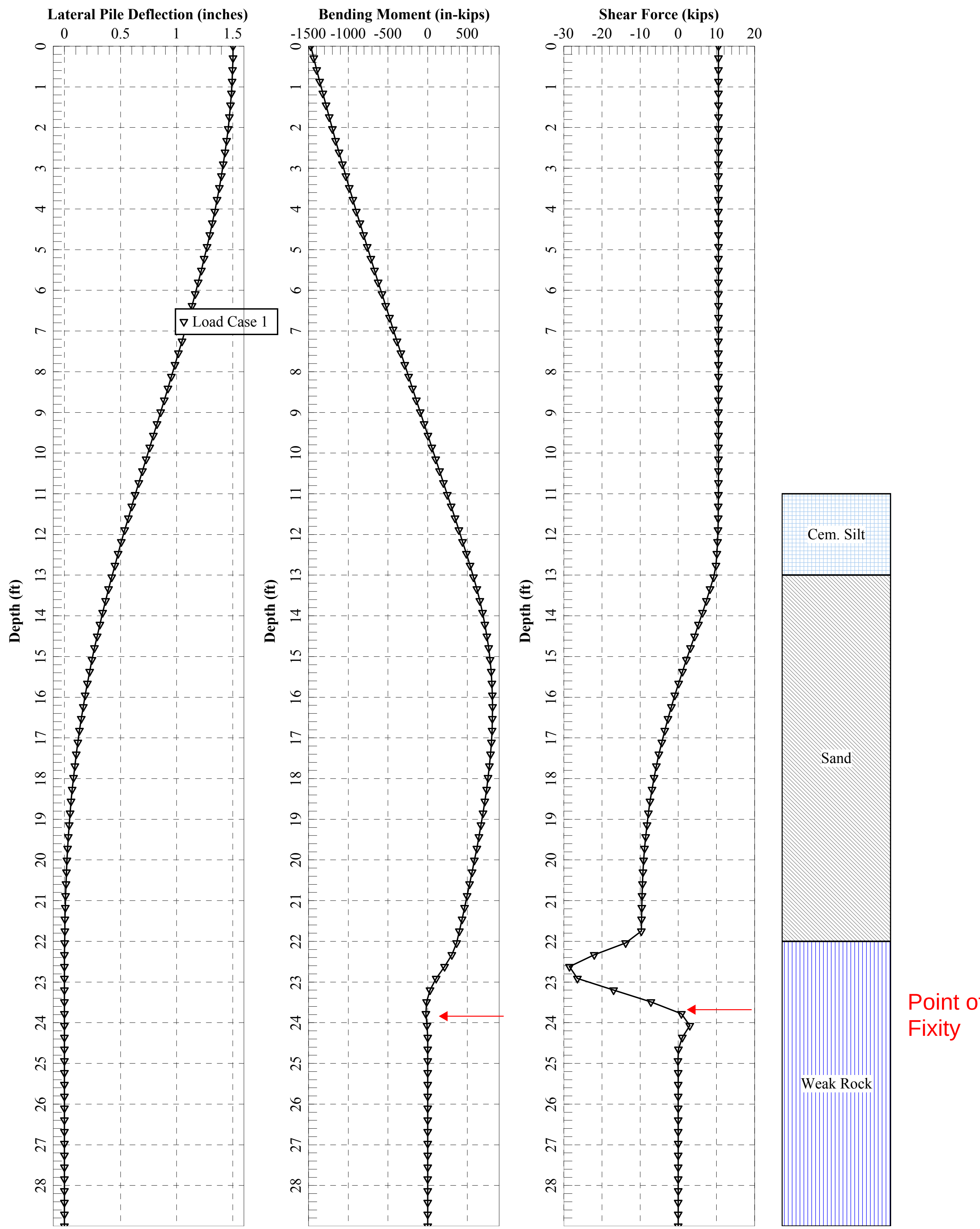
Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	10500.	S, rad	0.00	379800.	1.5026	0.00	-28532.	-1471520.

Maximum pile-head deflection = 1.5025819846 inches
Maximum pile-head rotation = -0.0000000000 radians = -0.000000 deg.

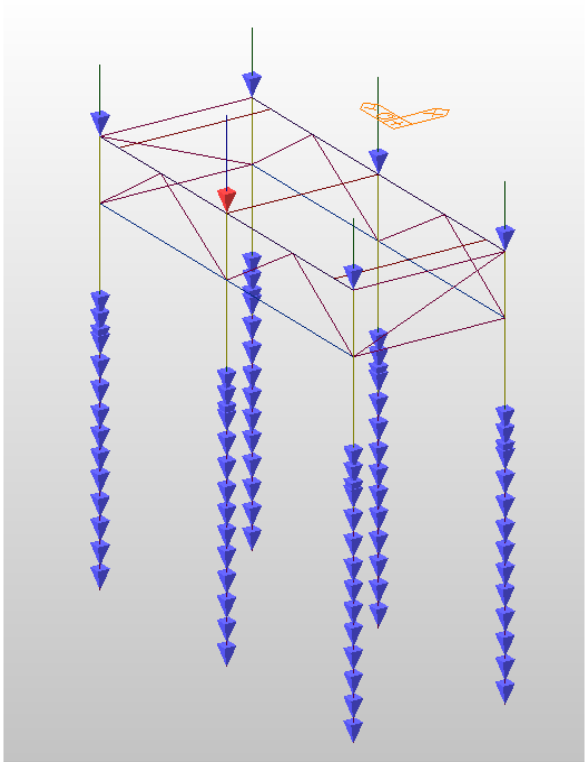
This analysis ended normally



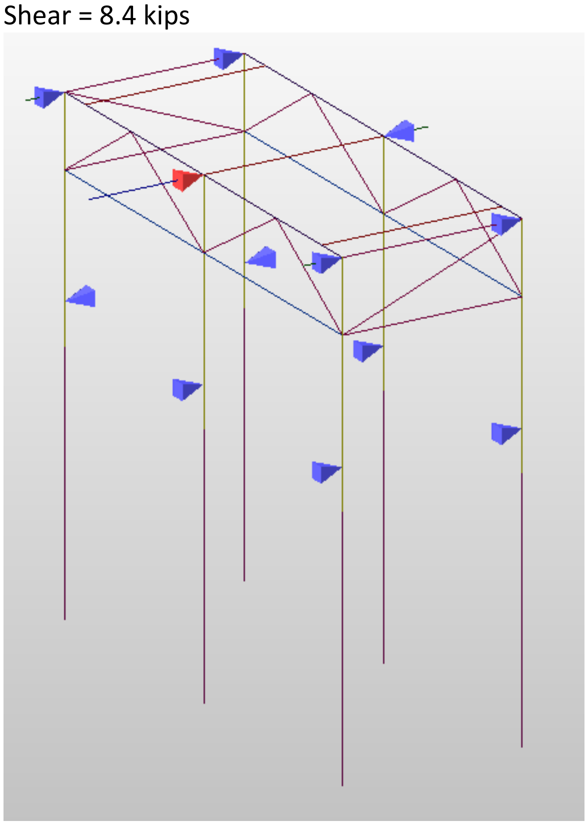
Lateral Pile Deflection (inches)
Bending Moment (in-kips)
Shear Force (kips)
Depth (ft)
Load Case 1
Cem. Silt
Sand
Weak Rock
Point of Fixity

L-Pile loads – HL-93 Operating

Axial = 350.8 kips



Shear = 8.4 kips



```
===============================================================================

                    LPile for Windows, Version 2015-08.007

                Analysis of Individual Piles and Drilled Shafts
               Subjected to Lateral Loading Using the p-y Method
                          © 1985-2015 by Ensoft, Inc.
                              All Rights Reserved

===============================================================================

This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

-------------------------------------------------------------------------------
                            Files Used for Analysis
-------------------------------------------------------------------------------

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
HL-93 Operating 01349 pier 2.lp8d

Name of output report file:
HL-93 Operating 01349 pier 2.lp8o

Name of plot output file:
HL-93 Operating 01349 pier 2.lp8p

Name of runtime message file:
HL-93 Operating 01349 pier 2.lp8r


-------------------------------------------------------------------------------
                           Date and Time of Analysis
-------------------------------------------------------------------------------

               Date:  June 1, 2016               Time:  14:50:08


-------------------------------------------------------------------------------
                                 Problem Title
-------------------------------------------------------------------------------

Project Name: Rehabilitation of Bridge 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis Under Existing Condition



-------------------------------------------------------------------------------
                          Program Options and Settings
-------------------------------------------------------------------------------

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                      =           1
Total length of pile                                 =      29.000 ft
Depth of ground surface below top of pile            =     11.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	13.8300
2	29.000	13.8300

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is an elastic pile
   Cross-sectional Shape                              =   Weak H-Pile
   Length of section                                  =    29.000000 ft
   Flange Width                                       =    14.695000 in
   Section Depth                                      =    13.830000 in
   Flange Thickness                                   =     0.615000 in
   Web Thickness                                      =     0.615000 in
   Section Area                                       =    25.823850 sq. in
   Moment of Inertia                                  =   325.505721 in^4
   Elastic Modulus                                    =    29000000. psi
```

Ground Slope and Pile Batter Angles

```
Ground Slope Angle                                    =       0.000 degrees
                                                      =       0.000 radians

Pile Batter Angle                                     =       0.000 degrees
                                                      =       0.000 radians
```

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

```
   Distance from top of pile to top of layer          =    11.000000 ft
   Distance from top of pile to bottom of layer       =    13.000000 ft
   Effective unit weight at top of layer              =   120.000000 pcf
   Effective unit weight at bottom of layer           =   120.000000 pcf
   Undrained cohesion at top of layer                 =   500.000000 psf
   Undrained cohesion at bottom of layer              =   500.000000 psf
   Friction angle at top of layer                     =    10.000000 deg.
   Friction angle at bottom of layer                  =    10.000000 deg.
   Epsilon-50 at top of layer                         =     0.010000
   Epsilon-50 at bottom of layer                      =     0.010000
   Subgrade k at top of layer                         =    18.000000 pci
   Subgrade k at bottom of layer                      =    18.000000 pci
```

Layer 2 is sand, p-y criteria by Reese et al., 1974

```
   Distance from top of pile to top of layer          =    13.000000 ft
   Distance from top of pile to bottom of layer       =    22.000000 ft
   Effective unit weight at top of layer              =   125.000000 pcf
   Effective unit weight at bottom of layer           =   125.000000 pcf
   Friction angle at top of layer                     =    38.000000 deg.
   Friction angle at bottom of layer                  =    38.000000 deg.
   Subgrade k at top of layer                         =    25.000000 pci
   Subgrade k at bottom of layer                      =    25.000000 pci
```

Layer 3 is weak rock, p-y criteria by Reese, 1997

```
   Distance from top of pile to top of layer          =    22.000000 ft
```

Distance from top of pile to bottom of layer	=	29.000000 ft
Effective unit weight at top of layer	=	125.000000 pcf
Effective unit weight at bottom of layer	=	125.000000 pcf
Uniaxial compressive strength at top of layer	=	500.000000 psi
Uniaxial compressive strength at bottom of layer	=	500.000000 psi
Initial modulus of rock at top of layer	=	1050000. psi
Initial modulus of rock at bottom of layer	=	1050000. psi
RQD of rock at top of layer	=	0.0000 %
RQD of rock at bottom of layer	=	0.0000 %
k rm of rock at top of layer	=	0.0005000
k rm of rock at bottom of layer	=	0.0005000

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

Distance from top of pile to top of layer	=	29.000000 ft
Distance from top of pile to bottom of layer	=	30.000000 ft
Effective unit weight at top of layer	=	139.000000 pcf
Effective unit weight at bottom of layer	=	139.000000 pcf
Uniaxial compressive strength at top of layer	=	11600. psi
Uniaxial compressive strength at bottom of layer	=	11600. psi
Poisson's ratio at top of layer	=	0.250000
Poisson's ratio at bottom of layer	=	0.250000
Option 1: Intact rock modulus at top of layer	=	1500000. psi
Intact rock modulus at bottom of layer	=	1500000. psi
Option 1: Geologic Strength Index for layer	=	50.000000
Option 2: Rock mass modulus at top of layer	=	0.0000 psi
Rock mass modulus at bottom of layer	=	0.0000 psi

Option 1 will be used to compute values of rock mass modulus for the p-y curve in massive rock.

The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28

(Depth of the lowest soil layer extends 1.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	11.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	13.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	13.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	22.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	22.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	29.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	29.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	30.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	2	V = 8500. lbs	S = 0.0000 in/in	350800.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	549.7454
2	13.0000	0.7518	No	No	549.7454	193067.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head = 8500.0 lbs
Rotation of pile head = 0.000E+00 radians
Axial load at pile head = 350800.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	1.1369	-1144859.	8500.	0.00	37906.	9.44E+09	0.00	0.00	0.00
0.2900	1.1361	-1115021.	8500.	-4.17E-04	37272.	9.44E+09	0.00	0.00	0.00
0.5800	1.1340	-1084682.	8500.	-8.22E-04	36627.	9.44E+09	0.00	0.00	0.00
0.8700	1.1304	-1053854.	8500.	-0.00122	35972.	9.44E+09	0.00	0.00	0.00
1.1600	1.1255	-1022553.	8500.	-0.00160	35307.	9.44E+09	0.00	0.00	0.00
1.4500	1.1193	-990790.	8500.	-0.00197	34633.	9.44E+09	0.00	0.00	0.00
1.7400	1.1118	-958582.	8500.	-0.00233	33948.	9.44E+09	0.00	0.00	0.00
2.0300	1.1031	-925943.	8500.	-0.00268	33255.	9.44E+09	0.00	0.00	0.00
2.3200	1.0931	-892887.	8500.	-0.00301	32553.	9.44E+09	0.00	0.00	0.00
2.6100	1.0821	-859429.	8500.	-0.00334	31842.	9.44E+09	0.00	0.00	0.00
2.9000	1.0699	-825584.	8500.	-0.00365	31123.	9.44E+09	0.00	0.00	0.00
3.1900	1.0567	-791368.	8500.	-0.00394	30396.	9.44E+09	0.00	0.00	0.00
3.4800	1.0425	-756795.	8500.	-0.00423	29662.	9.44E+09	0.00	0.00	0.00
3.7700	1.0273	-721882.	8500.	-0.00450	28920.	9.44E+09	0.00	0.00	0.00
4.0600	1.0112	-686644.	8500.	-0.00476	28171.	9.44E+09	0.00	0.00	0.00
4.3500	0.9941	-651097.	8500.	-0.00501	27416.	9.44E+09	0.00	0.00	0.00
4.6400	0.9763	-615257.	8500.	-0.00524	26655.	9.44E+09	0.00	0.00	0.00
4.9300	0.9577	-579140.	8500.	-0.00546	25888.	9.44E+09	0.00	0.00	0.00
5.2200	0.9383	-542763.	8500.	-0.00567	25115.	9.44E+09	0.00	0.00	0.00
5.5100	0.9182	-506141.	8500.	-0.00586	24337.	9.44E+09	0.00	0.00	0.00
5.8000	0.8975	-469292.	8500.	-0.00604	23554.	9.44E+09	0.00	0.00	0.00
6.0900	0.8762	-432231.	8500.	-0.00621	22767.	9.44E+09	0.00	0.00	0.00
6.3800	0.8543	-394975.	8500.	-0.00636	21975.	9.44E+09	0.00	0.00	0.00
6.6700	0.8319	-357542.	8500.	-0.00650	21180.	9.44E+09	0.00	0.00	0.00
6.9600	0.8091	-319948.	8500.	-0.00662	20381.	9.44E+09	0.00	0.00	0.00
7.2500	0.7858	-282210.	8500.	-0.00673	19580.	9.44E+09	0.00	0.00	0.00
7.5400	0.7622	-244345.	8500.	-0.00683	18775.	9.44E+09	0.00	0.00	0.00
7.8300	0.7383	-206370.	8500.	-0.00691	17968.	9.44E+09	0.00	0.00	0.00
8.1200	0.7141	-168303.	8500.	-0.00698	17160.	9.44E+09	0.00	0.00	0.00

8.4100	0.6896	-130159.	8500.	-0.00704	16349.	9.44E+09	0.00	0.00	0.00
8.7000	0.6651	-91957.	8500.	-0.00708	15538.	9.44E+09	0.00	0.00	0.00
8.9900	0.6404	-53713.	8500.	-0.00711	14725.	9.44E+09	0.00	0.00	0.00
9.2800	0.6156	-15445.	8500.	-0.00712	13912.	9.44E+09	0.00	0.00	0.00
9.5700	0.5908	22829.	8500.	-0.00712	14069.	9.44E+09	0.00	0.00	0.00
9.8600	0.5661	61094.	8500.	-0.00710	14882.	9.44E+09	0.00	0.00	0.00
10.1500	0.5414	99331.	8500.	-0.00707	15695.	9.44E+09	0.00	0.00	0.00
10.4400	0.5168	137523.	8500.	-0.00703	16506.	9.44E+09	0.00	0.00	0.00
10.7300	0.4925	175653.	8500.	-0.00697	17316.	9.44E+09	0.00	0.00	0.00
11.0200	0.4683	213704.	8496.	-0.00690	18124.	9.44E+09	-2.0231	15.0336	0.00
11.3100	0.4444	251635.	8441.	-0.00681	18930.	9.44E+09	-29.7599	233.0208	0.00
11.6000	0.4209	289092.	8294.	-0.00671	19726.	9.44E+09	-54.5475	451.0080	0.00
11.8900	0.3977	325758.	8067.	-0.00660	20505.	9.44E+09	-76.4559	668.9952	0.00
12.1800	0.3749	361352.	7767.	-0.00647	21261.	9.44E+09	-95.5668	886.9824	0.00
12.4700	0.3526	395626.	7406.	-0.00633	21989.	9.44E+09	-111.9731	1105.	0.00
12.7600	0.3309	428365.	6992.	-0.00618	22684.	9.44E+09	-125.7788	1323.	0.00
13.0500	0.3096	459389.	6442.	-0.00602	23344.	9.44E+09	-190.4137	2140.	0.00
13.3400	0.2890	487900.	5758.	-0.00584	23949.	9.44E+09	-202.8522	2443.	0.00
13.6300	0.2689	513734.	5036.	-0.00566	24498.	9.44E+09	-212.1910	2746.	0.00
13.9200	0.2496	536768.	4286.	-0.00547	24987.	9.44E+09	-218.6225	3048.	0.00
14.2100	0.2309	556913.	3519.	-0.00526	25415.	9.44E+09	-222.3473	3351.	0.00
14.5000	0.2129	574114.	2743.	-0.00506	25781.	9.44E+09	-223.5721	3654.	0.00
14.7900	0.1957	588349.	1967.	-0.00484	26083.	9.44E+09	-222.5086	3957.	0.00
15.0800	0.1792	599625.	1198.	-0.00462	26323.	9.44E+09	-219.3713	4260.	0.00
15.3700	0.1635	607974.	443.2019	-0.00440	26500.	9.44E+09	-214.3762	4562.	0.00
15.6600	0.1486	613454.	-291.2787	-0.00418	26616.	9.44E+09	-207.7391	4865.	0.00
15.9500	0.1345	616142.	-1000.	-0.00395	26674.	9.44E+09	-199.6740	5168.	0.00
16.2400	0.1211	616134.	-1679.	-0.00372	26673.	9.44E+09	-190.3916	5471.	0.00
16.5300	0.1086	613543.	-2324.	-0.00349	26618.	9.44E+09	-180.0984	5773.	0.00
16.8200	0.09679	608495.	-2931.	-0.00327	26511.	9.44E+09	-168.9948	6076.	0.00
17.1100	0.08580	601127.	-3499.	-0.00305	26355.	9.44E+09	-157.2744	6379.	0.00
17.4000	0.07558	591583.	-4025.	-0.00283	26152.	9.44E+09	-145.1228	6682.	0.00
17.6900	0.06613	580016.	-4508.	-0.00261	25906.	9.44E+09	-132.7166	6984.	0.00
17.9800	0.05741	566580.	-4948.	-0.00240	25621.	9.44E+09	-120.2230	7287.	0.00
18.2700	0.04943	551433.	-5345.	-0.00219	25299.	9.44E+09	-107.7985	7590.	0.00
18.5600	0.04215	534733.	-5699.	-0.00199	24944.	9.44E+09	-95.5888	7893.	0.00
18.8500	0.03555	516634.	-6011.	-0.00180	24560.	9.44E+09	-83.7280	8195.	0.00
19.1400	0.02962	497289.	-6283.	-0.00161	24149.	9.44E+09	-72.3385	8498.	0.00
19.4300	0.02433	476845.	-6516.	-0.00143	23714.	9.44E+09	-61.5306	8801.	0.00
19.7200	0.01965	455440.	-6712.	-0.00126	23260.	9.44E+09	-51.4021	9104.	0.00
20.0100	0.01555	433208.	-6875.	-0.00110	22787.	9.44E+09	-42.0385	9406.	0.00
20.3000	0.01201	410272.	-7006.	-9.42E-04	22300.	9.44E+09	-33.5127	9709.	0.00
20.5900	0.00900	386745.	-7109.	-7.95E-04	21800.	9.44E+09	-25.8850	10012.	0.00
20.8800	0.00648	362731.	-7188.	-6.57E-04	21290.	9.44E+09	-19.2035	10315.	0.00
21.1700	0.00443	338321.	-7245.	-5.28E-04	20772.	9.44E+09	-13.5037	10617.	0.00
21.4600	0.00281	313595.	-7284.	-4.07E-04	20246.	9.44E+09	-8.8086	10920.	0.00
21.7500	0.00159	288621.	-7308.	-2.96E-04	19716.	9.44E+09	-5.1293	11223.	0.00
22.0400	7.44E-04	263456.	-10937.	-1.95E-04	19181.	9.44E+09	-2081.	9730711.	0.00
22.3300	2.36E-04	212972.	-18192.	-1.07E-04	18109.	9.44E+09	-2088.	3.08E+07	0.00
22.6200	7.69E-07	137100.	-22067.	-4.23E-05	16497.	9.44E+09	-138.7502	6.27E+08	0.00
22.9100	-5.84E-05	59487.	-18430.	-6.05E-06	14848.	9.44E+09	2229.	1.33E+08	0.00
23.2000	-4.13E-05	8840.	-10357.	6.55E-06	13772.	9.44E+09	2411.	2.03E+08	0.00
23.4900	-1.28E-05	-12614.	-2461.	5.85E-06	13852.	9.44E+09	2127.	5.76E+08	0.00
23.7800	-5.71E-07	-8303.	1559.	2.00E-06	13761.	9.44E+09	183.3187	1.12E+09	0.00
24.0700	1.06E-06	-1769.	1224.	1.41E-07	13622.	9.44E+09	-376.0649	1.24E+09	0.00
24.3600	4.12E-07	212.3195	288.6185	-1.46E-07	13589.	9.44E+09	-161.2426	1.36E+09	0.00
24.6500	4.07E-08	240.4860	-22.1820	-6.23E-08	13589.	9.44E+09	-17.3784	1.49E+09	0.00
24.9400	-2.17E-08	58.0845	-34.9497	-7.23E-09	13586.	9.44E+09	10.0407	1.61E+09	0.00
25.2300	-9.64E-09	-2.7460	-9.1336	2.97E-09	13584.	9.44E+09	4.7961	1.73E+09	0.00
25.5200	-1.08E-09	-5.4926	0.2002	1.45E-09	13584.	9.44E+09	0.5682	1.83E+09	0.00
25.8100	4.32E-10	-1.3561	0.7943	1.85E-10	13584.	9.44E+09	-0.2268	1.83E+09	0.00
26.1000	2.06E-10	0.03502	0.2112	-5.84E-11	13584.	9.44E+09	-0.1083	1.83E+09	0.00
26.3900	2.57E-11	0.1141	-7.50E-04	-3.09E-11	13584.	9.44E+09	-0.01349	1.83E+09	0.00
26.6800	-8.52E-12	0.02987	-0.01644	-4.32E-12	13584.	9.44E+09	0.00447	1.83E+09	0.00
26.9700	-4.40E-12	-2.45E-04	-0.00463	1.14E-12	13584.	9.44E+09	0.00231	1.83E+09	0.00
27.2600	0.00	-0.00236	-5.89E-05	0.00	13584.	9.44E+09	3.16E-04	1.83E+09	0.00
27.5500	0.00	-6.56E-04	3.39E-04	0.00	13584.	9.44E+09	-8.74E-05	1.83E+09	0.00
27.8400	0.00	-5.47E-06	1.01E-04	0.00	13584.	9.44E+09	-4.92E-05	1.83E+09	0.00
28.1300	0.00	4.88E-05	2.84E-06	0.00	13584.	9.44E+09	-7.32E-06	1.83E+09	0.00
28.4200	0.00	1.43E-05	-6.93E-06	0.00	13584.	9.44E+09	1.71E-06	1.83E+09	0.00
28.7100	0.00	5.63E-07	-2.06E-06	0.00	13584.	9.44E+09	1.09E-06	1.83E+09	0.00
29.0000	0.00	0.00	0.00	0.00	13584.	9.44E+09	9.28E-08	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection              =     1.13685563 inches
Computed slope at pile head       =       0.000000 radians
Maximum bending moment            =      -1144859. inch-lbs
Maximum shear force               =        -22067. lbs
Depth of maximum bending moment   =       0.000000 feet below pile head
Depth of maximum shear force      =    22.62000000 feet below pile head
Number of iterations              =              8
Number of zero deflection points  =              8
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =         8500. lbs
Slope      =       0.00000
Axial Load =       350800. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	1.13685563	-1144859.	-22067.
27.55000	1.14103635	-1146716.	-22491.
26.10000	1.13752443	-1144855.	-21904.
24.65000	1.13774363	-1144951.	-22131.
23.20000	1.14362543	-1146692.	-24051.
21.75000	1.65684054	-1387562.	-12280.
20.30000	2.18078978	-1671462.	-13398.
18.85000	2.95107736	-2144307.	-12184.
17.40000	3.63353975	-2653834.	8500.
15.95000	3.41173624	-2653983.	8500.
14.50000	2.99760144	-2315755.	8500.

Summary of Pile-head Responses for Conventional Analyses

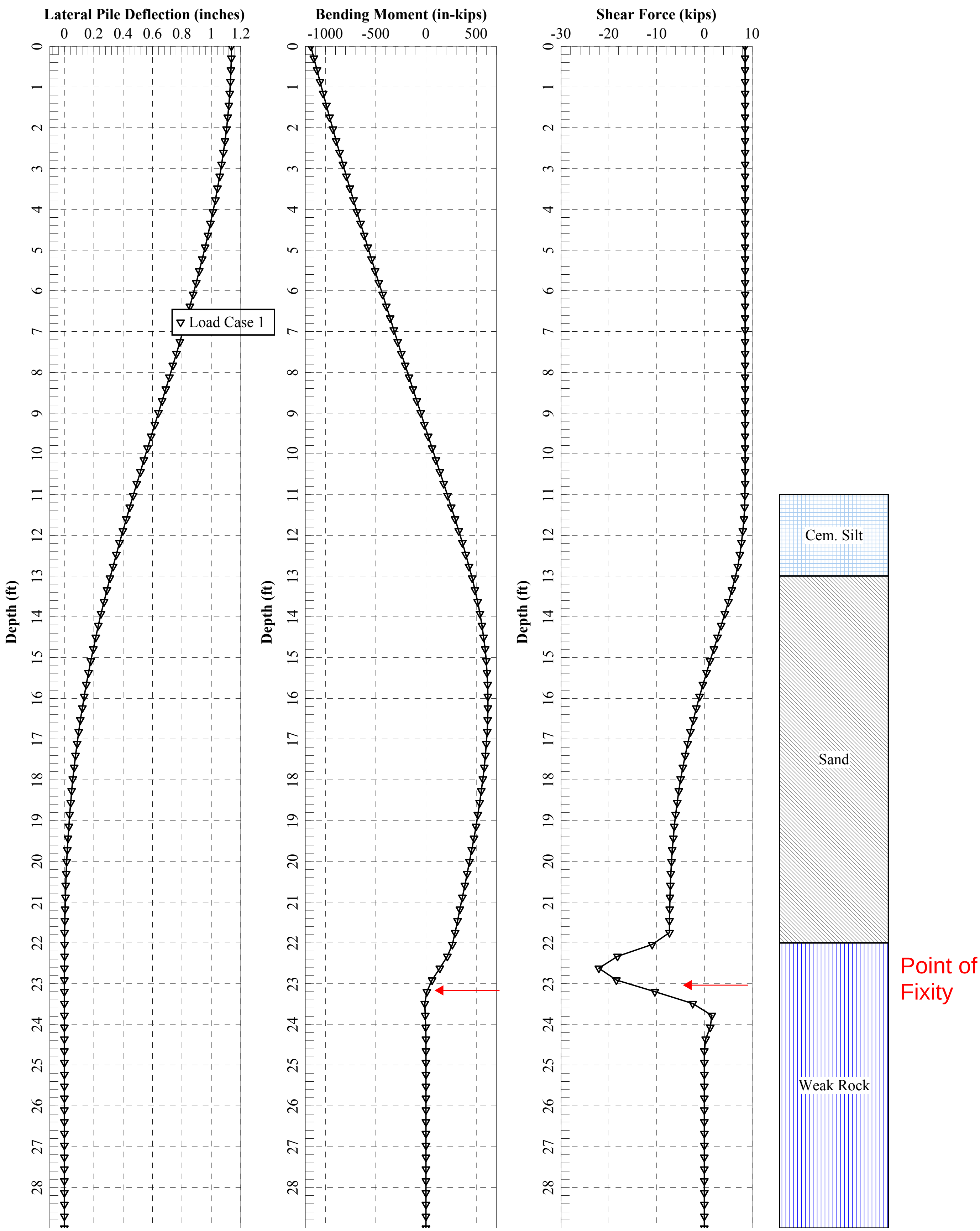
Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	8500.	S, rad	0.00	350800.	1.1369	0.00	-22067.	-1144859.

Maximum pile-head deflection = 1.1368556272 inches
Maximum pile-head rotation = -0.0000000000 radians = -0.000000 deg.

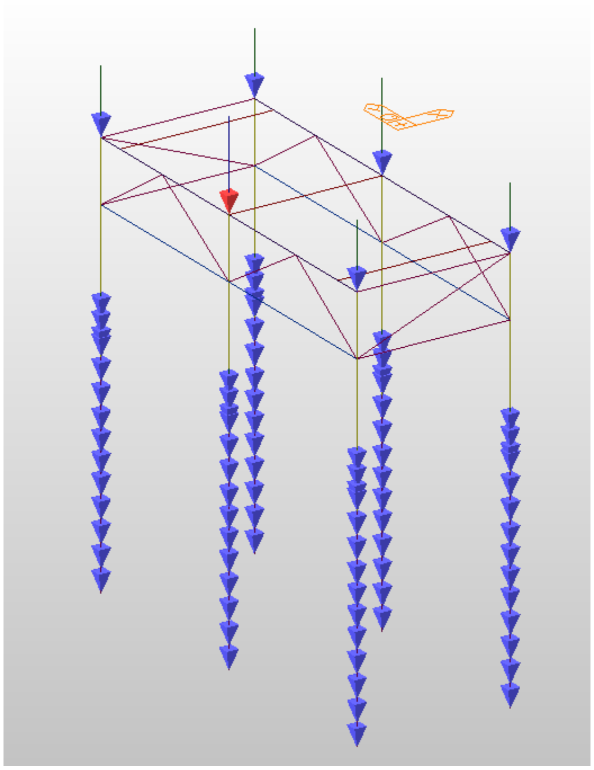
This analysis ended normally



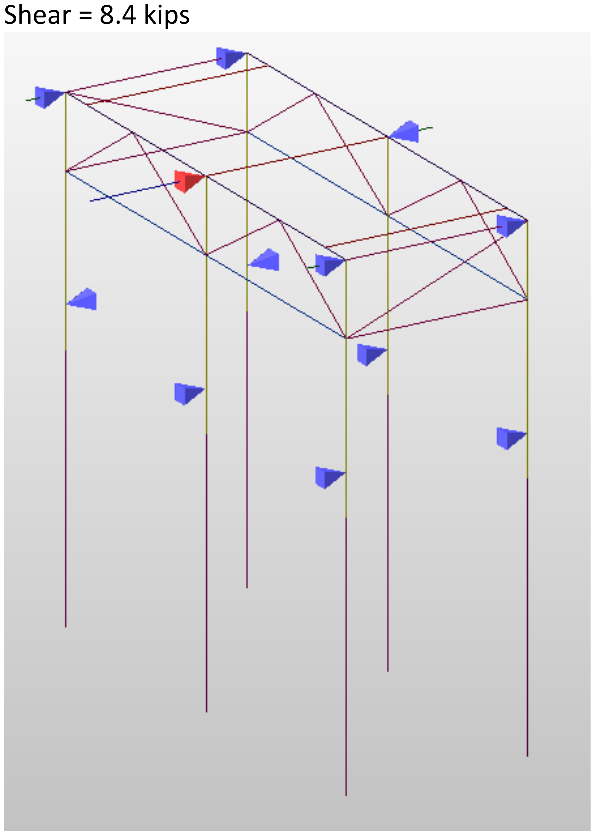
Lateral Pile Deflection (inches)
Bending Moment (in-kips)
Shear Force (kips)
Depth (ft)
Load Case 1
Cem. Silt
Sand
Weak Rock
Point of Fixity

L-Pile loads – HS-20

Axial Load = 350.4 kips



Shear = 8.4 kips



```
================================================================================
                    LPile for Windows, Version 2015-08.007

                Analysis of Individual Piles and Drilled Shafts
               Subjected to Lateral Loading Using the p-y Method
                          © 1985-2015 by Ensoft, Inc.
                              All Rights Reserved

================================================================================
```

This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

```
--------------------------------------------------------------------------------
                            Files Used for Analysis
--------------------------------------------------------------------------------
```

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
HS-20 01349 pier 2.lp8d

Name of output report file:
HS-20 01349 pier 2.lp8o

Name of plot output file:
HS-20 01349 pier 2.lp8p

Name of runtime message file:
HS-20 01349 pier 2.lp8r

```
--------------------------------------------------------------------------------
                           Date and Time of Analysis
--------------------------------------------------------------------------------

               Date:  June 1, 2016               Time:  14:37:40

--------------------------------------------------------------------------------
                                 Problem Title
--------------------------------------------------------------------------------
```

Project Name: Rehabilitation of Bridge 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis Under Existing Condition

```
--------------------------------------------------------------------------------
                         Program Options and Settings
--------------------------------------------------------------------------------

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                      =          1
Total length of pile                                 =      29.000 ft
Depth of ground surface below top of pile            =     11.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	13.8300
2	29.000	13.8300

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is an elastic pile
   Cross-sectional Shape                             =   Weak H-Pile
   Length of section                                 =    29.000000 ft
   Flange Width                                      =    14.695000 in
   Section Depth                                     =    13.830000 in
   Flange Thickness                                  =     0.615000 in
   Web Thickness                                     =     0.615000 in
   Section Area                                      =    25.823850 sq. in
   Moment of Inertia                                 =   325.505721 in^4
   Elastic Modulus                                   =    29000000. psi
```

Ground Slope and Pile Batter Angles

```
Ground Slope Angle                                   =       0.000 degrees
                                                     =       0.000 radians

Pile Batter Angle                                    =       0.000 degrees
                                                     =       0.000 radians
```

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

```
   Distance from top of pile to top of layer         =    11.000000 ft
   Distance from top of pile to bottom of layer      =    13.000000 ft
   Effective unit weight at top of layer             =   120.000000 pcf
   Effective unit weight at bottom of layer          =   120.000000 pcf
   Undrained cohesion at top of layer                =   500.000000 psf
   Undrained cohesion at bottom of layer             =   500.000000 psf
   Friction angle at top of layer                    =    10.000000 deg.
   Friction angle at bottom of layer                 =    10.000000 deg.
   Epsilon-50 at top of layer                        =     0.010000
   Epsilon-50 at bottom of layer                     =     0.010000
   Subgrade k at top of layer                        =    18.000000 pci
   Subgrade k at bottom of layer                     =    18.000000 pci
```

Layer 2 is sand, p-y criteria by Reese et al., 1974

```
   Distance from top of pile to top of layer         =    13.000000 ft
   Distance from top of pile to bottom of layer      =    22.000000 ft
   Effective unit weight at top of layer             =   125.000000 pcf
   Effective unit weight at bottom of layer          =   125.000000 pcf
   Friction angle at top of layer                    =    38.000000 deg.
   Friction angle at bottom of layer                 =    38.000000 deg.
   Subgrade k at top of layer                        =    25.000000 pci
   Subgrade k at bottom of layer                     =    25.000000 pci
```

Layer 3 is weak rock, p-y criteria by Reese, 1997

```
   Distance from top of pile to top of layer         =    22.000000 ft
```

```
   Distance from top of pile to bottom of layer        =    29.000000 ft
   Effective unit weight at top of layer               =   125.000000 pcf
   Effective unit weight at bottom of layer            =   125.000000 pcf
   Uniaxial compressive strength at top of layer       =   500.000000 psi
   Uniaxial compressive strength at bottom of layer    =   500.000000 psi
   Initial modulus of rock at top of layer             =     1050000. psi
   Initial modulus of rock at bottom of layer          =     1050000. psi
   RQD of rock at top of layer                         =       0.0000 %
   RQD of rock at bottom of layer                      =       0.0000 %
   k rm of rock at top of layer                        =    0.0005000
   k rm of rock at bottom of layer                     =    0.0005000


Layer 4 is massive rock, p-y criteria by Liang et al., 2009

   Distance from top of pile to top of layer           =    29.000000 ft
   Distance from top of pile to bottom of layer        =    30.000000 ft
   Effective unit weight at top of layer               =   139.000000 pcf
   Effective unit weight at bottom of layer            =   139.000000 pcf
   Uniaxial compressive strength at top of layer       =       11600. psi
   Uniaxial compressive strength at bottom of layer    =       11600. psi
   Poisson's ratio at top of layer                     =     0.250000
   Poisson's ratio at bottom of layer                  =     0.250000
   Option 1: Intact rock modulus at top of layer       =     1500000. psi
             Intact rock modulus at bottom of layer    =     1500000. psi
   Option 1: Geologic Strength Index for layer         =    50.000000
   Option 2: Rock mass modulus at top of layer         =       0.0000 psi
             Rock mass modulus at bottom of layer      =       0.0000 psi
   Option 1 will be used to compute values of rock mass modulus for the p-y curve
         in massive rock.
   The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28


 (Depth of the lowest soil layer extends 1.000 ft below the pile tip)



--------------------------------------------------------------------------------
                        Summary of Input Soil Properties
--------------------------------------------------------------------------------

Layer         Soil Type          Layer      Effective    Undrained    Angle of     Uniaxial                   E50
Rock Mass    Geologic     Int. Rock   Hoek-Brown
Layer           Name             Depth       Unit Wt.    Cohesion     Friction        qu          RQD %         or           kpy
Modulus     Strength      Modulus      Material     Poisson's
 Num.     (p-y Curve Type)        ft            pcf           psf          deg.         psi                     krm          pci
 psi          Index         psi       Index, mi      Ratio
-----  -------------------  ----------  ----------  ----------  ----------  ----------  ----------  ----------  ----------
----------  ----------  ----------  ----------  ----------
  1          Cemented            11.0000    120.0000    500.0000     10.0000        --          --       0.01000     18.0000
 --             --            0.00         0.00        0.00
              Silt               13.0000    120.0000    500.0000     10.0000        --          --       0.01000     18.0000
 --             --            0.00         0.00        0.00
  2           Sand               13.0000    125.0000       --        38.0000        --          --          --       25.0000
 --             --            0.00         0.00        0.00
         (Reese, et al.)         22.0000    125.0000       --        38.0000        --          --          --       25.0000
 --             --            0.00         0.00        0.00
  3           Weak               22.0000    125.0000       --           --       500.0000      0.00    5.00E-04        --
1050000.        --             0.00         0.00        0.00
              Rock               29.0000    125.0000       --           --       500.0000      0.00    5.00E-04        --
1050000.        --             0.00         0.00        0.00
  4          Massive             29.0000    139.0000       --           --         11600.       --          --          --
Internally      50.0000     1500000.     28.0000      0.2500
              Rock               30.0000    139.0000       --           --         11600.       --          --          --
Computed       50.0000     1500000.     28.0000      0.2500


--------------------------------------------------------------------------------
                              Static Loading Type
--------------------------------------------------------------------------------

Static loading criteria were used when computing p-y curves for all analyses.



--------------------------------------------------------------------------------
               Distributed Lateral Loading Used For All Load Cases
--------------------------------------------------------------------------------

Distributed lateral load intensity defined using 2 points

Point           Depth X            Dist. Load
 No.              in                 lb/in
-----          ----------          ----------
  1              0.000               0.000
  2              0.000               0.000



--------------------------------------------------------------------------------
                Pile-head Loading and Pile-head Fixity Conditions
--------------------------------------------------------------------------------

Number of loads specified = 1

Load    Load        Condition               Condition            Axial Thrust      Compute Top y
 No.    Type            1                       2                 Force, lbs      vs. Pile Length
```

1	2	V = 8400. lbs	S = 0.0000 in/in	350400.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	549.7454
2	13.0000	0.7518	No	No	549.7454	193067.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head	=	8400.0 lbs
Rotation of pile head	=	0.000E+00 radians
Axial load at pile head	=	350400.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	1.1232	-1131133.	8400.	0.00	37598.	9.44E+09	0.00	0.00	0.00
0.2900	1.1225	-1101647.	8400.	-4.12E-04	36972.	9.44E+09	0.00	0.00	0.00
0.5800	1.1203	-1071665.	8400.	-8.12E-04	36335.	9.44E+09	0.00	0.00	0.00
0.8700	1.1168	-1041202.	8400.	-0.00120	35688.	9.44E+09	0.00	0.00	0.00
1.1600	1.1120	-1010271.	8400.	-0.00158	35031.	9.44E+09	0.00	0.00	0.00
1.4500	1.1058	-978885.	8400.	-0.00195	34364.	9.44E+09	0.00	0.00	0.00
1.7400	1.0984	-947060.	8400.	-0.00230	33688.	9.44E+09	0.00	0.00	0.00
2.0300	1.0898	-914809.	8400.	-0.00264	33003.	9.44E+09	0.00	0.00	0.00
2.3200	1.0800	-882146.	8400.	-0.00298	32309.	9.44E+09	0.00	0.00	0.00
2.6100	1.0691	-849087.	8400.	-0.00329	31607.	9.44E+09	0.00	0.00	0.00
2.9000	1.0571	-815647.	8400.	-0.00360	30896.	9.44E+09	0.00	0.00	0.00
3.1900	1.0440	-781839.	8400.	-0.00390	30178.	9.44E+09	0.00	0.00	0.00
3.4800	1.0299	-747680.	8400.	-0.00418	29452.	9.44E+09	0.00	0.00	0.00
3.7700	1.0149	-713185.	8400.	-0.00445	28720.	9.44E+09	0.00	0.00	0.00
4.0600	0.9990	-678370.	8400.	-0.00470	27980.	9.44E+09	0.00	0.00	0.00
4.3500	0.9822	-643249.	8400.	-0.00495	27234.	9.44E+09	0.00	0.00	0.00
4.6400	0.9646	-607840.	8400.	-0.00518	26482.	9.44E+09	0.00	0.00	0.00
4.9300	0.9461	-572157.	8400.	-0.00540	25724.	9.44E+09	0.00	0.00	0.00
5.2200	0.9270	-536216.	8400.	-0.00560	24960.	9.44E+09	0.00	0.00	0.00
5.5100	0.9072	-500035.	8400.	-0.00579	24192.	9.44E+09	0.00	0.00	0.00
5.8000	0.8867	-463629.	8400.	-0.00597	23418.	9.44E+09	0.00	0.00	0.00
6.0900	0.8656	-427015.	8400.	-0.00613	22640.	9.44E+09	0.00	0.00	0.00
6.3800	0.8440	-390209.	8400.	-0.00628	21858.	9.44E+09	0.00	0.00	0.00
6.6700	0.8219	-353227.	8400.	-0.00642	21073.	9.44E+09	0.00	0.00	0.00
6.9600	0.7993	-316086.	8400.	-0.00654	20284.	9.44E+09	0.00	0.00	0.00
7.2500	0.7763	-278804.	8400.	-0.00665	19492.	9.44E+09	0.00	0.00	0.00
7.5400	0.7530	-241396.	8400.	-0.00675	18697.	9.44E+09	0.00	0.00	0.00
7.8300	0.7294	-203879.	8400.	-0.00683	17900.	9.44E+09	0.00	0.00	0.00
8.1200	0.7055	-166271.	8400.	-0.00690	17101.	9.44E+09	0.00	0.00	0.00

8.4100	0.6813	-128588.	8400.	-0.00695	16301.	9.44E+09	0.00	0.00	0.00
8.7000	0.6571	-90847.	8400.	-0.00699	15499.	9.44E+09	0.00	0.00	0.00
8.9900	0.6327	-53066.	8400.	-0.00702	14696.	9.44E+09	0.00	0.00	0.00
9.2800	0.6082	-15261.	8400.	-0.00703	13893.	9.44E+09	0.00	0.00	0.00
9.5700	0.5837	22552.	8400.	-0.00703	14048.	9.44E+09	0.00	0.00	0.00
9.8600	0.5593	60354.	8400.	-0.00702	14851.	9.44E+09	0.00	0.00	0.00
10.1500	0.5349	98129.	8400.	-0.00699	15653.	9.44E+09	0.00	0.00	0.00
10.4400	0.5106	135860.	8400.	-0.00694	16455.	9.44E+09	0.00	0.00	0.00
10.7300	0.4865	173529.	8400.	-0.00689	17255.	9.44E+09	0.00	0.00	0.00
11.0200	0.4627	211121.	8397.	-0.00682	18054.	9.44E+09	-1.9988	15.0336	0.00
11.3100	0.4391	248594.	8342.	-0.00673	18850.	9.44E+09	-29.4017	233.0208	0.00
11.6000	0.4158	285599.	8197.	-0.00663	19636.	9.44E+09	-53.8909	451.0080	0.00
11.8900	0.3929	321823.	7972.	-0.00652	20406.	9.44E+09	-75.5356	668.9952	0.00
12.1800	0.3704	356987.	7676.	-0.00640	21153.	9.44E+09	-94.4164	886.9824	0.00
12.4700	0.3484	390847.	7319.	-0.00626	21872.	9.44E+09	-110.6252	1105.	0.00
12.7600	0.3269	423193.	6911.	-0.00611	22559.	9.44E+09	-124.2646	1323.	0.00
13.0500	0.3059	453843.	6367.	-0.00595	23210.	9.44E+09	-188.1212	2140.	0.00
13.3400	0.2855	482010.	5691.	-0.00577	23809.	9.44E+09	-200.4098	2443.	0.00
13.6300	0.2657	507534.	4977.	-0.00559	24351.	9.44E+09	-209.6359	2746.	0.00
13.9200	0.2466	530291.	4237.	-0.00540	24834.	9.44E+09	-215.9896	3048.	0.00
14.2100	0.2281	550194.	3479.	-0.00520	25257.	9.44E+09	-219.6691	3351.	0.00
14.5000	0.2104	567189.	2712.	-0.00500	25618.	9.44E+09	-220.8787	3654.	0.00
14.7900	0.1933	581255.	1945.	-0.00478	25917.	9.44E+09	-219.8274	3957.	0.00
15.0800	0.1771	592397.	1186.	-0.00457	26154.	9.44E+09	-216.7272	4260.	0.00
15.3700	0.1615	600648.	440.2380	-0.00435	26329.	9.44E+09	-211.7915	4562.	0.00
15.6600	0.1468	606064.	-285.3855	-0.00413	26444.	9.44E+09	-205.2335	4865.	0.00
15.9500	0.1328	608722.	-985.7320	-0.00390	26500.	9.44E+09	-197.2645	5168.	0.00
16.2400	0.1197	608718.	-1656.	-0.00368	26500.	9.44E+09	-188.0930	5471.	0.00
16.5300	0.1072	606162.	-2293.	-0.00345	26446.	9.44E+09	-177.9226	5773.	0.00
16.8200	0.09562	601178.	-2893.	-0.00323	26340.	9.44E+09	-166.9516	6076.	0.00
17.1100	0.08476	593903.	-3454.	-0.00301	26186.	9.44E+09	-155.3711	6379.	0.00
17.4000	0.07467	584479.	-3974.	-0.00279	25985.	9.44E+09	-143.3645	6682.	0.00
17.6900	0.06532	573057.	-4451.	-0.00258	25743.	9.44E+09	-131.1065	6984.	0.00
17.9800	0.05672	559788.	-4886.	-0.00237	25461.	9.44E+09	-118.7620	7287.	0.00
18.2700	0.04882	544830.	-5278.	-0.00217	25143.	9.44E+09	-106.4859	7590.	0.00
18.5600	0.04163	528338.	-5628.	-0.00197	24793.	9.44E+09	-94.4220	7893.	0.00
18.8500	0.03512	510464.	-5936.	-0.00178	24413.	9.44E+09	-82.7030	8195.	0.00
19.1400	0.02926	491360.	-6204.	-0.00159	24007.	9.44E+09	-71.4497	8498.	0.00
19.4300	0.02403	471169.	-6434.	-0.00142	23578.	9.44E+09	-60.7711	8801.	0.00
19.7200	0.01941	450030.	-6628.	-0.00125	23129.	9.44E+09	-50.7639	9104.	0.00
20.0100	0.01536	428075.	-6789.	-0.00108	22663.	9.44E+09	-41.5127	9406.	0.00
20.3000	0.01186	405424.	-6919.	-9.30E-04	22182.	9.44E+09	-33.0896	9709.	0.00
20.5900	0.00888	382190.	-7021.	-7.85E-04	21688.	9.44E+09	-25.5542	10012.	0.00
20.8800	0.00639	358475.	-7098.	-6.49E-04	21184.	9.44E+09	-18.9539	10315.	0.00
21.1700	0.00437	334369.	-7154.	-5.21E-04	20672.	9.44E+09	-13.3240	10617.	0.00
21.4600	0.00277	309952.	-7193.	-4.02E-04	20153.	9.44E+09	-8.6874	10920.	0.00
21.7500	0.00157	285290.	-7216.	-2.93E-04	19630.	9.44E+09	-5.0550	11223.	0.00
22.0400	7.32E-04	260439.	-10832.	-1.92E-04	19102.	9.44E+09	-2073.	9847576.	0.00
22.3300	2.32E-04	210369.	-18056.	-1.05E-04	18038.	9.44E+09	-2079.	3.12E+07	0.00
22.6200	6.01E-07	135027.	-21862.	-4.15E-05	16437.	9.44E+09	-108.3196	6.27E+08	0.00
22.9100	-5.72E-05	58313.	-18194.	-5.85E-06	14808.	9.44E+09	2216.	1.35E+08	0.00
23.2000	-4.01E-05	8410.	-10176.	6.45E-06	13748.	9.44E+09	2392.	2.08E+08	0.00
23.4900	-1.22E-05	-12528.	-2357.	5.69E-06	13835.	9.44E+09	2102.	5.97E+08	0.00
23.7800	-4.68E-07	-8009.	1561.	1.91E-06	13739.	9.44E+09	150.2255	1.12E+09	0.00
24.0700	1.03E-06	-1667.	1182.	1.24E-07	13604.	9.44E+09	-368.0708	1.24E+09	0.00
24.3600	3.95E-07	218.7963	272.8980	-1.43E-07	13574.	9.44E+09	-154.5209	1.36E+09	0.00
24.6500	3.71E-08	232.9516	-23.5431	-5.98E-08	13574.	9.44E+09	-15.8475	1.49E+09	0.00
24.9400	-2.14E-08	55.0822	-33.9065	-6.66E-09	13570.	9.44E+09	9.8915	1.61E+09	0.00
25.2300	-9.26E-09	-3.0217	-8.6790	2.93E-09	13569.	9.44E+09	4.6071	1.73E+09	0.00
25.5200	-9.99E-10	-5.3309	0.2495	1.39E-09	13569.	9.44E+09	0.5243	1.83E+09	0.00
25.8100	4.27E-10	-1.2887	0.7720	1.72E-10	13569.	9.44E+09	-0.2240	1.83E+09	0.00
26.1000	1.98E-10	0.04180	0.2011	-5.79E-11	13569.	9.44E+09	-0.1042	1.83E+09	0.00
26.3900	2.38E-11	0.1109	-0.00193	-2.97E-11	13569.	9.44E+09	-0.01251	1.83E+09	0.00
26.6800	-8.44E-12	0.02843	-0.01600	-4.03E-12	13569.	9.44E+09	0.00443	1.83E+09	0.00
26.9700	-4.24E-12	-4.08E-04	-0.00441	1.13E-12	13569.	9.44E+09	0.00223	1.83E+09	0.00
27.2600	0.00	-0.00230	-3.09E-05	0.00	13569.	9.44E+09	2.94E-04	1.83E+09	0.00
27.5500	0.00	-6.25E-04	3.30E-04	0.00	13569.	9.44E+09	-8.69E-05	1.83E+09	0.00
27.8400	0.00	-1.60E-06	9.66E-05	0.00	13569.	9.44E+09	-4.74E-05	1.83E+09	0.00
28.1300	0.00	4.75E-05	2.19E-06	0.00	13569.	9.44E+09	-6.85E-06	1.83E+09	0.00
28.4200	0.00	1.37E-05	-6.76E-06	0.00	13569.	9.44E+09	1.71E-06	1.83E+09	0.00
28.7100	0.00	4.73E-07	-1.96E-06	0.00	13569.	9.44E+09	1.05E-06	1.83E+09	0.00
29.0000	0.00	0.00	0.00	0.00	13569.	9.44E+09	7.80E-08	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     1.12317797 inches
Computed slope at pile head      =       0.000000 radians
Maximum bending moment           =      -1131133. inch-lbs
Maximum shear force              =        -21862. lbs
Depth of maximum bending moment  =       0.000000 feet below pile head
Depth of maximum shear force     =    22.62000000 feet below pile head
Number of iterations             =              8
Number of zero deflection points =              8
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =          8400. lbs
Slope      =        0.00000
Axial Load =        350400. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	1.12317797	-1131133.	-21862.
27.55000	1.12730790	-1132967.	-22285.
26.10000	1.12384136	-1131129.	-21704.
24.65000	1.12405867	-1131224.	-21929.
23.20000	1.12979979	-1132944.	-23835.
21.75000	1.63616903	-1370531.	-12124.
20.30000	2.15050572	-1649407.	-13214.
18.85000	2.90112438	-2111205.	-12010.
17.40000	3.57460001	-2613671.	8400.
15.95000	3.36388832	-2618118.	8400.
14.50000	2.95632444	-2285881.	8400.

Summary of Pile-head Responses for Conventional Analyses

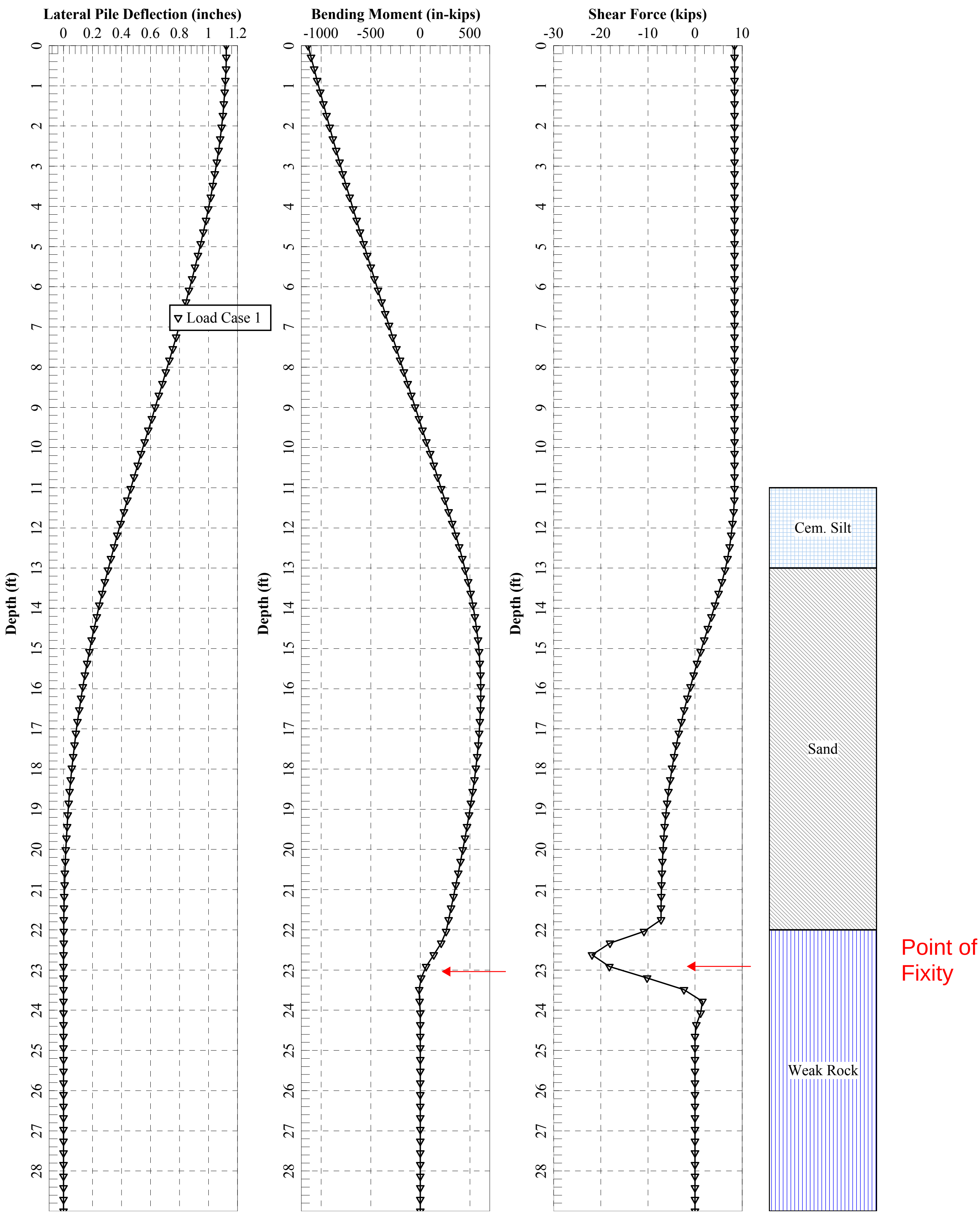
Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	8400.	S, rad	0.00	350400.	1.1232	0.00	-21862.	-1131133.

Maximum pile-head deflection = 1.1231779708 inches
Maximum pile-head rotation = 0.0000000000 radians = 0.000000 deg.

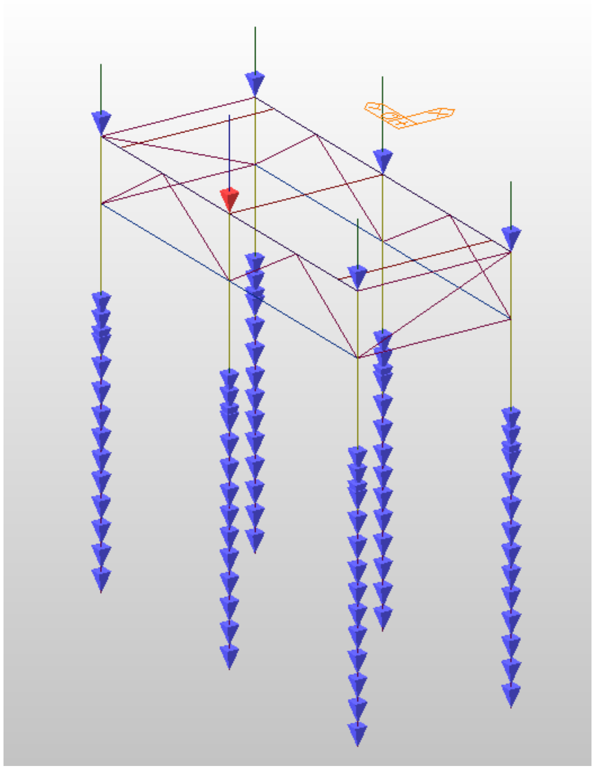
This analysis ended normally



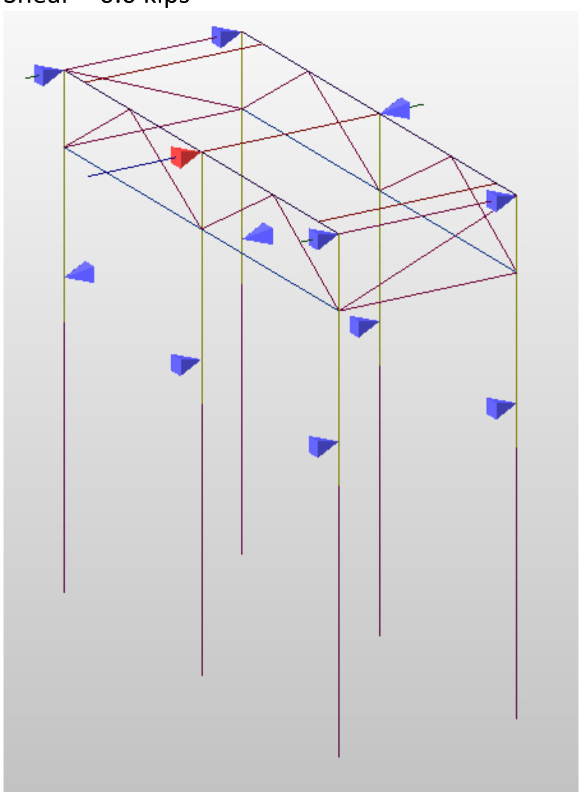
Lateral Pile Deflection (inches)
Bending Moment (in-kips)
Shear Force (kips)
Depth (ft)
Load Case 1
Cem. Silt
Sand
Weak Rock
Point of Fixity

L-Pile loads – H-20

Axial Load = 314.2 kips



Shear = 6.0 kips



```
================================================================================
                     LPile for Windows, Version 2015-08.007

                 Analysis of Individual Piles and Drilled Shafts
                Subjected to Lateral Loading Using the p-y Method
                           © 1985-2015 by Ensoft, Inc.
                               All Rights Reserved

================================================================================
```

This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

Files Used for Analysis

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
H-20 01349 pier 2.lp8d

Name of output report file:
H-20 01349 pier 2.lp8o

Name of plot output file:
H-20 01349 pier 2.lp8p

Name of runtime message file:
H-20 01349 pier 2.lp8r

Date and Time of Analysis

Date: June 1, 2016   Time: 14:38:34

Problem Title

Project Name: Rehabilitation of Bridge 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis Under Existing Condition

Program Options and Settings

```
Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                        =          1
Total length of pile                                   =     29.000 ft
Depth of ground surface below top of pile              =    11.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	13.8300
2	29.000	13.8300

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is an elastic pile
   Cross-sectional Shape                               =   Weak H-Pile
   Length of section                                   =    29.000000 ft
   Flange Width                                        =    14.695000 in
   Section Depth                                       =    13.830000 in
   Flange Thickness                                    =     0.615000 in
   Web Thickness                                       =     0.615000 in
   Section Area                                        =    25.823850 sq. in
   Moment of Inertia                                   =   325.505721 in^4
   Elastic Modulus                                     =    29000000. psi
```

Ground Slope and Pile Batter Angles

```
Ground Slope Angle                                     =       0.000 degrees
                                                       =       0.000 radians

Pile Batter Angle                                      =       0.000 degrees
                                                       =       0.000 radians
```

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

```
   Distance from top of pile to top of layer           =    11.000000 ft
   Distance from top of pile to bottom of layer        =    13.000000 ft
   Effective unit weight at top of layer               =   120.000000 pcf
   Effective unit weight at bottom of layer            =   120.000000 pcf
   Undrained cohesion at top of layer                  =   500.000000 psf
   Undrained cohesion at bottom of layer               =   500.000000 psf
   Friction angle at top of layer                      =    10.000000 deg.
   Friction angle at bottom of layer                   =    10.000000 deg.
   Epsilon-50 at top of layer                          =     0.010000
   Epsilon-50 at bottom of layer                       =     0.010000
   Subgrade k at top of layer                          =    18.000000 pci
   Subgrade k at bottom of layer                       =    18.000000 pci
```

Layer 2 is sand, p-y criteria by Reese et al., 1974

```
   Distance from top of pile to top of layer           =    13.000000 ft
   Distance from top of pile to bottom of layer        =    22.000000 ft
   Effective unit weight at top of layer               =   125.000000 pcf
   Effective unit weight at bottom of layer            =   125.000000 pcf
   Friction angle at top of layer                      =    38.000000 deg.
   Friction angle at bottom of layer                   =    38.000000 deg.
   Subgrade k at top of layer                          =    25.000000 pci
   Subgrade k at bottom of layer                       =    25.000000 pci
```

Layer 3 is weak rock, p-y criteria by Reese, 1997

```
   Distance from top of pile to top of layer           =    22.000000 ft
```

Distance from top of pile to bottom of layer	=	29.000000 ft
Effective unit weight at top of layer	=	125.000000 pcf
Effective unit weight at bottom of layer	=	125.000000 pcf
Uniaxial compressive strength at top of layer	=	500.000000 psi
Uniaxial compressive strength at bottom of layer	=	500.000000 psi
Initial modulus of rock at top of layer	=	1050000. psi
Initial modulus of rock at bottom of layer	=	1050000. psi
RQD of rock at top of layer	=	0.0000 %
RQD of rock at bottom of layer	=	0.0000 %
k rm of rock at top of layer	=	0.0005000
k rm of rock at bottom of layer	=	0.0005000

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

Distance from top of pile to top of layer	=	29.000000 ft
Distance from top of pile to bottom of layer	=	30.000000 ft
Effective unit weight at top of layer	=	139.000000 pcf
Effective unit weight at bottom of layer	=	139.000000 pcf
Uniaxial compressive strength at top of layer	=	11600. psi
Uniaxial compressive strength at bottom of layer	=	11600. psi
Poisson's ratio at top of layer	=	0.250000
Poisson's ratio at bottom of layer	=	0.250000
Option 1: Intact rock modulus at top of layer	=	1500000. psi
Intact rock modulus at bottom of layer	=	1500000. psi
Option 1: Geologic Strength Index for layer	=	50.000000
Option 2: Rock mass modulus at top of layer	=	0.0000 psi
Rock mass modulus at bottom of layer	=	0.0000 psi

Option 1 will be used to compute values of rock mass modulus for the p-y curve in massive rock.

The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28

(Depth of the lowest soil layer extends 1.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	11.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	13.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	13.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	22.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	22.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	29.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	29.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	30.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	2	V = 6100. lbs	S = 0.0000 in/in	314200.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

----

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

----

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	549.7454
2	13.0000	0.7518	No	No	549.7454	193067.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head = 6100.0 lbs
Rotation of pile head = 0.000E+00 radians
Axial load at pile head = 314200.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	0.7968	-804911.	6100.	0.00	29266.	9.44E+09	0.00	0.00	0.00
0.2900	0.7962	-783521.	6100.	-2.93E-04	28812.	9.44E+09	0.00	0.00	0.00
0.5800	0.7947	-761815.	6100.	-5.78E-04	28351.	9.44E+09	0.00	0.00	0.00
0.8700	0.7922	-739802.	6100.	-8.54E-04	27883.	9.44E+09	0.00	0.00	0.00
1.1600	0.7888	-717490.	6100.	-0.00112	27409.	9.44E+09	0.00	0.00	0.00
1.4500	0.7844	-694890.	6100.	-0.00138	26929.	9.44E+09	0.00	0.00	0.00
1.7400	0.7791	-672009.	6100.	-0.00164	26443.	9.44E+09	0.00	0.00	0.00
2.0300	0.7730	-648857.	6100.	-0.00188	25951.	9.44E+09	0.00	0.00	0.00
2.3200	0.7661	-625444.	6100.	-0.00211	25454.	9.44E+09	0.00	0.00	0.00
2.6100	0.7583	-601779.	6100.	-0.00234	24951.	9.44E+09	0.00	0.00	0.00
2.9000	0.7498	-577871.	6100.	-0.00256	24443.	9.44E+09	0.00	0.00	0.00
3.1900	0.7405	-553730.	6100.	-0.00277	23930.	9.44E+09	0.00	0.00	0.00
3.4800	0.7305	-529367.	6100.	-0.00297	23413.	9.44E+09	0.00	0.00	0.00
3.7700	0.7199	-504789.	6100.	-0.00316	22891.	9.44E+09	0.00	0.00	0.00
4.0600	0.7086	-480008.	6100.	-0.00334	22364.	9.44E+09	0.00	0.00	0.00
4.3500	0.6966	-455034.	6100.	-0.00351	21834.	9.44E+09	0.00	0.00	0.00
4.6400	0.6841	-429876.	6100.	-0.00367	21299.	9.44E+09	0.00	0.00	0.00
4.9300	0.6711	-404545.	6100.	-0.00383	20761.	9.44E+09	0.00	0.00	0.00
5.2200	0.6575	-379051.	6100.	-0.00397	20220.	9.44E+09	0.00	0.00	0.00
5.5100	0.6434	-353404.	6100.	-0.00411	19675.	9.44E+09	0.00	0.00	0.00
5.8000	0.6289	-327615.	6100.	-0.00423	19127.	9.44E+09	0.00	0.00	0.00
6.0900	0.6140	-301694.	6100.	-0.00435	18576.	9.44E+09	0.00	0.00	0.00
6.3800	0.5987	-275651.	6100.	-0.00445	18023.	9.44E+09	0.00	0.00	0.00
6.6700	0.5830	-249497.	6100.	-0.00455	17467.	9.44E+09	0.00	0.00	0.00
6.9600	0.5670	-223242.	6100.	-0.00464	16910.	9.44E+09	0.00	0.00	0.00
7.2500	0.5507	-196897.	6100.	-0.00472	16350.	9.44E+09	0.00	0.00	0.00
7.5400	0.5342	-170473.	6100.	-0.00478	15789.	9.44E+09	0.00	0.00	0.00
7.8300	0.5174	-143980.	6100.	-0.00484	15226.	9.44E+09	0.00	0.00	0.00
8.1200	0.5005	-117430.	6100.	-0.00489	14662.	9.44E+09	0.00	0.00	0.00

8.4100	0.4834	-90832.	6100.	-0.00493	14097.	9.44E+09	0.00	0.00	0.00
8.7000	0.4662	-64197.	6100.	-0.00496	13531.	9.44E+09	0.00	0.00	0.00
8.9900	0.4489	-37536.	6100.	-0.00498	12964.	9.44E+09	0.00	0.00	0.00
9.2800	0.4315	-10860.	6100.	-0.00498	12398.	9.44E+09	0.00	0.00	0.00
9.5700	0.4142	15820.	6100.	-0.00498	12503.	9.44E+09	0.00	0.00	0.00
9.8600	0.3968	42493.	6100.	-0.00497	13070.	9.44E+09	0.00	0.00	0.00
10.1500	0.3796	69150.	6100.	-0.00495	13636.	9.44E+09	0.00	0.00	0.00
10.4400	0.3624	95779.	6100.	-0.00492	14202.	9.44E+09	0.00	0.00	0.00
10.7300	0.3453	122369.	6100.	-0.00488	14767.	9.44E+09	0.00	0.00	0.00
11.0200	0.3284	148910.	6098.	-0.00483	15330.	9.44E+09	-1.4187	15.0336	0.00
11.3100	0.3117	175373.	6059.	-0.00477	15893.	9.44E+09	-20.8703	233.0208	0.00
11.6000	0.2952	201514.	5956.	-0.00470	16448.	9.44E+09	-38.2566	451.0080	0.00
11.8900	0.2790	227109.	5796.	-0.00462	16992.	9.44E+09	-53.6264	668.9952	0.00
12.1800	0.2630	251964.	5586.	-0.00453	17520.	9.44E+09	-67.0366	886.9824	0.00
12.4700	0.2474	275905.	5333.	-0.00444	18028.	9.44E+09	-78.5521	1105.	0.00
12.7600	0.2321	298784.	5042.	-0.00433	18514.	9.44E+09	-88.2453	1323.	0.00
13.0500	0.2172	320473.	4656.	-0.00422	18975.	9.44E+09	-133.6051	2140.	0.00
13.3400	0.2028	340416.	4176.	-0.00410	19399.	9.44E+09	-142.3464	2443.	0.00
13.6300	0.1887	358497.	3670.	-0.00397	19783.	9.44E+09	-148.9143	2746.	0.00
13.9200	0.1752	374631.	3143.	-0.00383	20126.	9.44E+09	-153.4430	3048.	0.00
14.2100	0.1621	388755.	2605.	-0.00369	20426.	9.44E+09	-156.0725	3351.	0.00
14.5000	0.1495	400832.	2060.	-0.00355	20682.	9.44E+09	-156.9474	3654.	0.00
14.7900	0.1374	410847.	1515.	-0.00340	20895.	9.44E+09	-156.2153	3957.	0.00
15.0800	0.1258	418805.	975.4804	-0.00324	21064.	9.44E+09	-154.0263	4260.	0.00
15.3700	0.1148	424728.	445.5503	-0.00309	21190.	9.44E+09	-150.5313	4562.	0.00
15.6600	0.1043	428657.	-70.2071	-0.00293	21273.	9.44E+09	-145.8811	4865.	0.00
15.9500	0.09443	430647.	-568.0324	-0.00277	21316.	9.44E+09	-140.2254	5168.	0.00
16.2400	0.08506	430765.	-1045.	-0.00261	21318.	9.44E+09	-133.7119	5471.	0.00
16.5300	0.07624	429090.	-1497.	-0.00245	21283.	9.44E+09	-126.4849	5773.	0.00
16.8200	0.06798	425711.	-1924.	-0.00230	21211.	9.44E+09	-118.6849	6076.	0.00
17.1100	0.06026	420722.	-2323.	-0.00214	21105.	9.44E+09	-110.4477	6379.	0.00
17.4000	0.05307	414226.	-2692.	-0.00199	20967.	9.44E+09	-101.9035	6682.	0.00
17.6900	0.04643	406330.	-3032.	-0.00184	20799.	9.44E+09	-93.1765	6984.	0.00
17.9800	0.04030	397141.	-3341.	-0.00169	20604.	9.44E+09	-84.3841	7287.	0.00
18.2700	0.03468	386770.	-3619.	-0.00154	20384.	9.44E+09	-75.6368	7590.	0.00
18.5600	0.02956	375327.	-3867.	-0.00140	20140.	9.44E+09	-67.0372	7893.	0.00
18.8500	0.02492	362921.	-4086.	-0.00127	19877.	9.44E+09	-58.6804	8195.	0.00
19.1400	0.02074	349658.	-4276.	-0.00114	19595.	9.44E+09	-50.6532	8498.	0.00
19.4300	0.01702	335640.	-4439.	-0.00101	19297.	9.44E+09	-43.0340	8801.	0.00
19.7200	0.01372	320967.	-4577.	-8.88E-04	18986.	9.44E+09	-35.8929	9104.	0.00
20.0100	0.01084	305729.	-4690.	-7.72E-04	18662.	9.44E+09	-29.2913	9406.	0.00
20.3000	0.00834	290013.	-4782.	-6.63E-04	18328.	9.44E+09	-23.2823	9709.	0.00
20.5900	0.00623	273898.	-4853.	-5.59E-04	17986.	9.44E+09	-17.9102	10012.	0.00
20.8800	0.00446	257456.	-4907.	-4.61E-04	17636.	9.44E+09	-13.2107	10315.	0.00
21.1700	0.00302	240750.	-4946.	-3.69E-04	17282.	9.44E+09	-9.2114	10617.	0.00
21.4600	0.00189	223836.	-4973.	-2.83E-04	16922.	9.44E+09	-5.9310	10920.	0.00
21.7500	0.00105	206760.	-4989.	-2.04E-04	16559.	9.44E+09	-3.3803	11223.	0.00
22.0400	4.72E-04	189559.	-8226.	-1.31E-04	16194.	9.44E+09	-1857.	1.37E+07	0.00
22.3300	1.38E-04	149792.	-14640.	-6.82E-05	15349.	9.44E+09	-1829.	4.61E+07	0.00
22.6200	-3.22E-06	87814.	-16812.	-2.44E-05	14033.	9.44E+09	580.7131	6.27E+08	0.00
22.9100	-3.18E-05	32834.	-12507.	-2.17E-06	12865.	9.44E+09	1893.	2.07E+08	0.00
23.2000	-1.83E-05	770.3493	-5857.	4.02E-06	12183.	9.44E+09	1929.	3.66E+08	0.00
23.4900	-3.86E-06	-7937.	-581.9015	2.70E-06	12336.	9.44E+09	1103.	9.95E+08	0.00
23.7800	4.49E-07	-3286.	1086.	6.32E-07	12237.	9.44E+09	-144.2760	1.12E+09	0.00
24.0700	5.39E-07	-379.9557	500.5156	-4.41E-08	12175.	9.44E+09	-192.2097	1.24E+09	0.00
24.3600	1.42E-07	198.0950	69.3902	-7.77E-08	12171.	9.44E+09	-55.5635	1.36E+09	0.00
24.6500	-1.37E-09	103.1700	-26.2734	-2.21E-08	12169.	9.44E+09	0.5844	1.49E+09	0.00
24.9400	-1.22E-08	15.2809	-15.4162	-3.06E-10	12167.	9.44E+09	5.6553	1.61E+09	0.00
25.2300	-3.50E-09	-4.1260	-2.5457	1.75E-09	12167.	9.44E+09	1.7415	1.73E+09	0.00
25.5200	-5.90E-11	-2.4408	0.5385	5.39E-10	12167.	9.44E+09	0.03098	1.83E+09	0.00
25.8100	2.52E-10	-0.3794	0.3621	1.95E-11	12167.	9.44E+09	-0.1324	1.83E+09	0.00
26.1000	7.65E-11	0.07923	0.06194	-3.59E-11	12167.	9.44E+09	-0.04014	1.83E+09	0.00
26.3900	2.45E-12	0.05175	-0.01014	-1.17E-11	12167.	9.44E+09	-0.00129	1.83E+09	0.00
26.6800	-5.17E-12	0.00868	-0.00765	0.00	12167.	9.44E+09	0.00272	1.83E+09	0.00
26.9700	-1.66E-12	-0.00150	-0.00140	0.00	12167.	9.44E+09	8.74E-04	1.83E+09	0.00
27.2600	0.00	-0.00109	1.87E-04	0.00	12167.	9.44E+09	4.06E-05	1.83E+09	0.00
27.5500	0.00	-1.97E-04	1.61E-04	0.00	12167.	9.44E+09	-5.55E-05	1.83E+09	0.00
27.8400	0.00	2.78E-05	3.16E-05	0.00	12167.	9.44E+09	-1.90E-05	1.83E+09	0.00
28.1300	0.00	2.31E-05	-3.36E-06	0.00	12167.	9.44E+09	-1.14E-06	1.83E+09	0.00
28.4200	0.00	4.45E-06	-3.36E-06	0.00	12167.	9.44E+09	1.14E-06	1.83E+09	0.00
28.7100	0.00	-3.47E-07	-6.40E-07	0.00	12167.	9.44E+09	4.25E-07	1.83E+09	0.00
29.0000	0.00	0.00	0.00	0.00	12167.	9.44E+09	-5.73E-08	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection            =     0.79675464 inches
Computed slope at pile head     =       0.000000 radians
Maximum bending moment          =       -804911. inch-lbs
Maximum shear force             =        -16812. lbs
Depth of maximum bending moment =       0.000000 feet below pile head
Depth of maximum shear force    =    22.62000000 feet below pile head
Number of iterations            =              9
Number of zero deflection points =             8
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =         6100. lbs
Slope      =       0.00000
Axial Load =       314200. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	0.79675464	-804911.	-16812.
27.55000	0.79962890	-806166.	-17236.
26.10000	0.79727754	-804913.	-16791.
24.65000	0.79744045	-804977.	-17036.
23.20000	0.80036919	-806165.	-18372.
21.75000	1.03509480	-915525.	-7570.
20.30000	1.44375578	-1128070.	-8684.
18.85000	1.83081532	-1374417.	-7573.
17.40000	2.21343882	-1663216.	6100.
15.95000	2.18316803	-1718416.	6100.
14.50000	1.97481761	-1537869.	6100.

Summary of Pile-head Responses for Conventional Analyses

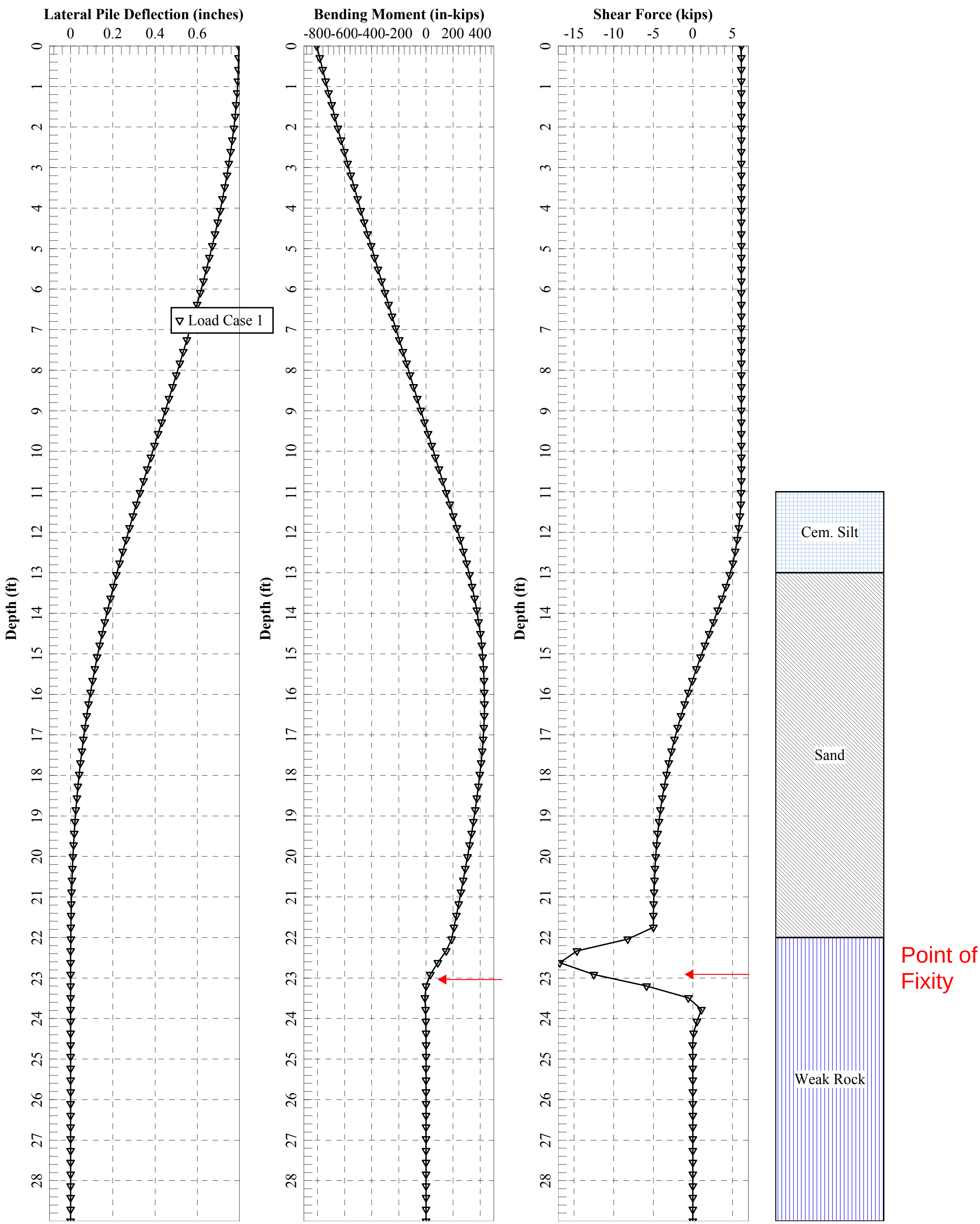
Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	6100.	S, rad	0.00	314200.	0.7968	0.00	-16812.	-804911.

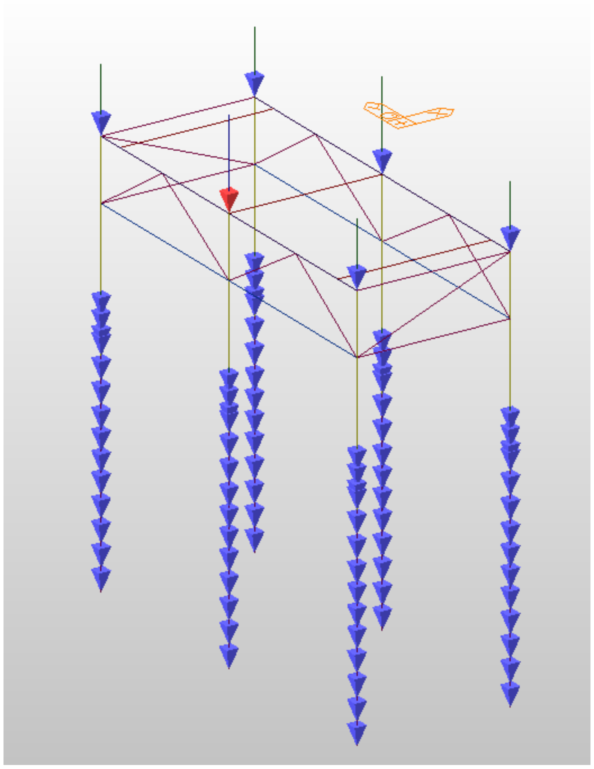
Maximum pile-head deflection = 0.7967546360 inches
Maximum pile-head rotation = -0.0000000000 radians = -0.000000 deg.

This analysis ended normally

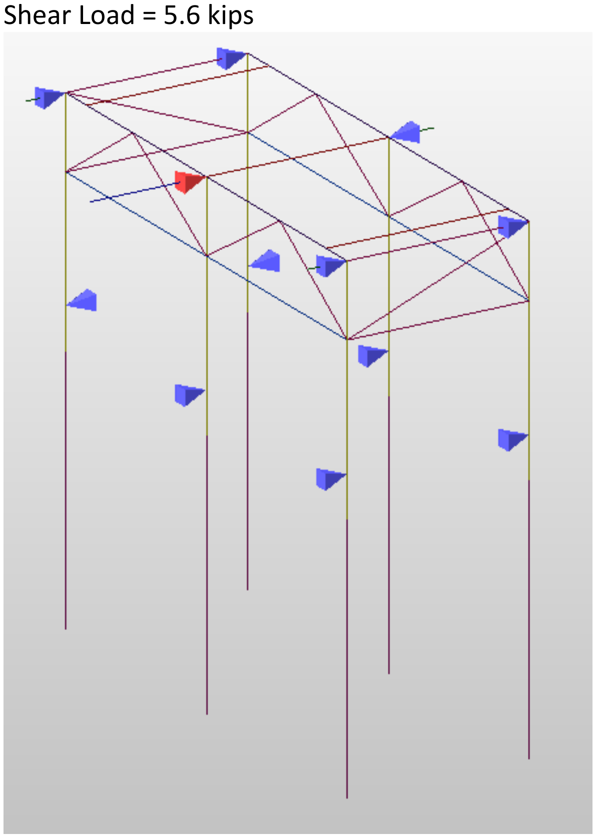

Lateral Pile Deflection (inches)
0
0.2
0.4
0.6
Load Case 1
Bending Moment (in-kips)
-800-600-400-200 0 200 400
Shear Force (kips)
-15
-10
-5
0
5
Depth (ft)
Depth (ft)
Depth (ft)
Cem. Silt
Sand
Weak Rock
Point of Fixity

L-Pile loads – CT-L3S2

Axial Load = 309.2 kips



Shear Load = 5.6 kips



```
================================================================================

                    LPile for Windows, Version 2015-08.007

                Analysis of Individual Piles and Drilled Shafts
               Subjected to Lateral Loading Using the p-y Method
                          © 1985-2015 by Ensoft, Inc.
                              All Rights Reserved

================================================================================
```

This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

```
--------------------------------------------------------------------------------
                             Files Used for Analysis
--------------------------------------------------------------------------------
```

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
CT-L3S2 01349 pier 2.lp8d

Name of output report file:
CT-L3S2 01349 pier 2.lp8o

Name of plot output file:
CT-L3S2 01349 pier 2.lp8p

Name of runtime message file:
CT-L3S2 01349 pier 2.lp8r

```
--------------------------------------------------------------------------------
                            Date and Time of Analysis
--------------------------------------------------------------------------------

               Date:  June 1, 2016               Time:  14:39:26

--------------------------------------------------------------------------------
                                  Problem Title
--------------------------------------------------------------------------------
```

Project Name: Rehabilitation of Bridge 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis Under Existing Condition

```
--------------------------------------------------------------------------------
                          Program Options and Settings
--------------------------------------------------------------------------------

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                      =          1
Total length of pile                                 =     29.000 ft
Depth of ground surface below top of pile            =    11.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	13.8300
2	29.000	13.8300

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is an elastic pile
   Cross-sectional Shape                             =   Weak H-Pile
   Length of section                                 =    29.000000 ft
   Flange Width                                      =    14.695000 in
   Section Depth                                     =    13.830000 in
   Flange Thickness                                  =     0.615000 in
   Web Thickness                                     =     0.615000 in
   Section Area                                      =    25.823850 sq. in
   Moment of Inertia                                 =   325.505721 in^4
   Elastic Modulus                                   =    29000000. psi
```

Ground Slope and Pile Batter Angles

```
Ground Slope Angle                                   =       0.000 degrees
                                                     =       0.000 radians

Pile Batter Angle                                    =       0.000 degrees
                                                     =       0.000 radians
```

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

```
   Distance from top of pile to top of layer         =    11.000000 ft
   Distance from top of pile to bottom of layer      =    13.000000 ft
   Effective unit weight at top of layer             =   120.000000 pcf
   Effective unit weight at bottom of layer          =   120.000000 pcf
   Undrained cohesion at top of layer                =   500.000000 psf
   Undrained cohesion at bottom of layer             =   500.000000 psf
   Friction angle at top of layer                    =    10.000000 deg.
   Friction angle at bottom of layer                 =    10.000000 deg.
   Epsilon-50 at top of layer                        =     0.010000
   Epsilon-50 at bottom of layer                     =     0.010000
   Subgrade k at top of layer                        =    18.000000 pci
   Subgrade k at bottom of layer                     =    18.000000 pci
```

Layer 2 is sand, p-y criteria by Reese et al., 1974

```
   Distance from top of pile to top of layer         =    13.000000 ft
   Distance from top of pile to bottom of layer      =    22.000000 ft
   Effective unit weight at top of layer             =   125.000000 pcf
   Effective unit weight at bottom of layer          =   125.000000 pcf
   Friction angle at top of layer                    =    38.000000 deg.
   Friction angle at bottom of layer                 =    38.000000 deg.
   Subgrade k at top of layer                        =    25.000000 pci
   Subgrade k at bottom of layer                     =    25.000000 pci
```

Layer 3 is weak rock, p-y criteria by Reese, 1997

```
   Distance from top of pile to top of layer         =    22.000000 ft
```

Distance from top of pile to bottom of layer = 29.000000 ft
Effective unit weight at top of layer = 125.000000 pcf
Effective unit weight at bottom of layer = 125.000000 pcf
Uniaxial compressive strength at top of layer = 500.000000 psi
Uniaxial compressive strength at bottom of layer = 500.000000 psi
Initial modulus of rock at top of layer = 1050000. psi
Initial modulus of rock at bottom of layer = 1050000. psi
RQD of rock at top of layer = 0.0000 %
RQD of rock at bottom of layer = 0.0000 %
k rm of rock at top of layer = 0.0005000
k rm of rock at bottom of layer = 0.0005000

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

Distance from top of pile to top of layer = 29.000000 ft
Distance from top of pile to bottom of layer = 30.000000 ft
Effective unit weight at top of layer = 139.000000 pcf
Effective unit weight at bottom of layer = 139.000000 pcf
Uniaxial compressive strength at top of layer = 11600. psi
Uniaxial compressive strength at bottom of layer = 11600. psi
Poisson's ratio at top of layer = 0.250000
Poisson's ratio at bottom of layer = 0.250000
Option 1: Intact rock modulus at top of layer = 1500000. psi
Intact rock modulus at bottom of layer = 1500000. psi
Option 1: Geologic Strength Index for layer = 50.000000
Option 2: Rock mass modulus at top of layer = 0.0000 psi
Rock mass modulus at bottom of layer = 0.0000 psi
Option 1 will be used to compute values of rock mass modulus for the p-y curve in massive rock.
The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28

(Depth of the lowest soil layer extends 1.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	11.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	13.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	13.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	22.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	22.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	29.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	29.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	30.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	2	V = 6300. lbs	S = 0.0000 in/in	319300.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	549.7454
2	13.0000	0.7518	No	No	549.7454	193067.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head = 6300.0 lbs
Rotation of pile head = 0.000E+00 radians
Axial load at pile head = 319300.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	0.8256	-833655.	6300.	0.00	30075.	9.44E+09	0.00	0.00	0.00
0.2900	0.8250	-811561.	6300.	-3.03E-04	29605.	9.44E+09	0.00	0.00	0.00
0.5800	0.8235	-789133.	6300.	-5.98E-04	29129.	9.44E+09	0.00	0.00	0.00
0.8700	0.8209	-766383.	6300.	-8.85E-04	28645.	9.44E+09	0.00	0.00	0.00
1.1600	0.8173	-743318.	6300.	-0.00116	28155.	9.44E+09	0.00	0.00	0.00
1.4500	0.8128	-719950.	6300.	-0.00143	27659.	9.44E+09	0.00	0.00	0.00
1.7400	0.8073	-696286.	6300.	-0.00169	27156.	9.44E+09	0.00	0.00	0.00
2.0300	0.8010	-672337.	6300.	-0.00195	26648.	9.44E+09	0.00	0.00	0.00
2.3200	0.7938	-648112.	6300.	-0.00219	26133.	9.44E+09	0.00	0.00	0.00
2.6100	0.7857	-623622.	6300.	-0.00242	25613.	9.44E+09	0.00	0.00	0.00
2.9000	0.7769	-598877.	6300.	-0.00265	25087.	9.44E+09	0.00	0.00	0.00
3.1900	0.7673	-573886.	6300.	-0.00287	24556.	9.44E+09	0.00	0.00	0.00
3.4800	0.7570	-548660.	6300.	-0.00307	24020.	9.44E+09	0.00	0.00	0.00
3.7700	0.7459	-523210.	6300.	-0.00327	23480.	9.44E+09	0.00	0.00	0.00
4.0600	0.7342	-497545.	6300.	-0.00346	22934.	9.44E+09	0.00	0.00	0.00
4.3500	0.7218	-471676.	6300.	-0.00364	22385.	9.44E+09	0.00	0.00	0.00
4.6400	0.7089	-445614.	6300.	-0.00381	21831.	9.44E+09	0.00	0.00	0.00
4.9300	0.6953	-419370.	6300.	-0.00397	21274.	9.44E+09	0.00	0.00	0.00
5.2200	0.6813	-392954.	6300.	-0.00412	20712.	9.44E+09	0.00	0.00	0.00
5.5100	0.6667	-366376.	6300.	-0.00426	20148.	9.44E+09	0.00	0.00	0.00
5.8000	0.6517	-339649.	6300.	-0.00439	19580.	9.44E+09	0.00	0.00	0.00
6.0900	0.6362	-312783.	6300.	-0.00451	19009.	9.44E+09	0.00	0.00	0.00
6.3800	0.6203	-285788.	6300.	-0.00462	18436.	9.44E+09	0.00	0.00	0.00
6.6700	0.6041	-258677.	6300.	-0.00472	17860.	9.44E+09	0.00	0.00	0.00
6.9600	0.5875	-231459.	6300.	-0.00481	17282.	9.44E+09	0.00	0.00	0.00
7.2500	0.5706	-204147.	6300.	-0.00489	16701.	9.44E+09	0.00	0.00	0.00
7.5400	0.5535	-176751.	6300.	-0.00496	16119.	9.44E+09	0.00	0.00	0.00
7.8300	0.5361	-149282.	6300.	-0.00502	15536.	9.44E+09	0.00	0.00	0.00
8.1200	0.5185	-121752.	6300.	-0.00507	14951.	9.44E+09	0.00	0.00	0.00

8.4100	0.5008	-94173.	6300.	-0.00511	14365.	9.44E+09	0.00	0.00	0.00
8.7000	0.4830	-66555.	6300.	-0.00514	13778.	9.44E+09	0.00	0.00	0.00
8.9900	0.4651	-38910.	6300.	-0.00516	13191.	9.44E+09	0.00	0.00	0.00
9.2800	0.4471	-11248.	6300.	-0.00517	12603.	9.44E+09	0.00	0.00	0.00
9.5700	0.4291	16417.	6300.	-0.00516	12713.	9.44E+09	0.00	0.00	0.00
9.8600	0.4112	44077.	6300.	-0.00515	13301.	9.44E+09	0.00	0.00	0.00
10.1500	0.3933	71718.	6300.	-0.00513	13888.	9.44E+09	0.00	0.00	0.00
10.4400	0.3755	99329.	6300.	-0.00510	14475.	9.44E+09	0.00	0.00	0.00
10.7300	0.3578	126900.	6300.	-0.00506	15060.	9.44E+09	0.00	0.00	0.00
11.0200	0.3402	154419.	6297.	-0.00501	15645.	9.44E+09	-1.4698	15.0336	0.00
11.3100	0.3229	181857.	6257.	-0.00494	16228.	9.44E+09	-21.6226	233.0208	0.00
11.6000	0.3058	208959.	6151.	-0.00487	16804.	9.44E+09	-39.6351	451.0080	0.00
11.8900	0.2890	235495.	5985.	-0.00479	17367.	9.44E+09	-55.5579	668.9952	0.00
12.1800	0.2725	261262.	5768.	-0.00470	17915.	9.44E+09	-69.4502	886.9824	0.00
12.4700	0.2563	286080.	5505.	-0.00460	18442.	9.44E+09	-81.3791	1105.	0.00
12.7600	0.2405	309796.	5204.	-0.00449	18946.	9.44E+09	-91.4197	1323.	0.00
13.0500	0.2251	332278.	4805.	-0.00437	19423.	9.44E+09	-138.4091	2140.	0.00
13.3400	0.2101	352948.	4307.	-0.00424	19863.	9.44E+09	-147.4623	2443.	0.00
13.6300	0.1955	371687.	3782.	-0.00411	20261.	9.44E+09	-154.2636	2746.	0.00
13.9200	0.1815	388405.	3237.	-0.00397	20616.	9.44E+09	-158.9522	3048.	0.00
14.2100	0.1679	403040.	2679.	-0.00382	20927.	9.44E+09	-161.6733	3351.	0.00
14.5000	0.1548	415552.	2115.	-0.00367	21192.	9.44E+09	-162.5766	3654.	0.00
14.7900	0.1423	425924.	1551.	-0.00352	21413.	9.44E+09	-161.8153	3957.	0.00
15.0800	0.1303	434163.	991.4012	-0.00336	21588.	9.44E+09	-159.5449	4260.	0.00
15.3700	0.1189	440291.	442.4891	-0.00320	21718.	9.44E+09	-155.9218	4562.	0.00
15.6600	0.1081	444351.	-91.7331	-0.00304	21804.	9.44E+09	-151.1024	4865.	0.00
15.9500	0.09781	446398.	-607.3723	-0.00287	21848.	9.44E+09	-145.2419	5168.	0.00
16.2400	0.08810	446504.	-1101.	-0.00271	21850.	9.44E+09	-138.4932	5471.	0.00
16.5300	0.07897	444750.	-1570.	-0.00254	21813.	9.44E+09	-131.0059	5773.	0.00
16.8200	0.07040	441228.	-2012.	-0.00238	21738.	9.44E+09	-122.9257	6076.	0.00
17.1100	0.06241	436035.	-2425.	-0.00222	21628.	9.44E+09	-114.3932	6379.	0.00
17.4000	0.05497	429279.	-2807.	-0.00206	21484.	9.44E+09	-105.5434	6682.	0.00
17.6900	0.04808	421069.	-3159.	-0.00190	21310.	9.44E+09	-96.5048	6984.	0.00
17.9800	0.04174	411517.	-3479.	-0.00175	21107.	9.44E+09	-87.3992	7287.	0.00
18.2700	0.03592	400739.	-3767.	-0.00160	20878.	9.44E+09	-78.3408	7590.	0.00
18.5600	0.03062	388848.	-4025.	-0.00145	20625.	9.44E+09	-69.4360	7893.	0.00
18.8500	0.02581	375956.	-4251.	-0.00131	20351.	9.44E+09	-60.7831	8195.	0.00
19.1400	0.02149	362174.	-4448.	-0.00118	20059.	9.44E+09	-52.4720	8498.	0.00
19.4300	0.01763	347609.	-4617.	-0.00104	19749.	9.44E+09	-44.5837	8801.	0.00
19.7200	0.01422	332361.	-4759.	-9.19E-04	19425.	9.44E+09	-37.1907	9104.	0.00
20.0100	0.01123	316527.	-4877.	-8.00E-04	19089.	9.44E+09	-30.3565	9406.	0.00
20.3000	0.00865	300195.	-4972.	-6.86E-04	18742.	9.44E+09	-24.1357	9709.	0.00
20.5900	0.00646	283448.	-5046.	-5.78E-04	18386.	9.44E+09	-18.5741	10012.	0.00
20.8800	0.00462	266360.	-5102.	-4.77E-04	18023.	9.44E+09	-13.7083	10315.	0.00
21.1700	0.00314	248997.	-5143.	-3.82E-04	17654.	9.44E+09	-9.5666	10617.	0.00
21.4600	0.00197	231416.	-5170.	-2.94E-04	17281.	9.44E+09	-6.1681	10920.	0.00
21.7500	0.00109	213666.	-5187.	-2.11E-04	16904.	9.44E+09	-3.5236	11223.	0.00
22.0400	4.94E-04	195785.	-8460.	-1.36E-04	16524.	9.44E+09	-1878.	1.32E+07	0.00
22.3300	1.46E-04	155086.	-14951.	-7.13E-05	15659.	9.44E+09	-1853.	4.42E+07	0.00
22.6200	-2.89E-06	91886.	-17269.	-2.58E-05	14317.	9.44E+09	520.4853	6.27E+08	0.00
22.9100	-3.38E-05	34951.	-13016.	-2.44E-06	13107.	9.44E+09	1924.	1.98E+08	0.00
23.2000	-1.99E-05	1303.	-6241.	4.24E-06	12392.	9.44E+09	1969.	3.45E+08	0.00
23.4900	-4.25E-06	-8496.	-699.5417	2.92E-06	12545.	9.44E+09	1215.	9.95E+08	0.00
23.7800	4.57E-07	-3573.	1159.	6.94E-07	12440.	9.44E+09	-146.9493	1.12E+09	0.00
24.0700	5.81E-07	-427.8185	543.5052	-4.34E-08	12374.	9.44E+09	-207.0181	1.24E+09	0.00
24.3600	1.55E-07	210.1792	77.5074	-8.35E-08	12369.	9.44E+09	-60.7967	1.36E+09	0.00
24.6500	-6.88E-10	111.8190	-27.7678	-2.42E-08	12367.	9.44E+09	0.2937	1.49E+09	0.00
24.9400	-1.31E-08	16.9692	-16.6907	-4.50E-10	12365.	9.44E+09	6.0725	1.61E+09	0.00
25.2300	-3.82E-09	-4.3473	-2.8171	1.88E-09	12365.	9.44E+09	1.9009	1.73E+09	0.00
25.5200	-8.11E-11	-2.6419	0.5645	5.88E-10	12365.	9.44E+09	0.04257	1.83E+09	0.00
25.8100	2.70E-10	-0.4198	0.3915	2.36E-11	12365.	9.44E+09	-0.1420	1.83E+09	0.00
26.1000	8.34E-11	0.08316	0.06834	-3.84E-11	12365.	9.44E+09	-0.04377	1.83E+09	0.00
26.3900	3.02E-12	0.05597	-0.01058	-1.28E-11	12365.	9.44E+09	-0.00158	1.83E+09	0.00
26.6800	-5.54E-12	0.00958	-0.00827	0.00	12365.	9.44E+09	0.00291	1.83E+09	0.00
26.9700	-1.81E-12	-0.00157	-0.00155	0.00	12365.	9.44E+09	9.52E-04	1.83E+09	0.00
27.2600	0.00	-0.00118	1.94E-04	0.00	12365.	9.44E+09	4.80E-05	1.83E+09	0.00
27.5500	0.00	-2.17E-04	1.74E-04	0.00	12365.	9.44E+09	-5.94E-05	1.83E+09	0.00
27.8400	0.00	2.89E-05	3.48E-05	0.00	12365.	9.44E+09	-2.06E-05	1.83E+09	0.00
28.1300	0.00	2.49E-05	-3.45E-06	0.00	12365.	9.44E+09	-1.32E-06	1.83E+09	0.00
28.4200	0.00	4.90E-06	-3.63E-06	0.00	12365.	9.44E+09	1.22E-06	1.83E+09	0.00
28.7100	0.00	-3.51E-07	-7.03E-07	0.00	12365.	9.44E+09	4.62E-07	1.83E+09	0.00
29.0000	0.00	0.00	0.00	0.00	12365.	9.44E+09	-5.80E-08	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection            =     0.82556209 inches
Computed slope at pile head     =       0.000000 radians
Maximum bending moment          =       -833655. inch-lbs
Maximum shear force             =        -17269. lbs
Depth of maximum bending moment =       0.000000 feet below pile head
Depth of maximum shear force    =    22.62000000 feet below pile head
Number of iterations            =              9
Number of zero deflection points =             8
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =         6300. lbs
Slope      =       0.00000
Axial Load =       319300. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	0.82556209	-833655.	-17269.
27.55000	0.82854771	-834962.	-17699.
26.10000	0.82609701	-833657.	-17242.
24.65000	0.82626564	-833723.	-17482.
23.20000	0.82939723	-834960.	-18884.
21.75000	1.07571509	-949996.	-7889.
20.30000	1.51095367	-1176313.	-9109.
18.85000	1.91363689	-1433758.	-7956.
17.40000	2.32337238	-1741976.	6300.
15.95000	2.28649160	-1797719.	6300.
14.50000	2.05982540	-1604216.	6300.

Summary of Pile-head Responses for Conventional Analyses

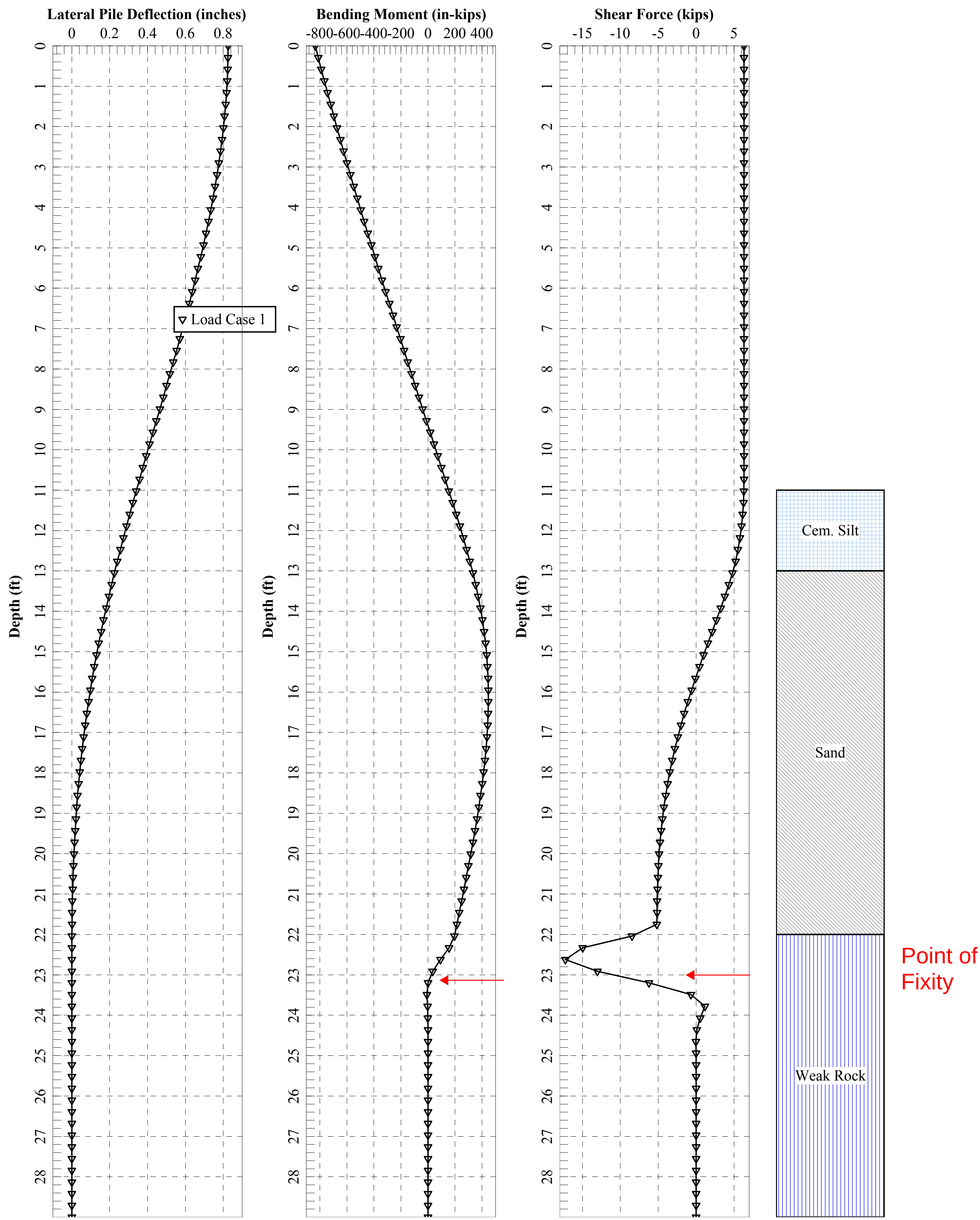
Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	6300.	S, rad	0.00	319300.	0.8256	0.00	-17269.	-833655.

Maximum pile-head deflection = 0.8255620926 inches
Maximum pile-head rotation = -0.0000000000 radians = -0.000000 deg.

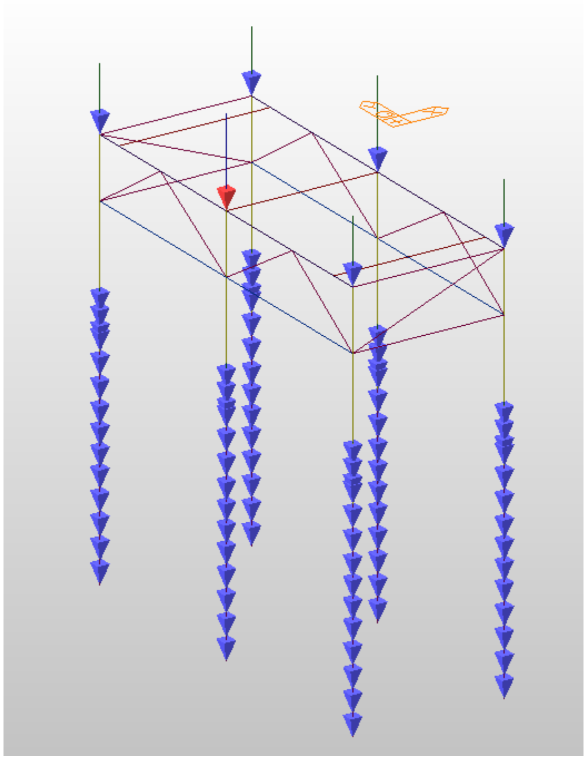
This analysis ended normally



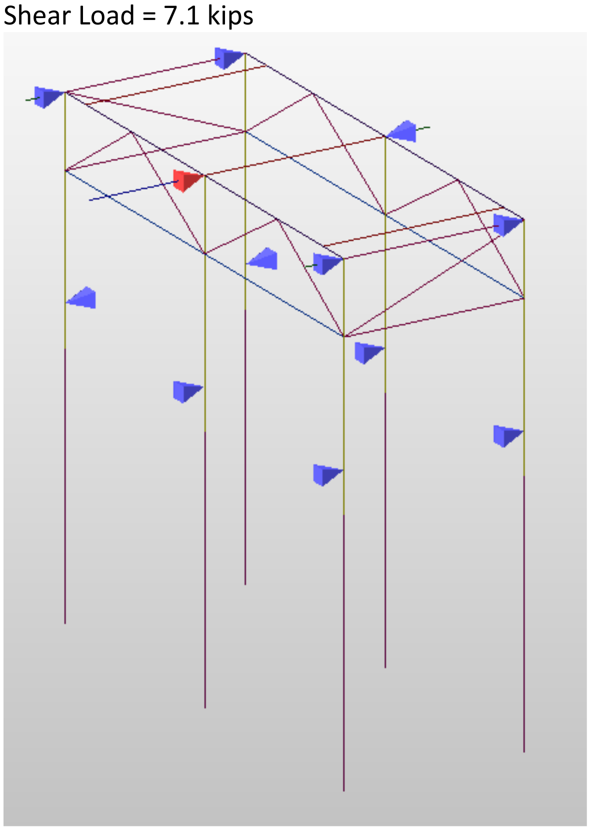
Lateral Pile Deflection (inches)
Bending Moment (in-kips)
Shear Force (kips)
Depth (ft)
Load Case 1
Cem. Silt
Sand
Weak Rock
Point of Fixity

L-Pile loads – CT-L73.0

Axial Load = 328.3 kips



Shear Load = 7.1 kips



```
================================================================================
                    LPile for Windows, Version 2015-08.007

                 Analysis of Individual Piles and Drilled Shafts
                Subjected to Lateral Loading Using the p-y Method
                         © 1985-2015 by Ensoft, Inc.
                             All Rights Reserved

================================================================================
This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

--------------------------------------------------------------------------------
                             Files Used for Analysis
--------------------------------------------------------------------------------

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
CT-L73.0 01349 pier 2.lp8d

Name of output report file:
CT-L73.0 01349 pier 2.lp8o

Name of plot output file:
CT-L73.0 01349 pier 2.lp8p

Name of runtime message file:
CT-L73.0 01349 pier 2.lp8r


--------------------------------------------------------------------------------
                            Date and Time of Analysis
--------------------------------------------------------------------------------

               Date:  June 1, 2016               Time:  14:41:09


--------------------------------------------------------------------------------
                                  Problem Title
--------------------------------------------------------------------------------

Project Name: Rehabilitation of Bridge 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis Under Existing Condition



--------------------------------------------------------------------------------
                          Program Options and Settings
--------------------------------------------------------------------------------

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                          =          1
Total length of pile                                     =      29.000 ft
Depth of ground surface below top of pile                =     11.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	13.8300
2	29.000	13.8300

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is an elastic pile
   Cross-sectional Shape                                 =   Weak H-Pile
   Length of section                                     =    29.000000 ft
   Flange Width                                          =    14.695000 in
   Section Depth                                         =    13.830000 in
   Flange Thickness                                      =     0.615000 in
   Web Thickness                                         =     0.615000 in
   Section Area                                          =    25.823850 sq. in
   Moment of Inertia                                     =   325.505721 in^4
   Elastic Modulus                                       =    29000000. psi
```

Ground Slope and Pile Batter Angles

```
Ground Slope Angle                                       =       0.000 degrees
                                                         =       0.000 radians

Pile Batter Angle                                        =       0.000 degrees
                                                         =       0.000 radians
```

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

```
   Distance from top of pile to top of layer             =    11.000000 ft
   Distance from top of pile to bottom of layer          =    13.000000 ft
   Effective unit weight at top of layer                 =   120.000000 pcf
   Effective unit weight at bottom of layer              =   120.000000 pcf
   Undrained cohesion at top of layer                    =   500.000000 psf
   Undrained cohesion at bottom of layer                 =   500.000000 psf
   Friction angle at top of layer                        =    10.000000 deg.
   Friction angle at bottom of layer                     =    10.000000 deg.
   Epsilon-50 at top of layer                            =     0.010000
   Epsilon-50 at bottom of layer                         =     0.010000
   Subgrade k at top of layer                            =    18.000000 pci
   Subgrade k at bottom of layer                         =    18.000000 pci
```

Layer 2 is sand, p-y criteria by Reese et al., 1974

```
   Distance from top of pile to top of layer             =    13.000000 ft
   Distance from top of pile to bottom of layer          =    22.000000 ft
   Effective unit weight at top of layer                 =   125.000000 pcf
   Effective unit weight at bottom of layer              =   125.000000 pcf
   Friction angle at top of layer                        =    38.000000 deg.
   Friction angle at bottom of layer                     =    38.000000 deg.
   Subgrade k at top of layer                            =    25.000000 pci
   Subgrade k at bottom of layer                         =    25.000000 pci
```

Layer 3 is weak rock, p-y criteria by Reese, 1997

```
   Distance from top of pile to top of layer             =    22.000000 ft
```

```
   Distance from top of pile to bottom of layer        =    29.000000 ft
   Effective unit weight at top of layer               =   125.000000 pcf
   Effective unit weight at bottom of layer            =   125.000000 pcf
   Uniaxial compressive strength at top of layer       =   500.000000 psi
   Uniaxial compressive strength at bottom of layer    =   500.000000 psi
   Initial modulus of rock at top of layer             =     1050000. psi
   Initial modulus of rock at bottom of layer          =     1050000. psi
   RQD of rock at top of layer                         =       0.0000 %
   RQD of rock at bottom of layer                      =       0.0000 %
   k rm of rock at top of layer                        =    0.0005000
   k rm of rock at bottom of layer                     =    0.0005000
```

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

```
   Distance from top of pile to top of layer           =    29.000000 ft
   Distance from top of pile to bottom of layer        =    30.000000 ft
   Effective unit weight at top of layer               =   139.000000 pcf
   Effective unit weight at bottom of layer            =   139.000000 pcf
   Uniaxial compressive strength at top of layer       =       11600. psi
   Uniaxial compressive strength at bottom of layer    =       11600. psi
   Poisson's ratio at top of layer                     =     0.250000
   Poisson's ratio at bottom of layer                  =     0.250000
   Option 1: Intact rock modulus at top of layer       =     1500000. psi
             Intact rock modulus at bottom of layer    =     1500000. psi
   Option 1: Geologic Strength Index for layer         =    50.000000
   Option 2: Rock mass modulus at top of layer         =       0.0000 psi
             Rock mass modulus at bottom of layer      =       0.0000 psi
   Option 1 will be used to compute values of rock mass modulus for the p-y curve
         in massive rock.
   The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28
```

(Depth of the lowest soil layer extends 1.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	11.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	13.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	13.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	22.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	22.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	29.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	29.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	30.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	2	V = 8100. lbs	S = 0.0000 in/in	341900.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

---

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

---

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	549.7454
2	13.0000	0.7518	No	No	549.7454	193067.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head = 8100.0 lbs
Rotation of pile head = 0.000E+00 radians
Axial load at pile head = 341900.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	1.0771	-1085494.	8100.	0.00	36300.	9.44E+09	0.00	0.00	0.00
0.2900	1.0764	-1057068.	8100.	-3.95E-04	35696.	9.44E+09	0.00	0.00	0.00
0.5800	1.0744	-1028178.	8100.	-7.79E-04	35082.	9.44E+09	0.00	0.00	0.00
0.8700	1.0710	-998837.	8100.	-0.00115	34459.	9.44E+09	0.00	0.00	0.00
1.1600	1.0663	-969058.	8100.	-0.00152	33826.	9.44E+09	0.00	0.00	0.00
1.4500	1.0604	-938854.	8100.	-0.00187	33185.	9.44E+09	0.00	0.00	0.00
1.7400	1.0533	-908239.	8100.	-0.00221	32534.	9.44E+09	0.00	0.00	0.00
2.0300	1.0451	-877225.	8100.	-0.00254	31875.	9.44E+09	0.00	0.00	0.00
2.3200	1.0357	-845826.	8100.	-0.00285	31208.	9.44E+09	0.00	0.00	0.00
2.6100	1.0252	-814056.	8100.	-0.00316	30533.	9.44E+09	0.00	0.00	0.00
2.9000	1.0137	-781929.	8100.	-0.00345	29851.	9.44E+09	0.00	0.00	0.00
3.1900	1.0012	-749459.	8100.	-0.00374	29161.	9.44E+09	0.00	0.00	0.00
3.4800	0.9877	-716660.	8100.	-0.00401	28464.	9.44E+09	0.00	0.00	0.00
3.7700	0.9733	-683547.	8100.	-0.00427	27761.	9.44E+09	0.00	0.00	0.00
4.0600	0.9580	-650134.	8100.	-0.00451	27051.	9.44E+09	0.00	0.00	0.00
4.3500	0.9419	-616436.	8100.	-0.00474	26335.	9.44E+09	0.00	0.00	0.00
4.6400	0.9250	-582468.	8100.	-0.00497	25614.	9.44E+09	0.00	0.00	0.00
4.9300	0.9073	-548244.	8100.	-0.00517	24887.	9.44E+09	0.00	0.00	0.00
5.2200	0.8890	-513780.	8100.	-0.00537	24154.	9.44E+09	0.00	0.00	0.00
5.5100	0.8699	-479090.	8100.	-0.00555	23417.	9.44E+09	0.00	0.00	0.00
5.8000	0.8503	-444190.	8100.	-0.00572	22676.	9.44E+09	0.00	0.00	0.00
6.0900	0.8301	-409095.	8100.	-0.00588	21930.	9.44E+09	0.00	0.00	0.00
6.3800	0.8094	-373821.	8100.	-0.00602	21181.	9.44E+09	0.00	0.00	0.00
6.6700	0.7882	-338383.	8100.	-0.00616	20428.	9.44E+09	0.00	0.00	0.00
6.9600	0.7665	-302797.	8100.	-0.00627	19672.	9.44E+09	0.00	0.00	0.00
7.2500	0.7445	-267077.	8100.	-0.00638	18913.	9.44E+09	0.00	0.00	0.00
7.5400	0.7221	-231241.	8100.	-0.00647	18152.	9.44E+09	0.00	0.00	0.00
7.8300	0.6995	-195303.	8100.	-0.00655	17389.	9.44E+09	0.00	0.00	0.00
8.1200	0.6766	-159279.	8100.	-0.00661	16623.	9.44E+09	0.00	0.00	0.00

8.4100	0.6534	-123186.	8100.	-0.00667	15857.	9.44E+09	0.00	0.00	0.00
8.7000	0.6301	-87038.	8100.	-0.00671	15089.	9.44E+09	0.00	0.00	0.00
8.9900	0.6068	-50852.	8100.	-0.00673	14320.	9.44E+09	0.00	0.00	0.00
9.2800	0.5833	-14644.	8100.	-0.00674	13551.	9.44E+09	0.00	0.00	0.00
9.5700	0.5598	21570.	8100.	-0.00674	13698.	9.44E+09	0.00	0.00	0.00
9.8600	0.5364	57775.	8100.	-0.00673	14467.	9.44E+09	0.00	0.00	0.00
10.1500	0.5130	93955.	8100.	-0.00670	15236.	9.44E+09	0.00	0.00	0.00
10.4400	0.4897	130093.	8100.	-0.00666	16003.	9.44E+09	0.00	0.00	0.00
10.7300	0.4667	166174.	8100.	-0.00660	16770.	9.44E+09	0.00	0.00	0.00
11.0200	0.4438	202183.	8097.	-0.00654	17535.	9.44E+09	-1.9172	15.0336	0.00
11.3100	0.4212	238079.	8044.	-0.00645	18297.	9.44E+09	-28.2018	233.0208	0.00
11.6000	0.3989	273530.	7905.	-0.00636	19051.	9.44E+09	-51.6929	451.0080	0.00
11.8900	0.3769	308235.	7689.	-0.00625	19788.	9.44E+09	-72.4566	668.9952	0.00
12.1800	0.3553	341927.	7406.	-0.00613	20504.	9.44E+09	-90.5703	886.9824	0.00
12.4700	0.3342	374372.	7063.	-0.00600	21193.	9.44E+09	-106.1219	1105.	0.00
12.7600	0.3136	405367.	6671.	-0.00586	21851.	9.44E+09	-119.2097	1323.	0.00
13.0500	0.2935	434742.	6150.	-0.00570	22475.	9.44E+09	-180.4745	2140.	0.00
13.3400	0.2739	461739.	5501.	-0.00554	23049.	9.44E+09	-192.2699	2443.	0.00
13.6300	0.2549	486206.	4817.	-0.00536	23569.	9.44E+09	-201.1284	2746.	0.00
13.9200	0.2366	508024.	4106.	-0.00518	24032.	9.44E+09	-207.2320	3048.	0.00
14.2100	0.2189	527110.	3379.	-0.00499	24438.	9.44E+09	-210.7704	3351.	0.00
14.5000	0.2018	543411.	2643.	-0.00479	24784.	9.44E+09	-211.9394	3654.	0.00
14.7900	0.1855	556908.	1907.	-0.00459	25071.	9.44E+09	-210.9394	3957.	0.00
15.0800	0.1699	567606.	1179.	-0.00438	25298.	9.44E+09	-207.9735	4260.	0.00
15.3700	0.1550	575536.	463.0676	-0.00417	25466.	9.44E+09	-203.2461	4562.	0.00
15.6600	0.1409	580752.	-233.2938	-0.00396	25577.	9.44E+09	-196.9616	4865.	0.00
15.9500	0.1275	583329.	-905.4282	-0.00374	25632.	9.44E+09	-189.3226	5168.	0.00
16.2400	0.1148	583356.	-1549.	-0.00353	25632.	9.44E+09	-180.5287	5471.	0.00
16.5300	0.1029	580942.	-2160.	-0.00331	25581.	9.44E+09	-170.7753	5773.	0.00
16.8200	0.09178	576204.	-2736.	-0.00310	25481.	9.44E+09	-160.2524	6076.	0.00
17.1100	0.08137	569274.	-3275.	-0.00289	25333.	9.44E+09	-149.1434	6379.	0.00
17.4000	0.07168	560287.	-3774.	-0.00268	25142.	9.44E+09	-137.6241	6682.	0.00
17.6900	0.06271	549388.	-4232.	-0.00248	24911.	9.44E+09	-125.8619	6984.	0.00
17.9800	0.05445	536723.	-4649.	-0.00228	24642.	9.44E+09	-114.0153	7287.	0.00
18.2700	0.04687	522442.	-5026.	-0.00208	24338.	9.44E+09	-102.2327	7590.	0.00
18.5600	0.03997	506695.	-5361.	-0.00189	24004.	9.44E+09	-90.6523	7893.	0.00
18.8500	0.03372	489627.	-5657.	-0.00171	23641.	9.44E+09	-79.4015	8195.	0.00
19.1400	0.02809	471382.	-5915.	-0.00153	23254.	9.44E+09	-68.5964	8498.	0.00
19.4300	0.02307	452100.	-6136.	-0.00136	22844.	9.44E+09	-58.3419	8801.	0.00
19.7200	0.01863	431914.	-6322.	-0.00120	22415.	9.44E+09	-48.7310	9104.	0.00
20.0100	0.01474	410948.	-6476.	-0.00104	21970.	9.44E+09	-39.8451	9406.	0.00
20.3000	0.01138	389318.	-6601.	-8.94E-04	21510.	9.44E+09	-31.7538	9709.	0.00
20.5900	0.00852	367134.	-6698.	-7.54E-04	21039.	9.44E+09	-24.5148	10012.	0.00
20.8800	0.00613	344492.	-6773.	-6.23E-04	20558.	9.44E+09	-18.1743	10315.	0.00
21.1700	0.00418	321478.	-6827.	-5.00E-04	20069.	9.44E+09	-12.7664	10617.	0.00
21.4600	0.00265	298169.	-6863.	-3.86E-04	19574.	9.44E+09	-8.3138	10920.	0.00
21.7500	0.00150	274629.	-6886.	-2.81E-04	19074.	9.44E+09	-4.8279	11223.	0.00
22.0400	6.97E-04	250909.	-10457.	-1.84E-04	18570.	9.44E+09	-2047.	1.02E+07	0.00
22.3300	2.19E-04	202286.	-17587.	-1.00E-04	17537.	9.44E+09	-2050.	3.26E+07	0.00
22.6200	1.65E-07	128745.	-21206.	-3.91E-05	15975.	9.44E+09	-29.7018	6.27E+08	0.00
22.9100	-5.33E-05	54788.	-17472.	-5.27E-06	14404.	9.44E+09	2176.	1.42E+08	0.00
23.2000	-3.65E-05	7155.	-9627.	6.15E-06	13392.	9.44E+09	2333.	2.23E+08	0.00
23.4900	-1.05E-05	-12228.	-2053.	5.22E-06	13499.	9.44E+09	2020.	6.70E+08	0.00
23.7800	-1.77E-07	-7147.	1560.	1.65E-06	13392.	9.44E+09	56.9201	1.12E+09	0.00
24.0700	9.65E-07	-1374.	1061.	7.50E-08	13269.	9.44E+09	-343.8866	1.24E+09	0.00
24.3600	3.45E-07	235.8267	227.5760	-1.35E-07	13245.	9.44E+09	-134.9546	1.36E+09	0.00
24.6500	2.69E-08	210.7228	-27.2327	-5.24E-08	13244.	9.44E+09	-11.4872	1.49E+09	0.00
24.9400	-2.04E-08	46.4119	-30.8208	-5.04E-09	13241.	9.44E+09	9.4251	1.61E+09	0.00
25.2300	-8.15E-09	-3.7777	-7.3646	2.82E-09	13240.	9.44E+09	4.0555	1.73E+09	0.00
25.5200	-7.60E-10	-4.8521	0.3860	1.23E-09	13240.	9.44E+09	0.3989	1.83E+09	0.00
25.8100	4.10E-10	-1.0941	0.7059	1.34E-10	13240.	9.44E+09	-0.2150	1.83E+09	0.00
26.1000	1.75E-10	0.06055	0.1717	-5.62E-11	13240.	9.44E+09	-0.09198	1.83E+09	0.00
26.3900	1.85E-11	0.1013	-0.00522	-2.63E-11	13240.	9.44E+09	-0.00972	1.83E+09	0.00
26.6800	-8.17E-12	0.02425	-0.01468	-3.20E-12	13240.	9.44E+09	0.00429	1.83E+09	0.00
26.9700	-3.75E-12	-8.63E-04	-0.00379	1.11E-12	13240.	9.44E+09	0.00197	1.83E+09	0.00
27.2600	0.00	-0.00211	4.72E-05	0.00	13240.	9.44E+09	2.33E-04	1.83E+09	0.00
27.5500	0.00	-5.35E-04	3.04E-04	0.00	13240.	9.44E+09	-8.50E-05	1.83E+09	0.00
27.8400	0.00	9.24E-06	8.32E-05	0.00	13240.	9.44E+09	-4.21E-05	1.83E+09	0.00
28.1300	0.00	4.37E-05	3.58E-07	0.00	13240.	9.44E+09	-5.49E-06	1.83E+09	0.00
28.4200	0.00	1.18E-05	-6.25E-06	0.00	13240.	9.44E+09	1.69E-06	1.83E+09	0.00
28.7100	0.00	2.19E-07	-1.69E-06	0.00	13240.	9.44E+09	9.35E-07	1.83E+09	0.00
29.0000	0.00	0.00	0.00	0.00	13240.	9.44E+09	3.61E-08	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection            =     1.07710935 inches
Computed slope at pile head     =       0.000000 radians
Maximum bending moment          =      -1085494. inch-lbs
Maximum shear force             =         -21206. lbs
Depth of maximum bending moment =       0.000000 feet below pile head
Depth of maximum shear force    =    22.62000000 feet below pile head
Number of iterations            =              8
Number of zero deflection points =             8
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =          8100. lbs
Slope      =        0.00000
Axial Load =        341900. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	1.07710935	-1085494.	-21206.
27.55000	1.08105285	-1087238.	-21627.
26.10000	1.07775592	-1085491.	-21066.
24.65000	1.07796549	-1085581.	-21288.
23.20000	1.08325656	-1087217.	-23134.
21.75000	1.56174462	-1310876.	-11517.
20.30000	2.03674951	-1568466.	-12452.
18.85000	2.69742852	-1978855.	-11191.
17.40000	3.31388487	-2438875.	8100.
15.95000	3.15592568	-2462871.	8100.
14.50000	2.79318256	-2164064.	8100.

Summary of Pile-head Responses for Conventional Analyses

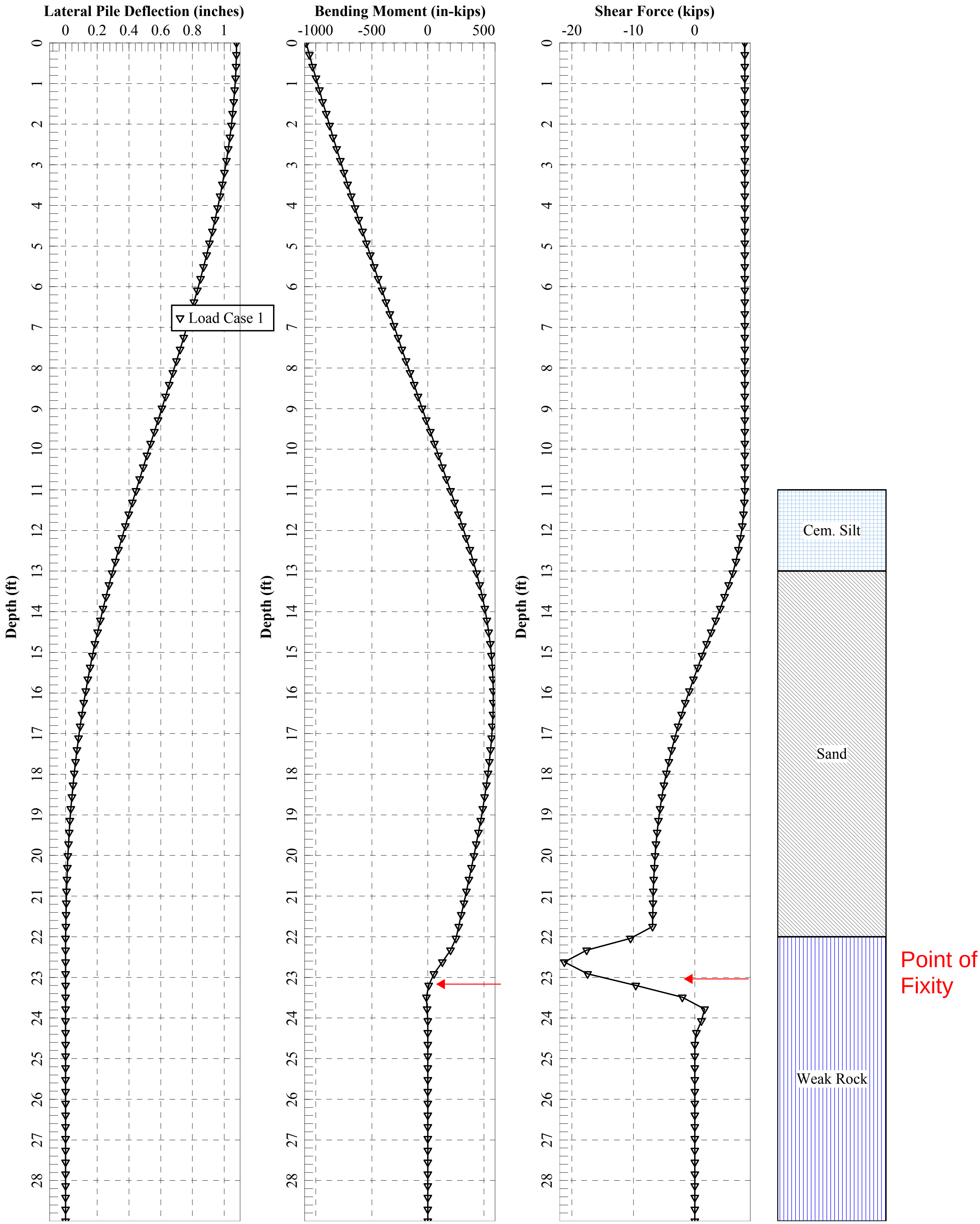
Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	8100.	S, rad	0.00	341900.	1.0771	0.00	-21206.	-1085494.

Maximum pile-head deflection = 1.0771093467 inches
Maximum pile-head rotation = 0.0000000000 radians = 0.000000 deg.

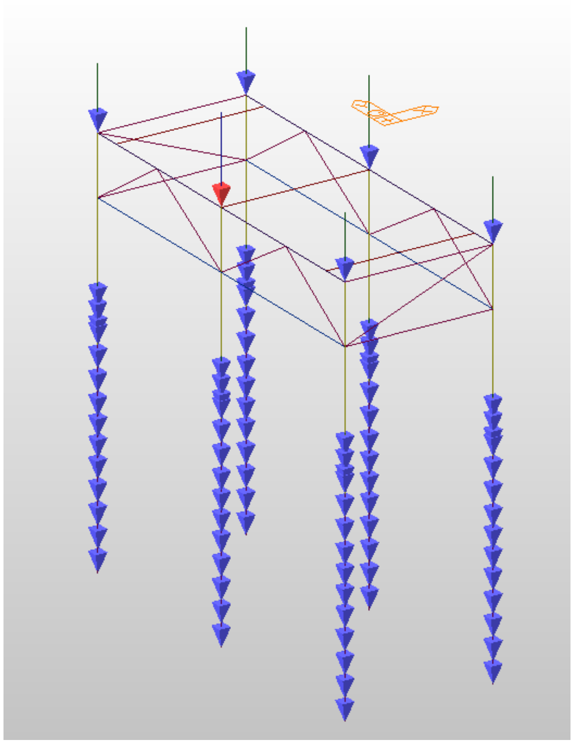
This analysis ended normally



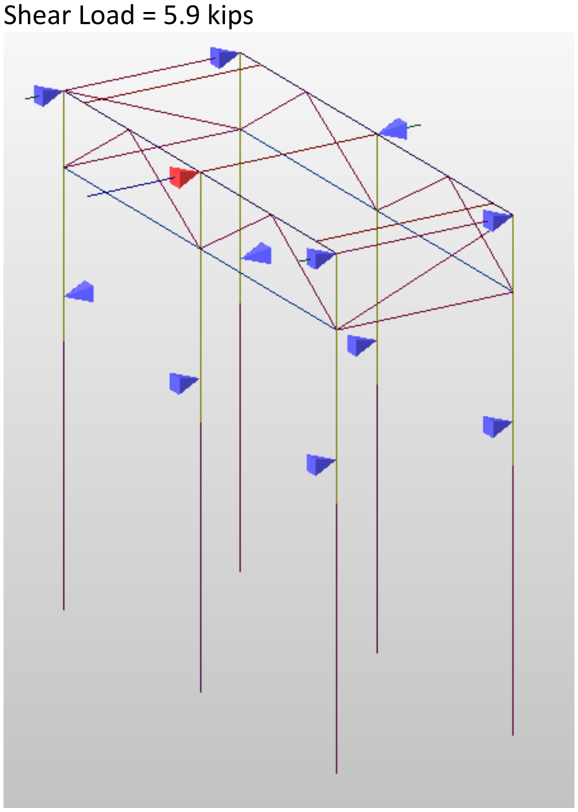
Lateral Pile Deflection (inches)
0
0.2
0.4
0.6
0.8
1
Load Case 1
Depth (ft)
Bending Moment (in-kips)
-1000
-500
0
500
Depth (ft)
Shear Force (kips)
-20
-10
0
Depth (ft)
Cem. Silt
Sand
Weak Rock
Point of Fixity

L-Pile loads – CT-L3S2 + Lane Load

Axial Load = 314.4 kips



Shear Load = 5.9 kips



```
===============================================================================

                    LPile for Windows, Version 2015-08.007

                Analysis of Individual Piles and Drilled Shafts
               Subjected to Lateral Loading Using the p-y Method
                          © 1985-2015 by Ensoft, Inc.
                              All Rights Reserved

===============================================================================
This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

-------------------------------------------------------------------------------
                            Files Used for Analysis
-------------------------------------------------------------------------------

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
CT-L3S2 plus Lane Load 01349 pier 2.lp8d

Name of output report file:
CT-L3S2 plus Lane Load 01349 pier 2.lp8o

Name of plot output file:
CT-L3S2 plus Lane Load 01349 pier 2.lp8p

Name of runtime message file:
CT-L3S2 plus Lane Load 01349 pier 2.lp8r


-------------------------------------------------------------------------------
                           Date and Time of Analysis
-------------------------------------------------------------------------------

               Date:  June 1, 2016               Time:  14:40:17


-------------------------------------------------------------------------------
                                 Problem Title
-------------------------------------------------------------------------------

Project Name: Rehabilitation of Bridge 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis Under Existing Condition



-------------------------------------------------------------------------------
                          Program Options and Settings
-------------------------------------------------------------------------------

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                    =          1
Total length of pile                               =     29.000 ft
Depth of ground surface below top of pile          =    11.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	13.8300
2	29.000	13.8300

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is an elastic pile
   Cross-sectional Shape                           =   Weak H-Pile
   Length of section                               =    29.000000 ft
   Flange Width                                    =    14.695000 in
   Section Depth                                   =    13.830000 in
   Flange Thickness                                =     0.615000 in
   Web Thickness                                   =     0.615000 in
   Section Area                                    =    25.823850 sq. in
   Moment of Inertia                               =   325.505721 in^4
   Elastic Modulus                                 =    29000000. psi
```

Ground Slope and Pile Batter Angles

```
Ground Slope Angle                                 =        0.000 degrees
                                                   =        0.000 radians

Pile Batter Angle                                  =        0.000 degrees
                                                   =        0.000 radians
```

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

```
   Distance from top of pile to top of layer       =    11.000000 ft
   Distance from top of pile to bottom of layer    =    13.000000 ft
   Effective unit weight at top of layer           =   120.000000 pcf
   Effective unit weight at bottom of layer        =   120.000000 pcf
   Undrained cohesion at top of layer              =   500.000000 psf
   Undrained cohesion at bottom of layer           =   500.000000 psf
   Friction angle at top of layer                  =    10.000000 deg.
   Friction angle at bottom of layer               =    10.000000 deg.
   Epsilon-50 at top of layer                      =     0.010000
   Epsilon-50 at bottom of layer                   =     0.010000
   Subgrade k at top of layer                      =    18.000000 pci
   Subgrade k at bottom of layer                   =    18.000000 pci
```

Layer 2 is sand, p-y criteria by Reese et al., 1974

```
   Distance from top of pile to top of layer       =    13.000000 ft
   Distance from top of pile to bottom of layer    =    22.000000 ft
   Effective unit weight at top of layer           =   125.000000 pcf
   Effective unit weight at bottom of layer        =   125.000000 pcf
   Friction angle at top of layer                  =    38.000000 deg.
   Friction angle at bottom of layer               =    38.000000 deg.
   Subgrade k at top of layer                      =    25.000000 pci
   Subgrade k at bottom of layer                   =    25.000000 pci
```

Layer 3 is weak rock, p-y criteria by Reese, 1997

```
   Distance from top of pile to top of layer       =    22.000000 ft
```

Distance from top of pile to bottom of layer = 29.000000 ft
Effective unit weight at top of layer = 125.000000 pcf
Effective unit weight at bottom of layer = 125.000000 pcf
Uniaxial compressive strength at top of layer = 500.000000 psi
Uniaxial compressive strength at bottom of layer = 500.000000 psi
Initial modulus of rock at top of layer = 1050000. psi
Initial modulus of rock at bottom of layer = 1050000. psi
RQD of rock at top of layer = 0.0000 %
RQD of rock at bottom of layer = 0.0000 %
k rm of rock at top of layer = 0.0005000
k rm of rock at bottom of layer = 0.0005000

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

Distance from top of pile to top of layer = 29.000000 ft
Distance from top of pile to bottom of layer = 30.000000 ft
Effective unit weight at top of layer = 139.000000 pcf
Effective unit weight at bottom of layer = 139.000000 pcf
Uniaxial compressive strength at top of layer = 11600. psi
Uniaxial compressive strength at bottom of layer = 11600. psi
Poisson's ratio at top of layer = 0.250000
Poisson's ratio at bottom of layer = 0.250000
Option 1: Intact rock modulus at top of layer = 1500000. psi
Intact rock modulus at bottom of layer = 1500000. psi
Option 1: Geologic Strength Index for layer = 50.000000
Option 2: Rock mass modulus at top of layer = 0.0000 psi
Rock mass modulus at bottom of layer = 0.0000 psi
Option 1 will be used to compute values of rock mass modulus for the p-y curve in massive rock.
The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28

(Depth of the lowest soil layer extends 1.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	11.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	13.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	13.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	22.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	22.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	29.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	29.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	30.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	2	V = 6700. lbs	S = 0.0000 in/in	324600.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

---

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

---

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	549.7454
2	13.0000	0.7518	No	No	549.7454	193067.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head = 6700.0 lbs
Rotation of pile head = 0.000E+00 radians
Axial load at pile head = 324600.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	0.8810	-889204.	6700.	0.00	31460.	9.44E+09	0.00	0.00	0.00
0.2900	0.8804	-865703.	6700.	-3.23E-04	30961.	9.44E+09	0.00	0.00	0.00
0.5800	0.8787	-841841.	6700.	-6.38E-04	30454.	9.44E+09	0.00	0.00	0.00
0.8700	0.8760	-817629.	6700.	-9.44E-04	29939.	9.44E+09	0.00	0.00	0.00
1.1600	0.8722	-793076.	6700.	-0.00124	29418.	9.44E+09	0.00	0.00	0.00
1.4500	0.8673	-768193.	6700.	-0.00153	28889.	9.44E+09	0.00	0.00	0.00
1.7400	0.8615	-742990.	6700.	-0.00181	28354.	9.44E+09	0.00	0.00	0.00
2.0300	0.8548	-717478.	6700.	-0.00208	27812.	9.44E+09	0.00	0.00	0.00
2.3200	0.8471	-691667.	6700.	-0.00234	27263.	9.44E+09	0.00	0.00	0.00
2.6100	0.8385	-665568.	6700.	-0.00259	26709.	9.44E+09	0.00	0.00	0.00
2.9000	0.8291	-639191.	6700.	-0.00283	26149.	9.44E+09	0.00	0.00	0.00
3.1900	0.8188	-612549.	6700.	-0.00306	25583.	9.44E+09	0.00	0.00	0.00
3.4800	0.8078	-585651.	6700.	-0.00328	25011.	9.44E+09	0.00	0.00	0.00
3.7700	0.7960	-558510.	6700.	-0.00349	24435.	9.44E+09	0.00	0.00	0.00
4.0600	0.7835	-531136.	6700.	-0.00369	23853.	9.44E+09	0.00	0.00	0.00
4.3500	0.7703	-503541.	6700.	-0.00388	23267.	9.44E+09	0.00	0.00	0.00
4.6400	0.7565	-475736.	6700.	-0.00406	22676.	9.44E+09	0.00	0.00	0.00
4.9300	0.7421	-447733.	6700.	-0.00423	22081.	9.44E+09	0.00	0.00	0.00
5.2200	0.7270	-419543.	6700.	-0.00439	21482.	9.44E+09	0.00	0.00	0.00
5.5100	0.7115	-391179.	6700.	-0.00454	20880.	9.44E+09	0.00	0.00	0.00
5.8000	0.6954	-362652.	6700.	-0.00468	20274.	9.44E+09	0.00	0.00	0.00
6.0900	0.6789	-333974.	6700.	-0.00481	19665.	9.44E+09	0.00	0.00	0.00
6.3800	0.6620	-305157.	6700.	-0.00493	19052.	9.44E+09	0.00	0.00	0.00
6.6700	0.6446	-276212.	6700.	-0.00503	18438.	9.44E+09	0.00	0.00	0.00
6.9600	0.6269	-247153.	6700.	-0.00513	17820.	9.44E+09	0.00	0.00	0.00
7.2500	0.6089	-217991.	6700.	-0.00522	17201.	9.44E+09	0.00	0.00	0.00
7.5400	0.5906	-188738.	6700.	-0.00529	16579.	9.44E+09	0.00	0.00	0.00
7.8300	0.5721	-159406.	6700.	-0.00535	15956.	9.44E+09	0.00	0.00	0.00
8.1200	0.5534	-130008.	6700.	-0.00541	15332.	9.44E+09	0.00	0.00	0.00

8.4100	0.5345	-100556.	6700.	-0.00545	14706.	9.44E+09	0.00	0.00	0.00
8.7000	0.5154	-71062.	6700.	-0.00548	14079.	9.44E+09	0.00	0.00	0.00
8.9900	0.4963	-41538.	6700.	-0.00550	13452.	9.44E+09	0.00	0.00	0.00
9.2800	0.4771	-11998.	6700.	-0.00551	12825.	9.44E+09	0.00	0.00	0.00
9.5700	0.4579	17548.	6700.	-0.00551	12943.	9.44E+09	0.00	0.00	0.00
9.8600	0.4388	47087.	6700.	-0.00550	13570.	9.44E+09	0.00	0.00	0.00
10.1500	0.4197	76606.	6700.	-0.00548	14197.	9.44E+09	0.00	0.00	0.00
10.4400	0.4006	106093.	6700.	-0.00544	14824.	9.44E+09	0.00	0.00	0.00
10.7300	0.3818	135536.	6700.	-0.00540	15449.	9.44E+09	0.00	0.00	0.00
11.0200	0.3631	164922.	6697.	-0.00534	16073.	9.44E+09	-1.5684	15.0336	0.00
11.3100	0.3446	194221.	6654.	-0.00528	16696.	9.44E+09	-23.0727	233.0208	0.00
11.6000	0.3263	223160.	6541.	-0.00520	17311.	9.44E+09	-42.2929	451.0080	0.00
11.8900	0.3084	251493.	6364.	-0.00511	17912.	9.44E+09	-59.2829	668.9952	0.00
12.1800	0.2907	279004.	6132.	-0.00502	18497.	9.44E+09	-74.1058	886.9824	0.00
12.4700	0.2735	305501.	5852.	-0.00491	19060.	9.44E+09	-86.8336	1105.	0.00
12.7600	0.2566	330819.	5531.	-0.00479	19598.	9.44E+09	-97.5462	1323.	0.00
13.0500	0.2401	354818.	5104.	-0.00466	20107.	9.44E+09	-147.6831	2140.	0.00
13.3400	0.2241	376881.	4574.	-0.00453	20576.	9.44E+09	-157.3414	2443.	0.00
13.6300	0.2086	396882.	4013.	-0.00439	21001.	9.44E+09	-164.5968	2746.	0.00
13.9200	0.1936	414723.	3432.	-0.00424	21380.	9.44E+09	-169.5979	3048.	0.00
14.2100	0.1791	430339.	2837.	-0.00408	21712.	9.44E+09	-172.4998	3351.	0.00
14.5000	0.1652	443686.	2235.	-0.00392	21995.	9.44E+09	-173.4624	3654.	0.00
14.7900	0.1518	454747.	1632.	-0.00375	22230.	9.44E+09	-172.6491	3957.	0.00
15.0800	0.1391	463529.	1036.	-0.00358	22417.	9.44E+09	-170.2259	4260.	0.00
15.3700	0.1269	470055.	450.1323	-0.00341	22556.	9.44E+09	-166.3600	4562.	0.00
15.6600	0.1153	474372.	-119.8534	-0.00324	22647.	9.44E+09	-161.2181	4865.	0.00
15.9500	0.1044	476538.	-670.0135	-0.00306	22693.	9.44E+09	-154.9659	5168.	0.00
16.2400	0.09400	476629.	-1197.	-0.00289	22695.	9.44E+09	-147.7666	5471.	0.00
16.5300	0.08426	474733.	-1697.	-0.00271	22655.	9.44E+09	-139.7800	5773.	0.00
16.8200	0.07512	470945.	-2169.	-0.00254	22574.	9.44E+09	-131.1614	6076.	0.00
17.1100	0.06659	465374.	-2609.	-0.00237	22456.	9.44E+09	-122.0609	6379.	0.00
17.4000	0.05866	458130.	-3017.	-0.00220	22302.	9.44E+09	-112.6224	6682.	0.00
17.6900	0.05131	449331.	-3393.	-0.00203	22115.	9.44E+09	-102.9832	6984.	0.00
17.9800	0.04454	439098.	-3734.	-0.00186	21898.	9.44E+09	-93.2729	7287.	0.00
18.2700	0.03834	427553.	-4042.	-0.00170	21653.	9.44E+09	-83.6135	7590.	0.00
18.5600	0.03268	414817.	-4316.	-0.00155	21382.	9.44E+09	-74.1183	7893.	0.00
18.8500	0.02755	401011.	-4558.	-0.00140	21089.	9.44E+09	-64.8920	8195.	0.00
19.1400	0.02294	386252.	-4769.	-0.00125	20775.	9.44E+09	-56.0303	8498.	0.00
19.4300	0.01883	370654.	-4949.	-0.00111	20444.	9.44E+09	-47.6196	8801.	0.00
19.7200	0.01519	354324.	-5101.	-9.81E-04	20097.	9.44E+09	-39.7368	9104.	0.00
20.0100	0.01200	337366.	-5227.	-8.53E-04	19737.	9.44E+09	-32.4495	9406.	0.00
20.3000	0.00925	319874.	-5328.	-7.32E-04	19365.	9.44E+09	-25.8155	9709.	0.00
20.5900	0.00691	301937.	-5408.	-6.17E-04	18984.	9.44E+09	-19.8834	10012.	0.00
20.8800	0.00496	283633.	-5468.	-5.09E-04	18595.	9.44E+09	-14.6919	10315.	0.00
21.1700	0.00337	265032.	-5511.	-4.08E-04	18200.	9.44E+09	-10.2705	10617.	0.00
21.4600	0.00212	246198.	-5541.	-3.14E-04	17800.	9.44E+09	-6.6394	10920.	0.00
21.7500	0.00118	227180.	-5559.	-2.27E-04	17396.	9.44E+09	-3.8093	11223.	0.00
22.0400	5.38E-04	208021.	-8901.	-1.46E-04	16989.	9.44E+09	-1917.	1.24E+07	0.00
22.3300	1.62E-04	165558.	-15541.	-7.76E-05	16087.	9.44E+09	-1898.	4.09E+07	0.00
22.6200	-2.19E-06	100035.	-18158.	-2.87E-05	14695.	9.44E+09	394.1174	6.27E+08	0.00
22.9100	-3.77E-05	39243.	-14026.	-2.98E-06	13403.	9.44E+09	1981.	1.83E+08	0.00
23.2000	-2.30E-05	2422.	-7021.	4.70E-06	12621.	9.44E+09	2045.	3.10E+08	0.00
23.4900	-5.06E-06	-9636.	-944.9734	3.37E-06	12774.	9.44E+09	1447.	9.95E+08	0.00
23.7800	4.73E-07	-4163.	1309.	8.23E-07	12658.	9.44E+09	-151.8803	1.12E+09	0.00
24.0700	6.66E-07	-526.9680	631.7750	-4.17E-08	12581.	9.44E+09	-237.3262	1.24E+09	0.00
24.3600	1.83E-07	234.7082	94.2985	-9.56E-08	12575.	9.44E+09	-71.5683	1.36E+09	0.00
24.6500	7.57E-10	129.5655	-30.7924	-2.84E-08	12573.	9.44E+09	-0.3230	1.49E+09	0.00
24.9400	-1.50E-08	20.4574	-19.3048	-7.53E-10	12570.	9.44E+09	6.9250	1.61E+09	0.00
25.2300	-4.48E-09	-4.7941	-3.3774	2.13E-09	12570.	9.44E+09	2.2286	1.73E+09	0.00
25.5200	-1.27E-10	-3.0542	0.6167	6.88E-10	12570.	9.44E+09	0.06687	1.83E+09	0.00
25.8100	3.08E-10	-0.5031	0.4519	3.23E-11	12570.	9.44E+09	-0.1616	1.83E+09	0.00
26.1000	9.76E-11	0.09106	0.08155	-4.36E-11	12570.	9.44E+09	-0.05124	1.83E+09	0.00
26.3900	4.20E-12	0.06462	-0.01144	-1.49E-11	12570.	9.44E+09	-0.00221	1.83E+09	0.00
26.6800	-6.30E-12	0.01144	-0.00953	0.00	12570.	9.44E+09	0.00331	1.83E+09	0.00
26.9700	-2.12E-12	-0.00170	-0.00184	0.00	12570.	9.44E+09	0.00111	1.83E+09	0.00
27.2600	0.00	-0.00136	2.07E-04	0.00	12570.	9.44E+09	6.35E-05	1.83E+09	0.00
27.5500	0.00	-2.58E-04	2.00E-04	0.00	12570.	9.44E+09	-6.74E-05	1.83E+09	0.00
27.8400	0.00	3.10E-05	4.13E-05	0.00	12570.	9.44E+09	-2.41E-05	1.83E+09	0.00
28.1300	0.00	2.87E-05	-3.62E-06	0.00	12570.	9.44E+09	-1.70E-06	1.83E+09	0.00
28.4200	0.00	5.81E-06	-4.17E-06	0.00	12570.	9.44E+09	1.38E-06	1.83E+09	0.00
28.7100	0.00	-3.58E-07	-8.35E-07	0.00	12570.	9.44E+09	5.39E-07	1.83E+09	0.00
29.0000	0.00	0.00	0.00	0.00	12570.	9.44E+09	-5.92E-08	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     0.88098891 inches
Computed slope at pile head      =       0.000000 radians
Maximum bending moment           =       -889204. inch-lbs
Maximum shear force              =        -18158. lbs
Depth of maximum bending moment  =       0.000000 feet below pile head
Depth of maximum shear force     =    22.62000000 feet below pile head
Number of iterations             =              9
Number of zero deflection points =              8
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =          6700. lbs
Slope      =        0.00000
Axial Load =        324600. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	0.88098891	-889204.	-18158.
27.55000	0.88418357	-890606.	-18595.
26.10000	0.88154887	-889205.	-18116.
24.65000	0.88172697	-889276.	-18346.
23.20000	0.88528244	-890600.	-19864.
21.75000	1.21092281	-1042330.	-8879.
20.30000	1.62629156	-1262331.	-9833.
18.85000	2.06887438	-1544879.	-8627.
17.40000	2.52069802	-1883940.	6700.
15.95000	2.46944795	-1938842.	6700.
14.50000	2.21510784	-1724570.	6700.

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	6700.	S, rad	0.00	324600.	0.8810	0.00	-18158.	-889204.

Maximum pile-head deflection = 0.8809889120 inches
Maximum pile-head rotation = 0.0000000000 radians = 0.000000 deg.

This analysis ended normally

```
*****************************************************************************************************
**          MIDAS/Civil V.8.5.1    Modeling, Integrated Design & Analysis Software                 **
**                           CIVIL STRUCTURE DESIGN SYSTEM                                         **
*****************************************************************************************************

                    XXX   XXX     XX    XXXXXXXX      XXXXXXX    XXXXXXXX
                    XXXX XXXX     XX    XX     XX     XX   XX    XX    XX
                    XX XXX XX     XX    XX     XX     XX   XX    XX
                    XX  X  XX     XX    XX     XX     XXXXXXX    XXXXXXXX
                    XXX    XX    XXX    XXX    XX     XX   XX         XXX
                    XXX    XX    XXX    XXX    XX    XXX   XX    XX   XXX
                    XXX    XX    XXX    XXX    XX    XXX   XX    XX   XXX
                    XXX    XX    XXX    XXXXXXXX     XXX   XX    XXXXXXXX  /Civil

                                     VERSION 8.5.1
```



```
*****************************************************************************************************

                                 ANALYSIS RESULT OUTPUT
                               __________________________
```

LOAD SET FOR DISPLACMENT OUTPUT - Strength I HL-93 Inv.

<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

ABBREVIATION	FULL NAME	TYPE	DESCRIPTION
Self W~1	Self Weight	Static	
Guide ~1	Guide Rail	Static	
Wearin~1	Wearing Surface	Static	
S1 HL-~1	S1 HL-93 INV	Gen.Comb	

<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>

[Selected Load Combinations]

L. COMB	TYPE	COMBINATION DETAIL
S1 HL-~1	Gen.Comb	1.250 x Self W~1 + 1.250 x Guide ~1 + 1.250 x Sidewalk + 1.500 x Wearin~1 + 1.750 x HL-93

```
LOAD SET FOR REACTION OUTPUT - Strength I HL-93 Inv.


<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

   ABBREVIATION    FULL NAME                       TYPE             DESCRIPTION
   ------------  ------------------------------ ---------- ---------------------------------------
    No Abbreviation was defined in this Load Set. All names are less than 8 char.'s
   ------------  ------------------------------ ---------- ---------------------------------------


<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>


[Selected Load Combinations]

    L. COMB    TYPE                               COMBINATION DETAIL
    -------- ---------- ----------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

```
LOAD SET FOR ELEMENT OUTPUT - Strength I HL-93 Inv.


<< LOAD COMB/CASE/ENVEL ABBREVIATION TABLE >>

   ABBREVIATION    FULL NAME                       TYPE             DESCRIPTION
   ------------  ------------------------------ ---------- ----------------------------------------
    No Abbreviation was defined in this Load Set. All names are less than 8 char.'s
   ------------  ------------------------------ ---------- ----------------------------------------


<< SELECTED LOAD CASE/COMBINATION DETAIL LIST >>


[Selected Load Combinations]

    L. COMB    TYPE                               COMBINATION DETAIL
    -------- ---------- ----------------------------------------------------------------------------
    S1 HL-~1  Gen.Comb      1.250 x Self W~1 +  1.250 x Guide ~1 +  1.250 x Sidewalk +  1.500 x Wearin~1 +
                         1.750 x HL-93
```

NODE DISPLACEMENT AND ROTATIONS DEFAULT PRINTOUT Unit System : kips , in

NODE	LC		UX	UY	UZ	RX	RY	RZ
1	S1 HL-~1	Max	-0.058	0.023	-0.088	-0.0	0.0	0.0
		Min	-0.064	-0.022	-0.166	-0.0	0.0	-0.0
2	S1 HL-~1	Max	-0.059	0.023	-0.114	-0.0	0.0	0.0
		Min	-0.064	-0.023	-0.220	-0.0	0.0	-0.0
3	S1 HL-~1	Max	-0.059	0.024	-0.139	-0.0	0.0	0.0
		Min	-0.065	-0.025	-0.271	-0.0	0.0	-0.0
4	S1 HL-~1	Max	-0.059	0.025	-0.160	0.0	0.0	0.0
		Min	-0.065	-0.026	-0.314	-0.0	0.0	-0.0
5	S1 HL-~1	Max	-0.059	0.025	-0.176	0.0	0.0	0.0
		Min	-0.065	-0.027	-0.347	-0.0	0.0	-0.0
6	S1 HL-~1	Max	-0.059	0.025	-0.185	0.0	0.0	0.0
		Min	-0.065	-0.028	-0.366	-0.0	-0.0	-0.0
7	S1 HL-~1	Max	-0.059	0.025	-0.173	0.0	-0.0	0.0
		Min	-0.065	-0.028	-0.344	-0.0	-0.0	-0.0
8	S1 HL-~1	Max	-0.059	0.024	-0.155	0.0	-0.0	0.0
		Min	-0.065	-0.027	-0.307	-0.0	-0.0	-0.0
9	S1 HL-~1	Max	-0.059	0.024	-0.132	-0.0	-0.0	0.0
		Min	-0.065	-0.026	-0.261	-0.0	-0.0	-0.0
10	S1 HL-~1	Max	-0.059	0.023	-0.105	-0.0	-0.0	0.0
		Min	-0.065	-0.025	-0.208	-0.0	-0.0	-0.0
11	S1 HL-~1	Max	-0.059	0.023	-0.077	-0.0	-0.0	0.0
		Min	-0.065	-0.024	-0.152	-0.0	-0.0	0.0
12	S1 HL-~1	Max	-0.059	0.022	-0.055	0.0	0.0	0.0
		Min	-0.063	-0.023	-0.088	-0.0	0.0	-0.0
13	S1 HL-~1	Max	-0.060	0.022	-0.085	0.0	0.0	0.0
		Min	-0.063	-0.025	-0.136	-0.0	0.0	-0.0
14	S1 HL-~1	Max	-0.060	0.023	-0.116	0.0	0.0	0.0
		Min	-0.063	-0.026	-0.185	-0.0	0.0	-0.0
15	S1 HL-~1	Max	-0.060	0.024	-0.145	0.0	0.0	0.0
		Min	-0.063	-0.027	-0.230	-0.0	0.0	-0.0
16	S1 HL-~1	Max	-0.060	0.024	-0.169	0.0	0.0	0.0
		Min	-0.063	-0.028	-0.266	-0.0	0.0	-0.0
17	S1 HL-~1	Max	-0.060	0.025	-0.184	0.0	0.0	0.0
		Min	-0.064	-0.028	-0.291	-0.0	-0.0	-0.0
18	S1 HL-~1	Max	-0.060	0.025	-0.167	0.0	-0.0	0.0
		Min	-0.064	-0.028	-0.266	-0.0	-0.0	-0.0

19	S1	HL-~1	Max	-0.060	0.024	-0.141	0.0	-0.0	0.0
			Min	-0.064	-0.028	-0.226	-0.0	-0.0	-0.0
20	S1	HL-~1	Max	-0.061	0.023	-0.110	0.0	-0.0	0.0
			Min	-0.064	-0.027	-0.178	-0.0	-0.0	-0.0
21	S1	HL-~1	Max	-0.061	0.023	-0.076	0.0	-0.0	0.0
			Min	-0.064	-0.026	-0.124	-0.0	-0.0	-0.0
22	S1	HL-~1	Max	-0.061	0.022	-0.043	0.0	-0.0	0.0
			Min	-0.065	-0.025	-0.071	-0.0	-0.0	-0.0
23	S1	HL-~1	Max	-0.058	0.021	-0.089	0.0	0.0	-0.0
			Min	-0.062	-0.025	-0.166	0.0	0.0	-0.0
24	S1	HL-~1	Max	-0.058	0.021	-0.115	0.0	0.0	0.0
			Min	-0.062	-0.026	-0.220	0.0	0.0	-0.0
25	S1	HL-~1	Max	-0.058	0.022	-0.141	0.0	0.0	0.0
			Min	-0.062	-0.027	-0.271	0.0	0.0	-0.0
26	S1	HL-~1	Max	-0.059	0.023	-0.162	0.0	0.0	0.0
			Min	-0.063	-0.028	-0.315	-0.0	0.0	-0.0
27	S1	HL-~1	Max	-0.059	0.023	-0.178	0.0	0.0	0.0
			Min	-0.063	-0.029	-0.349	-0.0	0.0	-0.0
28	S1	HL-~1	Max	-0.059	0.024	-0.187	0.0	0.0	0.0
			Min	-0.063	-0.029	-0.368	-0.0	-0.0	-0.0
29	S1	HL-~1	Max	-0.059	0.024	-0.176	0.0	-0.0	0.0
			Min	-0.063	-0.029	-0.345	-0.0	-0.0	-0.0
30	S1	HL-~1	Max	-0.059	0.023	-0.157	0.0	-0.0	0.0
			Min	-0.063	-0.028	-0.308	-0.0	-0.0	-0.0
31	S1	HL-~1	Max	-0.059	0.023	-0.133	0.0	-0.0	0.0
			Min	-0.063	-0.028	-0.261	0.0	-0.0	-0.0
32	S1	HL-~1	Max	-0.059	0.022	-0.106	0.0	-0.0	0.0
			Min	-0.063	-0.027	-0.208	0.0	-0.0	-0.0
33	S1	HL-~1	Max	-0.059	0.021	-0.077	0.0	-0.0	0.0
			Min	-0.063	-0.026	-0.150	0.0	-0.0	-0.0

BEAM ELEMENT FORCES & MOMENTS DEFAULT PRINTOUT Unit System : kips , in

ELEM	MAT	SEC	LC		PT	AXIAL	SHEAR-y	SHEAR-z	TORSION	MOMENT-y	MOMENT-z
1	4	11	S1 HL-~1	Max	I	-0.4	1.1	189.5	9.7	2360.8	59.8
					J	-0.4	1.1	189.9	9.7	-5.6	115.4
				Min	I	-2.5	-4.4	94.7	0.4	1180.5	1.6
					J	-2.5	-4.4	95.1	0.4	-10.8	-11.5
2	4	11	S1 HL-~1	Max	I	-0.4	1.1	189.1	9.7	4726.8	15.0
					J	-0.4	1.1	189.5	9.7	2360.8	59.8
				Min	I	-2.5	-4.4	94.2	0.4	2361.0	4.1
					J	-2.5	-4.4	94.7	0.4	1180.5	1.6
3	4	11	S1 HL-~1	Max	I	-0.4	1.1	188.6	9.7	7087.4	28.0
					J	-0.4	1.1	189.1	9.7	4726.8	15.0
				Min	I	-2.5	-4.4	93.8	0.4	3536.1	-51.4
					J	-2.5	-4.4	94.2	0.4	2361.0	4.1
4	4	11	S1 HL-~1	Max	I	-0.4	1.1	188.2	9.7	9442.4	41.1
					J	-0.4	1.1	188.6	9.7	7087.4	28.0
				Min	I	-2.5	-4.4	93.3	0.4	4705.6	-107.0
					J	-2.5	-4.4	93.8	0.4	3536.1	-51.4
5	4	11	S1 HL-~1	Max	I	-0.4	1.1	187.7	9.7	11791.9	54.3
					J	-0.4	1.1	188.2	9.7	9442.4	41.1
				Min	I	-2.5	-4.4	92.9	0.4	5869.5	-162.6
					J	-2.5	-4.4	93.3	0.4	4705.6	-107.0
6	4	11	S1 HL-~1	Max	I	7.8	1.0	-88.2	0.1	9122.1	68.9
					J	7.8	1.0	-87.7	0.1	11391.2	127.3
				Min	I	6.1	-4.7	-181.7	-9.2	4448.5	-91.0
					J	6.1	-4.7	-181.3	-9.2	5547.8	-103.8
7	4	11	S1 HL-~1	Max	I	7.8	1.0	-88.6	0.1	6847.5	10.6
					J	7.8	1.0	-88.2	0.1	9122.1	68.9
				Min	I	6.1	-4.7	-182.2	-9.2	3343.6	-78.2
					J	6.1	-4.7	-181.7	-9.2	4448.5	-91.0
8	4	11	S1 HL-~1	Max	I	7.8	1.0	-89.1	0.1	4567.3	-47.6
					J	7.8	1.0	-88.6	0.1	6847.5	10.6
				Min	I	6.1	-4.7	-182.6	-9.2	2233.2	-65.7
					J	6.1	-4.7	-182.2	-9.2	3343.6	-78.2
9	4	11	S1 HL-~1	Max	I	7.8	1.0	-89.5	0.1	2281.6	-52.5
					J	7.8	1.0	-89.1	0.1	4567.3	-47.6
				Min	I	6.1	-4.7	-183.1	-9.2	1117.3	-106.2
					J	6.1	-4.7	-182.6	-9.2	2233.2	-65.7
10	4	11	S1 HL-~1	Max	I	7.8	1.0	-89.9	0.1	-4.2	-39.7
					J	7.8	1.0	-89.5	0.1	2281.6	-52.5
				Min	I	6.1	-4.7	-183.5	-9.2	-9.6	-164.5
					J	6.1	-4.7	-183.1	-9.2	1117.3	-106.2
11	4	11	S1 HL-~1	Max	I	-22.9	2.1	274.7	3.5	-717.4	35.7
					J	-22.9	2.1	275.1	3.5	-2876.8	78.9
				Min	I	-34.3	-3.5	168.7	-3.6	-1222.5	-16.3
					J	-34.3	-3.5	169.1	-3.6	-4375.8	-42.7
12	4	11	S1 HL-~1	Max	I	-22.9	2.1	274.2	3.5	2647.3	10.1
					J	-22.9	2.1	274.7	3.5	-717.4	35.7
				Min	I	-34.3	-3.5	168.3	-3.6	1338.1	-7.5
					J	-34.3	-3.5	168.7	-3.6	-1222.5	-16.3
13	4	11	S1 HL-~1	Max	I	-22.9	2.1	273.8	3.5	6072.6	36.5
					J	-22.9	2.1	274.2	3.5	2647.3	10.1
				Min	I	-34.3	-3.5	167.8	-3.6	3438.5	-50.7
					J	-34.3	-3.5	168.3	-3.6	1338.1	-7.5
14	4	11	S1 HL-~1	Max	I	-22.9	2.1	273.4	3.5	9492.4	63.0
					J	-22.9	2.1	273.8	3.5	6072.6	36.5
				Min	I	-34.3	-3.5	167.4	-3.6	5533.4	-93.9
					J	-34.3	-3.5	167.8	-3.6	3438.5	-50.7
15	4	11	S1 HL-~1	Max	I	-22.9	2.1	272.9	3.5	12906.7	89.4

				J	-22.9	2.1	273.4	3.5	9492.4	63.0
			Min	I	-34.3	-3.5	166.9	-3.6	7622.8	-137.1
				J	-34.3	-3.5	167.4	-3.6	5533.4	-93.9
16	4	11 S1 HL--1	Max	I	-14.2	3.7	-151.5	3.7	9663.4	70.6
				J	-14.2	3.7	-151.1	3.7	12947.0	100.5
			Min	I	-25.3	-2.4	-262.9	-3.5	5521.1	-100.6
				J	-25.3	-2.4	-262.5	-3.5	7412.6	-146.9
17	4	11 S1 HL--1	Max	I	-14.2	3.7	-152.0	3.7	6374.2	40.7
				J	-14.2	3.7	-151.5	3.7	9663.4	70.6
			Min	I	-25.3	-2.4	-263.4	-3.5	3624.0	-54.3
				J	-25.3	-2.4	-262.9	-3.5	5521.1	-100.6
18	4	11 S1 HL--1	Max	I	-14.2	3.7	-152.4	3.7	3079.6	10.8
				J	-14.2	3.7	-152.0	3.7	6374.2	40.7
			Min	I	-25.3	-2.4	-263.8	-3.5	1721.5	-8.0
				J	-25.3	-2.4	-263.4	-3.5	3624.0	-54.3
19	4	11 S1 HL--1	Max	I	-14.2	3.7	-152.9	3.7	-132.0	38.3
				J	-14.2	3.7	-152.4	3.7	3079.6	10.8
			Min	I	-25.3	-2.4	-264.2	-3.5	-639.2	-19.1
				J	-25.3	-2.4	-263.8	-3.5	1721.5	-8.0
20	4	11 S1 HL--1	Max	I	-14.2	3.7	-153.3	3.7	-2076.0	84.6
				J	-14.2	3.7	-152.9	3.7	-132.0	38.3
			Min	I	-25.3	-2.4	-264.7	-3.5	-3571.8	-49.0
				J	-25.3	-2.4	-264.2	-3.5	-639.2	-19.1
21	4	11 S1 HL--1	Max	I	-4.2	5.4	191.4	-0.6	2384.5	-49.9
				J	-4.2	5.4	191.8	-0.6	-5.6	-46.4
			Min	I	-7.0	-0.3	96.6	-9.9	1204.4	-114.1
				J	-7.0	-0.3	97.0	-9.9	-10.7	-181.5
22	4	11 S1 HL--1	Max	I	-4.2	5.4	191.0	-0.6	4774.2	-42.0
				J	-4.2	5.4	191.4	-0.6	2384.5	-49.9
			Min	I	-7.0	-0.3	96.1	-9.9	2408.9	-53.7
				J	-7.0	-0.3	96.6	-9.9	1204.4	-114.1
23	4	11 S1 HL--1	Max	I	-4.2	5.4	190.5	-0.6	7158.4	21.0
				J	-4.2	5.4	191.0	-0.6	4774.2	-42.0
			Min	I	-7.0	-0.3	95.7	-9.9	3607.9	-56.8
				J	-7.0	-0.3	96.1	-9.9	2408.9	-53.7
24	4	11 S1 HL--1	Max	I	-4.2	5.4	190.1	-0.6	9537.0	88.5
				J	-4.2	5.4	190.5	-0.6	7158.4	21.0
			Min	I	-7.0	-0.3	95.3	-9.9	4801.3	-60.2
				J	-7.0	-0.3	95.7	-9.9	3607.9	-56.8
25	4	11 S1 HL--1	Max	I	-4.2	5.4	189.6	-0.6	11910.1	156.0
				J	-4.2	5.4	190.1	-0.6	9537.0	88.5
			Min	I	-7.0	-0.3	94.8	-9.9	5989.2	-63.7
				J	-7.0	-0.3	95.3	-9.9	4801.3	-60.2
26	4	11 S1 HL--1	Max	I	3.8	3.9	-90.7	9.6	9264.7	72.4
				J	3.8	3.9	-90.2	9.6	11569.5	95.6
			Min	I	2.0	-1.9	-184.6	0.2	4572.8	-87.6
				J	2.0	-1.9	-184.2	0.2	5703.3	-136.4
27	4	11 S1 HL--1	Max	I	3.8	3.9	-91.1	9.6	6954.4	49.3
				J	3.8	3.9	-90.7	9.6	9264.7	72.4
			Min	I	2.0	-1.9	-185.0	0.2	3436.8	-38.7
				J	2.0	-1.9	-184.6	0.2	4572.8	-87.6
28	4	11 S1 HL--1	Max	I	3.8	3.9	-91.5	9.6	4638.6	26.2
				J	3.8	3.9	-91.1	9.6	6954.4	49.3
			Min	I	2.0	-1.9	-185.5	0.2	2295.3	10.0
				J	2.0	-1.9	-185.0	0.2	3436.8	-38.7
29	4	11 S1 HL--1	Max	I	3.8	3.9	-92.0	9.6	2317.2	59.0
				J	3.8	3.9	-91.5	9.6	4638.6	26.2
			Min	I	2.0	-1.9	-185.9	0.2	1148.3	2.9
				J	2.0	-1.9	-185.5	0.2	2295.3	10.0
30	4	11 S1 HL--1	Max	I	3.8	3.9	-92.4	9.6	-4.3	107.8
				J	3.8	3.9	-92.0	9.6	2317.2	59.0
			Min	I	2.0	-1.9	-186.4	0.2	-9.7	-20.2
				J	2.0	-1.9	-185.9	0.2	1148.3	2.9

BEAM ELEMENT FORCES & MOMENTS MIN/MAX SUMMARY BY PROPERTY PRINTOUT Unit System : kips , in

* LENGTH : the length between two nodes

[SECTION NAME : W14X219 , SECTION ID : 11 , SECTION SHAPE : H]
[SECTION SIZE] H:15.875 B1:15.875 tw:1 tf1:1.5625 B2:15.875 tf2:1.5625
** MAX

ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-z	TORSION	MOMENT-y	MOMENT-z	LENGTH
10	AXL	S1 HL-~1	1	I	7.8	1.0	-89.9	0.1	-4.2	-39.7	12.50
21	SHY	S1 HL-~1	1	I	-4.2	5.4	191.4	-0.6	2384.5	-49.9	12.50
11	SHZ	S1 HL-~1	1	J	-22.9	2.1	275.1	3.5	-2876.8	78.9	12.50
1	TOR	S1 HL-~1	1	J	-0.4	1.1	189.9	9.7	-5.6	115.4	12.50
16	MTY	S1 HL-~1	1	J	-14.2	3.7	-151.1	3.7	12947.0	100.5	12.50
25	MTZ	S1 HL-~1	1	I	-4.2	5.4	189.6	-0.6	11910.1	156.0	12.50

** MIN

ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-z	TORSION	MOMENT-y	MOMENT-z	LENGTH
15	AXL	S1 HL-~1	1	I	-34.3	-3.5	166.9	-3.6	7622.8	-137.1	12.50
9	SHY	S1 HL-~1	1	I	6.1	-4.7	-183.1	-9.2	1117.3	-106.2	12.50
20	SHZ	S1 HL-~1	1	I	-25.3	-2.4	-264.7	-3.5	-3571.8	-49.0	12.50
21	TOR	S1 HL-~1	1	J	-7.0	-0.3	97.0	-9.9	-10.7	-181.5	12.50
11	MTY	S1 HL-~1	1	J	-34.3	-3.5	169.1	-3.6	-4375.8	-42.7	12.50
21	MTZ	S1 HL-~1	1	J	-7.0	-0.3	97.0	-9.9	-10.7	-181.5	12.50

BEAM ELEMENT STRESSES DEFAULT PRINTOUT Unit System : kips , in

ELEM	MAT	SEC	LC		PT	AXIAL	SHEAR-y	SHEAR-z	(+y)-BENDING-(-y)		(+z)-BENDING-(-z)	
1	4	11	S1 HL-~1	Max	I	-0.0	0.0	10.2	-0.0	0.4	-2.5	5.1
					J	-0.0	0.0	10.2	0.1	0.7	0.0	-0.0
				Min	I	-0.0	-0.1	5.1	-0.4	0.0	-5.1	2.5
					J	-0.0	-0.1	5.1	-0.7	-0.1	0.0	-0.0
2	4	11	S1 HL-~1	Max	I	-0.0	0.0	10.2	-0.0	0.1	-5.1	10.2
					J	-0.0	0.0	10.2	-0.0	0.4	-2.5	5.1
				Min	I	-0.0	-0.1	5.1	-0.1	0.0	-10.2	5.1
					J	-0.0	-0.1	5.1	-0.4	0.0	-5.1	2.5
3	4	11	S1 HL-~1	Max	I	-0.0	0.0	10.1	0.3	0.2	-7.6	15.3
					J	-0.0	0.0	10.2	-0.0	0.1	-5.1	10.2
				Min	I	-0.0	-0.1	5.0	-0.2	-0.3	-15.3	7.6
					J	-0.0	-0.1	5.1	-0.1	0.0	-10.2	5.1
4	4	11	S1 HL-~1	Max	I	-0.0	0.0	10.1	0.7	0.3	-10.2	20.4
					J	-0.0	0.0	10.1	0.3	0.2	-7.6	15.3
				Min	I	-0.0	-0.1	5.0	-0.3	-0.7	-20.4	10.2
					J	-0.0	-0.1	5.0	-0.2	-0.3	-15.3	7.6
5	4	11	S1 HL-~1	Max	I	-0.0	0.0	10.1	1.0	0.3	-12.7	25.5
					J	-0.0	0.0	10.1	0.7	0.3	-10.2	20.4
				Min	I	-0.0	-0.1	5.0	-0.3	-1.0	-25.5	12.7
					J	-0.0	-0.1	5.0	-0.3	-0.7	-20.4	10.2
6	4	11	S1 HL-~1	Max	I	0.1	0.0	-4.7	0.6	0.4	-9.6	19.7
					J	0.1	0.0	-4.7	0.7	0.8	-12.0	24.6
				Min	I	0.1	-0.1	-9.8	-0.4	-0.6	-19.7	9.6
					J	0.1	-0.1	-9.8	-0.8	-0.7	-24.6	12.0
7	4	11	S1 HL-~1	Max	I	0.1	0.0	-4.8	0.5	0.1	-7.2	14.8
					J	0.1	0.0	-4.7	0.6	0.4	-9.6	19.7
				Min	I	0.1	-0.1	-9.8	-0.1	-0.5	-14.8	7.2
					J	0.1	-0.1	-9.8	-0.4	-0.6	-19.7	9.6
8	4	11	S1 HL-~1	Max	I	0.1	0.0	-4.8	0.4	-0.3	-4.8	9.9
					J	0.1	0.0	-4.8	0.5	0.1	-7.2	14.8
				Min	I	0.1	-0.1	-9.8	0.3	-0.4	-9.9	4.8
					J	0.1	-0.1	-9.8	-0.1	-0.5	-14.8	7.2

9	4	11 S1 HL-~1	Max	I	0.1	0.0	-4.8	0.7	-0.3	-2.4	4.9
				J	0.1	0.0	-4.8	0.4	-0.3	-4.8	9.9
			Min	I	0.1	-0.1	-9.9	0.3	-0.7	-4.9	2.4
				J	0.1	-0.1	-9.8	0.3	-0.4	-9.9	4.8
10	4	11 S1 HL-~1	Max	I	0.1	0.0	-4.8	1.0	-0.3	0.0	-0.0
				J	0.1	0.0	-4.8	0.7	-0.3	-2.4	4.9
			Min	I	0.1	-0.1	-9.9	0.3	-1.0	0.0	-0.0
				J	0.1	-0.1	-9.9	0.3	-0.7	-4.9	2.4
11	4	11 S1 HL-~1	Max	I	-0.2	0.1	14.8	0.1	0.2	2.6	-1.5
				J	-0.2	0.1	14.8	0.3	0.5	9.4	-6.2
			Min	I	-0.3	-0.1	9.1	-0.2	-0.1	1.5	-2.6
				J	-0.3	-0.1	9.1	-0.5	-0.3	6.2	-9.4
12	4	11 S1 HL-~1	Max	I	-0.2	0.1	14.8	0.0	0.1	-2.9	5.7
				J	-0.2	0.1	14.8	0.1	0.2	2.6	-1.5
			Min	I	-0.3	-0.1	9.1	-0.1	-0.0	-5.7	2.9
				J	-0.3	-0.1	9.1	-0.2	-0.1	1.5	-2.6
13	4	11 S1 HL-~1	Max	I	-0.2	0.1	14.7	0.3	0.2	-7.4	13.1
				J	-0.2	0.1	14.8	0.0	0.1	-2.9	5.7
			Min	I	-0.3	-0.1	9.0	-0.2	-0.3	-13.1	7.4
				J	-0.3	-0.1	9.1	-0.1	-0.0	-5.7	2.9
14	4	11 S1 HL-~1	Max	I	-0.2	0.1	14.7	0.6	0.4	-11.9	20.5
				J	-0.2	0.1	14.7	0.3	0.2	-7.4	13.1
			Min	I	-0.3	-0.1	9.0	-0.4	-0.6	-20.5	11.9
				J	-0.3	-0.1	9.0	-0.2	-0.3	-13.1	7.4
15	4	11 S1 HL-~1	Max	I	-0.2	0.1	14.7	0.9	0.6	-16.5	27.9
				J	-0.2	0.1	14.7	0.6	0.4	-11.9	20.5
			Min	I	-0.3	-0.1	9.0	-0.6	-0.9	-27.9	16.5
				J	-0.3	-0.1	9.0	-0.4	-0.6	-20.5	11.9
16	4	11 S1 HL-~1	Max	I	-0.1	0.1	-8.2	0.6	0.4	-11.9	20.9
				J	-0.1	0.1	-8.1	0.9	0.6	-16.0	28.0
			Min	I	-0.3	-0.1	-14.1	-0.4	-0.6	-20.9	11.9
				J	-0.3	-0.1	-14.1	-0.6	-0.9	-28.0	16.0
17	4	11 S1 HL-~1	Max	I	-0.1	0.1	-8.2	0.3	0.3	-7.8	13.8
				J	-0.1	0.1	-8.2	0.6	0.4	-11.9	20.9
			Min	I	-0.3	-0.1	-14.2	-0.3	-0.3	-13.8	7.8
				J	-0.3	-0.1	-14.1	-0.4	-0.6	-20.9	11.9
18	4	11 S1 HL-~1	Max	I	-0.1	0.1	-8.2	0.1	0.1	-3.7	6.6
				J	-0.1	0.1	-8.2	0.3	0.3	-7.8	13.8
			Min	I	-0.3	-0.1	-14.2	-0.1	-0.1	-6.6	3.7
				J	-0.3	-0.1	-14.2	-0.3	-0.3	-13.8	7.8
19	4	11 S1 HL-~1	Max	I	-0.1	0.1	-8.2	0.1	0.2	1.4	-0.3
				J	-0.1	0.1	-8.2	0.1	0.1	-3.7	6.6
			Min	I	-0.3	-0.1	-14.2	-0.2	-0.1	0.3	-1.4
				J	-0.3	-0.1	-14.2	-0.1	-0.1	-6.6	3.7
20	4	11 S1 HL-~1	Max	I	-0.1	0.1	-8.2	0.3	0.5	7.7	-4.5
				J	-0.1	0.1	-8.2	0.1	0.2	1.4	-0.3
			Min	I	-0.3	-0.1	-14.2	-0.5	-0.3	4.5	-7.7
				J	-0.3	-0.1	-14.2	-0.2	-0.1	0.3	-1.4
21	4	11 S1 HL-~1	Max	I	-0.0	0.1	10.3	0.7	-0.3	-2.6	5.1
				J	-0.0	0.1	10.3	1.2	-0.3	0.0	-0.0
			Min	I	-0.1	-0.0	5.2	0.3	-0.7	-5.1	2.6
				J	-0.1	-0.0	5.2	0.3	-1.2	0.0	-0.0
22	4	11 S1 HL-~1	Max	I	-0.0	0.1	10.3	0.3	-0.3	-5.2	10.3
				J	-0.0	0.1	10.3	0.7	-0.3	-2.6	5.1
			Min	I	-0.1	-0.0	5.2	0.3	-0.3	-10.3	5.2
				J	-0.1	-0.0	5.2	0.3	-0.7	-5.1	2.6
23	4	11 S1 HL-~1	Max	I	-0.0	0.1	10.3	0.4	0.1	-7.8	15.5
				J	-0.0	0.1	10.3	0.3	-0.3	-5.2	10.3
			Min	I	-0.1	-0.0	5.1	-0.1	-0.4	-15.5	7.8
				J	-0.1	-0.0	5.2	0.3	-0.3	-10.3	5.2
24	4	11 S1 HL-~1	Max	I	-0.0	0.1	10.2	0.4	0.6	-10.4	20.6
				J	-0.0	0.1	10.3	0.4	0.1	-7.8	15.5

			Min	I	-0.1	-0.0	5.1	-0.6	-0.4	-20.6	10.4
				J	-0.1	-0.0	5.1	-0.1	-0.4	-15.5	7.8
25	4	11 S1 HL-~1	Max	I	-0.0	0.1	10.2	0.4	1.0	-12.9	25.7
				J	-0.0	0.1	10.2	0.4	0.6	-10.4	20.6
			Min	I	-0.1	-0.0	5.1	-1.0	-0.4	-25.7	12.9
				J	-0.1	-0.0	5.1	-0.6	-0.4	-20.6	10.4
26	4	11 S1 HL-~1	Max	I	0.0	0.1	-4.9	0.6	0.5	-9.9	20.0
				J	0.0	0.1	-4.9	0.9	0.6	-12.3	25.0
			Min	I	0.0	-0.0	-9.9	-0.5	-0.6	-20.0	9.9
				J	0.0	-0.0	-9.9	-0.6	-0.9	-25.0	12.3
27	4	11 S1 HL-~1	Max	I	0.0	0.1	-4.9	0.2	0.3	-7.4	15.0
				J	0.0	0.1	-4.9	0.6	0.5	-9.9	20.0
			Min	I	0.0	-0.0	-10.0	-0.3	-0.2	-15.0	7.4
				J	0.0	-0.0	-9.9	-0.5	-0.6	-20.0	9.9
28	4	11 S1 HL-~1	Max	I	0.0	0.1	-4.9	-0.1	0.2	-5.0	10.0
				J	0.0	0.1	-4.9	0.2	0.3	-7.4	15.0
			Min	I	0.0	-0.0	-10.0	-0.2	0.1	-10.0	5.0
				J	0.0	-0.0	-10.0	-0.3	-0.2	-15.0	7.4
29	4	11 S1 HL-~1	Max	I	0.0	0.1	-4.9	-0.0	0.4	-2.5	5.0
				J	0.0	0.1	-4.9	-0.1	0.2	-5.0	10.0
			Min	I	0.0	-0.0	-10.0	-0.4	0.0	-5.0	2.5
				J	0.0	-0.0	-10.0	-0.2	0.1	-10.0	5.0
30	4	11 S1 HL-~1	Max	I	0.0	0.1	-5.0	0.1	0.7	0.0	-0.0
				J	0.0	0.1	-4.9	-0.0	0.4	-2.5	5.0
			Min	I	0.0	-0.0	-10.0	-0.7	-0.1	0.0	-0.0
				J	0.0	-0.0	-10.0	-0.4	0.0	-5.0	2.5

BEAM ELEMENT STRESSES MIN/MAX SUMMARY BY PROPERTY PRINTOUT Unit System : kips , in

[SECTION NAME : W14X219 , SECTION ID : 11 , SECTION SHAPE : H]
[SECTION SIZE] H:15.875 B1:15.875 tw:1 tf1:1.5625 B2:15.875 tf2:1.5625

** MAX

ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-Z	(+y)-BENDING	-(-y)	(+z)-BENDING	-(-z)
10	AXL	S1 HL-~1	1	I	0.1	0.0	-4.8	1.0	-0.3	0.0	-0.0
21	SHY	S1 HL-~1	1	I	-0.0	0.1	10.3	0.7	-0.3	-2.6	5.1
11	SHZ	S1 HL-~1	1	J	-0.2	0.1	14.8	0.3	0.5	9.4	-6.2
21	BY+	S1 HL-~1	1	J	-0.0	0.1	10.3	1.2	-0.3	0.0	-0.0
25	BY-	S1 HL-~1	1	I	-0.0	0.1	10.2	0.4	1.0	-12.9	25.7
11	BZ+	S1 HL-~1	1	J	-0.2	0.1	14.8	0.3	0.5	9.4	-6.2
16	BZ-	S1 HL-~1	1	J	-0.1	0.1	-8.1	0.9	0.6	-16.0	28.0

** MIN

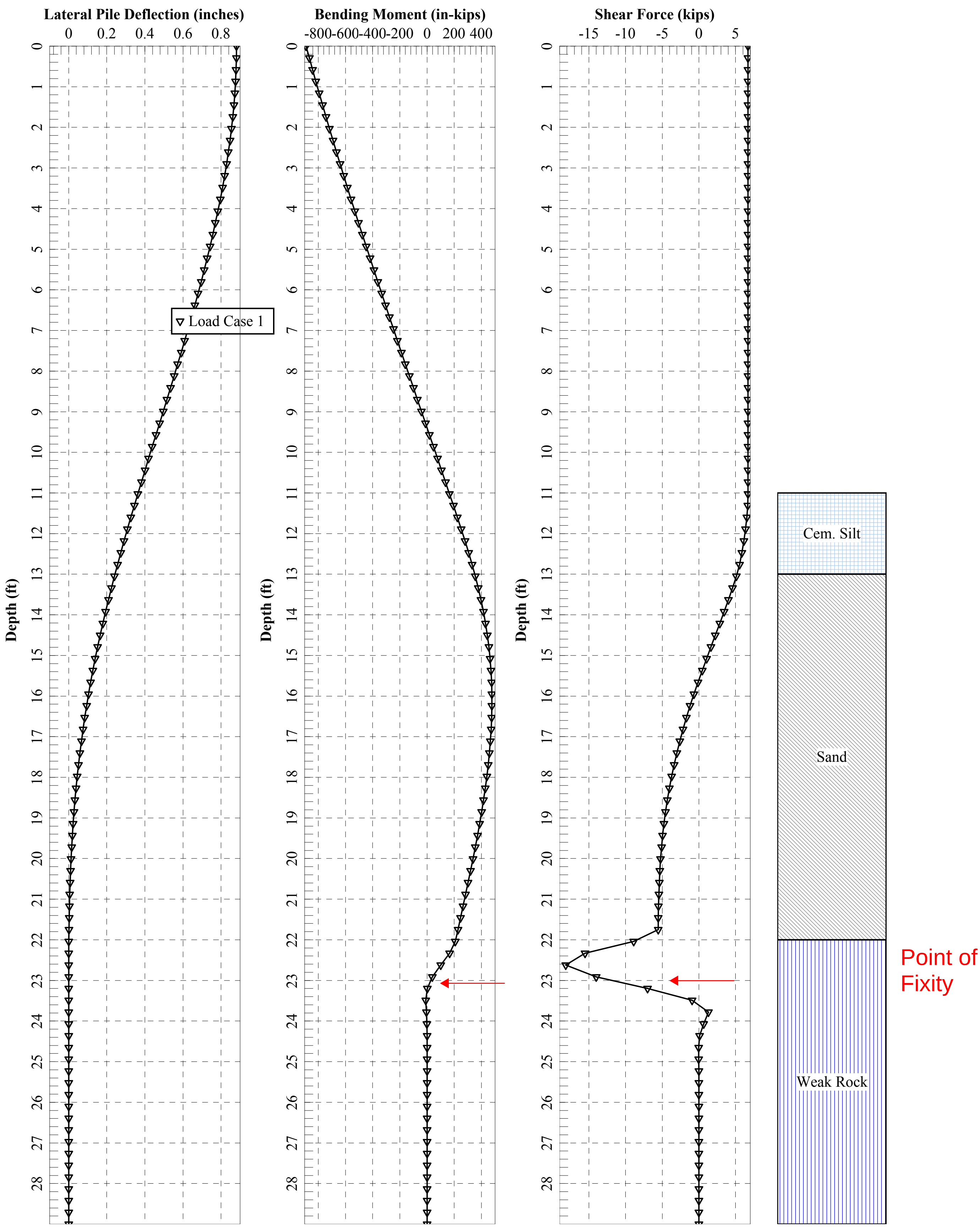
ELEM	COM	LC		PT	AXIAL	SHEAR-y	SHEAR-Z	(+y)-BENDING	-(-y)	(+z)-BENDING	-(-z)
15	AXL	S1 HL-~1	1	I	-0.3	-0.1	9.0	-0.6	-0.9	-27.9	16.5
6	SHY	S1 HL-~1	1	I	0.1	-0.1	-9.8	-0.4	-0.6	-19.7	9.6
20	SHZ	S1 HL-~1	1	I	-0.3	-0.1	-14.2	-0.5	-0.3	4.5	-7.7
25	BY+	S1 HL-~1	1	I	-0.1	-0.0	5.1	-1.0	-0.4	-25.7	12.9
21	BY-	S1 HL-~1	1	J	-0.1	-0.0	5.2	0.3	-1.2	0.0	-0.0
16	BZ+	S1 HL-~1	1	J	-0.3	-0.1	-14.1	-0.6	-0.9	-28.0	16.0
11	BZ-	S1 HL-~1	1	J	-0.3	-0.1	9.1	-0.5	-0.3	6.2	-9.4

REACTION FORCES & MOMENTS DEFAULT PRINTOUT Unit System : kips , in

Node	LC		FX	FY	FZ	MX	MY	MZ

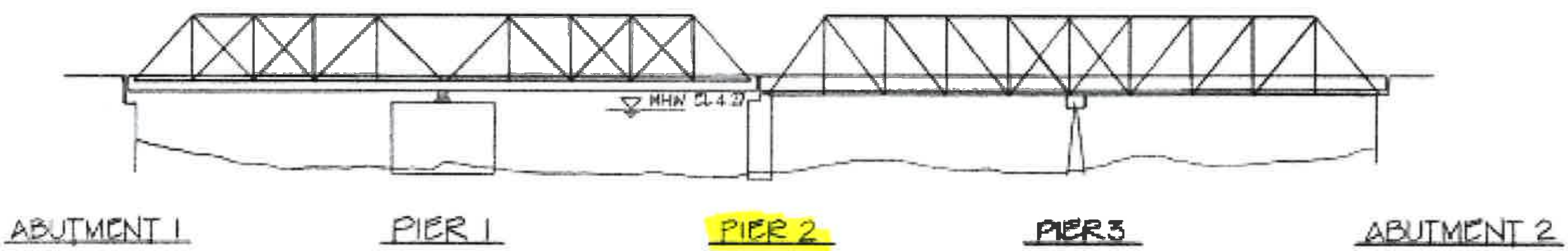
SUMMATION OF REACTION FORCES

LC		SUM-FX	SUM-FY	SUM-FZ



Lateral Pile Deflection (inches)
Bending Moment (in-kips)
Shear Force (kips)
Depth (ft)
Load Case 1
Cem. Silt
Sand
Weak Rock
Point of Fixity

1



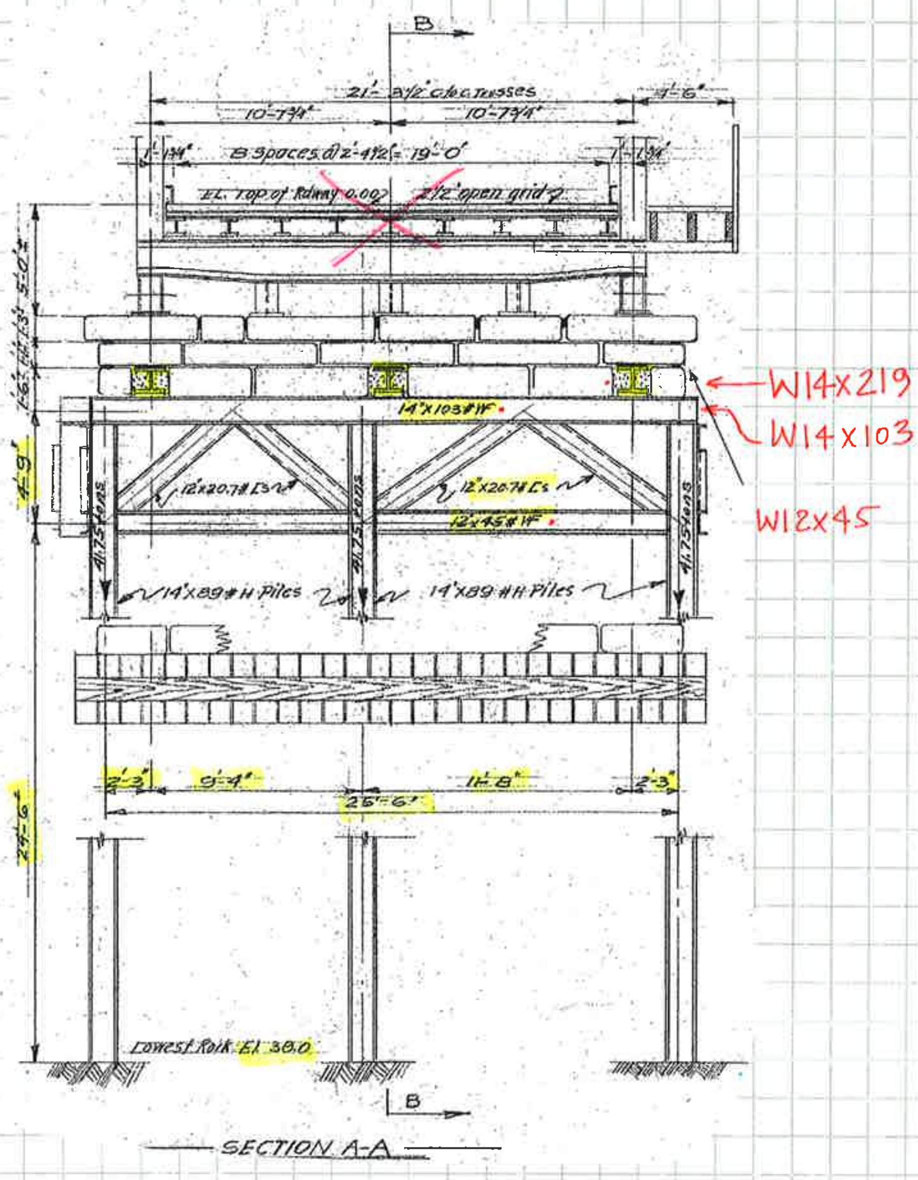
ELEVATION
SCALE: 1" = 30'

Close, Jensen and Miller, P.C.

BY: BA DATE: 11/11/2015 SUBJECT: BR. 1349 SHEET NO. 2 OF

CHKD. BY DATE US RTE 136 O/ SAUGATUCK RIVER JOB NO. EXIST. 158-150

PIER 2 ANALYSIS WESTPORT



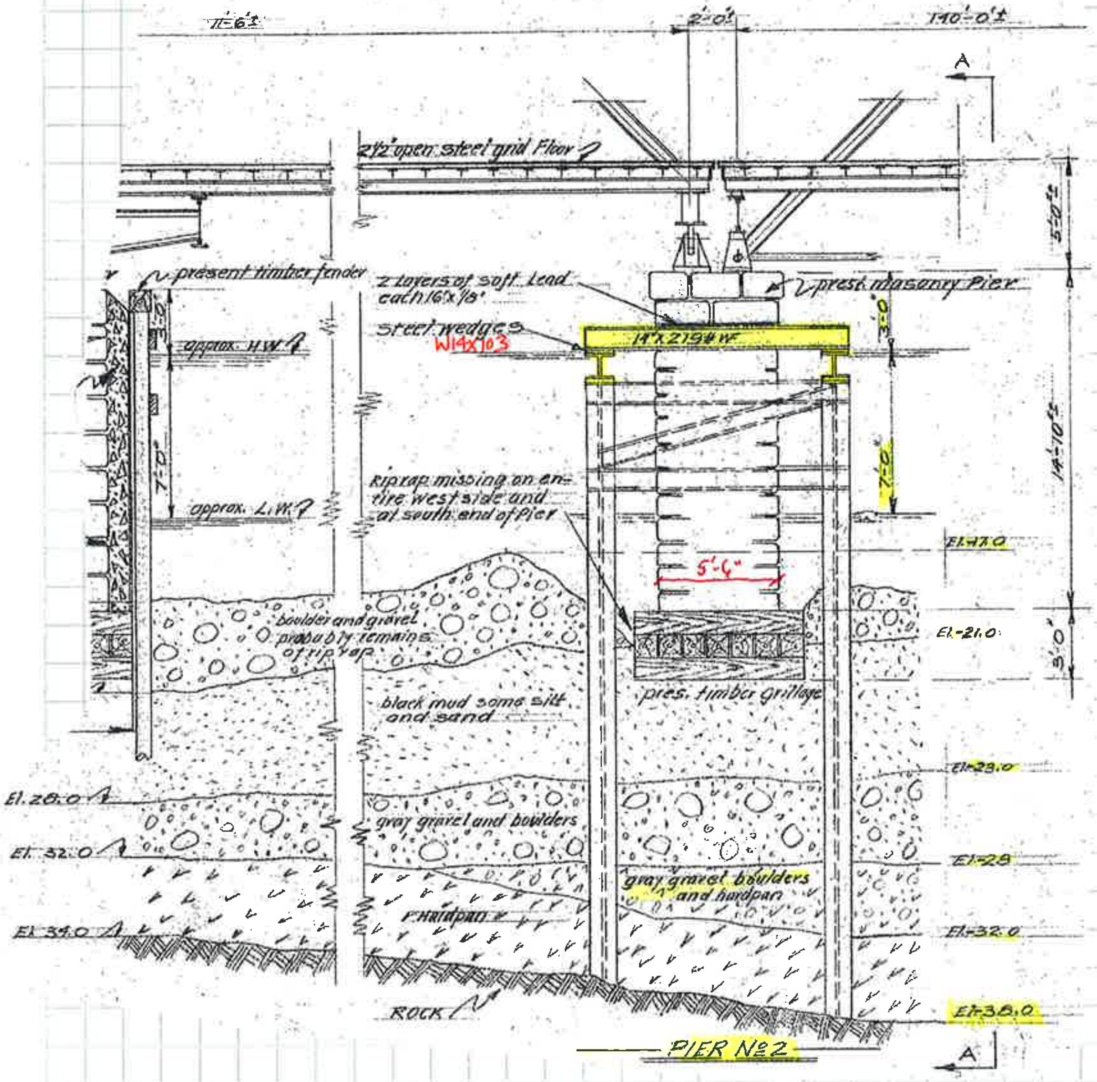
EXIST. PIER 2

Close, Jensen and Miller, P.C.

BY: BA DATE: 11/11/15 SUBJECT: BR. 1349 SHEET NO. 3 OF

CHKD. BY DATE US RTE 136 O/ SAUGATUCK RIVER JOB NO. EXIST. 158-150

PIER 2 ANALYSIS WESTPORT

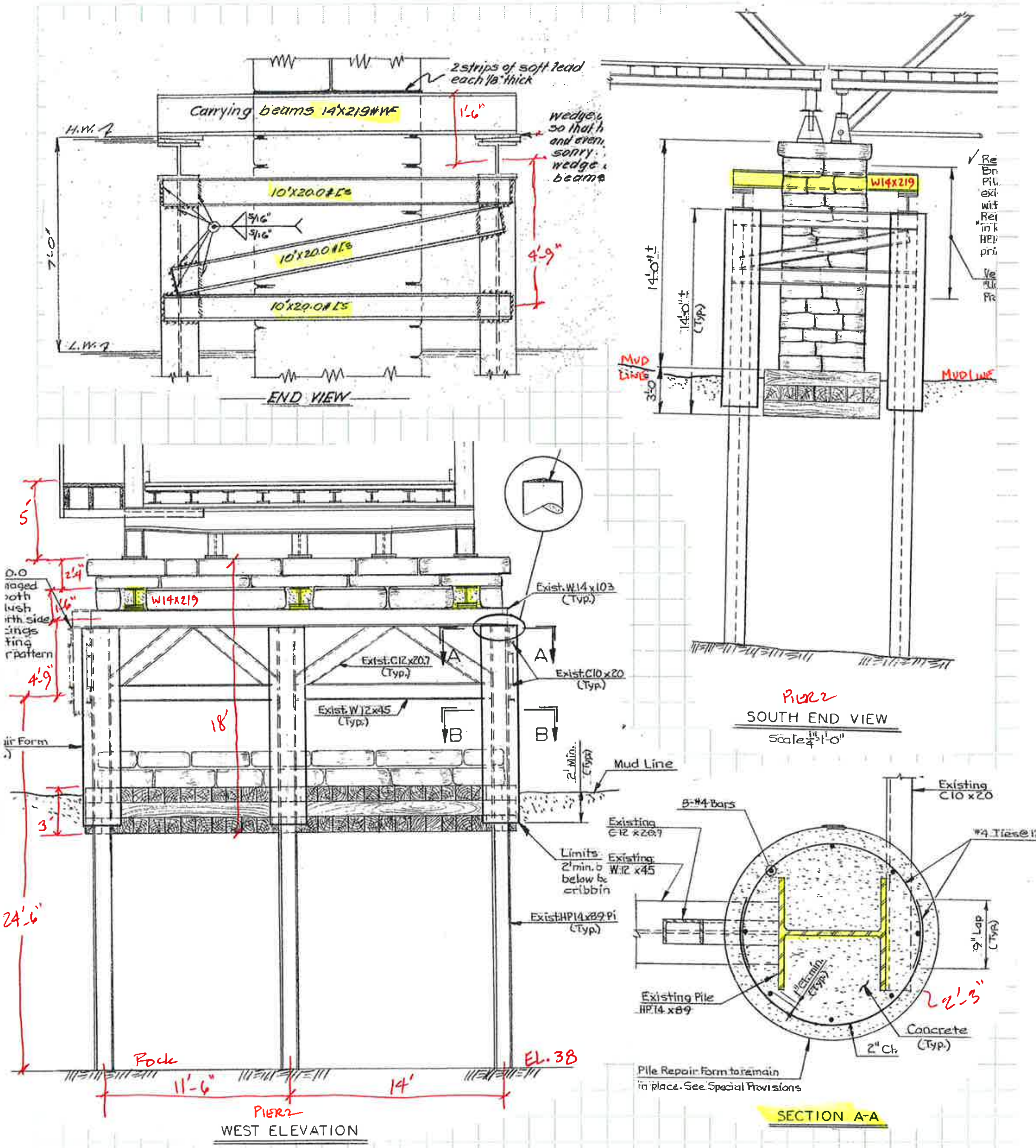


Close, Jensen and Miller, P.C.

BY BA DATE 11/11/15 SUBJECT BR. 1349 SHEET NO. 4 OF

CHKD. BY DATE U.S. RTE 136 o/ SAUGATUCK RIVER JOB NO. EXIST. 158-150

PIER 2 ANALYSIS WESTPORT



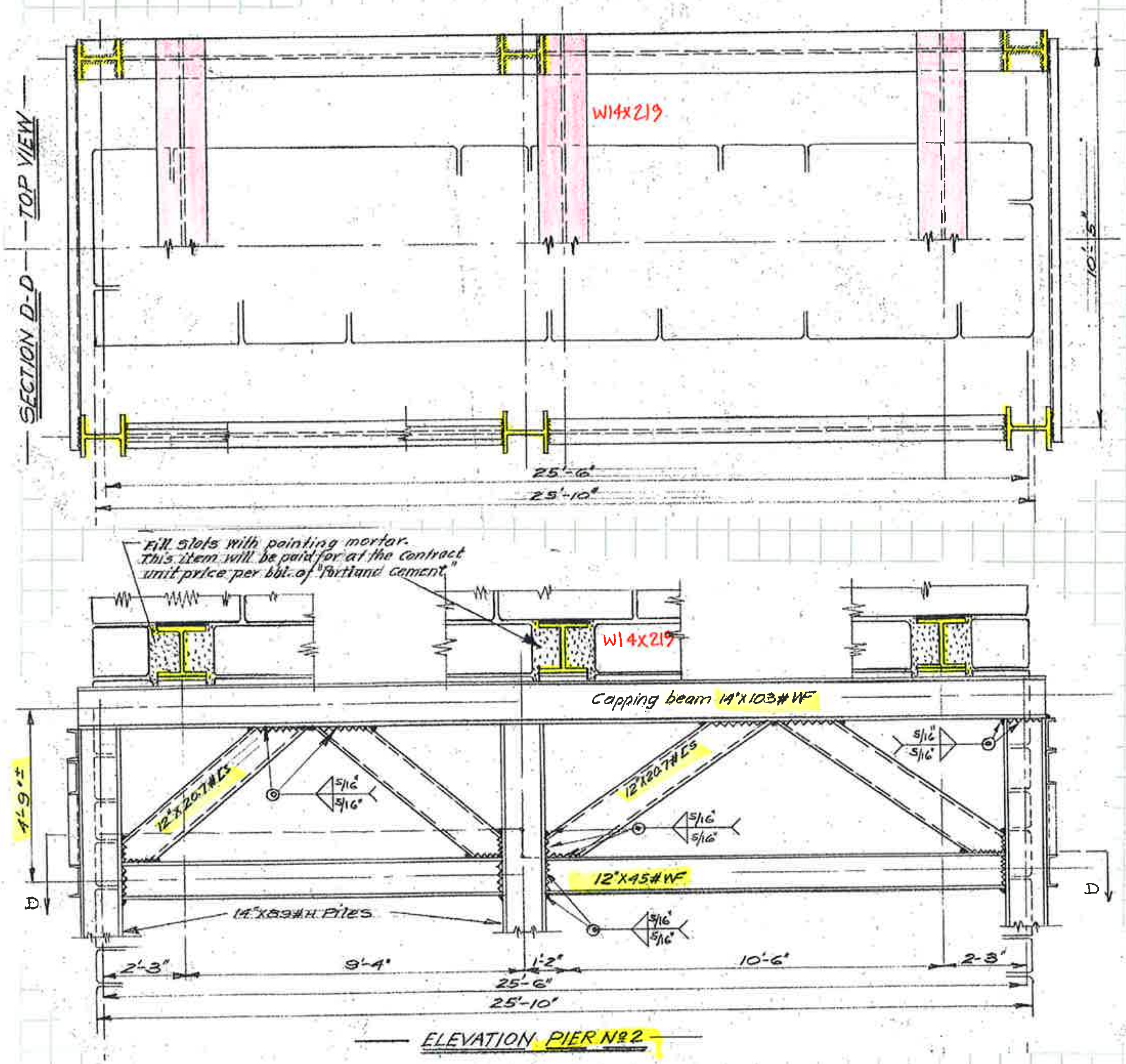
EXIG PIER 2

Close, Jensen and Miller, P.C.

BY BA DATE 11/11/15 SUBJECT BR. 1349 SHEET NO. 5 OF

CHKD. BY DATE US RTE 136 o/ SAUGATUCK RIVER JOB NO. EDIST. 158-150

PIER 2 ANALYSIS WESTPORT

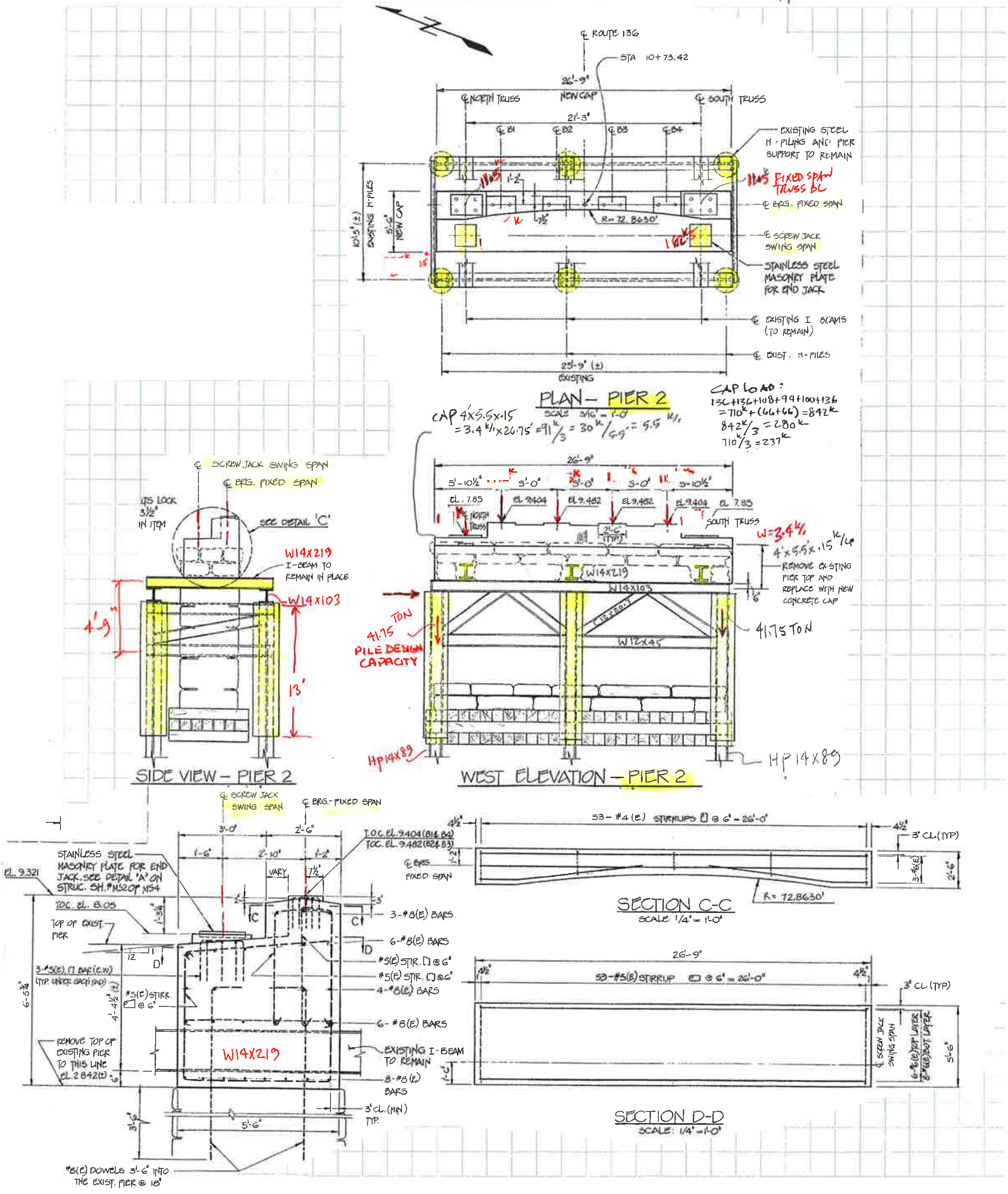


Close, Jensen and Miller, P.C.

BY BA DATE 11/11/15 SUBJECT BR. 1349 SHEET NO. 6 OF

CHKD. BY DATE US RTE 136 O/SAUGATUCK RIVER JOB NO. EXIST. 158-150

PIER 2 ANALYSIS WESTPORT



FIXED SPAN - SPANS 3 AND 4

SIDE TRUSSES

NO.	MEMBER	AREA (in^2)	AREA (ft^2)	LENGTH (ft)	UNIT WEIGHT (pcf)		WEIGHT (lbs)	SIDES		WEIGHT (kips)
1	L0L1	7.109	0.049	14.000	490	=	338.665	2	=	0.677
2	L1L2	10.359	0.072	14.000	490	=	493.491	2	=	0.987
3	L2L3	10.359	0.072	14.000	490	=	493.491	2	=	0.987
4	L3L4	10.359	0.072	14.000	490	=	493.491	2	=	0.987
5	L4L5	7.109	0.049	14.000	490	=	338.665	2	=	0.677
6	L5L6	7.109	0.049	14.000	490	=	338.665	2	=	0.677
7	L6L7	10.359	0.072	14.000	490	=	493.491	2	=	0.987
8	L7L8	10.359	0.072	14.000	490	=	493.491	2	=	0.987
9	L8L9	10.359	0.072	14.000	490	=	493.491	2	=	0.987
10	L9L10	7.109	0.049	14.000	490	=	338.665	2	=	0.677
11	U1U2	7.109	0.049	14.000	490	=	338.665	2	=	0.677
12	U2U3	7.109	0.049	14.000	490	=	338.665	2	=	0.677
13	U3U4	7.109	0.049	14.000	490	=	338.665	2	=	0.677
14	U4U5	7.109	0.049	14.000	490	=	338.665	2	=	0.677
15	U5U6	7.109	0.049	14.000	490	=	338.665	2	=	0.677
16	U6U7	7.109	0.049	14.000	490	=	338.665	2	=	0.677
17	U7U8	7.109	0.049	14.000	490	=	338.665	2	=	0.677
18	U8U9	7.109	0.049	14.000	490	=	338.665	2	=	0.677
19	L0U1	7.109	0.049	22.492	490	=	544.098	2	=	1.088
20	L1U1	4.760	0.033	17.604	490	=	285.139	2	=	0.570
21	L2U1	10.453	0.073	22.492	490	=	800.036	2	=	1.600
22	L2U2	4.760	0.033	17.604	490	=	285.139	2	=	0.570
23	L3U2	10.453	0.073	22.492	490	=	800.036	2	=	1.600
24	L3U3	4.760	0.033	17.604	490	=	285.139	2	=	0.570
25	L4U3	10.453	0.073	22.492	490	=	800.036	2	=	1.600
26	L4U4	4.760	0.033	17.604	490	=	285.139	2	=	0.570
27	L4U5	3.125	0.022	22.492	490	=	239.177	2	=	0.478
28	L5U4	1.530	0.011	22.492	490	=	117.101	2	=	0.234
29	L5U5	4.760	0.033	17.604	490	=	285.139	2	=	0.570
30	L5U6	3.125	0.022	22.492	490	=	239.177	2	=	0.478
31	L6U5	1.530	0.011	22.492	490	=	117.101	2	=	0.234
32	L6U6	4.760	0.033	17.604	490	=	285.139	2	=	0.570
33	L6U7	10.453	0.073	22.492	490	=	800.036	2	=	1.600
34	L7U7	4.760	0.033	17.604	490	=	285.139	2	=	0.570
35	L7U8	10.453	0.073	22.492	490	=	800.036	2	=	1.600
36	L8U8	4.760	0.033	17.604	490	=	285.139	2	=	0.570
37	L8U9	10.453	0.073	22.492	490	=	800.036	2	=	1.600
38	L9U9	4.760	0.033	17.604	490	=	285.139	2	=	0.570
39	L10U9	7.109	0.049	22.492	490	=	544.098	2	=	1.088
								TOTAL	**=**	**32.384** kips

TOP AND BOTTOM CROSS FRAMES

NO.	MEMBER	AREA (in^2)	AREA (ft^2)	LENGTH (ft)	UNIT WEIGHT (pcf)		WEIGHT (lbs)	SIDES		WEIGHT (kips)
1	U1	4.760	0.033	21.250	490	=	344.191	1	=	0.344
2	U2	4.760	0.033	21.250	490	=	344.191	1	=	0.344
3	U3	4.760	0.033	21.250	490	=	344.191	1	=	0.344
4	U4	4.760	0.033	21.250	490	=	344.191	1	=	0.344
5	U5	4.760	0.033	21.250	490	=	344.191	1	=	0.344
6	U6	4.760	0.033	21.250	490	=	344.191	1	=	0.344
7	U7	4.760	0.033	21.250	490	=	344.191	1	=	0.344
8	U8	4.760	0.033	21.250	490	=	344.191	1	=	0.344
9	U9	4.760	0.033	21.250	490	=	344.191	1	=	0.344
10	U1U2	1.000	0.007	25.447	490	=	86.591	2	=	0.173
11	U2U1	1.000	0.007	25.447	490	=	86.591	2	=	0.173
12	U2U3	1.000	0.007	25.447	490	=	86.591	2	=	0.173
13	U3U2	1.000	0.007	25.447	490	=	86.591	2	=	0.173
14	U3U4	1.000	0.007	25.447	490	=	86.591	2	=	0.173
15	U4U3	1.000	0.007	25.447	490	=	86.591	2	=	0.173
16	U4U5	1.000	0.007	25.447	490	=	86.591	2	=	0.173
17	U5U4	1.000	0.007	25.447	490	=	86.591	2	=	0.173
18	U5U6	1.000	0.007	25.447	490	=	86.591	2	=	0.173
19	U6U5	1.000	0.007	25.447	490	=	86.591	2	=	0.173
20	U6U7	1.000	0.007	25.447	490	=	86.591	2	=	0.173
21	U7U6	1.000	0.007	25.447	490	=	86.591	2	=	0.173
22	U7U8	1.000	0.007	25.447	490	=	86.591	2	=	0.173
23	U8U7	1.000	0.007	25.447	490	=	86.591	2	=	0.173
24	U8U9	1.000	0.007	25.447	490	=	86.591	2	=	0.173
25	U9U8	1.000	0.007	25.447	490	=	86.591	4	=	0.346
								TOTAL	**=**	**6.042** kips

TOAL WEIGHT OF TRUSS	38.426	kips
ADD 15% FOR CROSS BARS	5.764	kips
	44.190	kips
Say:	**45**	**kips**
WEIGHT PER BEARING (4 EA)	11.250	kips
Say:	**11.5**	**kips**

@ FIXED SPAN
TRUSS DL

Close, Jensen and Miller, P.C.

Assuming based on borings and As-builts

embedment depth = 18ft

Layer 1: Silt (2ft deep)

γ = 120 pcf N_{avg} = 2
c = 500 psf
ϕ = 10°
K = 18 pci

Layer 2: Sand (9ft deep)

γ = 125 pcf N_{avg} = 27
ϕ = 38°
K = 25 pci

Layer 3: Gravel/sand (7ft deep)

γ = 125 pcf N_{avg} = 23
ϕ = 40°

Layer 4: Bed rock

γ = 160 pcf
ν = .25 (AASHTO Table C10.4.6.3-1)
E = 4130 ksi (AASHTO Table C10.4.6.5-1)
σ_c = 1670 ksf (AASHTO Figure 10.4.6.2.4-1)

Maximum load occur at Limit State Strength I

Axial load = 173.71 kips

horizontal load = 17.15 kips

Close, Jensen and Miller, P.C.

BY BA DATE 6/1/2016 SUBJECT REHABILITATION STUDY SHEET NO. ... OF ...
CHKD. BY ... DATE ... BR. 1349 JOB NO. 158-212
PIER 2 PILE ANALYSIS RTE 136 O/ SAUGATUCK RIVER WESTPORT

PIER 2 ANALYSIS: (PILES HP 14X89)

MAXIMUM AXIAL LOAD = 350.4^{k}

MAXIMUM MOMENT = 1131.13 k-in

L-PILE ANALYSIS FOR HS-20

DETERMINE NOMINAL AXIAL STRUCTURE PILE RESISTANCE

DETERMINE POINT OF FIXITY

$$1.8\left[E_p I_w / n_h\right]^{.2}$$ (AASHTO C10.7.3.13.4-2)

$E_p = 29000$ ksi

$I_w = (326\ in^4)(1/12_{in})^4 = .0157\ ft^4$

$n_h = .556$ (AASHTO TABLE C10.4.6.3-2)

$$1.8\left[(29000 \times .0157)/.556\right]^{.2} = 6.9\ ft$$

UNBRACED LENGTH ESTIMATED

$$\ell = D_{cp} + D_{FIXITY} = (18'-3.8'-3') + 6.9 \cong 18.1\ ft$$

DETERMINE SLENDERNESS

$$b/2t < .56\sqrt{E/F_y}$$ (AISC TABLE B4.1a)

$$b/2t = 14.75/2(5/8) = 11.8$$

$$.56\sqrt{\frac{29000}{36}} = 15.9$$ (Q=1) NOT SLENDER

ELASTIC FLEXURAL BUCKLING RESISTANCE:

$$P_e = \pi^2 E A_g \Big/ \left(\frac{K\ell}{r_s}\right)^2 \quad \text{(AASHTO 6.9.4.1.2-1)}$$

$K = 2$ (AASHTO 4.6.2.5)

$$P_e = \frac{\pi^2 (29000)(26.1)}{\left(\frac{2 \times 18.1 \times 12}{3.53}\right)^2} = 493.3^{k}$$

$P_e / P_o \longrightarrow P_o = F_y A_g Q$ (AASHTO 6.9.4.1.1)

$P_o = 36 \times 26.1 \times 1 = 939.6^{k}$

$P_e / P_o = 493.3 / 939.6 = .525 \qquad P_e / P_o \geq .44$

$$P_n = .658^{(P_o/P_e)} P_o \quad \text{(AASHTO 6.9.4.1.1-1)}$$

$$P_n = .658^{(1.905)} (939.6) = 423.3^{kips}$$

TORSIONAL BUCKLING:

$$P_e = \left[\frac{\pi^2 E C_w}{(K_z \ell_z)^2} + GJ\right] \frac{A_g}{I_x + I_y} \quad \text{(AASHTO 6.9.4.1.3-1)}$$

$G = .385E = .385(29000) = 11165$ ksi $\qquad C_w = I_y h^2 / 4$

$$P_e = \left[\frac{\pi^2 (29000)(14232)}{(1 \times 18.1 \times 12)^2} + (11165)(3.59)\right] \frac{26.1}{904 + 326} = 2683 \text{ kips}$$

$P_e / P_o = 2683 / 939.6 = 2.86 \qquad P_e / P_o \geq .44$ (AASHTO 6.9.4.1.1)

$$P_n = .658^{(939.6/2683)} (939.6) = 811.5^{kips}$$

P_n = LESSER OF TWO

$P_n = 423.3^{kips}$

Close, Jensen and Miller, P.C.

BY: EA DATE: 6/1/2016 SUBJECT: REHABILITATION STUDY SHEET NO. ____ OF ____

CHKD. BY ____ DATE ____ BR. 1349 JOB NO. 158-212

RTE 136 O/ SAUGATUCK RIVER WESTPORT

L PILE POINT OF FIXITY @ 24' FROM TOP OF PILE:

$$P_e = \frac{\pi^2(29000)(26.1)}{\left(1.2 \times 24 \times 12 / 3.53\right)^2} = 779.4^k \qquad k = 1.2 \qquad \text{AASHTO } 4.6.2.5$$

$$P_e / P_o = 779.4^k / 939.6 = .83 \qquad P_e / P_o \overset{\text{IF}}{<} .44 \qquad P_n = .877 P_e$$

$$P_n = .658^{(939.6/779.4)}(939.6) = 567.3^k$$

NOMINAL AXIAL GEOTECHNICAL RESISTANCE:

$q_p = 3 q_u K_{sp} d$ (NOMINAL UNIT BEARING RESISTANCE ON ROCK)

$$K_{sp} = \frac{3 + S_d/D}{10\left(1 + 300\, t_d/S_d\right)^{.5}} = \frac{3 + 1/1.22}{10\left(1 + 300\,(0/1)\right)^{.5}} = .382$$

$S_d = 1'$

$t_d = 0'$

$D = 14.75 / 12_{in} = 1.22'$

$H_s = 0$

$D_s = 1'$

$d = 1 + .4\, H_s/D_s = 1 + .4(0/1) = 1$

$q_u = 11600$ psi (AVERAGE COMPRESSION STRENGTH FOR ROCK TABLE 3-11)

$$q_p = 3(.382)\left(\frac{11600 \times 144}{1000}\right)(1) = 1914.3 \text{ ksf} \simeq 1920^{\text{ksf}}$$

$Q_p = q_p A_p$ (AASHTO 10.7.3.8.6 a-3)

$A_p = (13.83")(14.695") = 203.23 \text{ in}^2$

$$Q_p = (1914.3 \text{ ksf})(203.23 \text{ in}^2)\left(\frac{1 \text{ ft}^2}{144 \text{ in}^2}\right) = 2701.7 \text{ K}$$

NOMINAL AXIAL RESISTANCE

$Q_{nom} = 2700^{\text{kips}}$

Close, Jensen and Miller, P.C.

BY: BA DATE: 6/1/2016 SUBJECT: REHABILITATION STUDY SHEET NO. ____ OF ____
CHKD. BY ____ DATE ____ BR. 1349 JOB NO. 158-212
RTE 136 O/ SAUGATUCK RIVER WESTPORT

FACTORED AXIAL STRUCTURAL RESISTANCE FOR A SINGLE PILE:

$P_r = \phi_c P_n$ (AASHTO 6.9.2.1-1)

$\phi_c = .6$ (AASHTO 6.5.4.2)

$P_n = 567.3^k$ $P_n = 423.3^k$

$P_r = .6(567.3^k) = \underline{340.4^k}$ $P_r = .6(423.3^k) = 254^k$

$P_n / P_r \geq .2$ $P_n < P_r = \phi P_n$ USE FROM CALCULATED UNBRACED LENGTH

FACTORED AXIAL GEOTECHNICAL RESISTANCE FOR SINGLE PILE:

$Q_R = \phi_b Q_p$ (AASHTO 10.7.3.8.6a-1)

$\phi_b = .5$ (AASHTO 10.5.5.2.3-1) END BEARING ON ROCK

$Q_p = 2700^k$

$Q_R = .5(2700^k) = 1350^k$

FROM A-PILE

$Q_R = 520^k$ MAX. FACTORED GEOTECHNICAL AXIAL RESISTANCE

FROM MIDAS

$F_{VERT_{MAX}} = 350^k$ MAX. FACTORED AXIAL PILE LOAD $C/D = 254^k / 350^k = .73$

$F_y = 350.4^k$ $F_x = 8.4^k$ $M_y = 1131.1$ k-in
MAX. FACTORED MOMENT LOAD
@ PT. OF FIXITY

FROM L-PILE

$M_y = 1131.13$ k-in

EVALUATE PILE HEAD FIXITY:

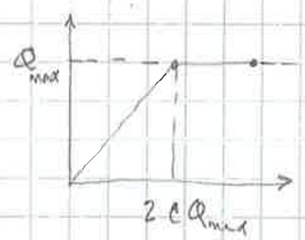
BRACING LOCATION = 4.75' = 57"

ASSUME PILE HEAD FIXITY FOR PILE STRESS & NO PILE HEAD FIXITY FOR DEFLECTION.

PILE SOIL INTERACTION ANALYSIS:

$Q_{max} = 2700^{kips}$

$\rho_{BASE} = \Sigma P_i I_p / D_s E_r$



$P_i = Q_{max} \times .5 = 1350$ TON

$I_p = 1.1$ (INFLUENCE COEFFICIENT)

$D_s = 14.695$ (DIAMETER)

$E_r = K_c E_i$ (MODULUS OF ELASTICITY OF ROCK)

$K_c = .74$

$E_i = 108000$ TSF (BASED ON SOIL PROPERTIES)

$E_r = .74(108000) = 79920$ TSF

$$\rho_{BASE} = \frac{(1350^{TONS})(1.1)}{(14.695)(79920)\left(1 \, ft^2/144 \, in^2\right)} = .182''$$

GEOTECHNICAL AXIAL CAPACITY

P_{max} = MAX. FACTORED AXIAL PILE LOAD = 350.4^k HS-20

M_n = MAX. FACTORED MOMENT LOAD = 1131.13 K-IN

OCCURED WHEN PILE HEAD WAS ASSUMED TO BE FIXED IN L-PILE

MAX. FACTORED GEOTECHNICAL AXIAL RESISTANCE $Q_r = 520^k$

MAX. FACTORED STRUCTURAL AXIAL RESISTANCE $P_r = 340.4^k$

PILE PROPERTIES HP 14X89 (36 ksi)

$I_x = 904 \text{ in}^4$ $I_y = 326 \text{ in}^4$ $S_x = 131 \text{ in}^3$ $S_y = 44.3 \text{ in}^3$

MAXIMUM SERVICE LOAD PER PILE FOR AN ASSUMED 1" DEFLECTION IS

$\text{ALLOW. MOM.} = 44.3^{\text{in}^3} \times 36^{\text{ksi}} \times .9 = 1435 \text{ k-in} = 119.6 \text{ k-ft}$

NOMINAL FLEXURAL RESISTANCE:

IF $\lambda_f < \lambda_{pf}$ ...

$M_{ny} = M_p$ (AASHTO 6.12.2.2.1-1)

$\lambda_f = b_f / 2t_f$ (AASHTO 6.12.2.2.1-3)

$\lambda_f = 14.75 / 2(5/8) = 11.8$

$\lambda_{pf} = .38\sqrt{E/F_y} = .38\sqrt{29000/36} = 10.8$ (AASHTO 6.12.2.2.1-4)

$\lambda_{pf} < \lambda_f$ NOT SATISFIED

IF $\lambda_{pf} < \lambda_f < \lambda_{rf}$ ...

$$M_{ny} = \left[1 - \left(1 - \frac{S_y}{Z_y}\right)\left[\frac{\lambda_f - \lambda_{pf}}{.45\sqrt{\frac{E}{F_y}}}\right]\right] F_y Z_y$$ (AASHTO 6.12.2.2.1-2)

$\lambda_{rf} = .83\sqrt{E/F_y} = .83\sqrt{\frac{29000}{36}} = 23.6$ (AASHTO 6.12.2.2.1-5)

$$M_{ny} = \left[1 - \left(1 - \frac{44.3}{67.7}\right)\left(\frac{11.8 - 10.8}{.45\sqrt{\frac{29000}{36}}}\right)\right](36 \times 67.7) = 2371 \text{ k-in}$$

$M_{nx} = F_y Z_x = 36 \times 146 = 5256 \text{ k-in}$

$\phi_f = 1$ (AASHTO 6.5.4.2)

$M_{ry} = \phi_f M_{ny} = (1)(2371) = 2371 \text{ k-in}$ (AASHTO 6.12.1.2.1-1)

$M_{rx} = \phi_f M_{nx} = (1)(5256) = 5256 \text{ k-in}$ (AASHTO 6.12.1.2.1-1)

FACTORED MOMENT RESISTANCE ABOUT THE WEAK AXIS

COMBINED AXIAL COMPRESSION & FLEXURE:

$P_u = 350.4^k$ APPLIED FACTORED AXIAL LOAD

$P_r = 340.4^k$ FACTORED COMPRESSIVE STRUCTURAL PILE RESISTANCE

$P_u / P_r = 350.4^k / 340.4^k = 1.03 \geq .2$ ✓ $P_u < P_r = \phi P_n$ 254^k

$$\frac{P_u}{P_r} + \frac{8}{9}\left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) < 1$$ (AASHTO 6.9.2.2-2)

ABOUT WEAK AXIS:

$$1.03 + \frac{8}{9}\left(\frac{0}{5256} + \frac{1131.13}{2371}\right) = 1.45 > 1$$ N.G.

HS-20
RATING = .688
HP14x89

PIER 2 PILE ANALYSIS

$$C/D_{\text{AXIAL RATIO}} = \frac{340.4^k}{350.4^k} = .97 \quad \text{HS20}$$

AASHTO 6.5.4.2

$$\left(1.03 \times \frac{.6}{.8}\right) + 1 \times \frac{8}{9}\left(\frac{1131.13}{2371}\right) = 1.197 > 1$$

.775 .424

AASHTO 6.9.2.2
6.5.4.2

Close, Jensen and Miller, P.C.

BY BA DATE 6/1/2016 SUBJECT REHABILITATION STUDY SHEET NO. ____ OF ____
CHKD. BY ____ DATE ____ BR. 1349 JOB NO. 158-212
RTE 136 O/ SAUGATUCK RIVER WESTPORT

CHECK STRUCTURAL SHEAR CAPACITY :

$V_n = V_{cr} = CV_p$ (AASHTO 6.10.9.2-1)

$V_p = .58 F_{yw} D t_w$ (AASHTO 6.10.9.2-2)

$F_{yw} = 36$ ksi

$D = 13.83$ in

$t_w = 5/8$ in

$V_p = .58(36)(13.83)(.625) = 180.48$ kips

SOLVE FOR C $D/t_w < 1.12\sqrt{Ek/F_y}$ (AASHTO 6.10.9.3.2-4)

$k = 5$

$D/t_w = 13.83/.625 = 22.2$ $C = 1.0$

$1.12\sqrt{29000 \times 5/36} = 71.08$

$V_n = V_{cr} = (1.0)(180.48) = 180.48$ kips

$V_r = \phi_v V_n = (1.0)(180.48) = 180.48^k$ $\phi_v = 1$ (AASHTO 6.5.4.2)

(AASHTO 6.10.9.1-1)

$V_r > V = 8.4^k$ OK

Close, Jensen and Miller, P.C.

BY BA DATE 6/1/2016 SUBJECT REHABILITATION STUDY SHEET NO. ..... OF .....

CHKD. BY ..... DATE ..... BR. 1349 JOB NO. 15B-212

RTE 136 O/SAUGATUCK RIVER WESTPORT

CHECK DEFLECTION:

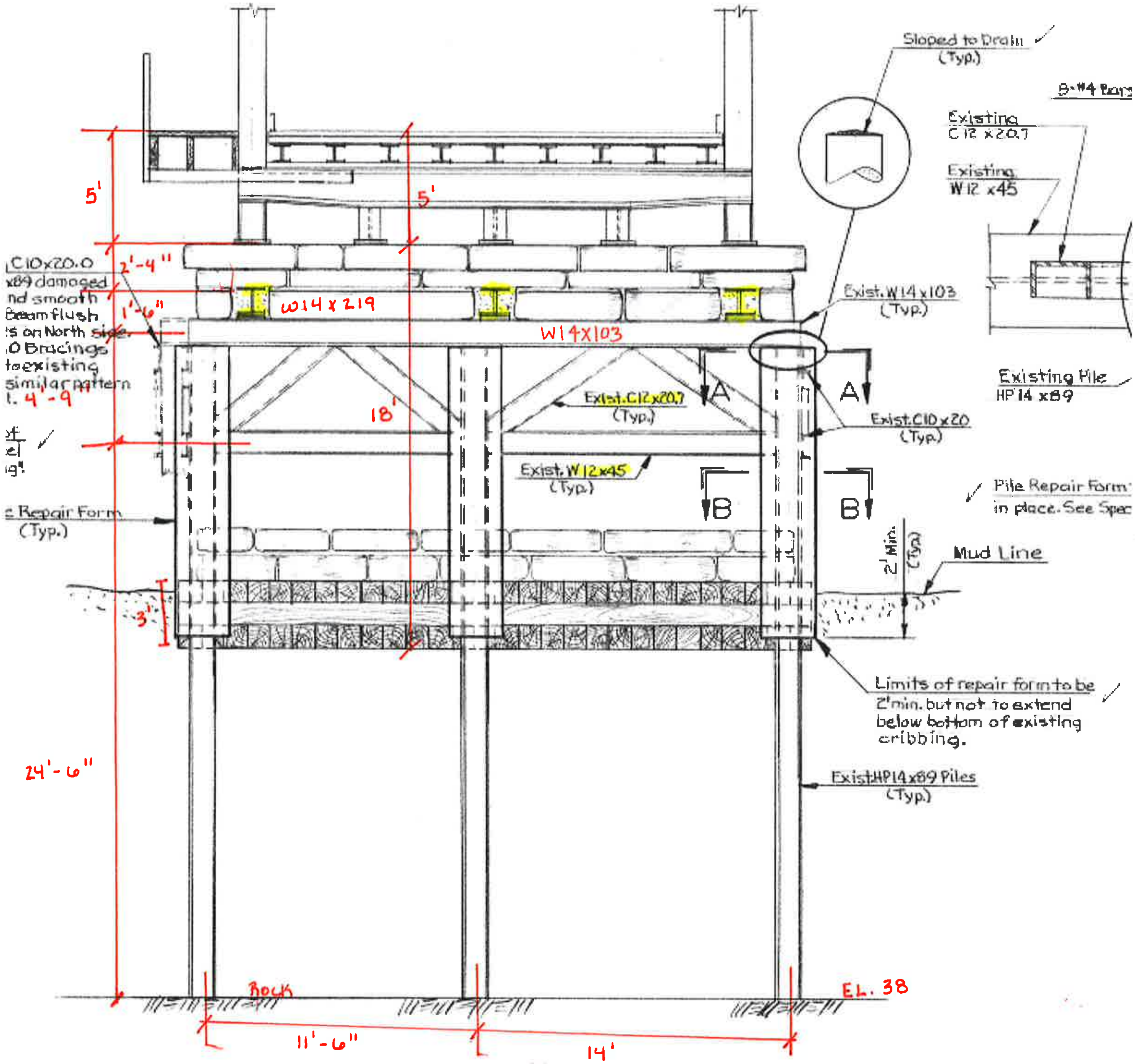
APPROXIMATE DEFLECTION $\Delta_x = (\text{horizontal load})(N_{piles}) / R_t$

$R_t = K_h A$

$K_h = 18$ pci

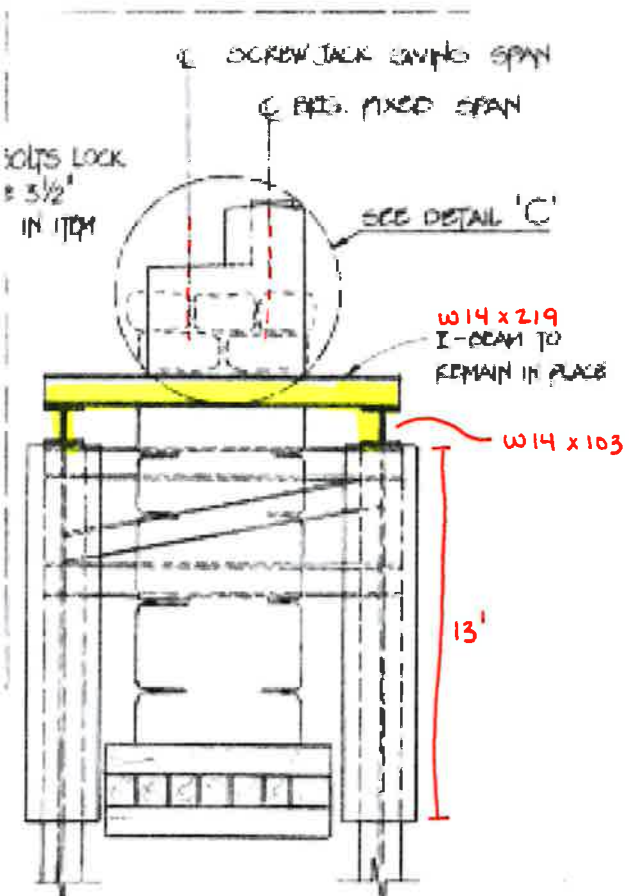
$$\Delta_x = \frac{8.4^k \times 1000 \times 1^{\text{pile}}}{18 \text{ pci} \times (14.7 \times 13.83)} = 2.3''$$

ACTUAL DEFLECTION CALCULATED FROM L-PILE 1.5" USE



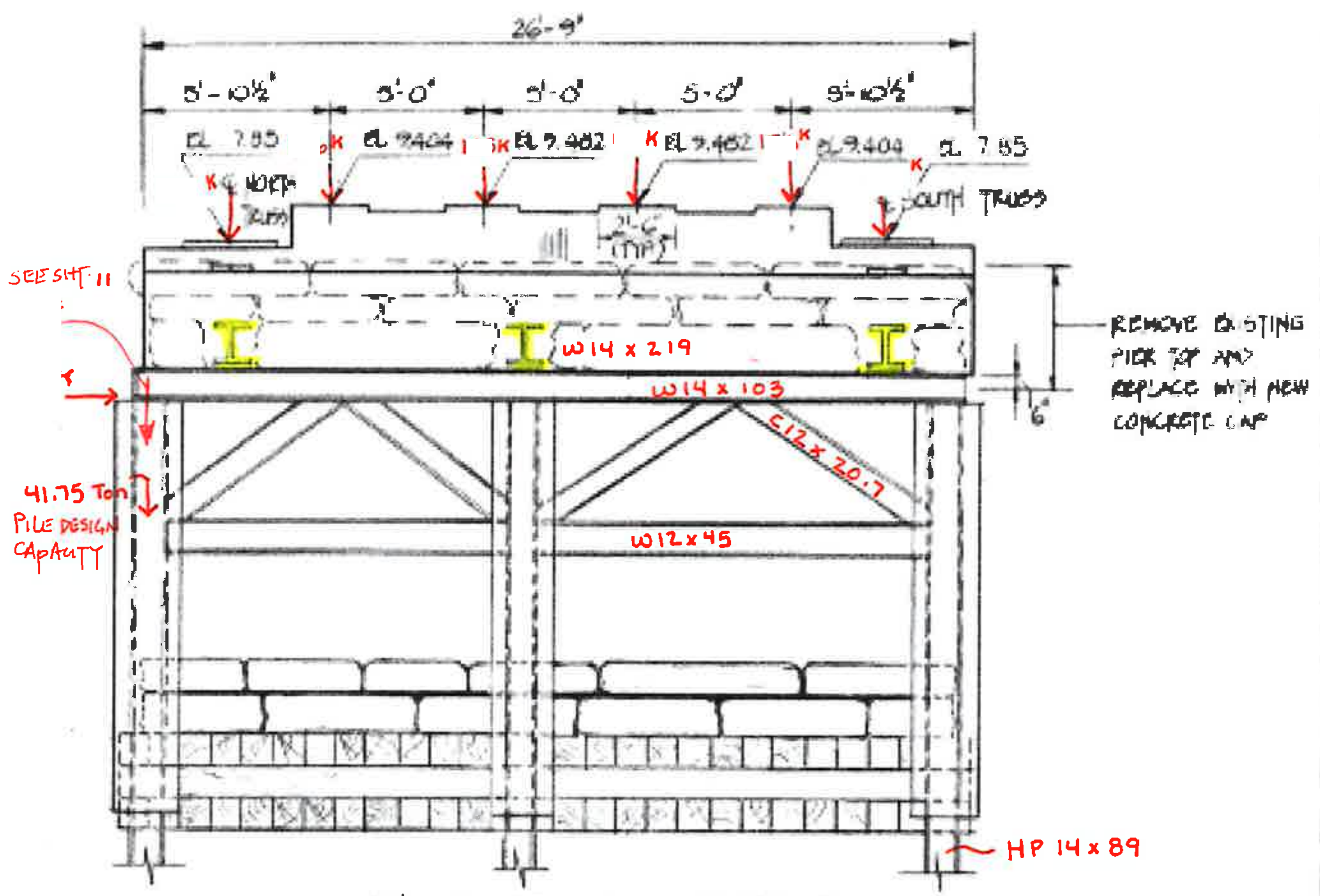
WEST ELEVATION

Scale $\frac{1}{4}$"=1'-0"



SIDE VIEW – PIER 2

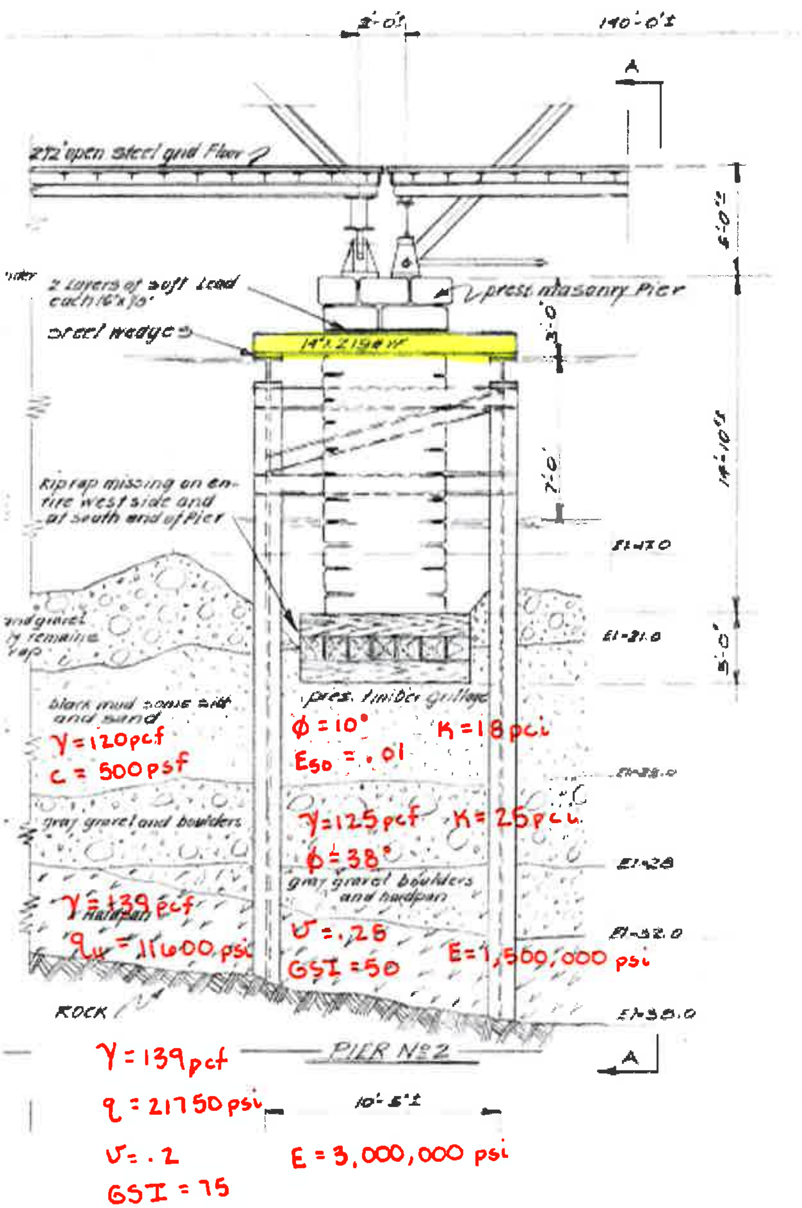
SCALE: 3/16" = 1'-0"

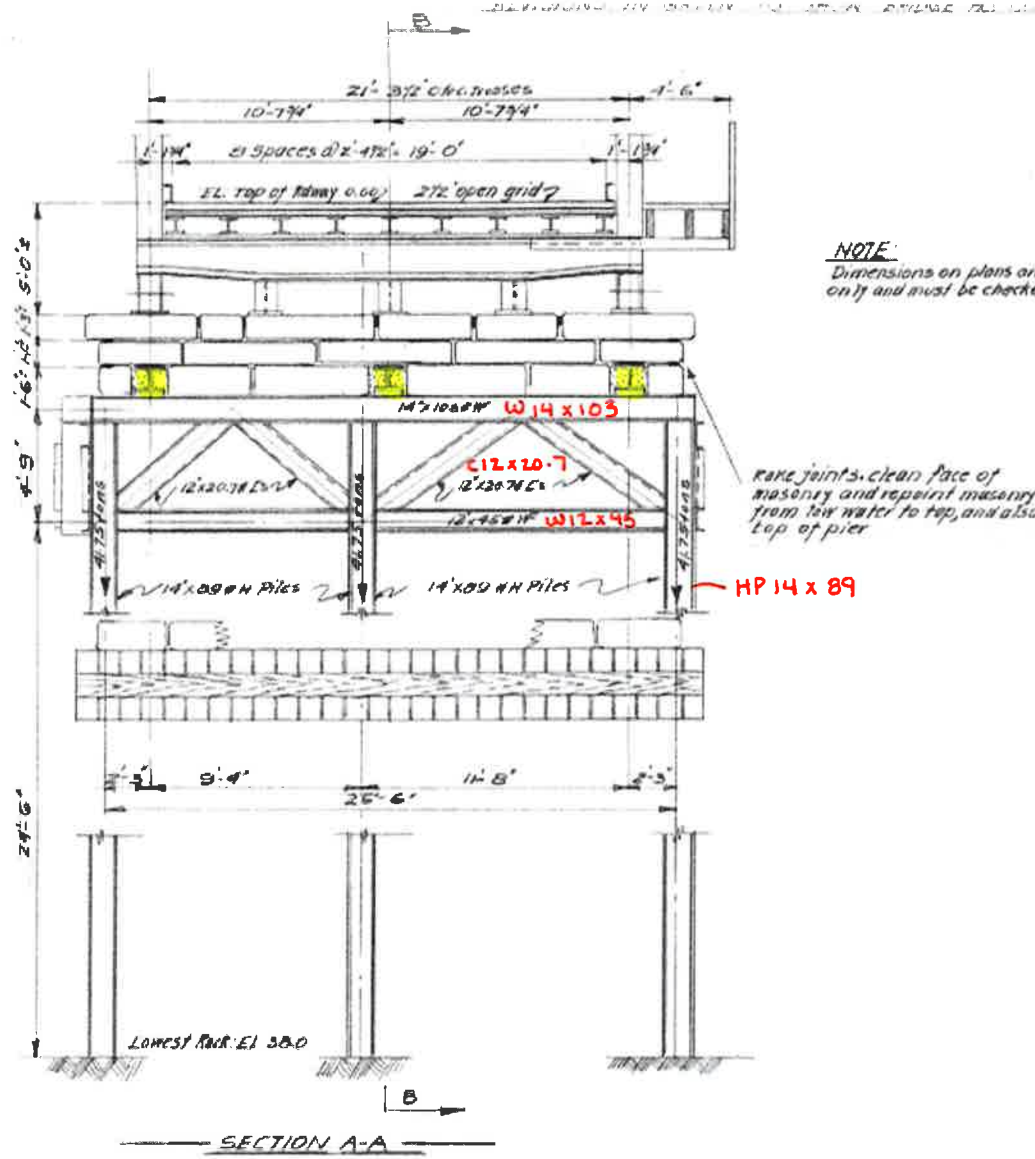


WEST ELEVATION – PIER 2

SCALE 3/16" = 1'-0"

22





NOTE:
Dimensions on plans are approximate only and must be checked by contractor

B-1

General Borings, Inc. — Boring Contractor
Haley & Aldrich, Inc. — Consulting Engineer
Town: Westport (Bridge #01349)
Project Name: Rte. 136 Over Saugatuck River
Project No. 170-381

Strata Change Depth	Field Identification of Soil, Remarks
	Concrete filled steel deck. Air space below deck.
3.5'	Run#1 to Run#4 inclusive - drilled grouted SANDSTONE BLOCK PIER
23.5'	1) Brown WOOD, trace cement.
24.5'	2) Black fine SAND and ORGANIC SILT, trace shells. Blow count high due to friction from wood.
29.0'	3) Brown-black fine-coarse SAND and medium-coarse gravel, trace organic silt and shells.
32.0'	4) Brown fine-coarse SAND and GRAVEL trace SILT. Casing refusal at 34.0'.
34.0'	Run#6 Cored 34'-36' w/BX core barrel Recovered 12" gray-white GNEISS.
41.0'	Run#7 Cored 36'-41' w/BQ core barrel Rec. 48" gray-white GNEISS. EOB 41'

B-2

General Borings, Inc. — Boring Contractor
Haley & Aldrich, Inc. — Consulting Engineer
Town: Westport (Bridge #01349)
Project Name: Rte. 136 Over Saugatuck River
Project No. 170-381

Strata Change Depth	Field Identification of Soil, Remarks
	Concrete filled steel deck. Air space below deck.
5.5'	Run#1, 2, 3, 4 drilled grouted SANDSTONE BLOCK PIER, some voids. Note: Roller Bit Hole 3½". Hole Caved. Roller Bit 4½"-hole caved. Spun 4" casing to 23.5'. After tubes, installed 3" casing.
	22.5'-23.5' Roller Bit Concrete. 23.5'-25.0' Wood.
23.5' / 25.0'	Note: No Recovery on UP at 25'. 1UP) Top of tube - Organic SILT. Bottom SAND, silt and shells. Refusal on tube at 28.5'.
28.4'	2) Gray medium-fine SAND and GRAVEL, little silt, little coarse sand.
30.5'	3) Gray-brown medium-fine SAND, little fine-coarse gravel, little silt. 3) Same as S-2.
35.0'	Run#5 Cored 35'-40'. Recovered 41" Gray GNEISS.
40.0'	Run#6 Cored 40'-41'. Recovered 12" gray-brown GNEISS. Note: Core Barrel plugged. Run#7 Cored 41'-42'. Recovered 12" (same as Run#6). Run#8 Cored 42'-43'. Recovered 12" (same as Run#6). Run#9 Cored 43'-44.5'. Recovered 15" (same as Run#6). Run#10 Cored 44.5'-46'. Recovered 14" (same as Run#6).
46.0'	END OF BORING 46.0'

B-3

General Borings, Inc. — Boring Contractor
Haley & Aldrich, Inc. — Consulting Engineer
Town: Westport (Bridge #01349)
Project Name: Rte. 136 Over Saugatuck River
Project No. 170-381

Strata Change Depth	Field Identification of Soil, Remarks
	Mud Line el -7.0. Gray SAND and organic SILT, some shells. Very Loose
8.0 / 11.0'	Gray-brown coarse-fine SAND, little gravel, trace mica schist. Very Dense. Casing refusal at 11.0'. 11'-11.5' Started to core - core barrel blocked. 11.5'-16.0' Drilled cobbles. Recovered 33". 16'-18' Roller Bit through cobbles. Run#2 Cored 18'-23'. Recovered 24", cobbles.
23.0'	END OF BORING 23.0'

B-3A

General Borings, Inc. — Boring Contractor
Haley & Aldrich, Inc. — Consulting Engineer
Town: Westport (Bridge #01349)
Project Name: Rte. 136 Over Saugatuck River
Project No. 170-381

Strata Change Depth	Field Identification of Soil, Remarks
	See Boring B-3 for soil sample descriptions. Spun casing to 14.5'. Casing refusal at 14.5'. Roller Bit 14.5'-15'. Run#1 Cored 15'-19.5'. Recovered 8" COBBLES and GRAVEL. Roller Bit 19.5'-23'. Run#2 Cored 23'-28'. Recovered 5" COBBLES and GRAVEL. Roller Bit 28'-28.5'.
30.0	Run#3 Cored 28.5'-30', Cobbles. Run#4 Cored 30'-33'. Recovered 37". 30'-33' - Cored Gray GNEISS.
33.0'	END OF BORING 33.0'

B-4

General Borings, Inc. — Boring Contractor
Haley & Aldrich, Inc. — Consulting Engineer
Town: Westport (Bridge #01349)
Project Name: Rte. 136 Over Saugatuck River
Project No. 170-381

Strata Change Depth	Field Identification of Soil, Remarks
	Mud line -5.0
2.0'	Wet Loose - Black fine-medium SAND, trace gravel, trace seashells. Organic Odor. Light brown fine-medium SAND.
10.0'	Light brown coarse to fine SAND, little gravel, few cobbles, trace silt.
28.5'	Casing refusal at 28.5'. Run#1 Cored Rock 28.5'-33.5'. Recovered 60". Run#2 Cored Rock 33.5'-35.5'. Recovered 24" gray GNEISS, moderately fractured.
35.5'	END OF BORING 35.5'

SAMPLE TYPE CODING: D=DRY, C=CORE, A=AUGER, UP=UNDISTURBED PISTON, V=VANE TEST
PROPORTIONS USED: TRACE=0-10%, LITTLE=10-20%, SOME=20-35%, AND=35-50%

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
		REVISIONS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT
BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

BORING LOGS

ENGINEER: H.W. LOCHNER, INC. AND HALEY & ALDRICH, INC.
DESIGNER — DRAFTER — CHECKER
APPROVED — DATE 9-6-89
STRUCTURE NO. 158-150-1 — 01349 — 7 of 24

B-4

Eldon Kennedy BORING FOREMAN Sheila Gleason INSPECTOR SOILS ENGINEER	FORM NO. SM-1 ED. 1/71 STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS BORING REPORT TOWN Westport (Bridge #01349) PROJECT NAME Rte. 136 Over Saugatuck River PROJECT NO. 170-381	SHEET 1 OF 1 LOCATION General Borings, Inc. BORING CONTRACTOR Haley & Aldrich, Inc. CONTRACTING ENGINEER

LOCATION

		AUGER	CASING	SAMPLER	CORE BAR	
SURFACE ELEV. -5.0						HOLE NO. B-4
DATE FINISHED 8/22/88	TYPE		NW	SS	N.Q	LINE & STATION
GROUND WATER OBSERVATIONS	SIZE I.D.		3"	1-3/8"	2-1/8"	OFFSET
AT FT. AFTER HRS.	HAMMER WT.			140	BIT	N. COORDINATE 105997
AT FT. AFTER HRS.	HAMMER FALL			30"	Dia.	E. COORDINATE 429281

DEPTH	CASING BLOWS PER FOOT	SAMPLE DEPTHS FROM – TO	NO.	PEN. INCH	REC. INCH	TYPE	BLOWS PER 6 INCHES ON SAMPLER 0-6	6-12	12-18	24	STRATA CHANGE DEPTH ELEV.	FIELD INDENTIFICATION OF SOIL. REMARKS (INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.)
		0'-2.0'	1	24"	0"	SS	1	1	2			Mud line -5.0
									1		2.0'	Wet Loose - Black fine-medium SAND, trace gravel, trace seashells. Organic Odor
		5'-7'	2	24"	16"	SS	2	2	4			Light brown fine-medium SAND.
									3			
		10'-12'	3	24"	22"	SS	30	33	25		10.0'	
									21			Light brown coarse to fine SAND, little gravel, few cobbles, trace silt.
		15.5'-17.5'	4	24"	16"	SS	41	23	31			
									34			
		21.5'-23.5'	5	24"	14"	SS	9	12	15			
									21			
		26'-28'	6	24"	6"	SS	36	35	22			
									80			
							Coring Time Per Foot (Min.)				28.5'	Casing refusal at 28.5'.
									7			
									7			
									11			Run#1 Cored Rock 28.5'-33.5'.
									12			Recovered 60"
		28.5'-33.5'	1	60"	60"	C			11			Run#2 Cored Rock 33.5'-35.5'.
									25			
		33.5'-35.5'	2	24"	24"	C			35		35.5'	Recovered 24" gray GNEISS, moderately fractured.
												END OF BORING 35.5'

FROM GROUND SURFACE TO 28.5 FEET USED 3" INCH CASING THEN INCH CASING FOR FEET

FOOTAGE IN EARTH 28.5' FOOTAGE IN ROCK 7' TYPE NO. OF SAMPLES 5 HOLE NO. B-4

SAMPLE TYPE CODING: D=DRY C=CORE A=AUGER UP=UNDISTURBED, PISTON V=VANE TEST

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

Recovered 16" (same as Run#6).

Run#10 Cored 44.5'-46'.

Recovered 14" (same as Run#6).

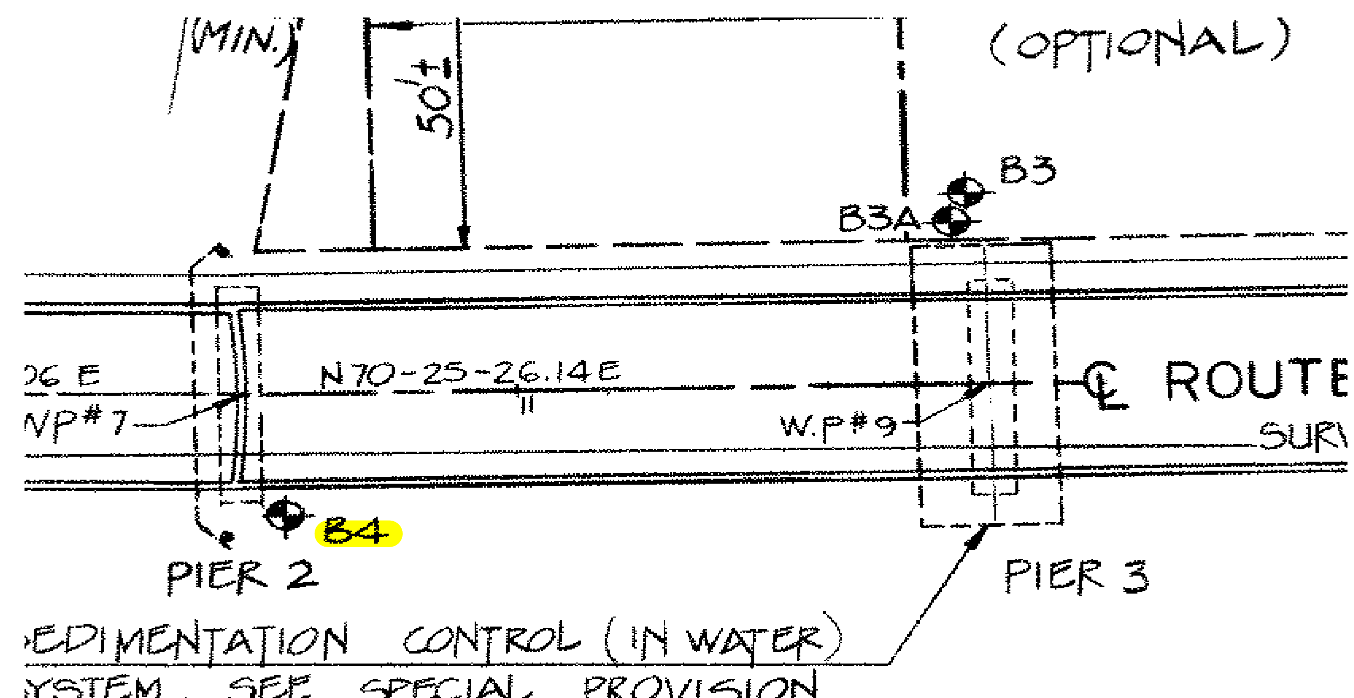
END OF BORING 46.0'

FROM GROUND SURFACE TO FEET USED INCH CASING THEN INCH CASING FOR FEET

FOOTAGE IN EARTH 11.5 FOOTAGE IN ROCK TYPE NQ NO. OF SAMPLES 3 S/S 1V HOLE NO.

SAMPLE TYPE CODING: D=DRY C=CORE A=AUGER UP=UNDISTURBED, PISTON V=VANE TEST

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%



SCALE: 1" = 30'

MERRITT & CO.

25

Table 3-11. Typical Properties for Rock Masses (from Hoek, 2001)

Property	Symbol	Good Quality Hard Rock Mass	Average Rock Mass	Very Poor Quality Rock Mass
Intact Rock Strength	σ_{ci}	150 MPa 21,750 psi	80 MPa 11,600 psi	20 MPa 2,900 psi
Hoek-Brown Constant	m_i	25	12	8
Geological Strength Index	GSI	75	50	30
Friction Angle	ϕ'	46 deg.	33 deg.	24 deg.
Cohesive Strength	c'	13 MPa 1,885 psi	3.5 MPa 500 psi	0.55 MPa 80 psi
Poisson's Ratio	ν	0.2	0.25	0.3

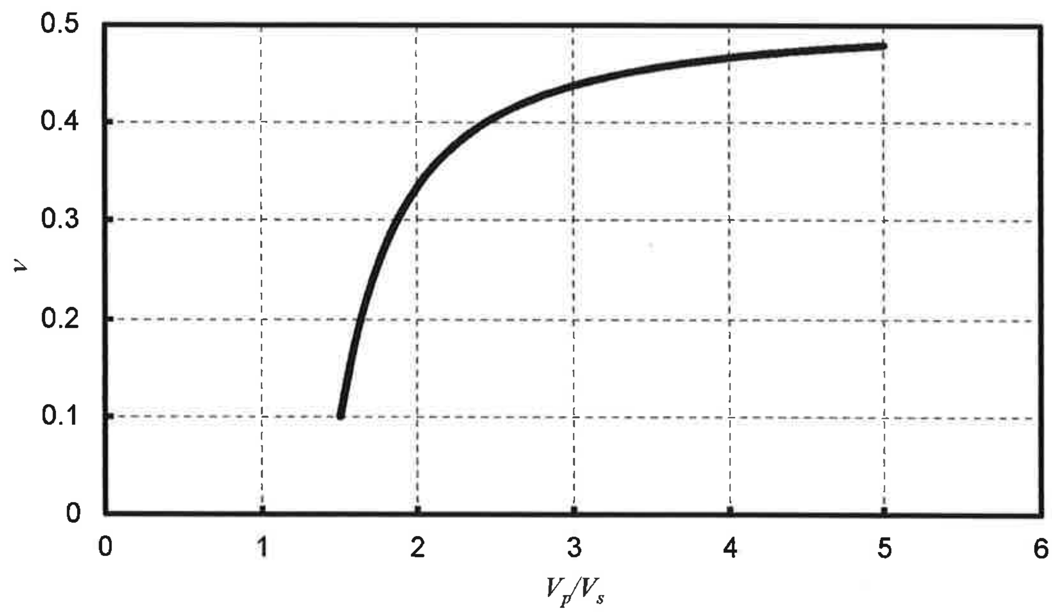


Figure 3-58 Poisson's Ratio as Function of Stress Wave Velocity Ratio

3-9-4 Determination of p_{us} Near the Ground Surface

For a passive wedge type failure near the ground surface, as shown in Figure 3-59, the ultimate lateral resistance per unit length, p_{us} of the drilled shaft at depth H near the ground surface is

$$p_{us} = 2C_1 \cos\theta \sin\beta + C_2 \sin\beta - 2C_4 \sin\theta - C_5 \quad \text{(3-128)}$$

where $\beta = 45° + \dfrac{\phi'}{2}$ and $\theta = \dfrac{\phi'}{2}$.

Rock Type	**Modulus of Elasticity**
-	**(MPa x 1000)** 6.894 psi
Limestone	3-27
Dolomite	7-15
Limestone (very hard)	70
Sandstone	10-20
Quartz-sandstone	60-120
Greywacke	10-14
Siltstone	3-14
Gneiss - fine	9-13 AVG. = 11/6.894 = 1.5[illegible] ≃ 1,500,000 psi
Gneiss - coarse	13-23
Schist - Micaceous	21
Schist - Biotite	40
Schist - Granitic	10
Schist - Quartz	14
Granite - very altered	2
Granite - slightly altered	10-20
Granite - good	20-50
Quartzite - Micaceous	28
Quartzite - sound	50-80
Dolerite	70-100
Basalt	50
Andesite	20-50
Amphibolite	90

The large ranges emphasize the need for testing at each site.

$$y_A = \left(\frac{p_{ur}}{2(y_{rm})^{0.25} M_{ir}} \right)^{1.333} \quad \text{.......................................(3-118)}$$

As shown in the case studies that follow, the equations from weak rock predict with reasonable accuracy the behavior of single piles under lateral loading for the two cases that are available. An adequate factor of safety should be employed in all cases.

The equations are based on the assumption that p is a function only of y. This assumption appears to be valid if loading is static and resistance is only due to lateral stresses. However, O'Neill (1996) noted "in large diameter drilled shafts, moment is resisted in the push-pull shear produced by the axial shears caused by the rotation of the pile. In rock, this effect could be significant, especially for small deflections, if the diameter of the pile is large. "

3-8-5 Case Histories for Drilled Shafts in Weak Rock

3-8-5-1 Islamorada

The drilled shaft was 1.22 m (48 in.) diameter and penetrated 13.3 m (43.7 ft) into limestone. A layer of sand over the limestone was retained by a steel casing, and the lateral load was applied at 3.51 m (11.5 ft) above the surface of the rock. A maximum lateral load of 667 kN (150 kips) was applied and the measured curve of load versus deflection was nonlinear.

Values of the strengths of the concrete and steel were unavailable and the bending stiffness of the gross section was used for the initial solutions. The following values were used to compute the p-y curves:

q_{ur} = 3.45 MPa (500 psi),

α_r = 1.0, (RQD = 0%)

E_{ri} = 7,240 MPa (1.05×10^6 psi),

ε_{rm} = 0.0005,

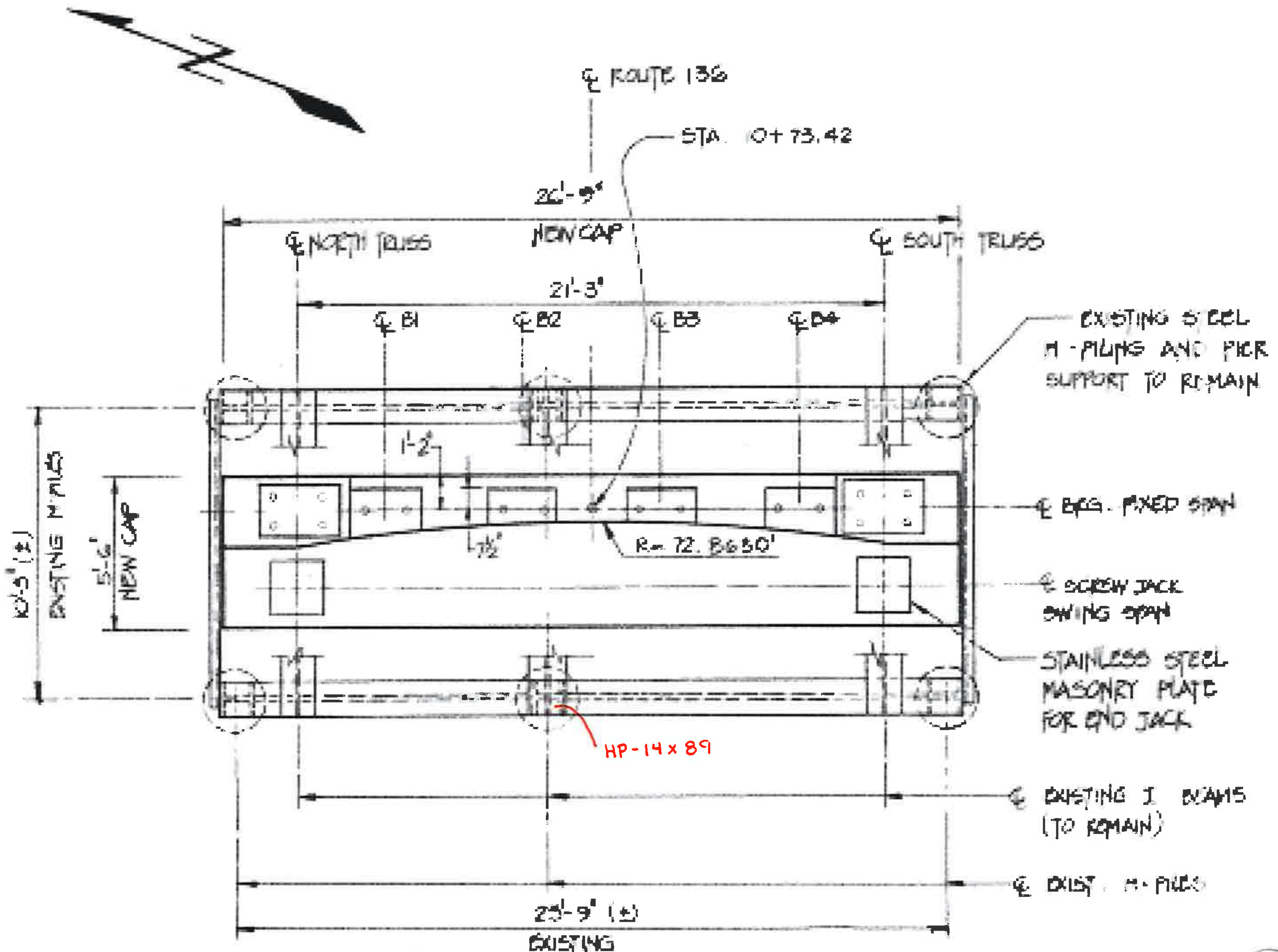
b = 1.22 m (48 in.),

L = 15.2 m (50 ft), and

$EI = 3.73 \times 10^6$ kN-m^2 (1.3×10^9 ksi).

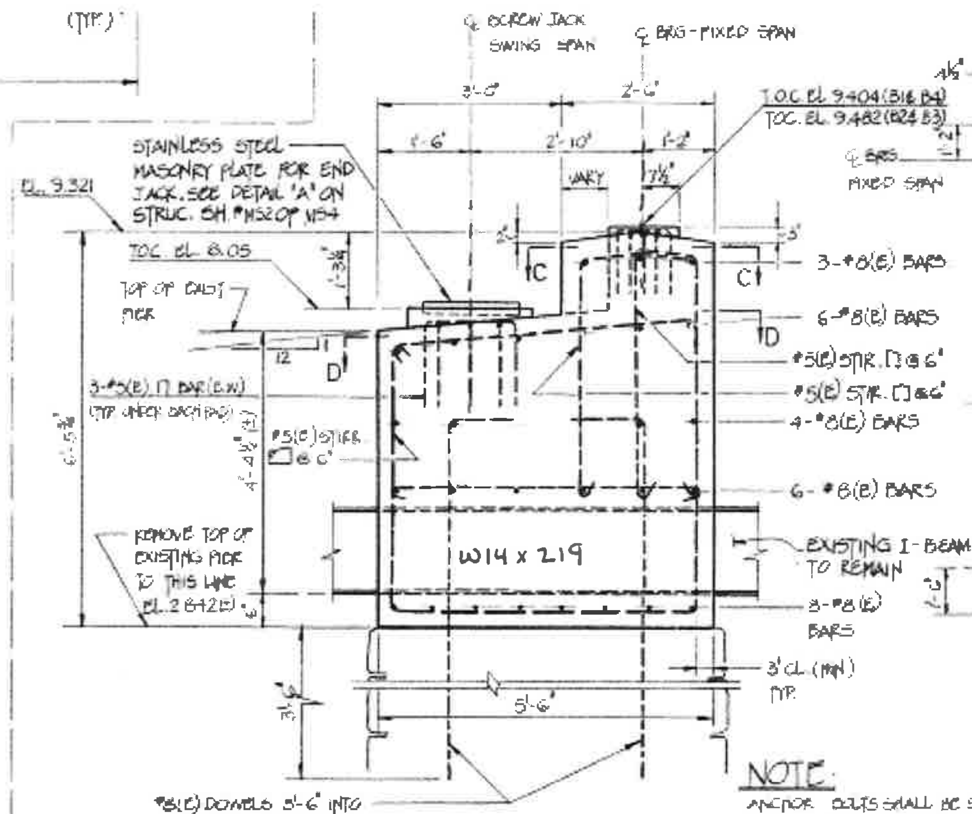
A comparison of pile-head deflection curves from experiment and from analysis is shown in Figure 3-51. Excellent agreement between the elastic EI and experiment and is found for loading levels up to about 350 kN (78.7 kips), where sharp change in the load-deflection curve occurs. Above that level of loading, nonlinear EI is required to match the experimental values reasonably well.

Curves giving deflection and bending moment as a function of depth were computed for a lateral load of 334 kN (75 kips), one-half of the ultimate lateral load, and are shown in Figure 3-52. The plotting is shown for limited depths because the values to the full length are too small to plot. The stiffness of the rock, compared to the stiffness of the pile, is reflected by a total of 13 points of zero deflection over the length of the pile of 15.2 meters (50 ft). However, for the data employed here, the pile will behave as a long pile through the full range of loading.



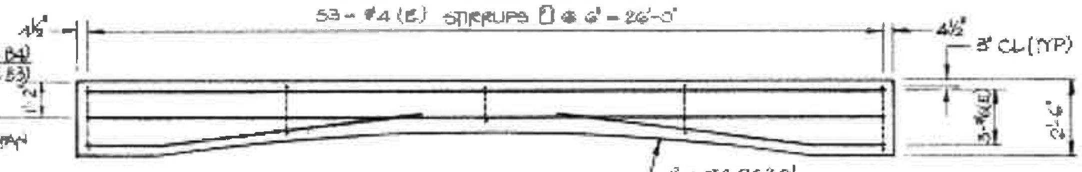
PLAN – PIER 2

SCALE 3/16" = 1'-0"

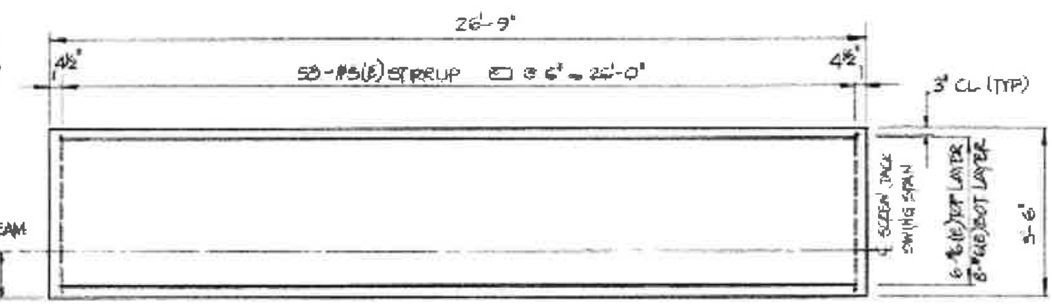


DETAIL 'C'
SCALE: 1/2" = 1'-0"

NOTE:
ANCHOR BOLTS SHALL BE SET IN FORMS WHICH SHALL BE PLACED BEFORE THE CONCRETE IS POURED.



SECTION C-C
SCALE 1/4" = 1'-0"



SECTION D-D
SCALE: 1/4" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

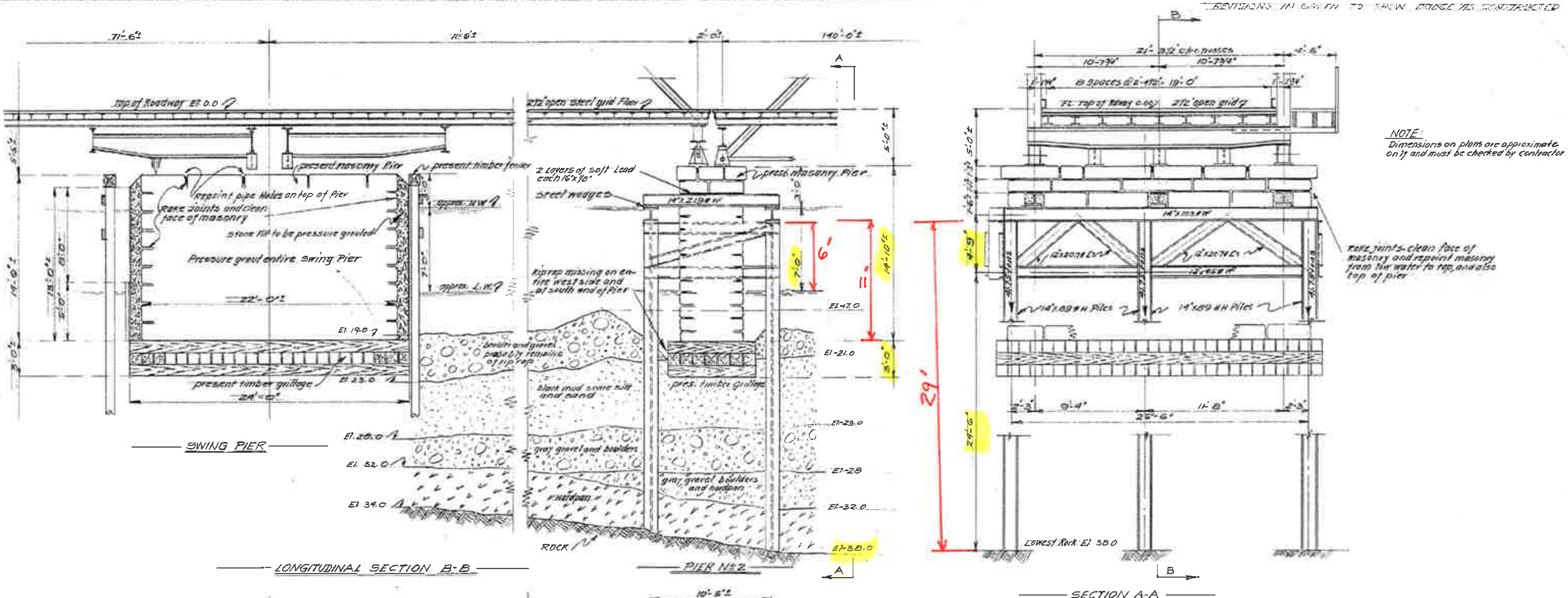
3	6/3/90	REV CON
NO.	DATE	

RE

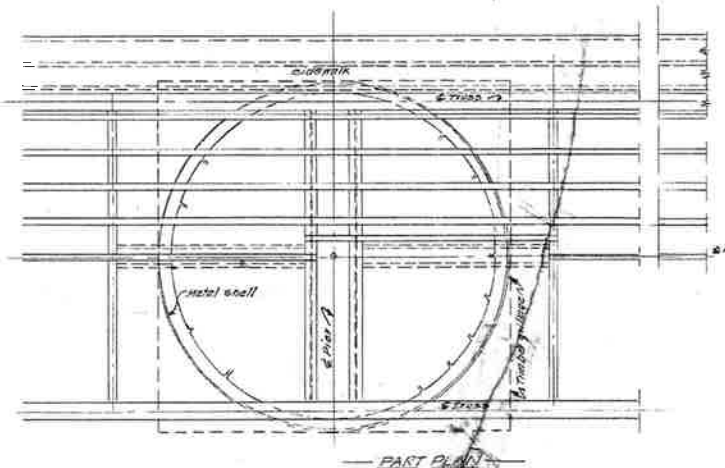
35

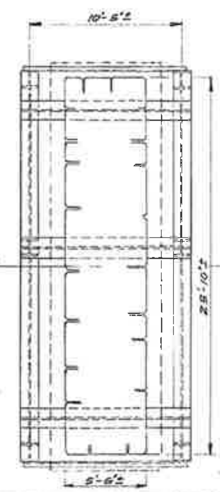
FED ROAD DIV NO	STATE	TOWN	FED AID PROJ NO	FISCAL YEAR	PROJ NO	SHEET NO	TOTAL SHEETS
1	Conn	Westport		1951	136	2	8

REVISIONS IN GREEN TO SHOW BRIDGE AS CONSTRUCTED



NOTE: Dimensions on plans are approximate only and must be checked by contractor





QUANTITIES

ALTERATION TO MASONRY	LS
FURNISHING STEEL PILES	31392 Lb.
DRIVING STEEL PILES	248 LF
PORTLAND CEMENT	10 Bu.
RAKING JOINTS & CLEANING FACE OF MASONRY	210 SY.
STRUCTURAL STEEL	5721 Lb.
METAL SHELL AROUND SWING PIER	15600 Lb.
STONE FILL	56 Tons
LIQUID ACCELERATING AND WATER RESISTING AGENT	62 Gal.
POWDER ACCELERATING AND WATER RESISTING AGENT	248 Lb.
REPOINTING MASONRY JOINTS	598 LF.
DENSIFYING AND RETARDING AGENT	120 Lb.
PRESSURE GROUTING OF STONE FILL	216 Bags
PRESSURE GROUTING SWING PIER	160 Bags

GENERAL NOTES

CONN. STATE HWY. DEPT. SPECIFICATIONS FORM 801.
ALL NEW STEEL EXCEPT THE METAL SHELL AROUND SWING PIER SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND IRON OXIDE AND TWO FIELD COATS OF PAINT OF A COLOR AND SHADE SELECTED BY THE ENGINEER

REVISIONS		
NO.	DATE	DESCRIPTION

CONNECTICUT
STATE HIGHWAY DEPARTMENT
BRIDGE No 136-09 (Rt. 136)
OVER SAUGATUCK RIVER
IN THE TOWN OF
WESTPORT
PLANS SHOWING
PROPOSED REPAIRS TO PIERS

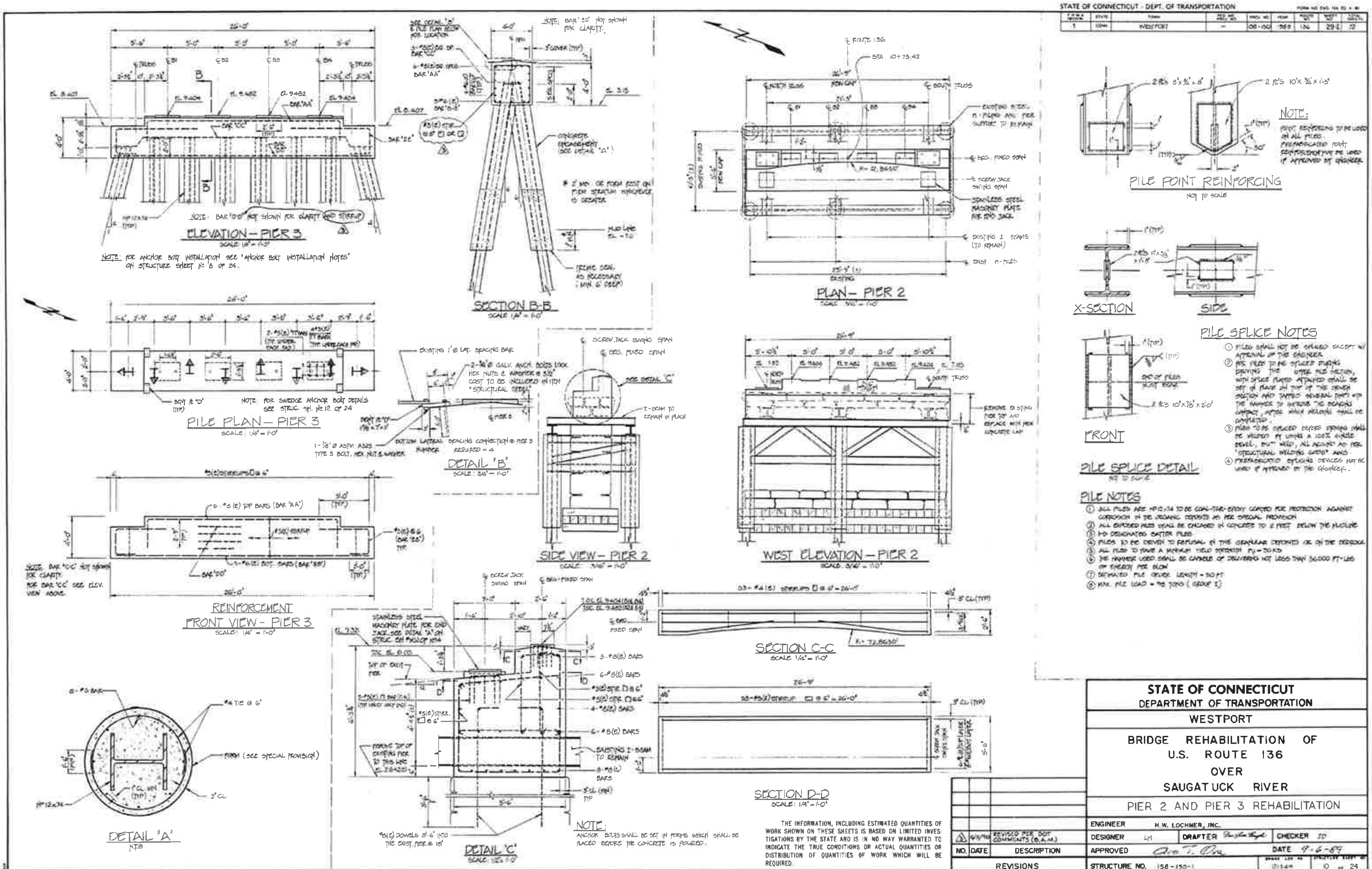
DESIGNED BY A.E.
SCALE: 1/4" = 1'-0"
MADE BY [signature] DATE 5/14/51
CHECKED BY GA4 DATE 5/14/51
APPROVED J.O. [signature] DATE 6/1/51
PROJECT No MC-18
Bridge Sheet No 1 of 2

MC-18 FORMERLY 158 58

165 05

2

5R



158-150

270-01

For uplift, the number of pile load tests required to justify a specific resistance factor are the same as that required for determining compression resistance. Extrapolating the pile load test results to other untested piles as specified in Article 10.7.3.10 does create some uncertainty, since there is not a way to directly verify that the desired uplift resistance has been obtained for each production pile. This uncertainty has not been quantified. Therefore, it is recommended that a resistance factor of not greater than 0.60 be used if an uplift load test is conducted.

Regarding pile drivability analysis, the only source of load is from the pile driving hammer. Therefore, the load factors provided in Section 3 do not apply. In past practice, e.g., AASHTO (2002), no load factors were applied to the stresses imparted to the pile top by the pile hammer. Therefore, a load factor of 1.0 should be used for this type of analysis. Generally, either a wave equation analysis or dynamic testing, or both, are used to determine the stresses in the pile resulting from hammer impact forces. See Article 10.7.8 for the specific calculation of the pile structural resistance available for analysis of pile drivability. The structural resistance available during driving determined as specified in Article 10.7.8 considers the ability of the pile to handle the transient stresses resulting from hammer impact, considering variations in the materials, pile/hammer misalignment, and variations in the pile straightness and uniformity of the pile head impact surface.

Table 10.5.5.2.3-1—Resistance Factors for Driven Piles

Condition/Resistance Determination Method		Resistance Factor
Nominal Bearing Resistance of Single Pile—Dynamic Analysis and Static Load Test Methods, φ_{dyn}	Driving criteria established by successful static load test of at least one pile per site condition and dynamic testing* of at least two piles per site condition, but no less than 2% of the production piles	0.80
	Driving criteria established by successful static load test of at least one pile per site condition without dynamic testing	0.75
	Driving criteria established by dynamic testing* conducted on 100% of production piles	0.75
	Driving criteria established by dynamic testing,* quality control by dynamic testing* of at least two piles per site condition, but no less than 2% of the production piles	0.65
	Wave equation analysis, without pile dynamic measurements or load test but with field confirmation of hammer performance	0.50
	FHWA-modified Gates dynamic pile formula (End of Drive condition only)	0.40
	Engineering News (as defined in Article 10.7.3.8.5) dynamic pile formula (End of Drive condition only)	0.10

* Dynamic testing requires signal matching, and best estimates of nominal resistance are made from a restrike. Dynamic tests are calibrated to the static load test, when available.

Table 10.5.5.2.3-1—Resistance Factors for Driven Piles (continued)

Condition/Resistance Determination Method		Resistance Factor
Nominal Bearing Resistance of Single Pile—Static Analysis Methods, φ_{stat}	Side Resistance and End Bearing: Clay and Mixed Soils	
	α-method (Tomlinson, 1987; Skempton, 1951)	0.35
	β-method (Esrig & Kirby, 1979; Skempton, 1951)	0.25
	λ-method (Vijayvergiya & Focht, 1972; Skempton, 1951)	0.40
	Side Resistance and End Bearing: Sand	
	Nordlund/Thurman Method (Hannigan et al., 2005)	0.45
	SPT-method (Meyerhof)	0.30
	CPT-method (Schmertmann)	0.50
	End bearing in rock (Canadian Geotech. Society, 1985)	0.45
Block Failure, φ_{b1}	Clay	0.60
Uplift Resistance of Single Piles, φ_{up}	Nordlund Method	0.35
	α-method	0.25
	β-method	0.20
	λ-method	0.30
	SPT-method	0.25
	CPT-method	0.40
	Static load test	0.60
	Dynamic test with signal matching	0.50
Group Uplift Resistance, φ_{ug}	All soils	0.50
Lateral Geotechnical Resistance of Single Pile or Pile Group	All soils and rock	1.0
Structural Limit State	Steel piles	See the provisions of Article 6.5.4.2
	Concrete piles	See the provisions of Article 5.5.4.2.1
	Timber piles	See the provisions of Article 8.5.2.2 and 8.5.2.3
Pile Drivability Analysis, φ_{da}	Steel piles	See the provisions of Article 6.5.4.2
	Concrete piles	See the provisions of Article 5.5.4.2.1
	Timber piles	See the provisions of Article 8.5.2.2
	In all three Articles identified above, use φ identified as "resistance during pile driving"	

- For axial resistance of piles in compression and subject to damage due to severe driving conditions where use of a pile tip is necessary:
  - H-piles $\phi_c = 0.50$
  - pipe piles $\phi_c = 0.60$
- For axial resistance of piles in compression under good driving conditions where use of a pile tip is not necessary:
  - H-piles $\phi_c = 0.60$
  - pipe piles $\phi_c = 0.70$
- For combined axial and flexural resistance of undamaged piles:
  - axial resistance for H-piles $\phi_c = 0.70$
  - axial resistance for pipe piles $\phi_c = 0.80$
  - flexural resistance $\phi_f = 1.00$
- For shear connectors in tension $\phi_{st} = 0.75$

The basis for the resistance factors for driven steel piles is described in Article 6.15.2. Further limitations on usable resistance during driving are specified in Article 10.7.8.

Indicated values of ϕ_c and ϕ_f for combined axial and flexural resistance are for use in interaction equations in Article 6.9.2.2.

6.5.5—Extreme Event Limit State

All applicable extreme event load combinations in Table 3.4.1-1 shall be investigated.

All resistance factors for the extreme event limit state, except those specified for bolts and shear connectors, shall be taken to be 1.0.

All resistance factors for ASTM A307 Grade C and ASTM F1554 bolts used as anchor bolts for the extreme event limit state shall be taken to be 1.0.

Bolted slip-critical connections within a seismic load path shall be proportioned according to the requirements of Article 6.13.2.1.1. The connections shall also be proportioned to provide shear, bearing, and tensile resistance in accordance with Articles 6.13.2.7, 6.13.2.9, and 6.13.2.10, as applicable, at the extreme event limit state. Standard holes or short-slotted holes normal to the line of force shall be used in such connections.

C6.5.5

During earthquake motion, there is the potential for full reversal of design load and inelastic deformations of members orconnections, or both. Therefore, slip of bolted joints located within a seismic load path cannot and need not be prevented during a seismic event. A special inspection of joints and connections, particularly in fracture critical members, should be performed as described in AASHTO (2011a) after a seismic event.

To prevent excessive deformations of bolted joints due to slip between the connected plies under earthquake motions, only standard holes or short-slotted holes normal to the line of force are permitted in bolted joints located within a seismic load path. For such holes, the upper limit of $2.4dtF_u$ on the bearing resistance is intended to prevent elongations due to bearing deformations from exceeding approximately 0.25 in. It should be recognized, however, that the actual bearing load in a seismic event may be much larger than that anticipated in design and the actual deformation of the holes may be larger than this theoretical value. Nonetheless, the specified upper limit on the nominal bearing resistance should effectively minimize damage in moderate seismic events.

6.6—FATIGUE AND FRACTURE CONSIDERATIONS

6.6.1—Fatigue

6.6.1.1—General

Fatigue shall be categorized as load- or distortion-induced fatigue.

C6.6.1.1

In the AASHTO *Standard Specifications for Highway Bridges* (2002), the provisions explicitly relating to fatigue deal only with load-induced fatigue.

Modulus of Subgrade Reaction, K

Sandy Soils:

Loose Sand	30-100 kcf
Medium Sand	60-500 kcf
Dense Sand	400-800 kcf
Sand w/Clay (mix)	200-50 kcf
Sand w/Silt (mix)	150-300 kcf

Clayey Soils:

$qu < 4$ ksf	75-150 kcf
4 ksf $< qu <$ 8 ksf	150-300 kcf
$qu > 8$ ksf	$>$ 300 kcf

where: qu = unconfined compression strength

Note: if 'K' is known/given in units of kcf, multiply by 1000/1728 = 0.5787 to convert kcf to pci for input.

This program takes 'K' input in pci and multiplies it by 1728/1000 = 1.728 to convert to kcf for use throughout.

Max. Shears and L

+V(max) = 6.27

6.9.2—Compressive Resistance

6.9.2.1—Axial Compression

The factored resistance of components in compression, P_r, shall be taken as:

$$P_r = \phi_c P_n \tag{6.9.2.1-1}$$

where:

P_n = nominal compressive resistance as specified in Articles 6.9.4 or 6.9.5, as applicable (kip)
ϕ_c = resistance factor for compression as specified in Article 6.5.4.2

6.9.2.2—Combined Axial Compression and Flexure

Except as permitted otherwise in Article 6.9.4.4, the axial compressive load, P_u, and concurrent moments, M_{ux} and M_{uy}, calculated for the factored loadings by elastic analytical procedures shall satisfy the following relationship:

- If $\frac{P_u}{P_r} < 0.2$, then

$$\frac{P_u}{2.0P_r} + \left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \leq 1.0 \tag{6.9.2.2-1}$$

- If $\frac{P_u}{P_r} \geq 0.2$, then

$$\frac{P_u}{P_r} + \frac{8.0}{9.0}\left(\frac{M_{ux}}{M_{rx}} + \frac{M_{uy}}{M_{ry}}\right) \leq 1.0 \tag{6.9.2.2-2}$$

where:

P_r = factored compressive resistance as specified in Article 6.9.2.1 (kip)
M_{rx} = factored flexural resistance about the x-axis taken equal to ϕ_f times the nominal flexural resistance about the x-axis determined as specified in Article 6.10, 6.11 or 6.12, as applicable (kip-in.)
M_{ry} = factored flexural resistance about the y-axis taken equal to ϕ_f times the nominal flexural resistance about the y-axis determined as specified in Article 6.12, as applicable (kip-in.)
M_{ux} = factored flexural moment about the x-axis calculated as specified below (kip-in.)
M_{uy} = factored flexural moment about the y-axis calculated as specified below (kip-in.)
ϕ_f = resistance factor for flexure specified in Article 6.5.4.2

C6.9.2.2

These equations are identical to Eqs. (H1-1a) and (H1-1b) of AISC (2010). They were selected for use in that Specification after being compared with a number of alternative formulations with the results of refined inelastic analyses of 82 frame sidesway cases (Kanchanalai, 1977). P_u, M_{ux}, and M_{uy} are simultaneous axial and flexural forces on cross-sections determined by analysis under factored loads. The maximum calculated moment in the member in each direction including the second-order effects, should be considered. Where maxima occur on different cross-sections, each should be checked.

For further information on computing the factored flexural resistances about the x- and y-axes, refer to Article C6.8.2.3.

For tees and double angles subject to combined axial compression and flexure in which the axial and flexural stresses in the flange of the tee or the connected legs of the angles are additive in compression, e.g., when a tee is used as a bracing member and the connection of this member is made to the flange, a bulge in the interaction curve occurs. As a result, Eqs. 6.9.2.2-1 and 6.9.2.2-2 may significantly underestimate the resistance in such cases. Alternative approaches attempting to capture this bulge have proven to be generally inconclusive or incomplete as of this writing (2009). In the interim, it is recommended that Eqs. 6.9.2.2-1 and 6.9.2.2-2 be conservatively applied to these cases. Should significant additional resistance be required, the use of one or more of these alternative approaches, as described in White (2006), may be considered.

length is larger than the effective lateral unbraced length.

- Applicable buckling modes for singly symmetric members:
  - Flexural buckling shall be applicable.
  - Flexural-torsional buckling shall also be applicable for open-section members.
- Applicable buckling modes for unsymmetric members:
  - Only flexural-torsional buckling shall be applicable for open-section members, except that for single-angle members designed according to the provisions of Article 6.9.4.4, only flexural buckling shall be applicable.
  - Only flexural buckling shall be applicable for closed-section members.

Torsional buckling and flexural-torsional buckling shall not be applicable for bearing stiffeners.

P_n shall be determined as follows:

- If $\frac{P_e}{P_o} \geq 0.44$, then:

$$P_n = \left[0.658^{\left(\frac{P_o}{P_e}\right)}\right] P_o \qquad (6.9.4.1.1\text{-}1)$$

- If $\frac{P_e}{P_o} < 0.44$, then:

$$P_n = 0.877 P_e \qquad (6.9.4.1.1\text{-}2)$$

where:

A_g = gross cross-sectional area of the member (in.^{2})

F_y = specified minimum yield strength (ksi)

P_e = elastic critical buckling resistance determined as specified in Article 6.9.4.1.2 for flexural buckling, and as specified in Article 6.9.4.1.3 for torsional bucking or flexural-torsional buckling, as applicable (kips)

P_o = equivalent nominal yield resistance = QF_yA_g (kips)

Q = slender element reduction factor determined as specified in Article 6.9.4.2. Q shall be taken equal to 1.0 for bearing stiffeners.

is employed to assess the stability of trusses, frames or arches in lieu of utilizing an effective length factor approach (White, 2006). In such cases, P_e in Eqs. 6.9.4.1.1-1 and 6.9.4.1.1-2 would be taken as the axial load in a given member taken from the analysis at incipient elastic buckling of the structure or subassemblage.

Eqs. 6.9.4.1.1-1 and 6.9.4.1.1-2 represent a curve that is essentially the same as column strength curve 2P of Galambos (1998). The equations incorporate an out-of-straightness criterion of $L/1500$. The development of the mathematical form of these equations is described in Tide (1985), and the structural reliability they are intended to provide is discussed in Galambos (1998) and Galambos (2006).

For the member under consideration, Table 6.9.4.1.1-1 may be used as a guideline for selecting the appropriate potential buckling mode(s) to be considered in the determination of P_n, and the equations to use for the calculation of the corresponding critical elastic buckling resistance, P_e, and slender element reduction factor, Q, as applicable. For compression members with cross-sections composed of one or more slender elements, or elements not meeting the corresponding width-to-thickness ratio limits specified in Article 6.9.4.2.1, the slender element reduction factor Q accounts for the effect of potential local buckling of those elements on the overall buckling resistance of the member and has a value less than 1.0. The value of Q in this instance is determined according to the provisions of Article 6.9.4.2.2. For compression member cross-sections without any slender elements, that is, composed entirely of nonslender elements, Q is taken equal to 1.0 as specified in Article 6.9.4.2.1. Q is always to be taken equal to 1.0 for bearing stiffeners.

6.9.4.1.2—Elastic Flexural Buckling Resistance

The elastic critical buckling resistance, P_e, based on flexural buckling shall be taken as:

$$P_e = \frac{\pi^2 E}{\left(\frac{K\ell}{r_s}\right)^2} A_g \qquad (6.9.4.1.2\text{-}1)$$

where:

A_g = gross cross-sectional area of the member (in.^{2})
K = effective length factor in the plane of buckling determined as specified in Article 4.6.2.5
ℓ = unbraced length in the plane of buckling (in.)
r_s = radius of gyration about the axis normal to the plane of buckling (in.)

C6.9.4.1.2

Flexural buckling of concentrically loaded compression members refers to a buckling mode in which the member deflects laterally without twist or a change in the cross-sectional shape. Flexural buckling involves lateral displacements of the member cross-sections in the direction of the x- or y-axes that are resisted by the respective flexural rigidities, EI_x or EI_y, of the member.

Eq. 6.9.4.1.2-1 should be used to calculate the critical flexural buckling resistances about the x- and y-axes, with the smaller value taken as P_e for use in Eq. 6.9.4.1.1-1 or 6.9.4.1.1-2, as applicable.

6.9.4.1.3—Elastic Torsional Buckling and Flexural-Torsional Buckling Resistance

For open-section doubly symmetric members, the elastic critical buckling resistance, P_e, based on torsional buckling shall be taken as:

$$P_e = \left[\frac{\pi^2 E C_w}{(K_z \ell_z)^2} + GJ\right] \frac{A_g}{I_x + I_y} \qquad (6.9.4.1.3\text{-}1)$$

where:

A_g = gross cross-sectional area of the member (in.^{2})
C_w = warping torsional constant (in.^{6})
G = shear modulus of elasticity for steel = $0.385E$ (ksi)
I_x, I_y = moments of inertia about the major and minor principal axes of the cross-section, respectively (in.^{4})
J = St. Venant torsional constant (in.^{4})
$K_z\ell_z$ = effective length for torsional buckling (in.)

For open-section singly symmetric members where y is the axis of symmetry of the cross-section, the elastic critical buckling resistance, P_e, based on flexural-torsional buckling shall be taken as:

$$P_e = \left(\frac{P_{ey} + P_{ez}}{2H}\right)\left[1 - \sqrt{1 - \frac{4 P_{ey} P_{ez} H}{(P_{ey} + P_{ez})^2}}\right] \qquad (6.9.4.1.3\text{-}2)$$

in which:

C6.9.4.1.3

Torsional buckling of concentrically loaded compression members refers to a buckling mode in which the member twists about its shear center. Torsional buckling applies only for open-section doubly symmetric compression members for which the locations of the centroid and shear center coincide. Torsional buckling will rarely control and need not be considered for doubly symmetric I-section members satisfying the cross-section proportion limits specified in Article 6.10.2, unless the effective length for torsional buckling is significantly larger than the effective length for y-axis flexural buckling. The effective length for torsional buckling, $K_z\ell_z$, is typically taken as the length between locations where the member is prevented from twisting. That is, in many cases, $K_z\ell_z$ can be taken conservatively as $1.0\ell_z$. For a cantilever member fully restrained against twisting and warping at one end with the other end free, $K_z\ell_z$ should be taken as 2ℓ where ℓ is the length of the member (White, 2006). For a member with twisting and warping restrained at both ends, $K_z\ell_z$ may be taken as 0.5ℓ. For a doubly symmetric I-section, C_w may be taken as $I_y h^2/4$, where h is the distance between flange centroids, in lieu of a more precise analysis. For closed sections, C_w may be taken equal to zero and GJ is relatively large. Because of the large GJ, torsional buckling and flexural-torsional buckling need not be considered for closed sections, including built-up members connected by lacing bars, batten plates, perforated plates, or any combination thereof.

Flexural-torsional buckling of concentrically loaded compression members refers to a buckling mode in which the member twists and bends simultaneously without a change in the cross-sectional shape. Compression members composed of open singly symmetric cross-sections, where the y-axis is defined as the axis of symmetry of the cross-experience damage. Therefore, the specified ϕ_c factors for axial resistance of 0.50 to 0.70 for piles in compression without bending shall be applied only to the axial capacity of the pile. The ϕ_c factors of 0.70 and 0.80 and the ϕ_f factor of 1.00 shall be applied to the combined axial and flexural resistance of the pile in the interaction equation for the compression and flexure terms, respectively.

- Unintended eccentricity of applied load about pile axis,
- Variations in material properties of pile, and
- Pile damage due to driving.

These factors are discussed by Davisson (1983). While the resistance factors specified herein generally conform to the recommendations given by Davisson (1983), they have been modified to reflect current design philosophy.

The factored compressive resistance, P_r, includes reduction factors for unintended load eccentricity and material property variations, as well as a reduction for potential damage to piles due to driving, which is most likely to occur near the tip of the pile. The resistance factors for computation of the factored axial pile capacity near the tip of the pile are 0.50 to 0.60 and 0.60 to 0.70 for severe and good driving conditions, respectively. These factors include a base axial compression resistance factor ϕ_c equal to 0.90, modified by reduction multipliers of 0.78 and 0.87 for eccentric loading of H-piles and pipe piles, respectively, and reduction multipliers of 0.75 and 0.875 for difficult and moderately difficult driving conditions.

For steel piles, flexure occurs primarily toward the head of the pile. This upper zone of the pile is less likely to experience damage due to driving. Therefore, relative to combined axial compression and flexure, the resistance factor for axial resistance range of ϕ_c = 0.70 to 0.80 accounts for both unintended load eccentricity and pile material property variations, whereas the resistance factor for flexural resistance of ϕ_f = 1.00 accounts only for base flexural resistance. This design approach is illustrated on Figure C6.15.2-1 which illustrates the depth to fixity as determined by P-Δ analysis.

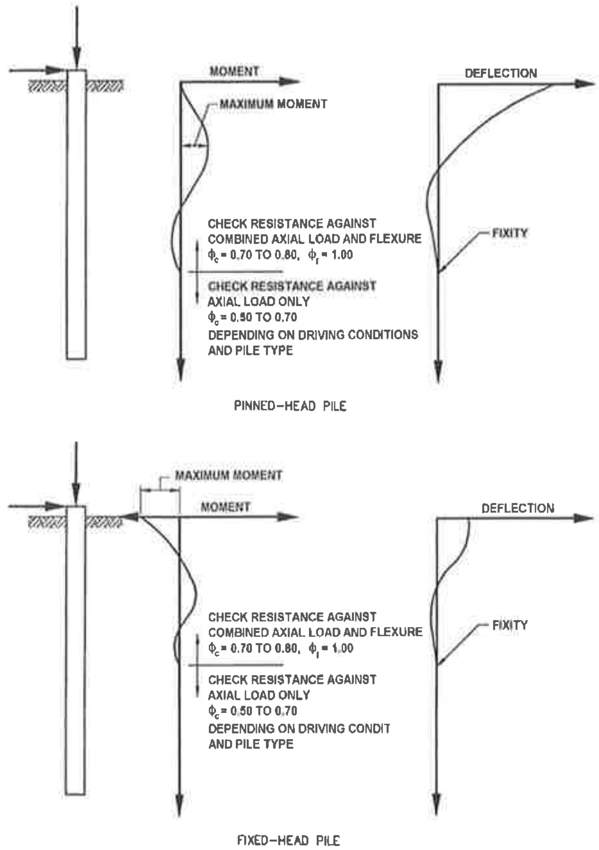


Figure C6.15.2-1—Distribution of Moment and Deflection in Vertical Piles Subjected to Lateral Load

If an unusual situation resulted in significant bending at the pile tip, possible pile damage should be considered in evaluating resistance to combined flexure and axial load.

6.15.3—Compressive Resistance

6.15.3.1—Axial Compression

For piles under axial load, the factored resistance of piles in compression, P_r, shall be taken as specified in Article 6.9.2.1 using the resistance factor, ϕ_c, specified in Article 6.5.4.2.

6.15.3.2—Combined Axial Compression and Flexure

Piles subjected to axial load and flexure shall be designed in accordance with Article 6.9.2.2 using the resistance factors, ϕ_c and ϕ_f, specified in Article 6.5.4.2.

6.15.3.3—Buckling

Instability of piles which extend through water or air shall be accounted for as specified in Article 6.9. Piles which extend through water or air shall be assumed to be fixed at some depth below the ground.

C6.15.3.3

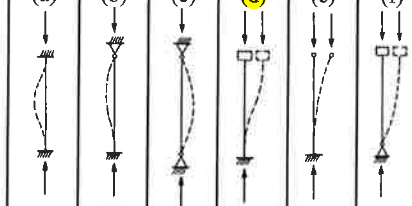
An approximate method acceptable to the Engineer may be used in lieu of a P-Δ analysis.

- For pinned connections at both ends: $K = 0.875$
- For single angles, regardless of end connection: $K = 1.0$

Vierendeel trusses shall be treated as unbraced frames.

Structural Stability Research Council, are given in Table C4.6.2.5-1 for some idealized column end conditions.

Table C4.6.2.5-1—Effective Length Factors, *K*



	(a)	(b)	(c)	(d)	(e)	(f)
Buckled shape of column is shown by dashed line						
Theoretical K value	0.5	0.7	1.0	1.0	2.0	2.0
Design value of K when ideal conditions are approximated	0.65	0.80	1.0	1.2	2.1	2.0
End condition code	Rotation fixed, Translation fixed Rotation free, Translation fixed Rotation fixed, Translation free Rotation free, Translation free					

Because actual column end conditions seldom comply fully with idealized restraint conditions against rotation and translation, the design values suggested by the Structural Stability Research Council are higher than the idealized values.

Lateral stability of columns in continuous frames, unbraced by attachment to shear walls, diagonal bracing, or adjacent structures, depends on the flexural stiffness of the rigidly connected beams. Therefore, the effective length factor, K, is a function of the total flexural restraint provided by the beams at the ends of the column. If the stiffness of the beams is small in relation to that of the column, the value of K could exceed 2.0.

Single angles are loaded through one leg and are subject to eccentricity and twist, which is often not recognized. K is set equal to 1.0 for these members to more closely match the strength provided in the Guide for Design of Steel Transmission Towers (ASCE Manual No. 52, 1971).

Assuming that only elastic action occurs and that all columns buckle simultaneously, it can be shown that (Chen and Liu, 1991; ASCE Task Committee on Effective Length, 1997):

For braced frames:

$$\frac{G_aG_b}{4}\left(\frac{\pi}{K}\right)^2+\frac{G_a+G_b}{2}\left(1-\frac{\frac{\pi}{K}}{\tan\left(\frac{\pi}{K}\right)}\right)+\frac{2\tan\left(\frac{\pi}{2K}\right)}{\frac{\pi}{K}}=1$$

(C4.6.2.5-1)

Table 6B.5.2.1-1—Inventory Rating Allowable Stresses, psi

		DATE BUILT-STEEL UNKNOWN								
		Prior to 1905	1905 to 1936	1936 to 1963	After 1963	Carbon Steel	Silicon Steel Over 2 in. to 4 in. incl.	Nickel Steel	$1^1/_8$ in. and under	Over $1^1/_8$ in. to 2 in. incl.
AASHTO Designation[a]						M 94 (1961)	M 95 (1961)	M 96 (1961)		
ASTM Designation[a]						A7 (1967)	A94 (1966)	A8 (1961)	A94	A94
Minimum Tensile Strength	F_u	52,000	60,000			60,000	70,000	90,000	75,000	72,000
Minimum Yield Point	F_y	26,000	30,000	33,000	36,000	33,000	45,000	55,000	50,000	47,000
Axial tension in members with no holes for high-strength bolts or rivets. Use net section when member has any open holes larger than $1^1/_4$-in. diameter, such as perforations.	$0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000
	$0.46F_y$					NOT APPLICABLE				
Axial tension in members with holes for high-strength bolts or rivets and tension in extreme fiber of rolled shapes, girders, and built-up sections subject to bending. (use whichever is smaller)	Gross* Section $0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000
• When the area of holes deducted for high-strength bolts or rivets is more than 15 percent of the gross area, that area in excess of 15 percent shall be deducted from the gross area in determining stress on the gross section. In determining gross section, any open holes larger than $1^1/_4$-in. diameter, such as perforations, shall be deducted.	Net Section $0.50F_u$	26,000	30,000	30,000	30,000	30,000	35,000	45,000	37,000	36,000
	Net Section $0.46F_u$					NOT APPLICABLE				
Axial tension in members without holes. Axial compression, gross section: stiffeners of plate girders. Compression in splice material, gross section.	$0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000
Compression in extreme fibers of rolled shapes, girders, and built-up sections, subject to bending, gross section, when compression flange is: (A) Supported laterally its full length by embedment in concrete (B) Partially supported or unsupported[b]	$0.55F_y$	14,000	16,000	18,000	20,000	18,000	24,000	30,000	27,000	25,000

$$F_b = \frac{91\times10^6 C_{\ell s}}{(F.S.)\,S_{xc}}\left(\frac{\ell_{yc}}{\ell}\right)\sqrt{0.772\frac{J}{\ell_{yc}}+9.87\left(\frac{d}{\ell}\right)^2} \leq 0.55F_y$$

C_b = $1.75 + 1.05\,(M_1/M_2) + 0.3\,(M_1/M_2)2 \leq 2.3$ where M_1 is the smaller and M_2 is the larger end moment in the unbraced segment of the beams: M_1/M_2 is positive when the moments cause reverse curvature and negative when bent in single curvature.

= 1.0 for unbraced cantilevers and for members where the moment within a significant portion of the unbraced segment is greater than or equal to the larger of the segment end moments.

$F.S.$ = Factor of Safety at Inventory Level = 1.82

APPENDIX B6A—LIMIT STATES AND LOAD FACTORS FOR LOAD RATING

Table B6A-1—Limit States and Load Factors for Load Rating (6A.4.2.2-1)

Bridge Type	Limit State*	Dead Load *DC*	Dead Load *DW*	Design Load Inventory *LL*	Design Load Operating *LL*	Legal Load *LL*	Permit Load *LL*
Steel	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	—	Table 6A.4.5.4.2a-1
	Service II	1.00	1.00	1.30	1.00	1.30	1.00
	Fatigue	0.00	0.00	0.75	—	—	—
Reinforced Concrete	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	—	Table 6A.4.5.4.2a-1
	Service I	1.00	1.00	—	—	—	1.00
Prestressed Concrete	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	—	Table 6A.4.5.4.2a-1
	Service III	1.00	1.00	0.80	—	1.00	—
	Service I	1.00	1.00	—	—	—	1.00
Wood	Strength I	1.25	1.50	1.75	1.35	Tables 6A.4.4.2.3a-1 and 6A.4.4.2.3b-1	—
	Strength II	1.25	1.50	—	—	–	Table 6A.4.5.4.2a-1

* Defined in the *AASHTO LRFD Bridge Design Specifications*.

Shaded cells of the table indicate optional checks.

Service I is used to check the $0.9F_y$ stress limit in reinforcing steel.

Load factor for *DW* at the strength limit state may be taken as 1.25 where thickness has been field measured.

Fatigue limit state is checked using the LRFD fatigue truck (see Article 6A.6.4.1).

Table B6A-2—Generalized Live Load Factors for Legal Loads: γ_L (6A.4.4.2.3a-1)

Traffic Volume (one direction)	Load Factor
Unknown	1.80
$ADTT \geq 5000$	1.80
$ADTT = 1000$	1.65
$ADTT \leq 100$	1.40

Note: Linear interpolation is permitted for other *ADTT*.

Table B6A-3—Generalized Live Load Factors, γ_L for Specialized Hauling Vehicles (6A.4.4.2.3b-1)

Traffic Volume (one direction)	Load Factor for NRL, SU4, SU5, SU6, and SU7
Unknown	1.60
$ADTT \geq 5000$	1.60
$ADTT = 1000$	1.40
$ADTT \leq 100$	1.15

Note: Linear interpolation is permitted for other *ADTT*.

A1A.1.8—Design Load Rating (6A.4.3)

A1A.1.8.1—Strength I Limit State (6A.6.4.1)

Capacity $C = (\varphi_c)(\varphi_s)(\varphi)R_n$

$$RF = \frac{(\varphi_c)(\varphi_s)(\varphi)R_n - (\gamma_{DC})(DC) - (\gamma_{DW})(DW)}{(\gamma_L)(LL+IM)}$$

A1A.1.8.1a—Inventory Level

Table 6A.4.2.2-1

Load Factors

γ_{DC}	1.25
γ_{DW}	1.50
γ_{LL}	1.75

The dead load demands established for load cases *DC*1 and *DC*2 are permanent loads and therefore the load factor for these loads will be taken from the load case *DC.*

$$RF = \frac{(1.0)(1.0)(1.0)(2873) - (1.25)(439+129) - (1.50)(0)}{(1.75)(952.6)}$$

Flexure: $RF = \dfrac{(1.0)(1.0)(1.0)(2873) - (1.25)(439) - (1.25)(129)}{(1.75)(952.6)}$

$= 1.2975$

Note: The general rule for simple spans carrying moving concentrated loads states: the maximum bending moment produced by moving concentrated loads occurs under one of the loads when that load is as far from one support as the center of gravity of all the moving loads on the beam is from the other support. In a refined analysis with the HL-93 truck located in such a manner, the resulting rating factor for flexure is $RF = 1.2922$ for this stringer. It should be understood that locating the precise critical section and load position for rating depends on the combined influence of dead load, live load, member capacity and load factors that make up the general Rating Factor equation.

Shear: $RF = \dfrac{(1.0)(1.0)(1.0)(360.3) - (1.25)(27+8)}{(1.75)(78.9)}$

$= 2.29$

A1A.1.8.1b—Operating Level

Table 6A.4.2.2-1

Load	Load Factor γ
DC	1.25
LL	1.35

For Strength I Operating Level, only the live-load factor changes; therefore, the rating factor can be calculated by direct proportions.

Flexure: $RF = 1.29 \times \dfrac{1.75}{1.35}$

$= 1.67$

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

<u>PIER 3 ANALYSIS</u>

Pier 3 (50 ksi)

	Midas Civil 2016 V2.1		
	Displacement (in)	Stress (ksi)	Limit State
HL-93 Inventory	0.035	6.26	Strength I
HS-20	0.03	5.26	Strength I

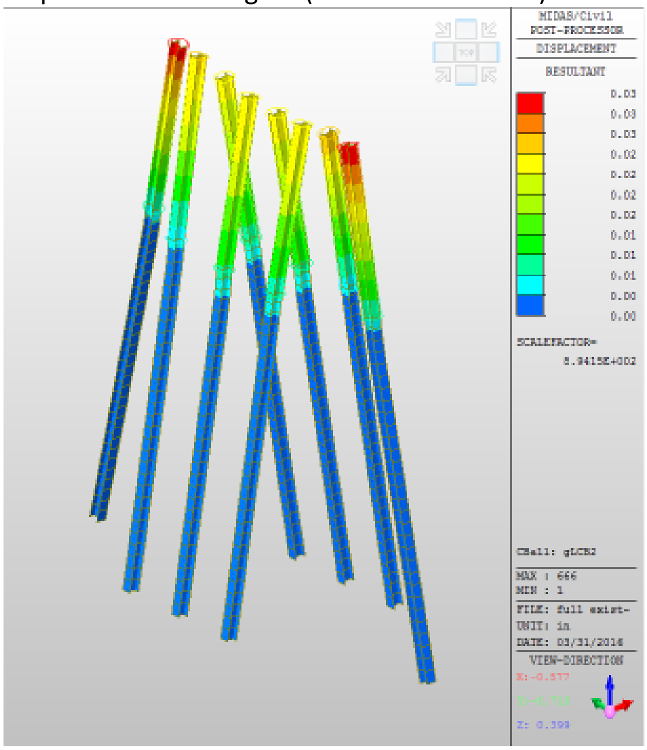
	Midas Civil 2016 V2.1/Hand Calcs.			A-Pile		Allowable Compressive Resistance			
Live load	Shear (kip)	Axial (kip)	Moment (in-kip)	Bearing Capacity (kips)	Pile Type	Axial (kips)	Moment (kip-in)	C/D Ratio Axial	C_{Ma}=Combined Compressive and Flexural Resistance Factor* < 1
HL-93 Inv.	42.8	226.0	913.3	520.0	HP14X89	470.3	1677.6	1.249	**1.170**
HL-93 Inv.	97.9	190	1402	520.0	HP14X89	470.3	1677.6	1.485	**1.320**

*$C_{Ma}=P_U/P_R+\gamma((M_{Ux}/M_{rx)})+(M_{Uy}/M_{ry}))$ < 1.0 AASHTO 6.9.2.2-2

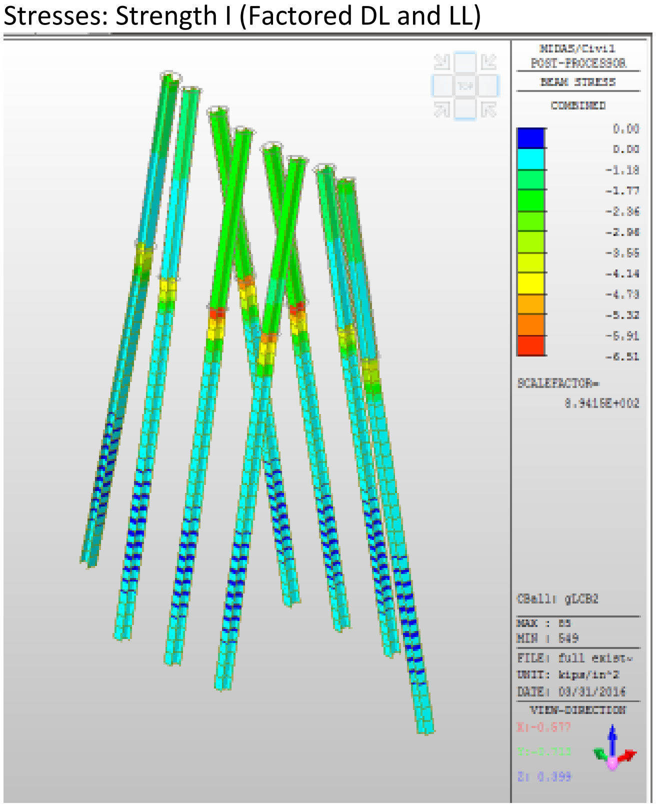
*C/D Ratio AASHTO 6.9.4

Pier 3

Displacement: Strength I (Factored DL and LL)



Stresses: Strength I (Factored DL and LL)



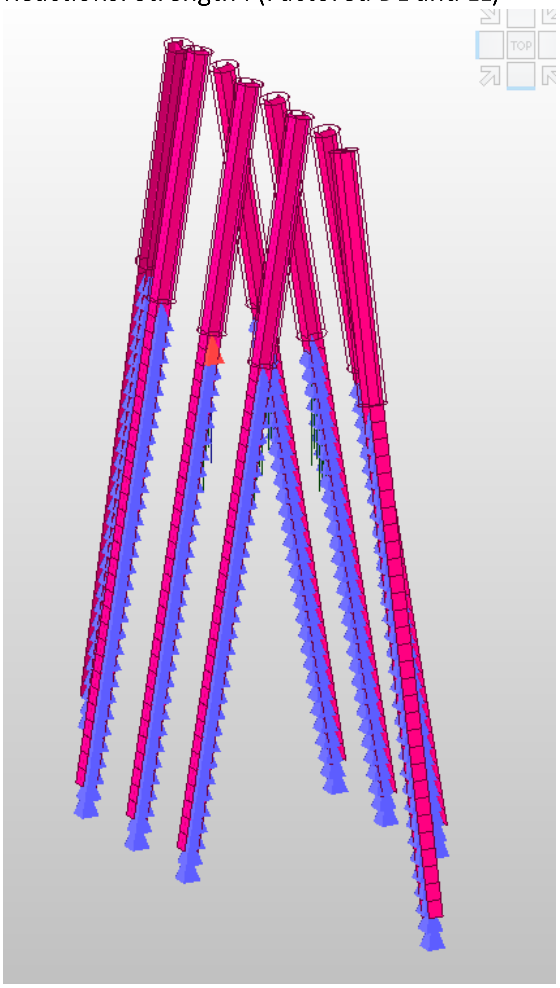
50 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ± Sax (Warping).

LRFD ANALYSIS

Pier 3

Reactions: Strength I (Factored DL and LL)



Maximum Axial Load = 150.032 kips

```
================================================================================

                  LPile for Windows, Version 2015-08.007

               Analysis of Individual Piles and Drilled Shafts
              Subjected to Lateral Loading Using the p-y Method
                         © 1985-2015 by Ensoft, Inc.
                             All Rights Reserved

================================================================================

This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

--------------------------------------------------------------------------------
                            Files Used for Analysis
--------------------------------------------------------------------------------

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\REVISED\

Name of input data file:
HL-93 Inv. 01349 pier 3.lp8d

Name of output report file:
HL-93 Inv. 01349 pier 3.lp8o

Name of plot output file:
HL-93 Inv. 01349 pier 3.lp8p

Name of runtime message file:
HL-93 Inv. 01349 pier 3.lp8r


--------------------------------------------------------------------------------
                           Date and Time of Analysis
--------------------------------------------------------------------------------

               Date:  June 3, 2016              Time:  11:27:29


--------------------------------------------------------------------------------
                                 Problem Title
--------------------------------------------------------------------------------

Project Name: Rehabilitation of Bridge No. 01349, ROute 136 Over

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 3 Pile Analysis Under Existing Condition



--------------------------------------------------------------------------------
                          Program Options and Settings
--------------------------------------------------------------------------------

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined	=	1
Total length of pile	=	35.000 ft
Depth of ground surface below top of pile	=	14.0000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	12.2000
2	35.000	12.2000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is an elastic pile

Cross-sectional Shape	=	Strong H-Pile
Length of section	=	35.000000 ft
Flange Width	=	12.200000 in
Section Depth	=	12.100000 in
Flange Thickness	=	0.610000 in
Web Thickness	=	0.605000 in
Section Area	=	21.466400 sq. in
Moment of Inertia	=	556.640624 in^4
Elastic Modulus	=	29000000. psi

Ground Slope and Pile Batter Angles

Ground Slope Angle	=	0.000 degrees
	=	0.000 radians
Pile Batter Angle	=	-9.462 degrees
	=	-0.165 radians

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

Distance from top of pile to top of layer	=	14.000000 ft
Distance from top of pile to bottom of layer	=	16.000000 ft
Effective unit weight at top of layer	=	120.000000 pcf
Effective unit weight at bottom of layer	=	120.000000 pcf
Undrained cohesion at top of layer	=	500.000000 psf
Undrained cohesion at bottom of layer	=	500.000000 psf
Friction angle at top of layer	=	10.000000 deg.
Friction angle at bottom of layer	=	10.000000 deg.
Epsilon-50 at top of layer	=	0.010000
Epsilon-50 at bottom of layer	=	0.010000
Subgrade k at top of layer	=	18.000000 pci
Subgrade k at bottom of layer	=	18.000000 pci

Layer 2 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	16.000000 ft
Distance from top of pile to bottom of layer	=	25.000000 ft
Effective unit weight at top of layer	=	125.000000 pcf
Effective unit weight at bottom of layer	=	125.000000 pcf
Friction angle at top of layer	=	38.000000 deg.
Friction angle at bottom of layer	=	38.000000 deg.
Subgrade k at top of layer	=	25.000000 pci
Subgrade k at bottom of layer	=	25.000000 pci

Layer 3 is weak rock, p-y criteria by Reese, 1997

Distance from top of pile to top of layer	=	25.000000 ft

Distance from top of pile to bottom of layer = 34.000000 ft
Effective unit weight at top of layer = 125.000000 pcf
Effective unit weight at bottom of layer = 125.000000 pcf
Uniaxial compressive strength at top of layer = 500.000000 psi
Uniaxial compressive strength at bottom of layer = 500.000000 psi
Initial modulus of rock at top of layer = 1050000. psi
Initial modulus of rock at bottom of layer = 1050000. psi
RQD of rock at top of layer = 0.0000 %
RQD of rock at bottom of layer = 0.0000 %
k rm of rock at top of layer = 0.0005000
k rm of rock at bottom of layer = 0.0005000

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

Distance from top of pile to top of layer = 34.000000 ft
Distance from top of pile to bottom of layer = 35.000000 ft
Effective unit weight at top of layer = 139.000000 pcf
Effective unit weight at bottom of layer = 139.000000 pcf
Uniaxial compressive strength at top of layer = 11600. psi
Uniaxial compressive strength at bottom of layer = 11600. psi
Poisson's ratio at top of layer = 0.250000
Poisson's ratio at bottom of layer = 0.250000
Option 1: Intact rock modulus at top of layer = 1500000. psi
Intact rock modulus at bottom of layer = 1500000. psi
Option 1: Geologic Strength Index for layer = 50.000000
Option 2: Rock mass modulus at top of layer = 0.0000 psi
Rock mass modulus at bottom of layer = 0.0000 psi
Option 1 will be used to compute values of rock mass modulus for the p-y curve in massive rock.
The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28

(Depth of the lowest soil layer extends 0.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	14.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	16.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	16.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	25.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	25.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	34.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	34.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	35.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	2	V = 42800. lbs	S = 0.0000 in/in	226000.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	14.0000	0.00	N.A.	No	0.00	476.3127
2	16.0000	0.7388	No	No	476.3127	186660.
3	25.0000	11.0000	No	Yes	N.A.	N.A.
4	34.0000	20.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Pile-head Rotation (Loading Type 2)

Shear force at pile head = 42800.0 lbs
Rotation of pile head = 0.000E+00 radians
Axial load at pile head = 226000.0 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	6.9920	-7169895.	42800.	0.00	89100.	1.61E+10	0.00	0.00	0.00
0.3500	6.9881	-6989249.	42800.	-0.00184	87120.	1.61E+10	0.00	0.00	0.00
0.7000	6.9766	-6806878.	42800.	-0.00364	85122.	1.61E+10	0.00	0.00	0.00
1.0500	6.9576	-6622825.	42800.	-0.00538	83105.	1.61E+10	0.00	0.00	0.00
1.4000	6.9314	-6437137.	42800.	-0.00708	81070.	1.61E+10	0.00	0.00	0.00
1.7500	6.8981	-6249859.	42800.	-0.00873	79018.	1.61E+10	0.00	0.00	0.00
2.1000	6.8580	-6061038.	42800.	-0.01033	76949.	1.61E+10	0.00	0.00	0.00
2.4500	6.8113	-5870720.	42800.	-0.01189	74863.	1.61E+10	0.00	0.00	0.00
2.8000	6.7581	-5678952.	42800.	-0.01339	72761.	1.61E+10	0.00	0.00	0.00
3.1500	6.6988	-5485781.	42800.	-0.01484	70645.	1.61E+10	0.00	0.00	0.00
3.5000	6.6335	-5291256.	42800.	-0.01624	68513.	1.61E+10	0.00	0.00	0.00
3.8500	6.5624	-5095424.	42800.	-0.01760	66367.	1.61E+10	0.00	0.00	0.00
4.2000	6.4857	-4898333.	42800.	-0.01890	64207.	1.61E+10	0.00	0.00	0.00
4.5500	6.4036	-4700033.	42800.	-0.02014	62034.	1.61E+10	0.00	0.00	0.00
4.9000	6.3165	-4500572.	42800.	-0.02134	59848.	1.61E+10	0.00	0.00	0.00
5.2500	6.2244	-4300000.	42800.	-0.02249	57650.	1.61E+10	0.00	0.00	0.00
5.6000	6.1276	-4098365.	42800.	-0.02358	55440.	1.61E+10	0.00	0.00	0.00
5.9500	6.0263	-3895719.	42800.	-0.02462	53220.	1.61E+10	0.00	0.00	0.00
6.3000	5.9208	-3692110.	42800.	-0.02561	50988.	1.61E+10	0.00	0.00	0.00
6.6500	5.8112	-3487590.	42800.	-0.02654	48747.	1.61E+10	0.00	0.00	0.00
7.0000	5.6979	-3282208.	42800.	-0.02742	46496.	1.61E+10	0.00	0.00	0.00
7.3500	5.5809	-3076016.	42800.	-0.02825	44237.	1.61E+10	0.00	0.00	0.00
7.7000	5.4606	-2869064.	42800.	-0.02902	41969.	1.61E+10	0.00	0.00	0.00
8.0500	5.3371	-2661403.	42800.	-0.02974	39693.	1.61E+10	0.00	0.00	0.00
8.4000	5.2108	-2453085.	42800.	-0.03041	37410.	1.61E+10	0.00	0.00	0.00
8.7500	5.0817	-2244162.	42800.	-0.03102	35121.	1.61E+10	0.00	0.00	0.00
9.1000	4.9502	-2034684.	42800.	-0.03157	32825.	1.61E+10	0.00	0.00	0.00
9.4500	4.8165	-1824703.	42800.	-0.03208	30524.	1.61E+10	0.00	0.00	0.00
9.8000	4.6808	-1614272.	42800.	-0.03252	28218.	1.61E+10	0.00	0.00	0.00

10.1500	4.5433	-1403443.	42800.	-0.03292	25908.	1.61E+10	0.00	0.00	0.00
10.5000	4.4043	-1192266.	42800.	-0.03325	23594.	1.61E+10	0.00	0.00	0.00
10.8500	4.2640	-980796.	42800.	-0.03354	21276.	1.61E+10	0.00	0.00	0.00
11.2000	4.1226	-769083.	42800.	-0.03376	18956.	1.61E+10	0.00	0.00	0.00
11.5500	3.9804	-557180.	42800.	-0.03394	16634.	1.61E+10	0.00	0.00	0.00
11.9000	3.8376	-345139.	42800.	-0.03405	14310.	1.61E+10	0.00	0.00	0.00
12.2500	3.6943	-133014.	42800.	-0.03412	11986.	1.61E+10	0.00	0.00	0.00
12.6000	3.5510	79145.	42800.	-0.03412	11395.	1.61E+10	0.00	0.00	0.00
12.9500	3.4077	291284.	42800.	-0.03407	13720.	1.61E+10	0.00	0.00	0.00
13.3000	3.2648	503351.	42800.	-0.03397	16044.	1.61E+10	0.00	0.00	0.00
13.6500	3.1224	715294.	42800.	-0.03381	18367.	1.61E+10	0.00	0.00	0.00
14.0000	2.9807	927060.	42800.	-0.03360	20687.	1.61E+10	0.00	0.00	0.00
14.3500	2.8401	1138597.	42797.	-0.03333	23006.	1.61E+10	-1.4247	2.1068	0.00
14.7000	2.7008	1349828.	42784.	-0.03301	25320.	1.61E+10	-4.9941	7.7664	0.00
15.0500	2.5629	1560637.	42755.	-0.03263	27630.	1.61E+10	-8.7952	14.4133	0.00
15.4000	2.4267	1770906.	42710.	-0.03219	29935.	1.61E+10	-12.5442	21.7108	0.00
15.7500	2.2925	1980517.	42650.	-0.03171	32232.	1.61E+10	-15.9800	29.2768	0.00
16.1000	2.1604	2189356.	42576.	-0.03116	34520.	1.61E+10	-19.3272	37.5742	0.00
16.4500	2.0307	2397313.	42002.	-0.03057	36799.	1.61E+10	-253.7771	524.8795	0.00
16.8000	1.9036	2600202.	40832.	-0.02992	39023.	1.61E+10	-303.3411	669.2713	0.00
17.1500	1.7794	2797098.	39465.	-0.02921	41180.	1.61E+10	-347.5332	820.3068	0.00
17.5000	1.6582	2987173.	37922.	-0.02846	43263.	1.61E+10	-387.6588	981.8825	0.00
17.8500	1.5403	3169671.	36222.	-0.02766	45263.	1.61E+10	-421.4273	1149.	0.00
18.2000	1.4259	3343953.	34389.	-0.02681	47173.	1.61E+10	-451.6685	1330.	0.00
18.5500	1.3151	3509441.	32426.	-0.02592	48987.	1.61E+10	-483.1232	1543.	0.00
18.9000	1.2081	3665541.	30288.	-0.02499	50697.	1.61E+10	-535.0819	1860.	0.00
19.2500	1.1052	3811296.	27934.	-0.02402	52295.	1.61E+10	-585.5205	2225.	0.00
19.6000	1.0064	3945782.	25376.	-0.02301	53768.	1.61E+10	-632.8869	2641.	0.00
19.9500	0.9119	4068129.	22549.	-0.02196	55109.	1.61E+10	-713.1766	3285.	0.00
20.3000	0.8219	4176890.	19376.	-0.02089	56301.	1.61E+10	-797.5319	4076.	0.00
20.6500	0.7364	4270552.	15840.	-0.01979	57327.	1.61E+10	-886.3148	5055.	0.00
21.0000	0.6556	4347525.	11908.	-0.01867	58171.	1.61E+10	-986.0967	6317.	0.00
21.3500	0.5796	4406029.	7546.	-0.01753	58812.	1.61E+10	-1091.	7908.	0.00
21.7000	0.5083	4444196.	2883.	-0.01638	59230.	1.61E+10	-1129.	9330.	0.00
22.0500	0.4420	4461346.	-1646.	-0.01522	59418.	1.61E+10	-1028.	9765.	0.00
22.4000	0.3805	4459268.	-5744.	-0.01406	59395.	1.61E+10	-923.9724	10200.	0.00
22.7500	0.3238	4439790.	-9407.	-0.01291	59182.	1.61E+10	-819.9901	10635.	0.00
23.1000	0.2721	4404751.	-12634.	-0.01175	58798.	1.61E+10	-717.0654	11070.	0.00
23.4500	0.2251	4355976.	-15435.	-0.01061	58263.	1.61E+10	-616.6010	11505.	0.00
23.8000	0.1829	4295247.	-17822.	-0.00949	57598.	1.61E+10	-519.9409	11940.	0.00
24.1500	0.1454	4224286.	-19813.	-0.00838	56820.	1.61E+10	-428.3686	12375.	0.00
24.5000	0.1125	4144725.	-21433.	-0.00729	55948.	1.61E+10	-343.1060	12810.	0.00
24.8500	0.08413	4058089.	-22711.	-0.00623	54999.	1.61E+10	-265.3131	13245.	0.00
25.2000	0.06020	3965770.	-23680.	-0.00518	53987.	1.61E+10	-196.0890	13680.	0.00
25.5500	0.04061	3869012.	-37247.	-0.00416	52927.	1.61E+10	-6265.	647924.	0.00
25.9000	0.02524	3660793.	-66427.	-0.00318	50645.	1.61E+10	-7631.	1269678.	0.00
26.2500	0.01388	3317066.	-99989.	-0.00227	46878.	1.61E+10	-8351.	2527941.	0.00
26.6000	0.00613	2825203.	-134877.	-0.00148	41488.	1.61E+10	-8262.	5657558.	0.00
26.9500	0.00148	2186898.	-166527.	-8.24E-04	34493.	1.61E+10	-6809.	1.93E+07	0.00
27.3000	-7.85E-04	1427937.	-166809.	-3.53E-04	26176.	1.61E+10	6675.	3.57E+07	0.00
27.6500	-0.00149	786374.	-134195.	-6.54E-05	19146.	1.61E+10	8855.	2.50E+07	0.00
28.0000	-0.00133	300824.	-95424.	7.61E-05	13825.	1.61E+10	9607.	3.02E+07	0.00
28.3500	-8.50E-04	-15333.	-55363.	1.13E-04	10696.	1.61E+10	9470.	4.68E+07	0.00
28.7000	-3.83E-04	-164441.	-18805.	8.98E-05	12330.	1.61E+10	7939.	8.70E+07	0.00
29.0500	-9.58E-05	-173462.	9657.	4.59E-05	12429.	1.61E+10	5614.	2.46E+08	0.00
29.4000	2.05E-06	-83412.	19184.	1.25E-05	11442.	1.61E+10	-1077.	2.20E+09	0.00
29.7500	8.79E-06	-12342.	10434.	-7.31E-10	10663.	1.61E+10	-3089.	1.48E+09	0.00
30.1000	2.05E-06	4234.	1691.	-1.06E-06	10574.	1.61E+10	-1074.	2.20E+09	0.00
30.4500	-7.39E-08	1867.	-482.3674	-2.62E-07	10549.	1.61E+10	38.8160	2.20E+09	0.00
30.8000	-1.54E-07	183.0728	-231.5056	4.85E-09	10530.	1.61E+10	80.6420	2.20E+09	0.00
31.1500	-3.32E-08	-78.0158	-25.5354	1.85E-08	10529.	1.61E+10	17.4391	2.20E+09	0.00
31.5000	1.92E-09	-31.4601	8.9736	4.27E-09	10528.	1.61E+10	-1.0062	2.20E+09	0.00
31.8500	2.67E-09	-2.6458	3.9147	-1.64E-10	10528.	1.61E+10	-1.4028	2.20E+09	0.00
32.2000	5.36E-10	1.4239	0.3778	-3.23E-10	10528.	1.61E+10	-0.2815	2.20E+09	0.00
32.5500	-4.37E-11	0.5282	-0.1651	-6.93E-11	10528.	1.61E+10	0.02293	2.20E+09	0.00
32.9000	-4.63E-11	0.03688	-0.06595	4.18E-12	10528.	1.61E+10	0.02430	2.20E+09	0.00
33.2500	-8.59E-12	-0.02577	-0.00544	5.62E-12	10528.	1.61E+10	0.00451	2.20E+09	0.00
33.6000	0.00	-0.00883	0.00300	1.12E-12	10528.	1.61E+10	-4.93E-04	2.20E+09	0.00
33.9500	0.00	-5.91E-04	0.00105	0.00	10528.	1.61E+10	-4.33E-04	2.20E+09	0.00
34.3000	0.00	5.12E-06	7.05E-05	0.00	10528.	1.61E+10	-3.40E-05	2.20E+09	0.00
34.6500	0.00	1.68E-06	-6.50E-07	0.00	10528.	1.61E+10	1.00E-07	609267.	0.00
35.0000	-1.44E-12	0.00	0.00	0.00	10528.	1.61E+10	2.09E-07	304633.	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection              =     6.99204679 inches
Computed slope at pile head       =       0.000000 radians
Maximum bending moment            =      -7169895. inch-lbs
Maximum shear force               =       -166809. lbs
Depth of maximum bending moment   =       0.000000 feet below pile head
Depth of maximum shear force      =    27.30000000 feet below pile head
Number of iterations              =             24
Number of zero deflection points  =              7
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 2, Shear and Slope

```
Shear      =          42800. lbs
Slope      =         0.00000
Axial Load =         226000. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
35.00000	6.99204679	-7169895.	-166809.
33.25000	6.97746888	-7162030.	-167483.
31.50000	6.97855245	-7164465.	-170773.
29.75000	6.98987046	-7168126.	-171194.
28.00000	7.29575037	-7271278.	-188961.
26.25000	23.65668834	-13612986.	-80085.
24.50000	26.87277718	-16090088.	42800.
22.75000	24.05233379	-15702662.	42800.

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	42800.	S, rad	0.00	226000.	6.9920	0.00	-166809.	-7169895.

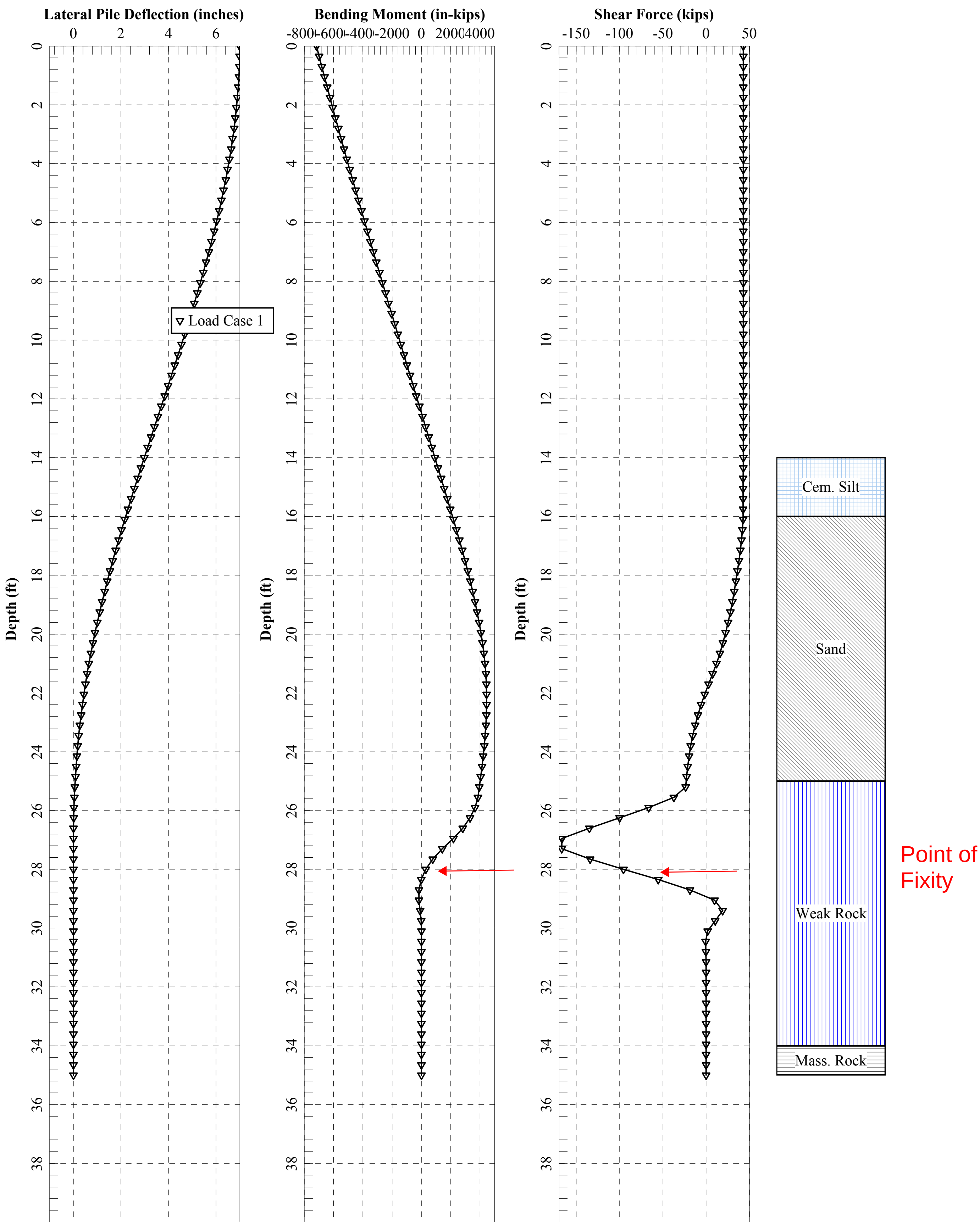
Maximum pile-head deflection = 6.9920467882 inches
Maximum pile-head rotation = -0.0000000000 radians = -0.000000 deg.

Summary of Warning Messages

The following warning was reported 298 times

WARNING: The ratio of intact rock modulus to uniaxial compressive strength for massive rock appears to be outside the usual range of values.

This analysis ended normally



Lateral Pile Deflection (inches)
Bending Moment (in-kips)
Shear Force (kips)
Depth (ft)
Load Case 1
Cem. Silt
Sand
Weak Rock
Mass. Rock
Point of Fixity

BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

PROPOSED WIDENING ANALYSIS

Company: Close, Jensen, and Miller PC
Engineer: Danielle Coutu

Swing Span

	Midas Civil 2016 V2.1		
	Displacement (in)	Stress (ksi)	Limit State
HL-93 Inventory	0.83	29.62	Strength I
HS-20	0.74	24.72	Strength I

Fixed Truss

	Midas Civil 2016 V2.1			
	Displacement (in)	Stress (ksi)	Limit State	Wind Speed (mph)
Cross Bracing		22.87	Strength III	100
Main Members		16.6	Strength III	100
add 1in CP				
Entire Truss		23.75	Strength III	100
Main Members	2.1	14.86	Strength III	100

Pier 2

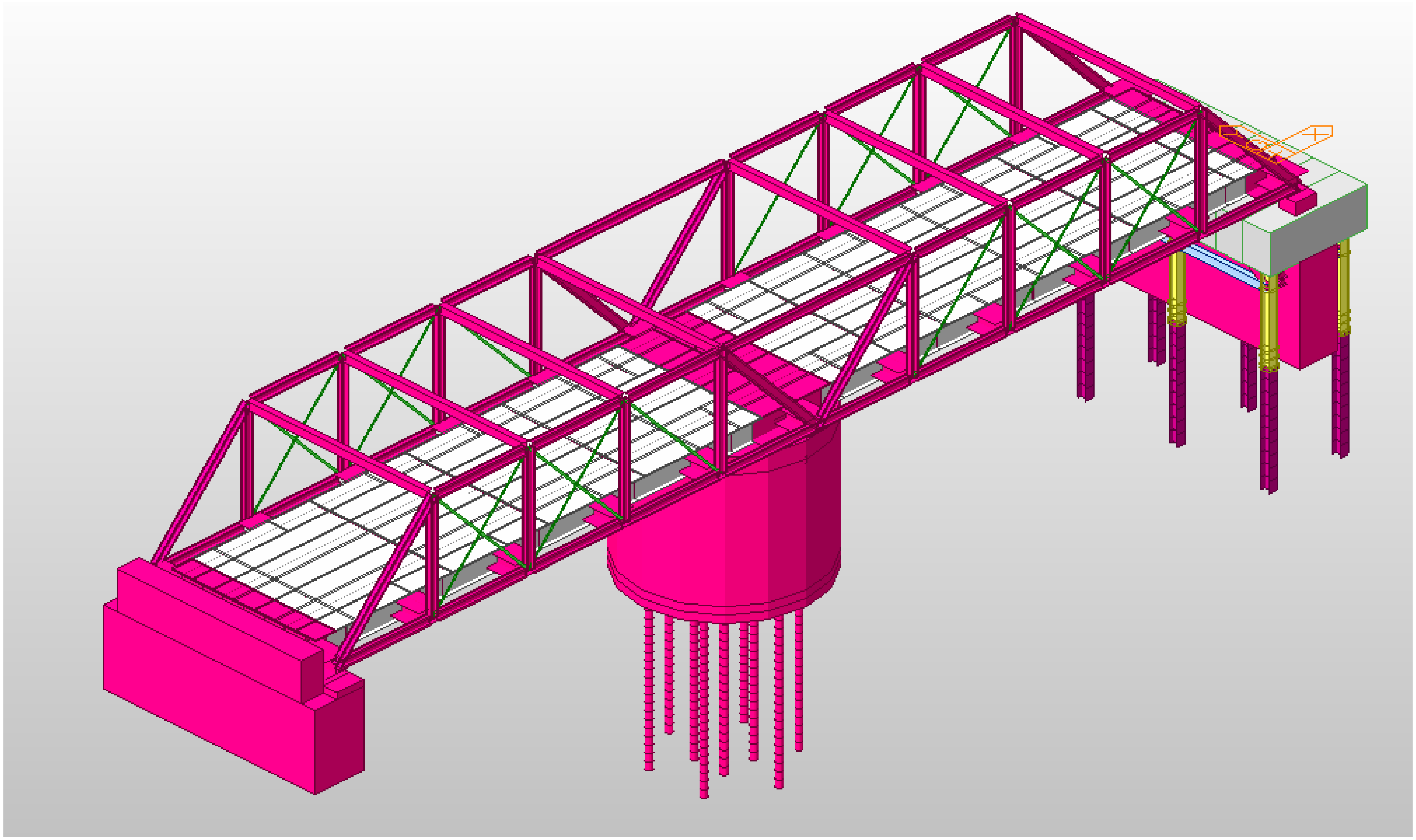
	Midas Civil 2016 V2.1		
	Displacement (in)	Stress (ksi)	Limit State
HL-93 Inventory	0.07	0.96	Strength I
HS-20	0.07	0.96	Strength I

	Midas Civil 2016 V2.1			L-pile V2015	A-Pile		Allowable Compressive Resistance			
Live load	Shear (kip)	Axial (kip)	Moment (in-kip)	Max Moment in Pile (in-kip)	Bearing Capacity (kips)	Pile Type	Axial (kips)	Moment (kip-in)	C/D Ratio Axial	C_{Ma}=Combined Compressive and Flexural Resistance Factor* < 1
HL-93 Inv.	14.1	225.0	1188.2	4337.1	520.0	HP14X117	1074.4	4570	**2.865**	**0.530**

*$C_{Ma}=P_U/P_R+\gamma((M_{Ux}/M_{rx})+(M_{Uy}/M_{ry})) < 1.0$ AASHTO 6.9.2.2-2

*C/D Ratio AASHTO 6.9.4

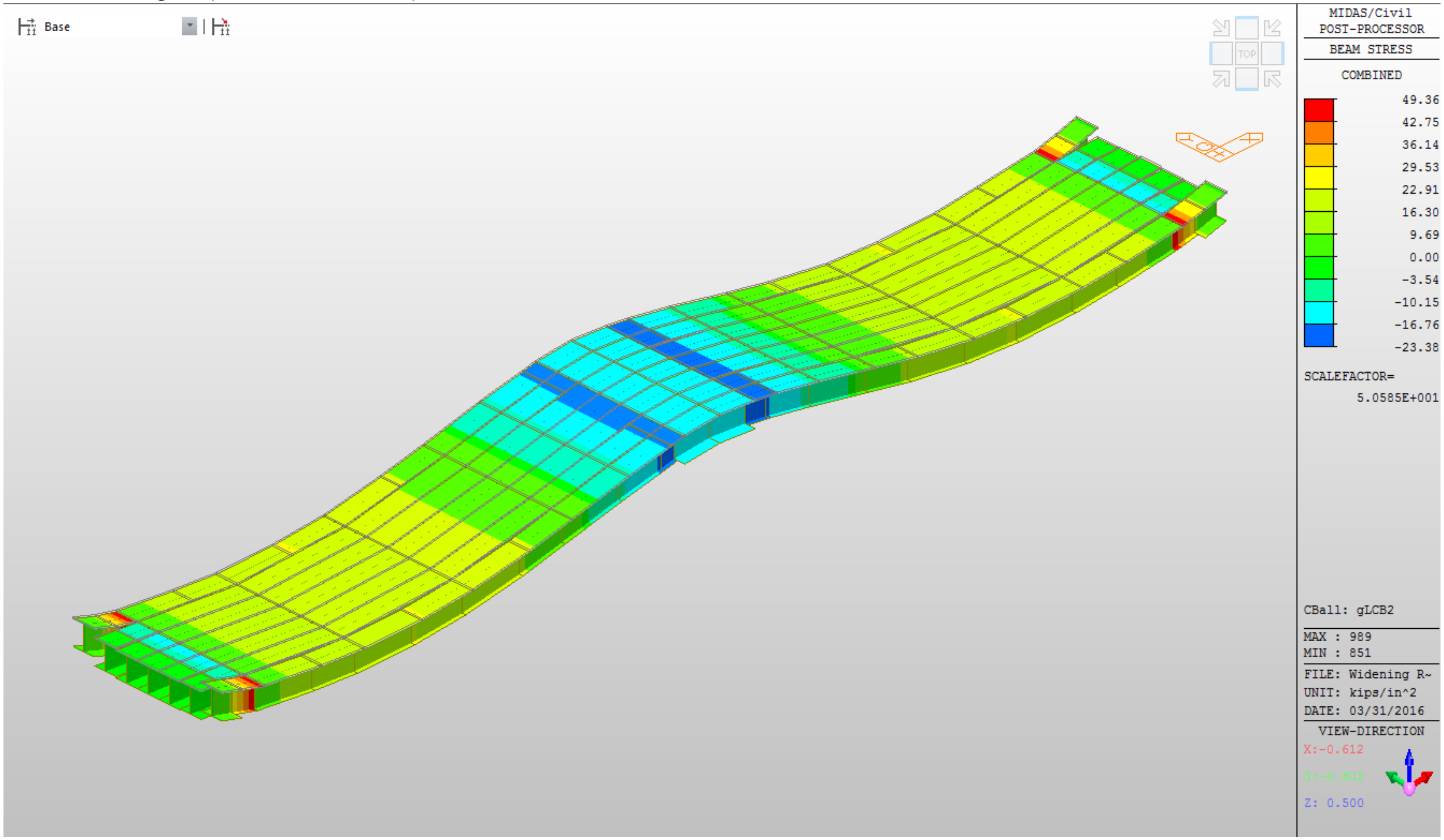
Truss Widening: Swing Span (widening Truss 2' on each side)



LRFD ANALYSIS

Truss Widening: Swing Span

Stresses: Strength I (Factored DL and LL)



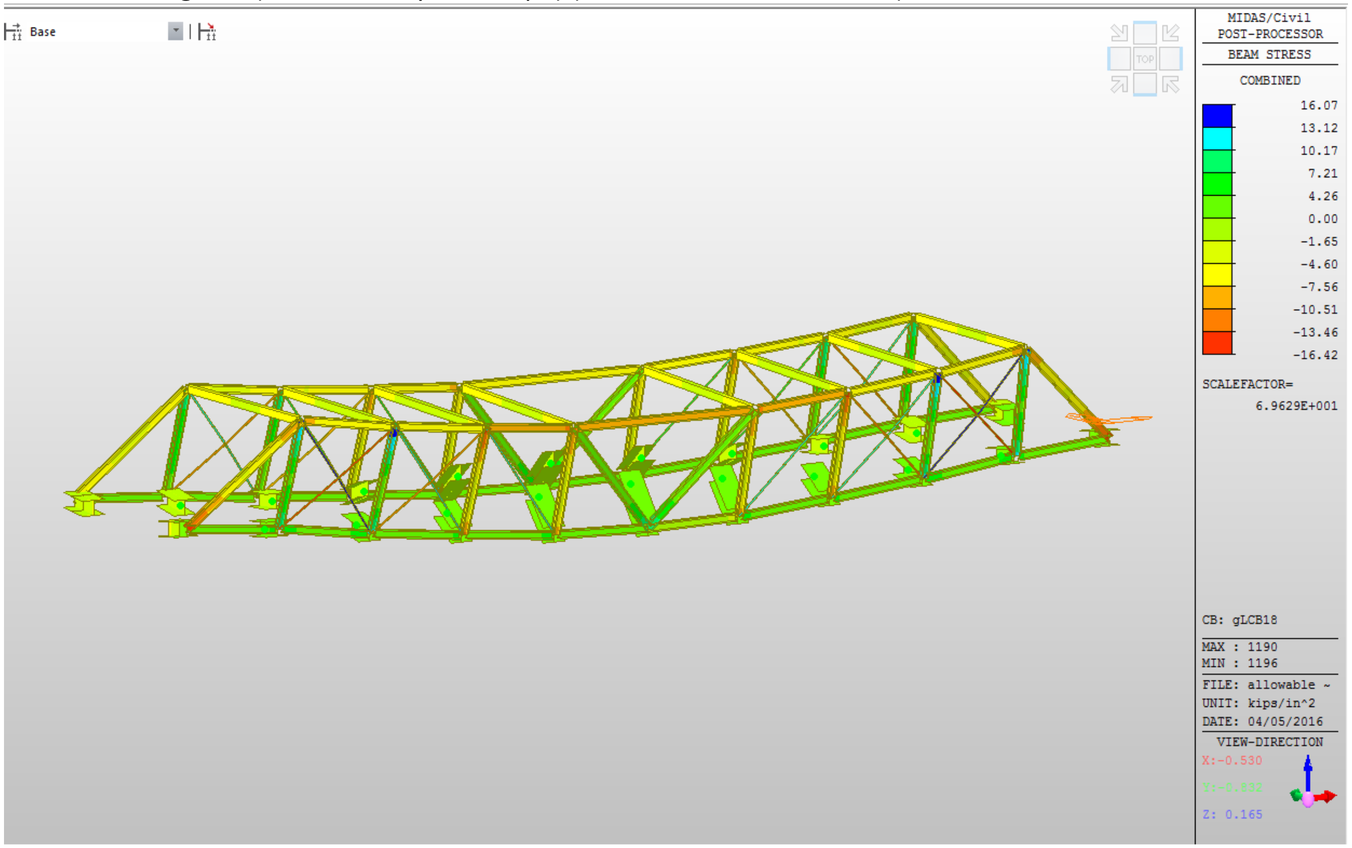
50 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Truss: Proposed Widening

Stresses: Strength III (Wind Velocity= 125 mph) (Fixed Moment Connection)



Stress = 16.42 ksi

25.5 ksi Steel

Windward load = .08 ksf

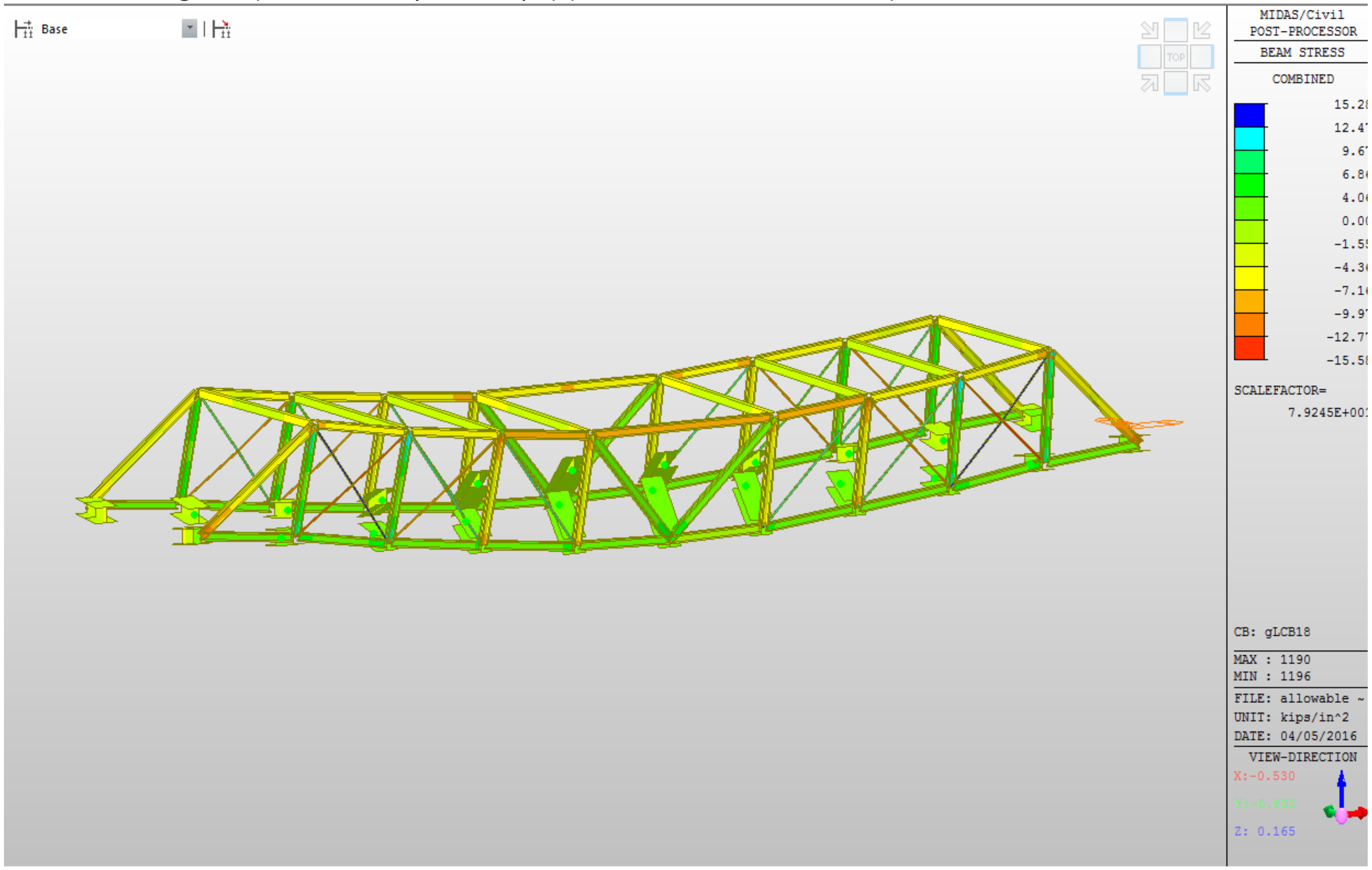
Leeward load = .04 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Truss: Proposed Widening

Stresses: Strength III (Wind Velocity= 100 mph) (Fixed Moment Connection)



Stress = 15.58 ksi

25.5 ksi Steel

Windward load = .0512 ksf

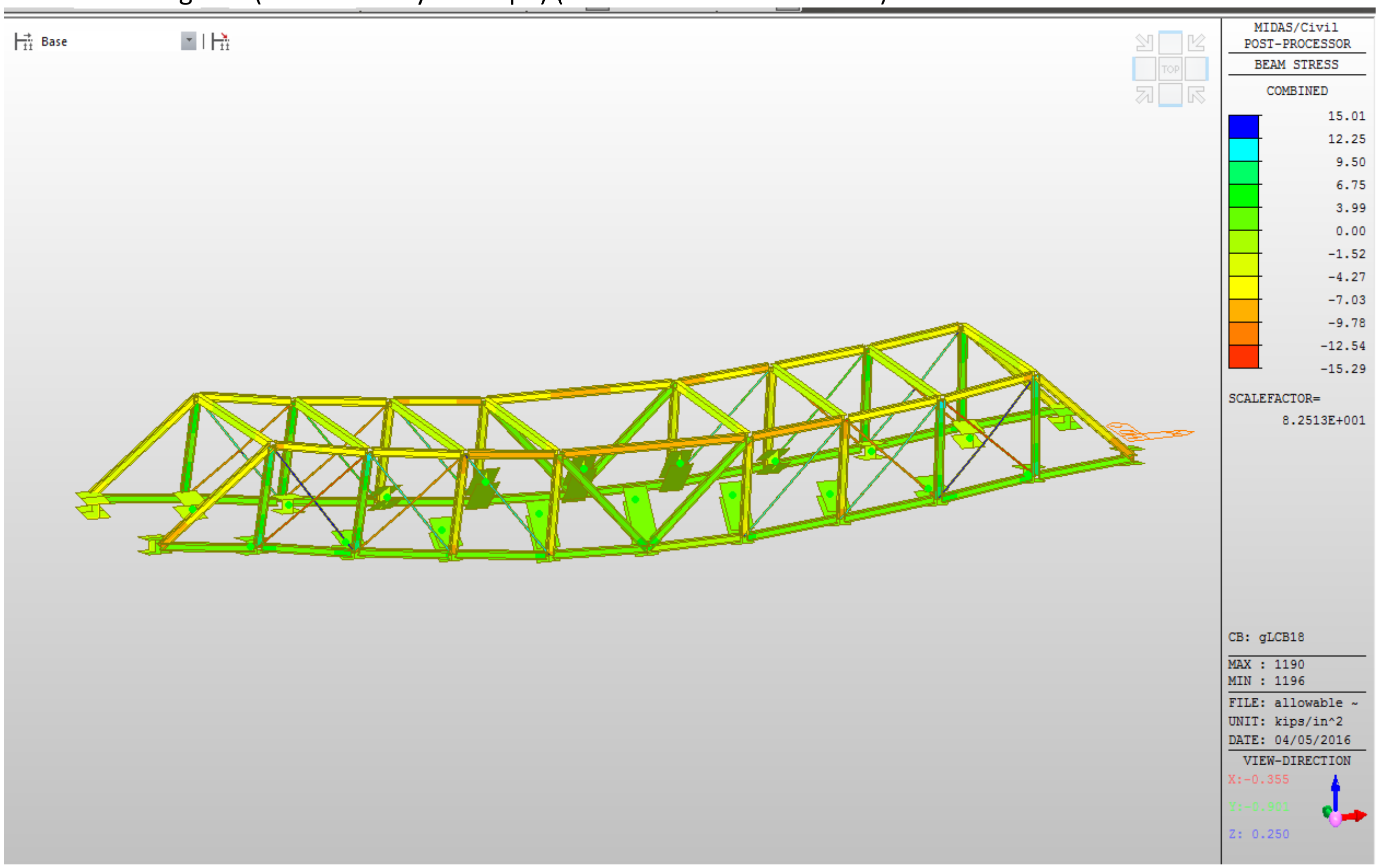
Leeward load = .0256 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Truss: Proposed Widening

Stresses: Strength III (Wind Velocity= 90 mph) (Fixed Moment Connection)



Stress = 15.29 ksi 25.5 ksi Steel

Windward load = .0415 ksf

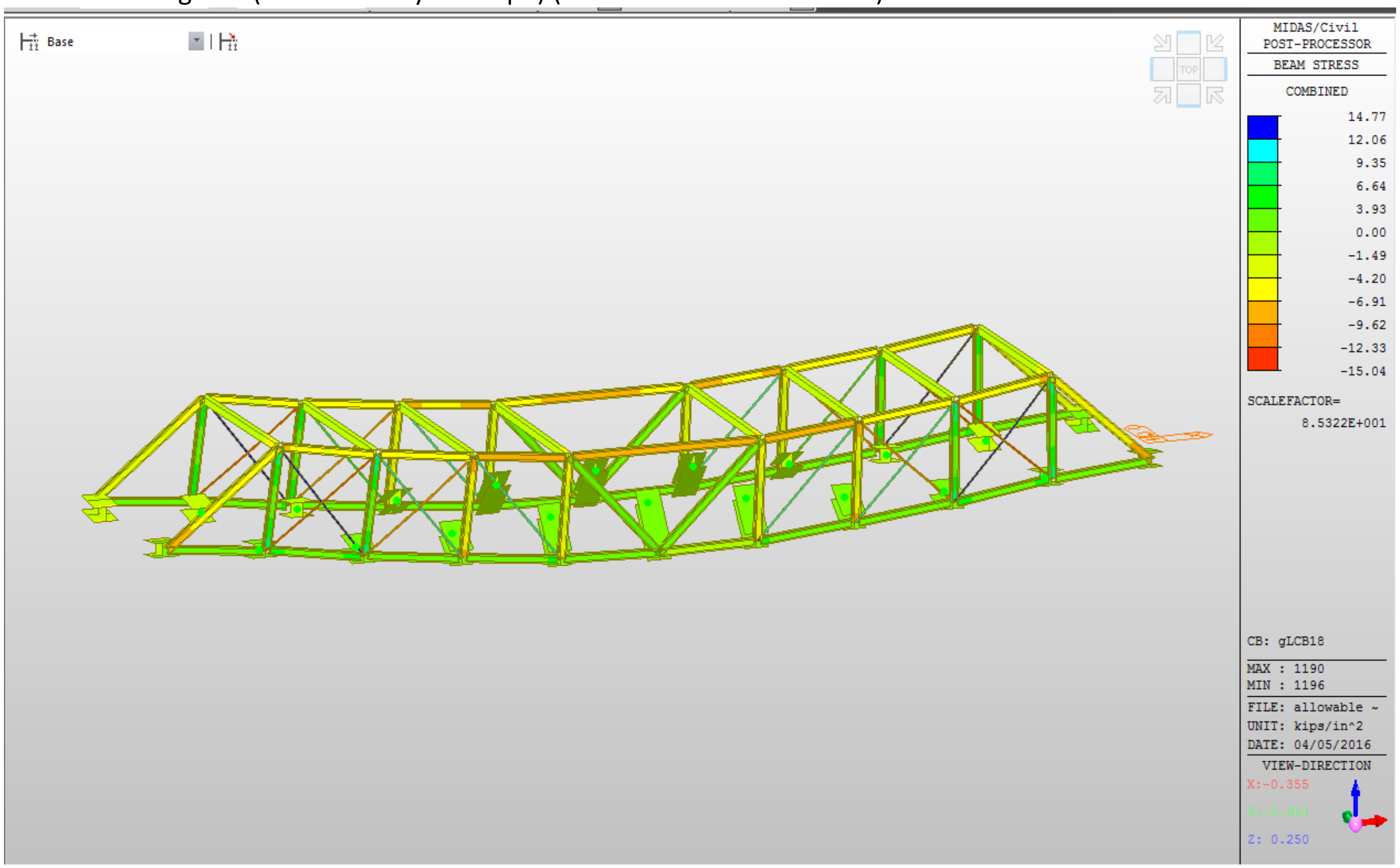
Leeward load = .0207 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Swing Truss: Proposed Widening

Stresses: Strength III (Wind Velocity= 80 mph) (Fixed Moment Connection)



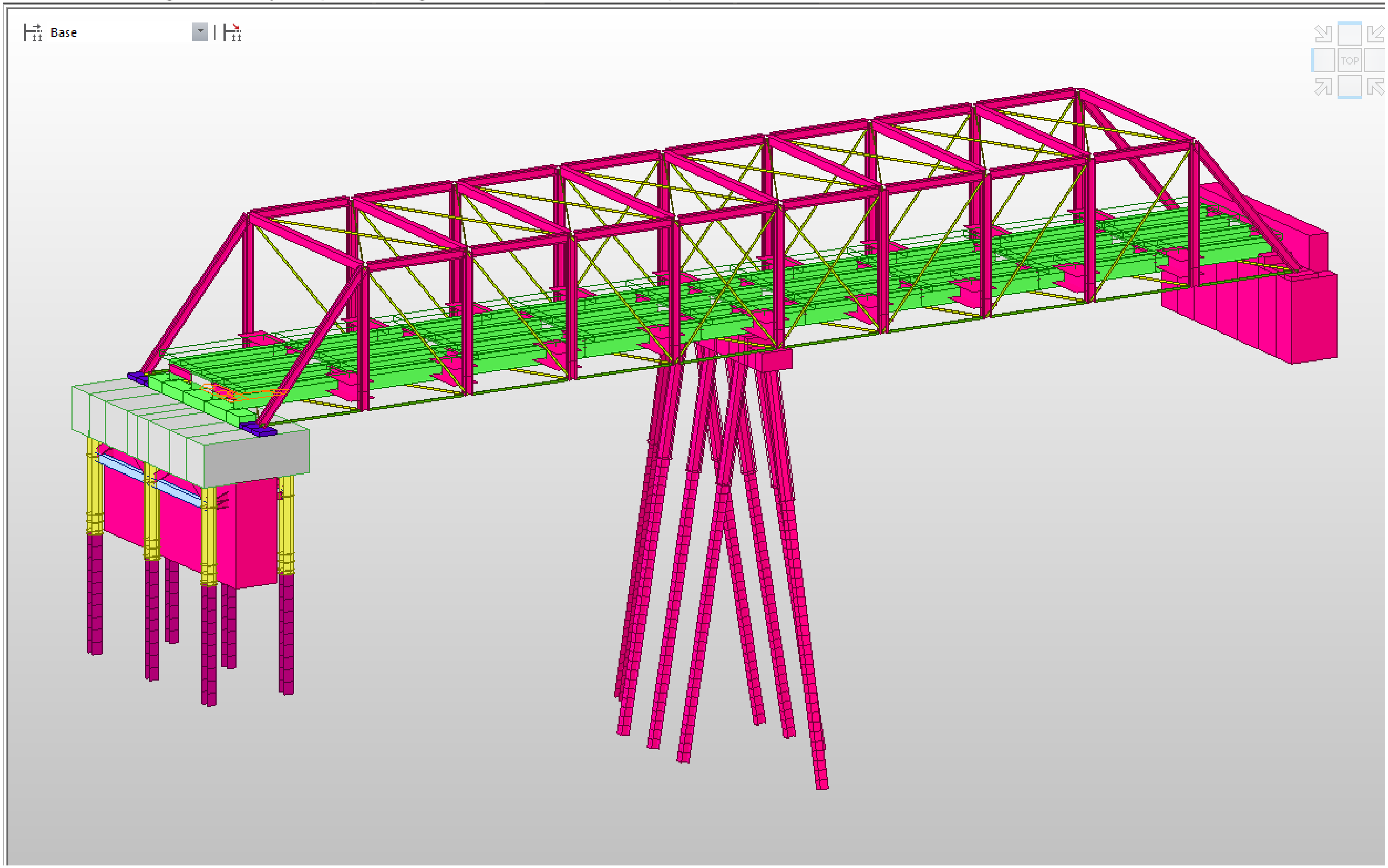
Stress = 15.02 ksi | 25.5 ksi Steel

Windward load = .0328 ksf

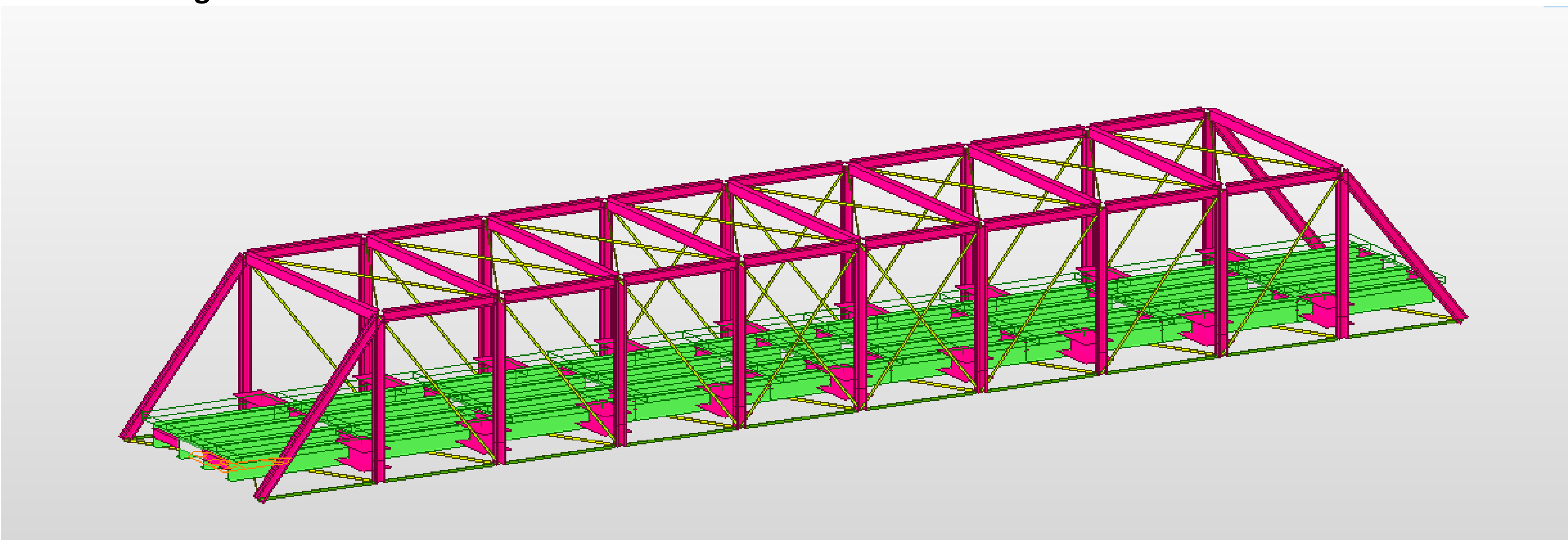
Leeward load = .0164 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

Truss Widening: Fixed Span (widening Truss 2' on each side)



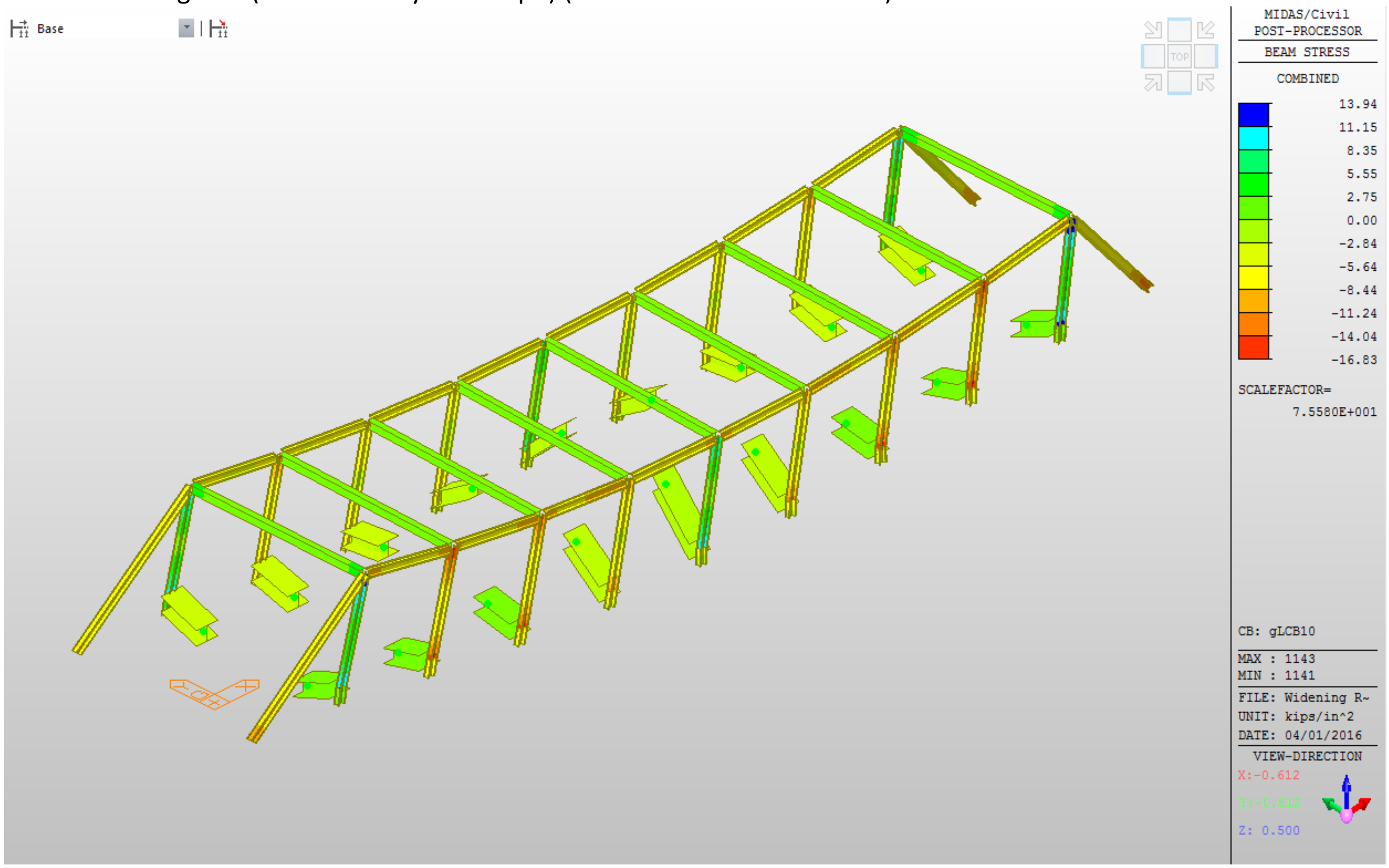
Truss Widening: Fixed Truss



LRFD ANALYSIS

Fixed Truss: Proposed Widening (Main Members)

Stresses: Strength III (Wind Velocity= 125 mph) (Fixed Moment Connection)



Stress = 16.83 ksi

25.5 ksi Steel

Windward load = .08 ksf

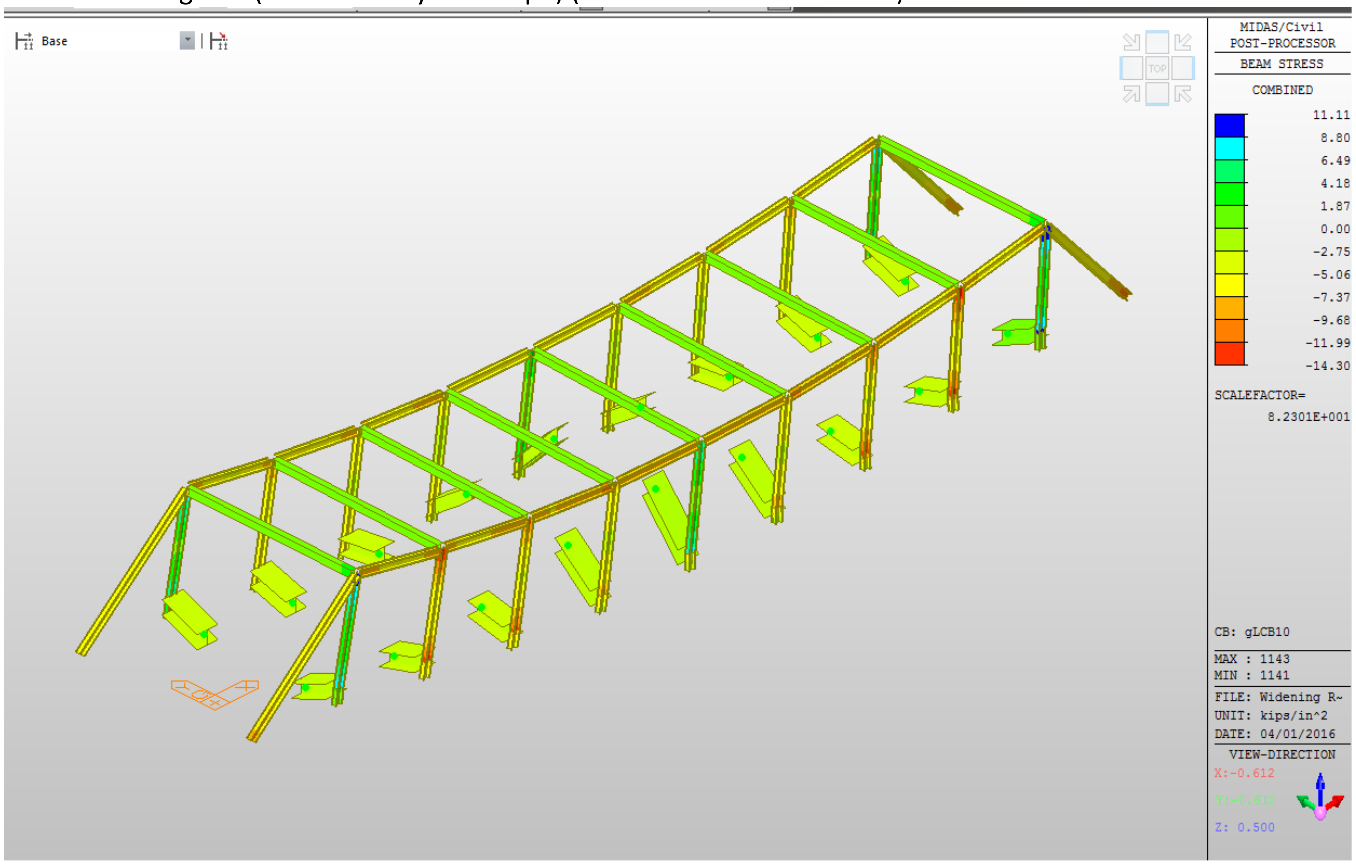
Leeward load = .04 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Truss: Proposed Widening (Main Members)

Stresses: Strength III (Wind Velocity= 100 mph) (Fixed Moment Connection)



Stress =14.30 ksi

25.5 ksi Steel

Windward load = .0512 ksf

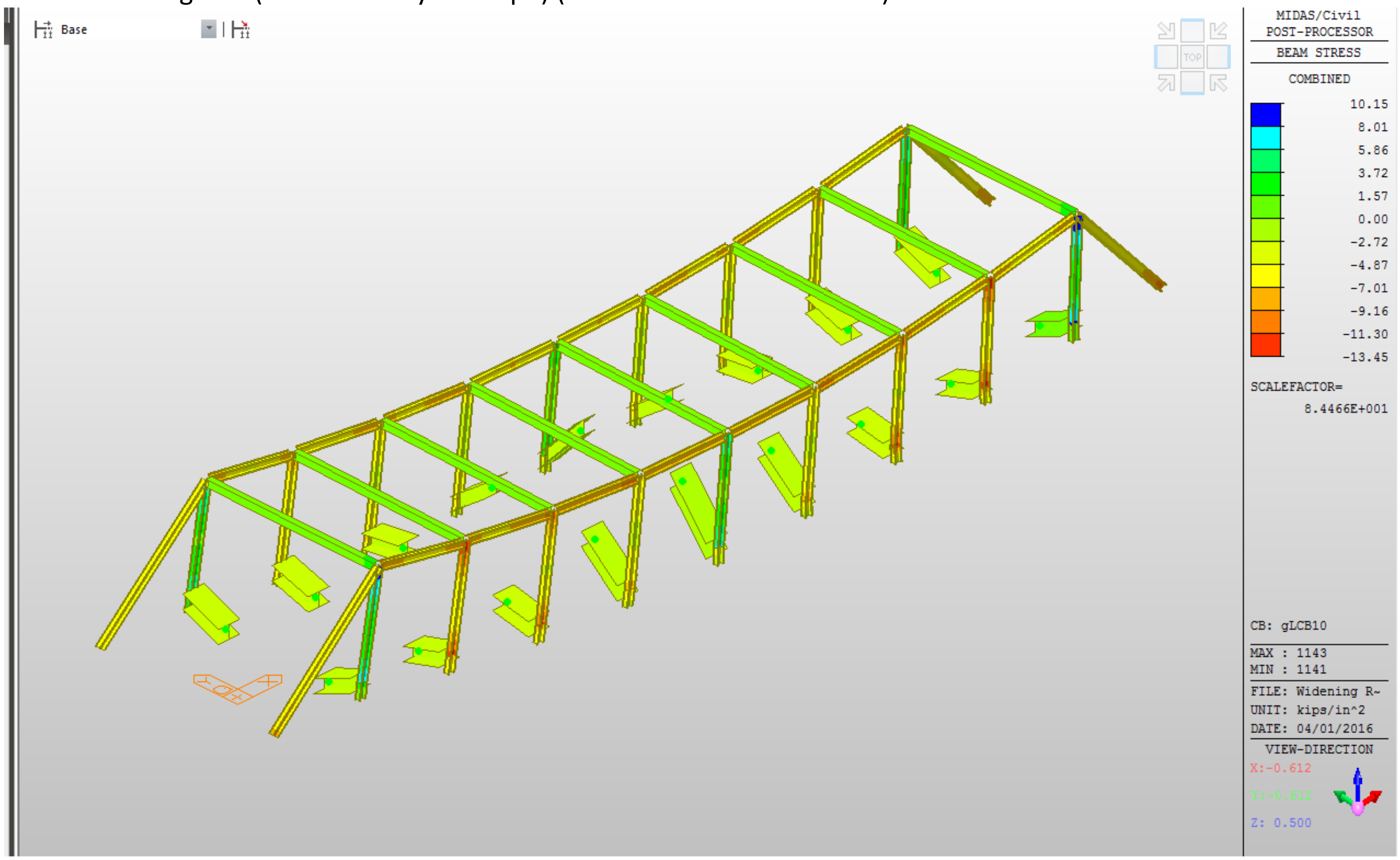
Leeward load = .0256 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Truss: Proposed Widening (Main Members)

Stresses: Strength III (Wind Velocity= 90 mph) (Fixed Moment Connection)



Stress = 13.45 ksi | 25.5 ksi Steel

Windward load = .0415 ksf

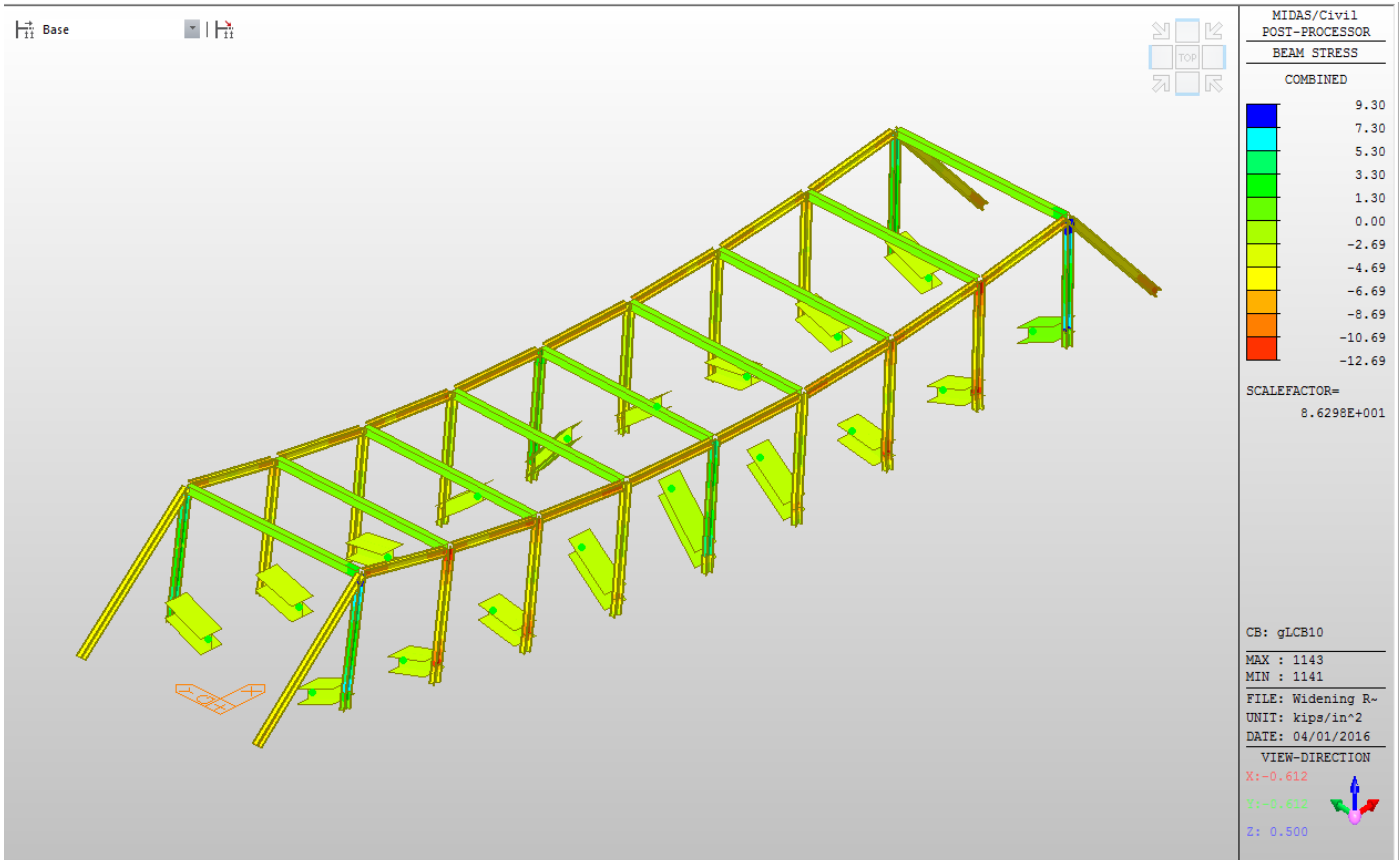
Leeward load = .0207 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Truss: Proposed Widening (Main Members)

Stresses: Strength III (Wind Velocity= 80 mph) (Fixed Moment Connection)



Stress = 12.69 ksi

25.5 ksi Steel

Windward load = .0328 ksf

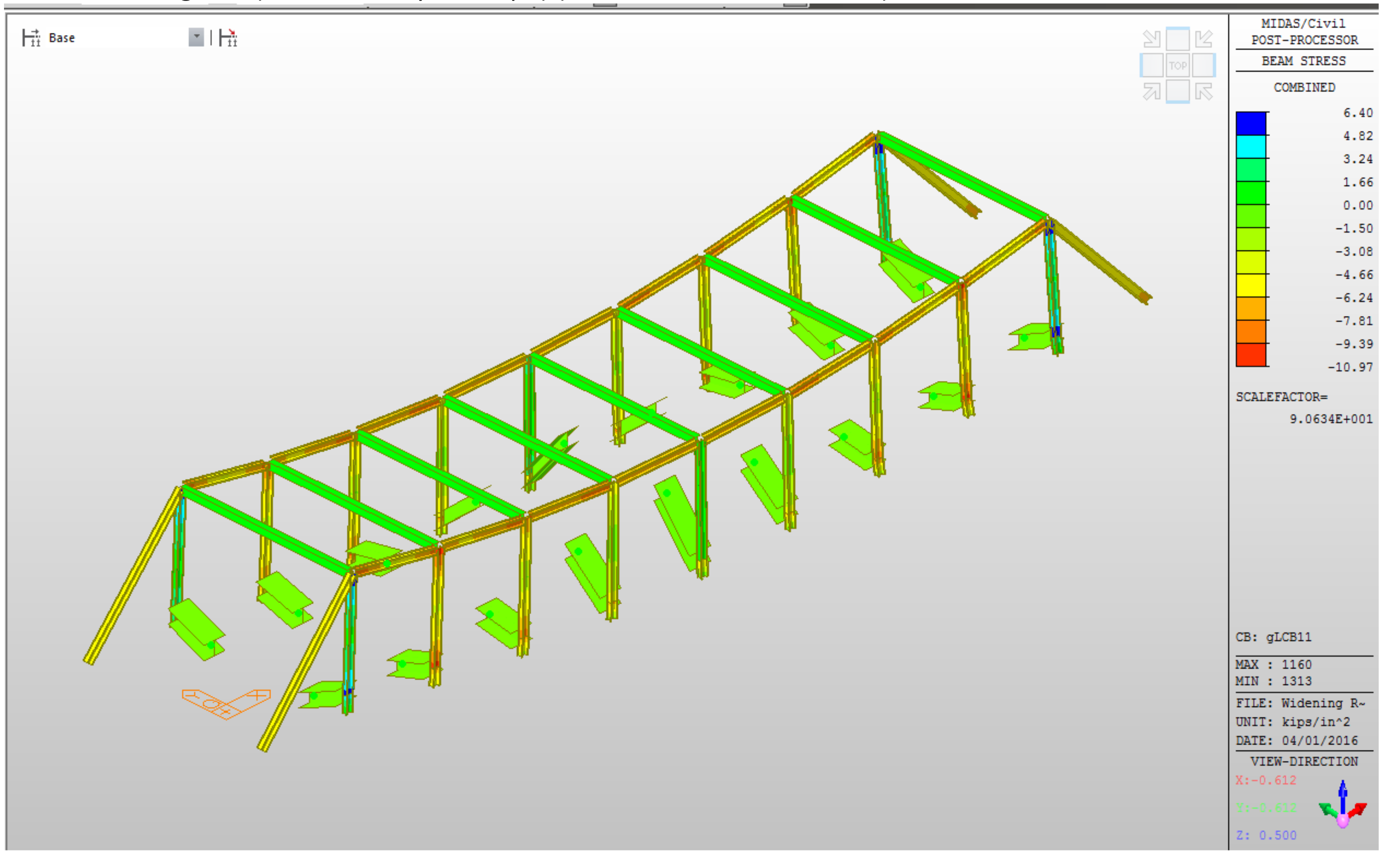
Leeward load = .0164 ksf

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Fixed Truss: Proposed Widening (Main Members)

Stresses: Strength III (Wind Velocity= 70 mph) (Fixed Moment Connection)



Stress = 10.97 ksi

25.5 ksi Steel

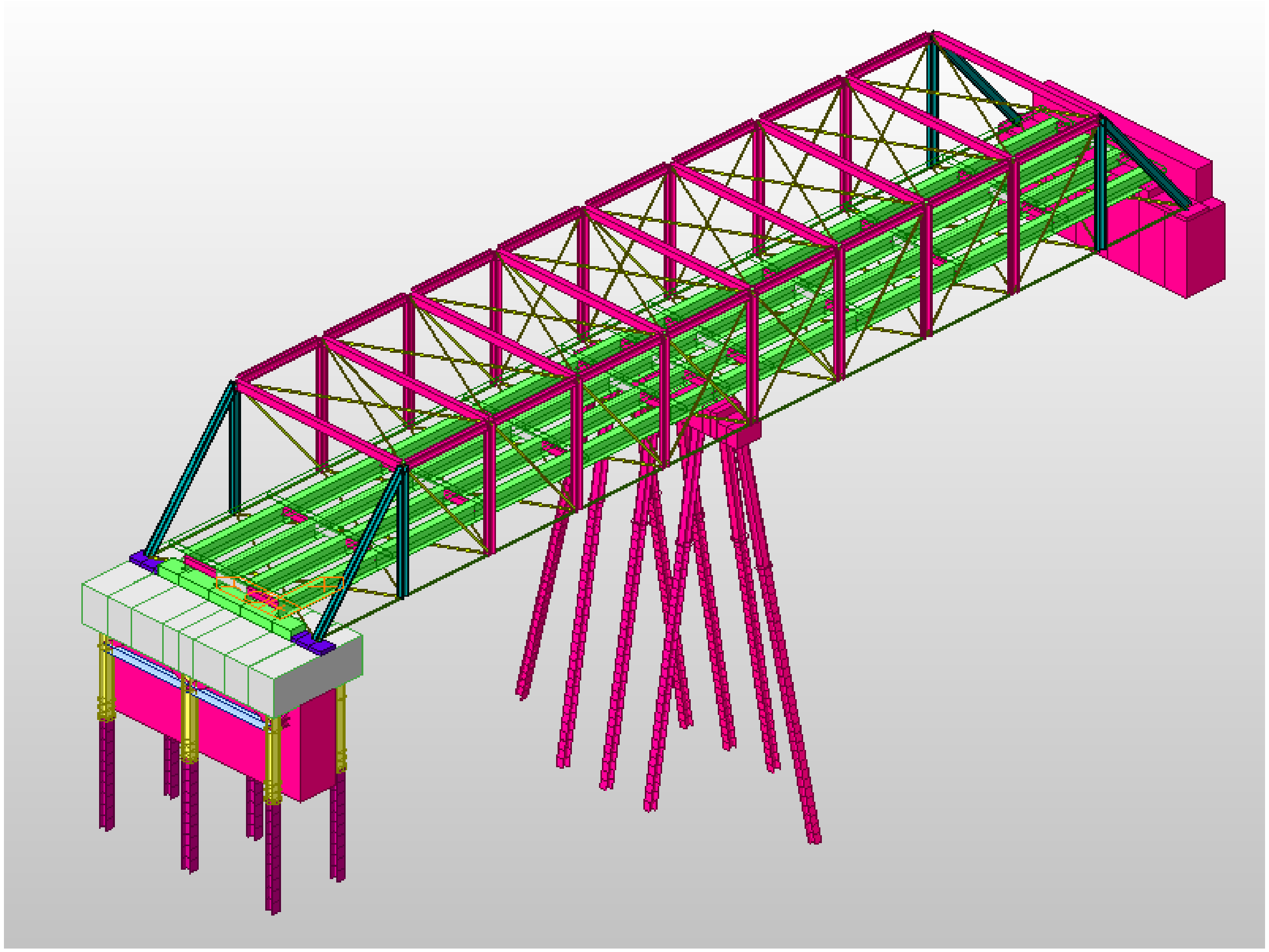
Windward load = .025 ksf

Leeward load = .0125 ksf

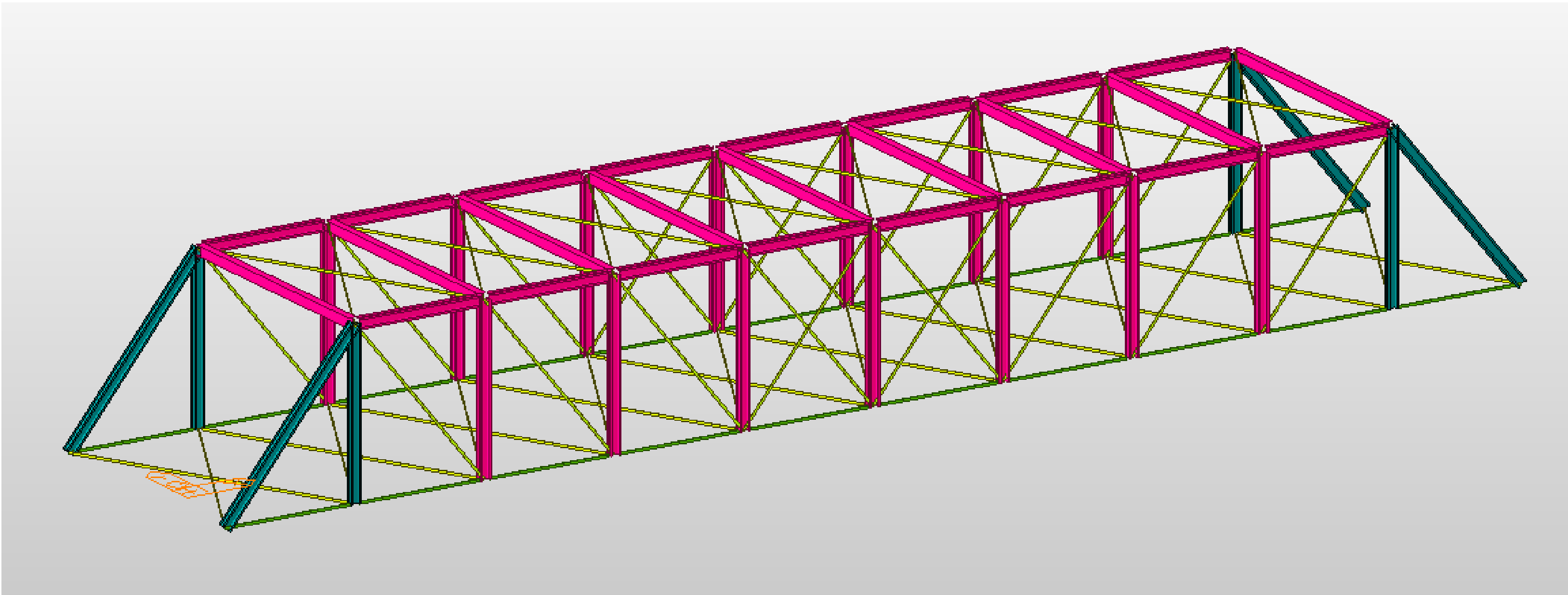
Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

LRFD ANALYSIS

Truss Widening: Fixed Span (adding 1" plate to diagonal and end columns)



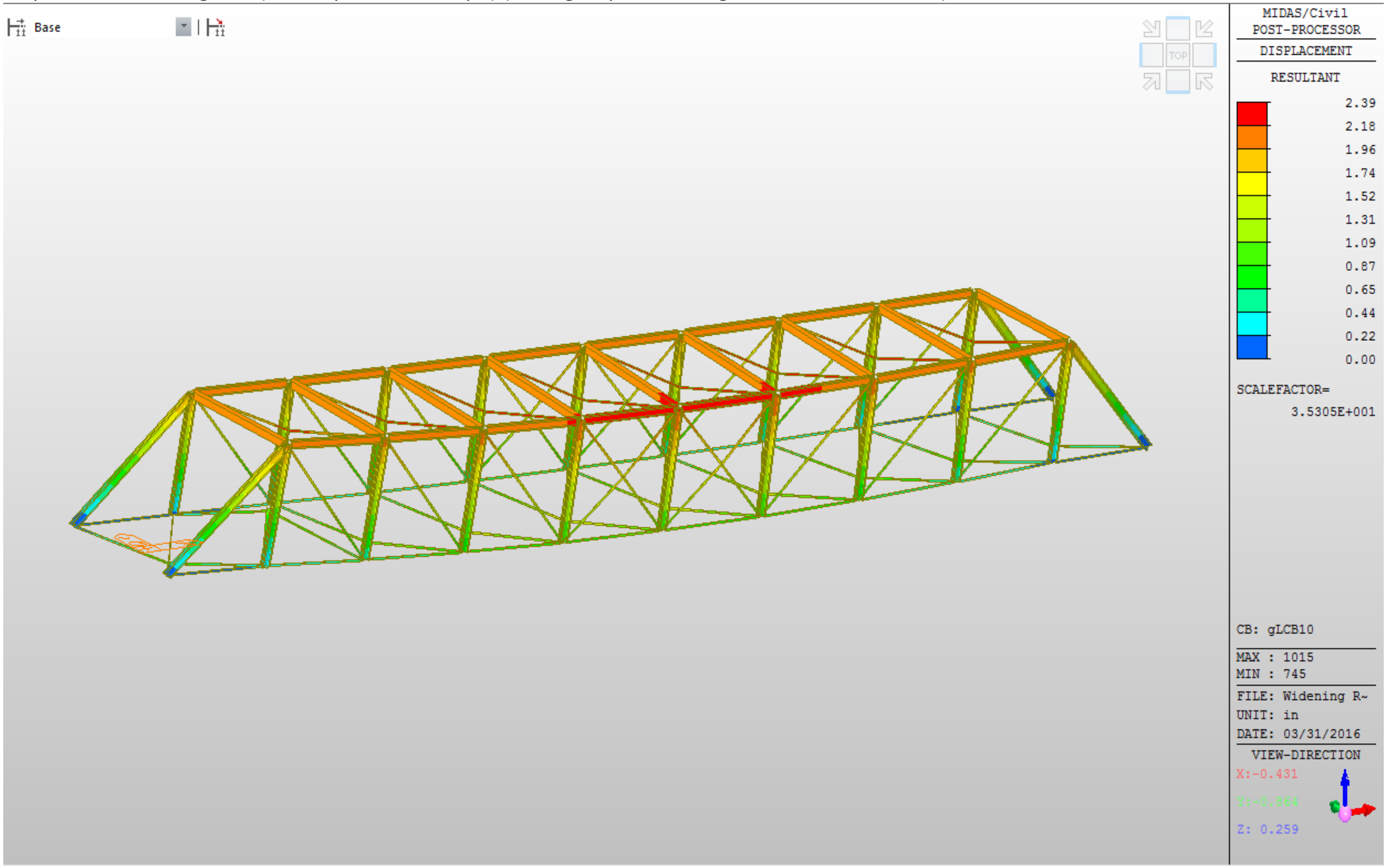
Truss Widening: Fixed Truss (adding 1” plate to diagonal and end columns)



LRFD ANALYSIS

Fixed Truss: Widening Truss 2’ on each side

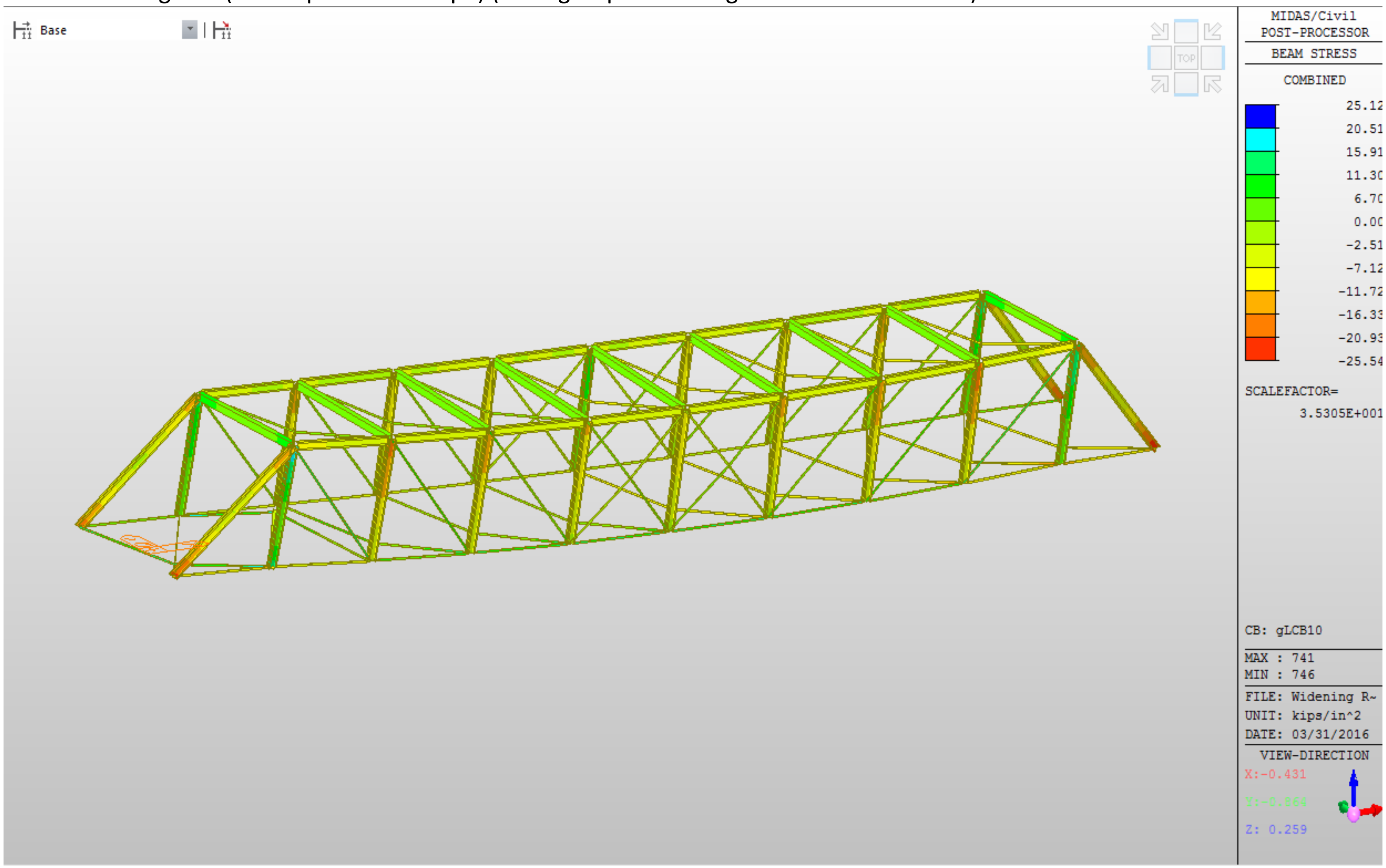
Displacement: Strength III (Wind Speed = 125 mph) (adding 1” plate to diagonal and end columns)



LRFD ANALYSIS

Truss Widening: Fixed Truss (Entire Truss)

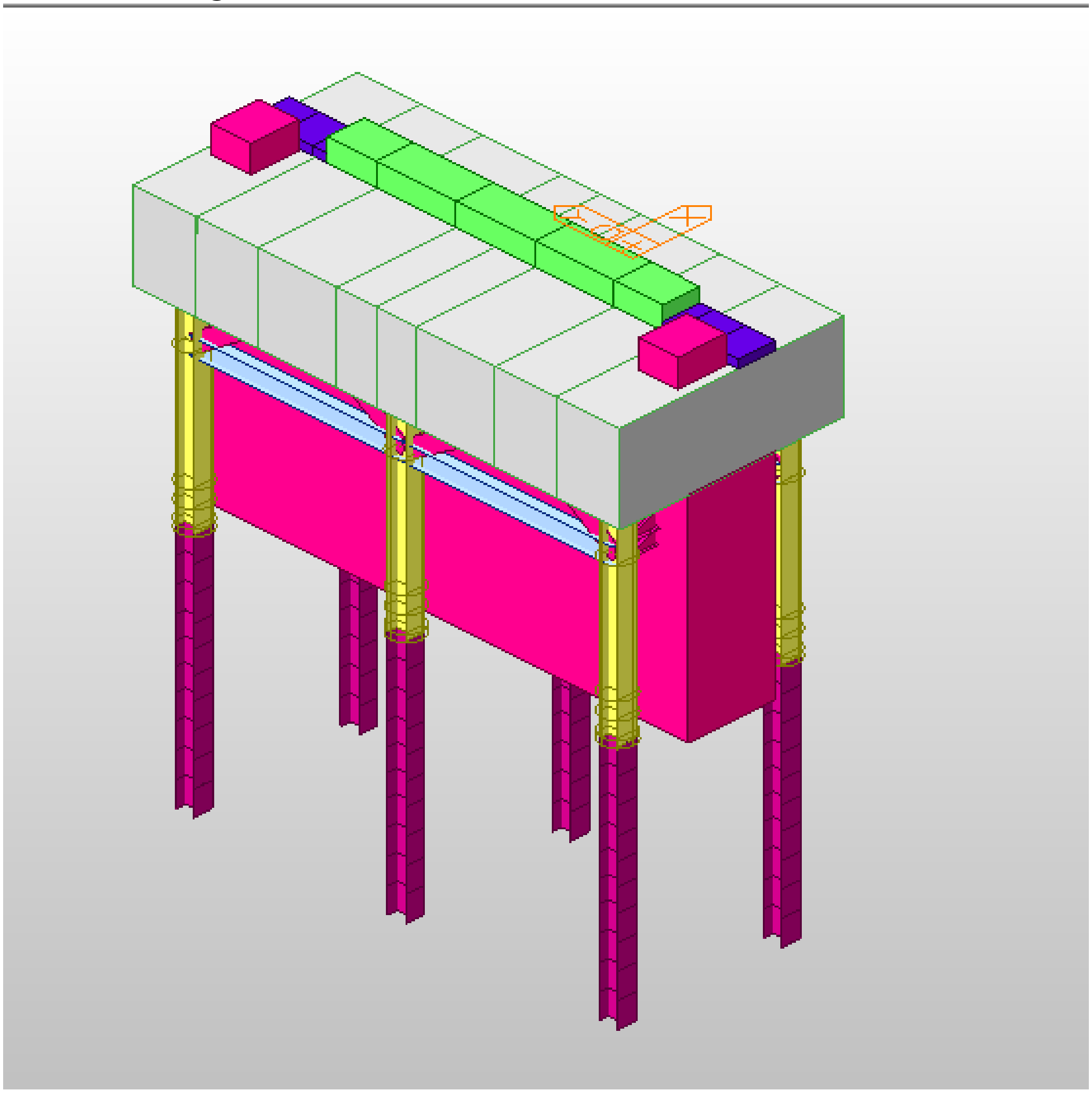
Stresses: Strength III (Wind Speed = 125 mph) (adding 1” plate to diagonal and end columns)



25.5 ksi Steel

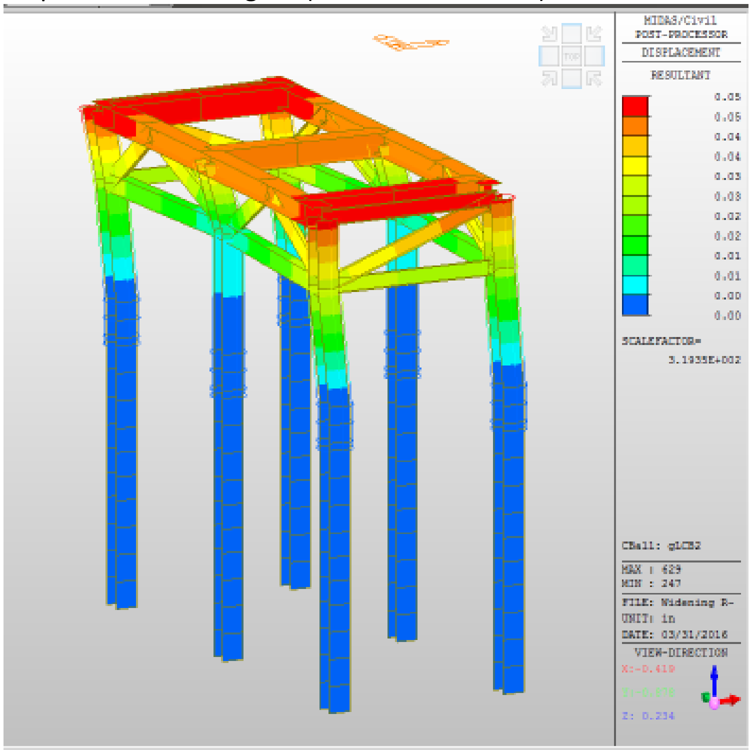
Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ±Sax (Warping).

Pier 2: Widening Truss 2’ on each side

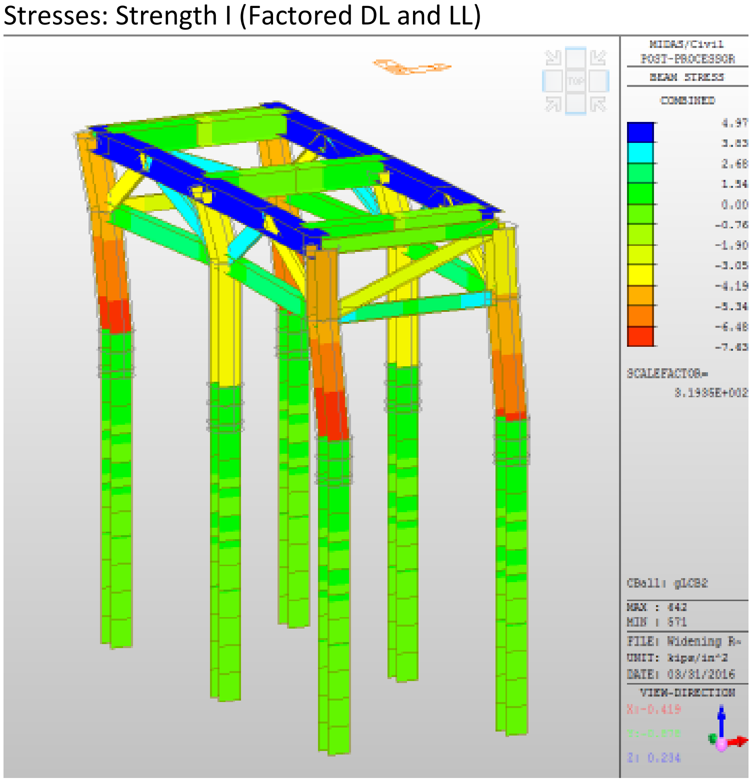


Pier 2: Widening Truss 2' on each side

Displacement: Strength I (Factored DL and LL)



Stresses: Strength I (Factored DL and LL)

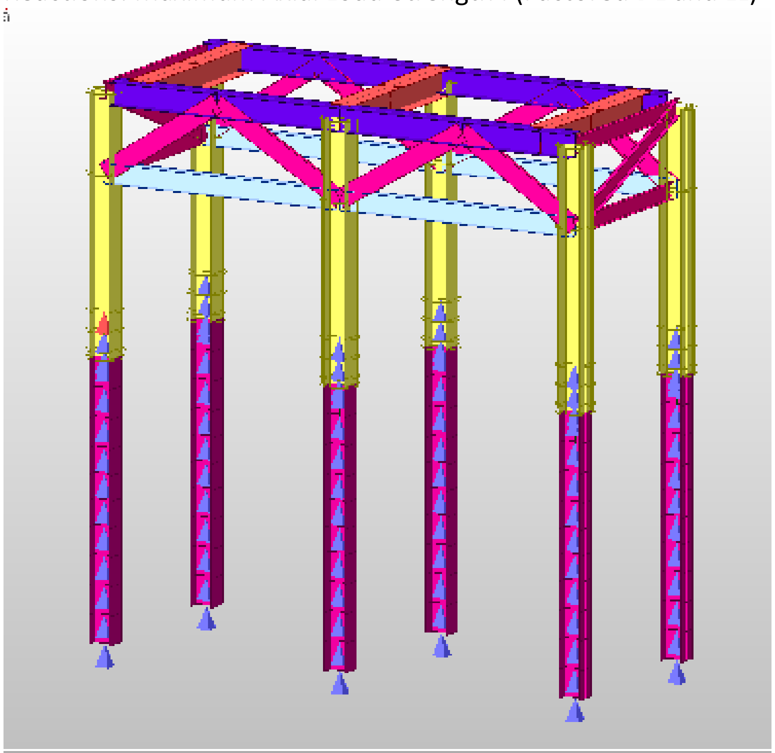


50 ksi Steel

Combined: Combined stress (Combined stress: Sax ± Sby ± Sbz). When warping effect is considered in Section Properties, combined moment is obtained by maximum or minimum value of Sax ± Sby ±Sbz ± Sax (Warping).

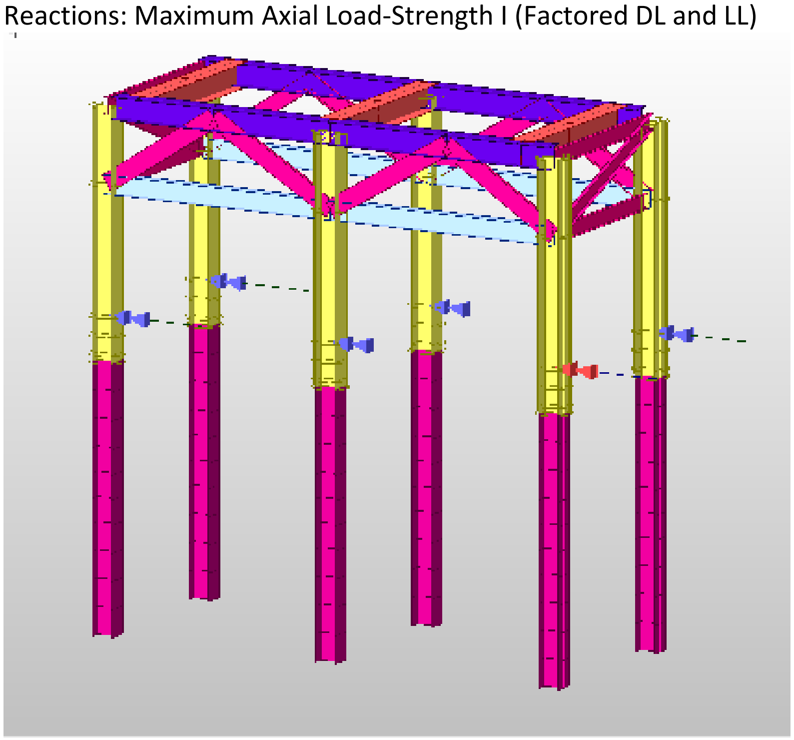
Pier 2: Widening Truss 2' on each side

Reactions: Maximum Axial Load-Strength I (Factored DL and LL)



Maximum Axial Load = 225 kips

Reactions: Maximum Axial Load-Strength I (Factored DL and LL)



Maximum Moment = 1188.1 in-kips

```
===============================================================================

                   LPile for Windows, Version 2015-08.007

               Analysis of Individual Piles and Drilled Shafts
              Subjected to Lateral Loading Using the p-y Method
                        © 1985-2015 by Ensoft, Inc.
                            All Rights Reserved

===============================================================================
```

This copy of LPile is being used by:

CJM
Wethersfield

Serial Number of Security Device: 227885239

This copy of LPile is licensed for exclusive use by:

Close, Jensen and Miller, P.C.,

Use of this program by any entity other than Close, Jensen and Miller, P.C.,
is a violation of the software license agreement.

```
-------------------------------------------------------------------------------
                          Files Used for Analysis
-------------------------------------------------------------------------------
```

Path to file locations:
\Liaison\State Bridge Program\Project Files\01349, SPN 158-212, List 28\1-Pre-Design\Calculations\01349 L-Pile\

Name of input data file:
01349 pier 2 (max axial load) Widening Rehab.lp8d

Name of output report file:
01349 pier 2 (max axial load) Widening Rehab.lp8o

Name of plot output file:
01349 pier 2 (max axial load) Widening Rehab.lp8p

Name of runtime message file:
01349 pier 2 (max axial load) Widening Rehab.lp8r

```
-------------------------------------------------------------------------------
                         Date and Time of Analysis
-------------------------------------------------------------------------------

              Date:  May 16, 2016               Time:  12:13:16


-------------------------------------------------------------------------------
                               Problem Title
-------------------------------------------------------------------------------
```

Project Name: Rehabilitation Bridge No. 01349, ROute 136 Over Saugatuck

Job Number: 158-212

Client: CT DOT

Engineer: Danielle Coutu

Description: Pier 2 Analysis for Proposed Widening

```
-------------------------------------------------------------------------------
                       Program Options and Settings
-------------------------------------------------------------------------------

Computational Options:
 - Use unfactored loads in computations (conventional analysis)
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed                =          500
 - Deflection tolerance for convergence                =   1.0000E-05 in
 - Maximum allowable deflection                        =     100.0000 in
 - Number of pile increments                           =          100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Use of p-y modification factors for p-y curves not selected
 - Analysis includes loading by one distributed lateral load acting on pile
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
```

- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

```
Number of pile sections defined                        =          1
Total length of pile                                   =      29.000 ft
Depth of ground surface below top of pile              =     11.0000 ft
```

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	14.8850
2	29.000	14.8850

Input Structural Properties for Pile Sections:

Pile Section No. 1:

```
   Section 1 is an elastic pile
   Cross-sectional Shape                               = Strong H-Pile
   Length of section                                   =    29.000000 ft
   Flange Width                                        =    14.885000 in
   Section Depth                                       =    14.250000 in
   Flange Thickness                                    =     0.805000 in
   Web Thickness                                       =     0.812500 in
   Section Area                                        =    34.234850 sq. in
   Moment of Inertia                                   =        1221. in^4
   Elastic Modulus                                     =    29000000. psi
```

Ground Slope and Pile Batter Angles

```
Ground Slope Angle                                     =       0.000 degrees
                                                       =       0.000 radians

Pile Batter Angle                                      =       0.000 degrees
                                                       =       0.000 radians
```

Soil and Rock Layering Information

The soil profile is modelled using 4 layers

Layer 1 is cemented silt with cohesion and friction

```
   Distance from top of pile to top of layer           =    11.000000 ft
   Distance from top of pile to bottom of layer        =    13.000000 ft
   Effective unit weight at top of layer               =   120.000000 pcf
   Effective unit weight at bottom of layer            =   120.000000 pcf
   Undrained cohesion at top of layer                  =   500.000000 psf
   Undrained cohesion at bottom of layer               =   500.000000 psf
   Friction angle at top of layer                      =    10.000000 deg.
   Friction angle at bottom of layer                   =    10.000000 deg.
   Epsilon-50 at top of layer                          =     0.010000
   Epsilon-50 at bottom of layer                       =     0.010000
   Subgrade k at top of layer                          =    18.000000 pci
   Subgrade k at bottom of layer                       =    18.000000 pci
```

Layer 2 is sand, p-y criteria by Reese et al., 1974

```
   Distance from top of pile to top of layer           =    13.000000 ft
   Distance from top of pile to bottom of layer        =    22.000000 ft
   Effective unit weight at top of layer               =   125.000000 pcf
   Effective unit weight at bottom of layer            =   125.000000 pcf
   Friction angle at top of layer                      =    38.000000 deg.
   Friction angle at bottom of layer                   =    38.000000 deg.
   Subgrade k at top of layer                          =    25.000000 pci
   Subgrade k at bottom of layer                       =    25.000000 pci
```

Layer 3 is weak rock, p-y criteria by Reese, 1997

```
   Distance from top of pile to top of layer           =    22.000000 ft
```

```
   Distance from top of pile to bottom of layer       =    29.000000 ft
   Effective unit weight at top of layer              =   125.000000 pcf
   Effective unit weight at bottom of layer           =   125.000000 pcf
   Uniaxial compressive strength at top of layer      =   500.000000 psi
   Uniaxial compressive strength at bottom of layer   =   500.000000 psi
   Initial modulus of rock at top of layer            =     1050000. psi
   Initial modulus of rock at bottom of layer         =     1050000. psi
   RQD of rock at top of layer                        =       0.0000 %
   RQD of rock at bottom of layer                     =       0.0000 %
   k rm of rock at top of layer                       =    0.0005000
   k rm of rock at bottom of layer                    =    0.0005000
```

Layer 4 is massive rock, p-y criteria by Liang et al., 2009

```
   Distance from top of pile to top of layer          =    29.000000 ft
   Distance from top of pile to bottom of layer       =    30.000000 ft
   Effective unit weight at top of layer              =   139.000000 pcf
   Effective unit weight at bottom of layer           =   139.000000 pcf
   Uniaxial compressive strength at top of layer      =       11600. psi
   Uniaxial compressive strength at bottom of layer   =       11600. psi
   Poisson's ratio at top of layer                    =     0.250000
   Poisson's ratio at bottom of layer                 =     0.250000
   Option 1: Intact rock modulus at top of layer      =     1500000. psi
             Intact rock modulus at bottom of layer   =     1500000. psi
   Option 1: Geologic Strength Index for layer        =    50.000000
   Option 2: Rock mass modulus at top of layer        =       0.0000 psi
             Rock mass modulus at bottom of layer     =       0.0000 psi
   Option 1 will be used to compute values of rock mass modulus for the p-y curve
         in massive rock.
   The rock type is (metamorphic) gneiss, Hoek-Brown Material Constant mi = 28
```

(Depth of the lowest soil layer extends 1.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	Angle of Friction deg.	Uniaxial qu psi	RQD %	E50 or krm	kpy pci	Rock Mass Modulus psi	Geologic Strength Index	Int. Rock Modulus psi	Hoek-Brown Material Index, mi	Poisson's Ratio
1	Cemented	11.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
	Silt	13.0000	120.0000	500.0000	10.0000	--	--	0.01000	18.0000	--	--	0.00	0.00	0.00
2	Sand	13.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
	(Reese, et al.)	22.0000	125.0000	--	38.0000	--	--	--	25.0000	--	--	0.00	0.00	0.00
3	Weak	22.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
	Rock	29.0000	125.0000	--	--	500.0000	0.00	5.00E-04	--	1050000.	--	0.00	0.00	0.00
4	Massive	29.0000	139.0000	--	--	11600.	--	--	--	Internally	50.0000	1500000.	28.0000	0.2500
	Rock	30.0000	139.0000	--	--	11600.	--	--	--	Computed	50.0000	1500000.	28.0000	0.2500

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Distributed Lateral Loading Used For All Load Cases

Distributed lateral load intensity defined using 2 points

Point No.	Depth X in	Dist. Load lb/in
1	0.000	0.000
2	0.000	0.000

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length

1	1	V = 14100. lbs	M = 1188100. in-lbs	225000.	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Moment-curvature properties were derived from elastic section properties

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	11.0000	0.00	N.A.	No	0.00	596.9777
2	13.0000	0.7588	No	No	596.9777	197499.
3	22.0000	11.0000	No	Yes	N.A.	N.A.
4	29.0000	18.0000	No	Yes	N.A.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 14100.0 lbs
Applied moment at pile head = 1188100.0 in-lbs
Axial thrust load on pile head = 225000.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	3.9493	1188100.	14100.	-0.02518	13814.	3.54E+10	0.00	0.00	0.00
0.2900	3.8619	1256836.	14100.	-0.02506	14233.	3.54E+10	0.00	0.00	0.00
0.5800	3.7749	1325475.	14100.	-0.02493	14651.	3.54E+10	0.00	0.00	0.00
0.8700	3.6883	1394013.	14100.	-0.02480	15069.	3.54E+10	0.00	0.00	0.00
1.1600	3.6023	1462443.	14100.	-0.02466	15486.	3.54E+10	0.00	0.00	0.00
1.4500	3.5167	1530761.	14100.	-0.02451	15902.	3.54E+10	0.00	0.00	0.00
1.7400	3.4317	1598960.	14100.	-0.02436	16318.	3.54E+10	0.00	0.00	0.00
2.0300	3.3472	1667037.	14100.	-0.02419	16733.	3.54E+10	0.00	0.00	0.00
2.3200	3.2633	1734986.	14100.	-0.02403	17147.	3.54E+10	0.00	0.00	0.00
2.6100	3.1800	1802801.	14100.	-0.02385	17561.	3.54E+10	0.00	0.00	0.00
2.9000	3.0973	1870477.	14100.	-0.02367	17973.	3.54E+10	0.00	0.00	0.00
3.1900	3.0152	1938009.	14100.	-0.02349	18385.	3.54E+10	0.00	0.00	0.00
3.4800	2.9338	2005392.	14100.	-0.02329	18795.	3.54E+10	0.00	0.00	0.00
3.7700	2.8531	2072621.	14100.	-0.02309	19205.	3.54E+10	0.00	0.00	0.00
4.0600	2.7731	2139691.	14100.	-0.02289	19614.	3.54E+10	0.00	0.00	0.00
4.3500	2.6938	2206595.	14100.	-0.02267	20022.	3.54E+10	0.00	0.00	0.00
4.6400	2.6153	2273330.	14100.	-0.02245	20429.	3.54E+10	0.00	0.00	0.00
4.9300	2.5376	2339890.	14100.	-0.02222	20834.	3.54E+10	0.00	0.00	0.00
5.2200	2.4606	2406270.	14100.	-0.02199	21239.	3.54E+10	0.00	0.00	0.00
5.5100	2.3845	2472465.	14100.	-0.02175	21642.	3.54E+10	0.00	0.00	0.00
5.8000	2.3092	2538469.	14100.	-0.02151	22045.	3.54E+10	0.00	0.00	0.00
6.0900	2.2348	2604279.	14100.	-0.02125	22446.	3.54E+10	0.00	0.00	0.00
6.3800	2.1613	2669887.	14100.	-0.02099	22846.	3.54E+10	0.00	0.00	0.00
6.6700	2.0887	2735291.	14100.	-0.02073	23244.	3.54E+10	0.00	0.00	0.00
6.9600	2.0170	2800484.	14100.	-0.02046	23642.	3.54E+10	0.00	0.00	0.00
7.2500	1.9463	2865461.	14100.	-0.02018	24038.	3.54E+10	0.00	0.00	0.00
7.5400	1.8766	2930218.	14100.	-0.01989	24432.	3.54E+10	0.00	0.00	0.00
7.8300	1.8079	2994749.	14100.	-0.01960	24826.	3.54E+10	0.00	0.00	0.00
8.1200	1.7402	3059050.	14100.	-0.01930	25218.	3.54E+10	0.00	0.00	0.00
8.4100	1.6735	3123116.	14100.	-0.01900	25608.	3.54E+10	0.00	0.00	0.00
8.7000	1.6079	3186941.	14100.	-0.01869	25997.	3.54E+10	0.00	0.00	0.00

8.9900	1.5434	3250521.	14100.	-0.01837	26385.	3.54E+10	0.00	0.00	0.00
9.2800	1.4801	3313851.	14100.	-0.01805	26771.	3.54E+10	0.00	0.00	0.00
9.5700	1.4178	3376925.	14100.	-0.01772	27155.	3.54E+10	0.00	0.00	0.00
9.8600	1.3567	3439740.	14100.	-0.01739	27538.	3.54E+10	0.00	0.00	0.00
10.1500	1.2968	3502291.	14100.	-0.01705	27919.	3.54E+10	0.00	0.00	0.00
10.4400	1.2381	3564572.	14100.	-0.01670	28299.	3.54E+10	0.00	0.00	0.00
10.7300	1.1806	3626578.	14100.	-0.01635	28677.	3.54E+10	0.00	0.00	0.00
11.0200	1.1243	3688305.	14099.	-0.01599	29053.	3.54E+10	-0.5035	1.5584	0.00
11.3100	1.0693	3749743.	14084.	-0.01562	29428.	3.54E+10	-7.9126	25.7516	0.00
11.6000	1.0156	3810796.	14044.	-0.01525	29800.	3.54E+10	-15.3912	52.7405	0.00
11.8900	0.9631	3871370.	13978.	-0.01487	30169.	3.54E+10	-22.6599	81.8738	0.00
12.1800	0.9121	3931371.	13887.	-0.01449	30535.	3.54E+10	-29.5309	112.6772	0.00
12.4700	0.8623	3990712.	13773.	-0.01410	30896.	3.54E+10	-35.9371	145.0314	0.00
12.7600	0.8139	4049311.	13638.	-0.01370	31253.	3.54E+10	-41.6541	178.0964	0.00
13.0500	0.7669	4107093.	12885.	-0.01330	31606.	3.54E+10	-391.0755	1775.	0.00
13.3400	0.7213	4159824.	11380.	-0.01290	31927.	3.54E+10	-473.8461	2286.	0.00
13.6300	0.6772	4206496.	9626.	-0.01249	32212.	3.54E+10	-534.2765	2746.	0.00
13.9200	0.6344	4246374.	7729.	-0.01207	32455.	3.54E+10	-555.7551	3048.	0.00
14.2100	0.5931	4279195.	5768.	-0.01165	32655.	3.54E+10	-571.1967	3351.	0.00
14.5000	0.5533	4304769.	3764.	-0.01123	32811.	3.54E+10	-580.9921	3654.	0.00
14.7900	0.5150	4322976.	1734.	-0.01081	32921.	3.54E+10	-585.5333	3957.	0.00
15.0800	0.4781	4333759.	-303.2702	-0.01038	32987.	3.54E+10	-585.2121	4260.	0.00
15.3700	0.4427	4337122.	-2331.	-0.00995	33008.	3.54E+10	-580.4192	4562.	0.00
15.6600	0.4088	4333121.	-4336.	-0.00953	32983.	3.54E+10	-571.5431	4865.	0.00
15.9500	0.3764	4321866.	-6303.	-0.00910	32915.	3.54E+10	-558.9689	5168.	0.00
16.2400	0.3455	4303509.	-8221.	-0.00868	32803.	3.54E+10	-543.0773	5471.	0.00
16.5300	0.3160	4278243.	-10078.	-0.00826	32649.	3.54E+10	-524.2437	5773.	0.00
16.8200	0.2880	4246300.	-11865.	-0.00784	32454.	3.54E+10	-502.8371	6076.	0.00
17.1100	0.2614	4207940.	-13574.	-0.00742	32220.	3.54E+10	-479.2195	6379.	0.00
17.4000	0.2363	4163453.	-15197.	-0.00701	31949.	3.54E+10	-453.7446	6682.	0.00
17.6900	0.2126	4113151.	-16729.	-0.00661	31643.	3.54E+10	-426.7575	6984.	0.00
17.9800	0.1904	4057364.	-18165.	-0.00620	31303.	3.54E+10	-398.5938	7287.	0.00
18.2700	0.1695	3996437.	-19502.	-0.00581	30931.	3.54E+10	-369.5791	7590.	0.00
18.5600	0.1499	3930727.	-20736.	-0.00542	30531.	3.54E+10	-340.0283	7893.	0.00
18.8500	0.1317	3860597.	-21868.	-0.00504	30103.	3.54E+10	-310.2452	8195.	0.00
19.1400	0.1149	3786413.	-22896.	-0.00466	29651.	3.54E+10	-280.5221	8498.	0.00
19.4300	0.09930	3708540.	-23821.	-0.00429	29176.	3.54E+10	-251.1394	8801.	0.00
19.7200	0.08500	3627340.	-24645.	-0.00393	28681.	3.54E+10	-222.3654	9104.	0.00
20.0100	0.07194	3543169.	-25370.	-0.00358	28168.	3.54E+10	-194.4562	9406.	0.00
20.3000	0.06009	3456369.	-26000.	-0.00324	27639.	3.54E+10	-167.6551	9709.	0.00
20.5900	0.04942	3367274.	-26539.	-0.00290	27096.	3.54E+10	-142.1931	10012.	0.00
20.8800	0.03991	3276197.	-26993.	-0.00257	26541.	3.54E+10	-118.2884	10315.	0.00
21.1700	0.03151	3183435.	-27366.	-0.00226	25976.	3.54E+10	-96.1464	10617.	0.00
21.4600	0.02421	3089264.	-27665.	-0.00195	25402.	3.54E+10	-75.9601	10920.	0.00
21.7500	0.01796	2993936.	-27898.	-0.00165	24821.	3.54E+10	-57.9098	11223.	0.00
22.0400	0.01273	2897676.	-35738.	-0.00136	24234.	3.54E+10	-4448.	1215929.	0.00
22.3300	0.00850	2747325.	-52664.	-0.00108	23318.	3.54E+10	-5279.	2162629.	0.00
22.6200	0.00520	2532827.	-71914.	-8.23E-04	22010.	3.54E+10	-5783.	3870565.	0.00
22.9100	0.00277	2248094.	-92230.	-5.88E-04	20275.	3.54E+10	-5893.	7401752.	0.00
23.2000	0.00111	1891823.	-111960.	-3.84E-04	18103.	3.54E+10	-5446.	1.71E+07	0.00
23.4900	9.68E-05	1469453.	-127306.	-2.19E-04	15529.	3.54E+10	-3373.	1.21E+08	0.00
23.7800	-4.14E-04	1006119.	-123712.	-9.74E-05	12705.	3.54E+10	5439.	4.57E+07	0.00
24.0700	-5.81E-04	608570.	-102828.	-1.80E-05	10282.	3.54E+10	6564.	3.93E+07	0.00
24.3600	-5.39E-04	290463.	-79094.	2.62E-05	8343.	3.54E+10	7077.	4.57E+07	0.00
24.6500	-3.99E-04	58036.	-54339.	4.33E-05	6926.	3.54E+10	7150.	6.24E+07	0.00
24.9400	-2.38E-04	-87806.	-30059.	4.18E-05	7107.	3.54E+10	6804.	9.94E+07	0.00
25.2300	-1.08E-04	-151240.	-7767.	3.01E-05	7494.	3.54E+10	6007.	1.94E+08	0.00
25.5200	-2.89E-05	-141911.	10757.	1.57E-05	7437.	3.54E+10	4639.	5.59E+08	0.00
25.8100	1.41E-06	-76393.	17538.	4.94E-06	7038.	3.54E+10	-741.6814	1.83E+09	0.00
26.1000	5.56E-06	-19851.	11171.	2.16E-07	6693.	3.54E+10	-2918.	1.83E+09	0.00
26.3900	2.91E-06	1356.	3433.	-6.93E-07	6581.	3.54E+10	-1530.	1.83E+09	0.00
26.6800	7.33E-07	4041.	101.5557	-4.28E-07	6597.	3.54E+10	-384.8622	1.83E+09	0.00
26.9700	-6.53E-08	2064.	-508.4341	-1.28E-07	6585.	3.54E+10	34.2933	1.83E+09	0.00
27.2600	-1.58E-07	502.2643	-304.5748	-1.91E-09	6575.	3.54E+10	82.8672	1.83E+09	0.00
27.5500	-7.86E-08	-55.8960	-88.5943	2.00E-08	6573.	3.54E+10	41.2595	1.83E+09	0.00
27.8400	-1.85E-08	-114.3836	0.05390	1.17E-08	6573.	3.54E+10	9.6878	1.83E+09	0.00
28.1300	2.56E-09	-55.5391	14.5682	3.31E-09	6573.	3.54E+10	-1.3462	1.83E+09	0.00
28.4200	4.59E-09	-12.9938	8.0356	-5.72E-11	6572.	3.54E+10	-2.4082	1.83E+09	0.00
28.7100	2.17E-09	0.3885	1.8668	-6.77E-10	6572.	3.54E+10	-1.1371	1.83E+09	0.00
29.0000	-1.22E-10	0.00	0.00	-6.58E-10	6572.	3.54E+10	0.06424	9.14E+08	0.00

* The above values of total stress are combined axial and bending stresses.

Output Summary for Load Case No. 1:

```
Pile-head deflection              =     3.94927094 inches
Computed slope at pile head       =    -0.02517728 radians
Maximum bending moment            =       4337122. inch-lbs
Maximum shear force               =       -127306. lbs
Depth of maximum bending moment   =    15.37000000 feet below pile head
Depth of maximum shear force      =    23.49000000 feet below pile head
Number of iterations              =             17
Number of zero deflection points  =              5
```

Pile-head Deflection vs. Pile Length for Load Case 1

Boundary Condition Type 1, Shear and Moment

```
Shear      =         14100. lbs
Moment     =       1188100. in-lbs
Axial Load =        225000. lbs
```

Pile Length feet	Pile Head Deflection inches	Maximum Moment ln-lbs	Maximum Shear lbs
29.00000	3.94927094	4337122.	-127306.
27.55000	3.98137026	4361231.	-127884.
26.10000	3.96128127	4338790.	-126433.
24.65000	4.03621985	4345560.	-138143.
23.20000	6.00171001	4656718.	-101664.
21.75000	-33.48974209	-2056373.	92581.
20.30000	-25.76099379	1188100.	63663.
18.85000	-20.49714153	1188100.	43152.
17.40000	-16.95013789	1188100.	27958.
15.95000	-14.86161209	1188100.	17975.

Summary of Pile-head Responses for Conventional Analyses

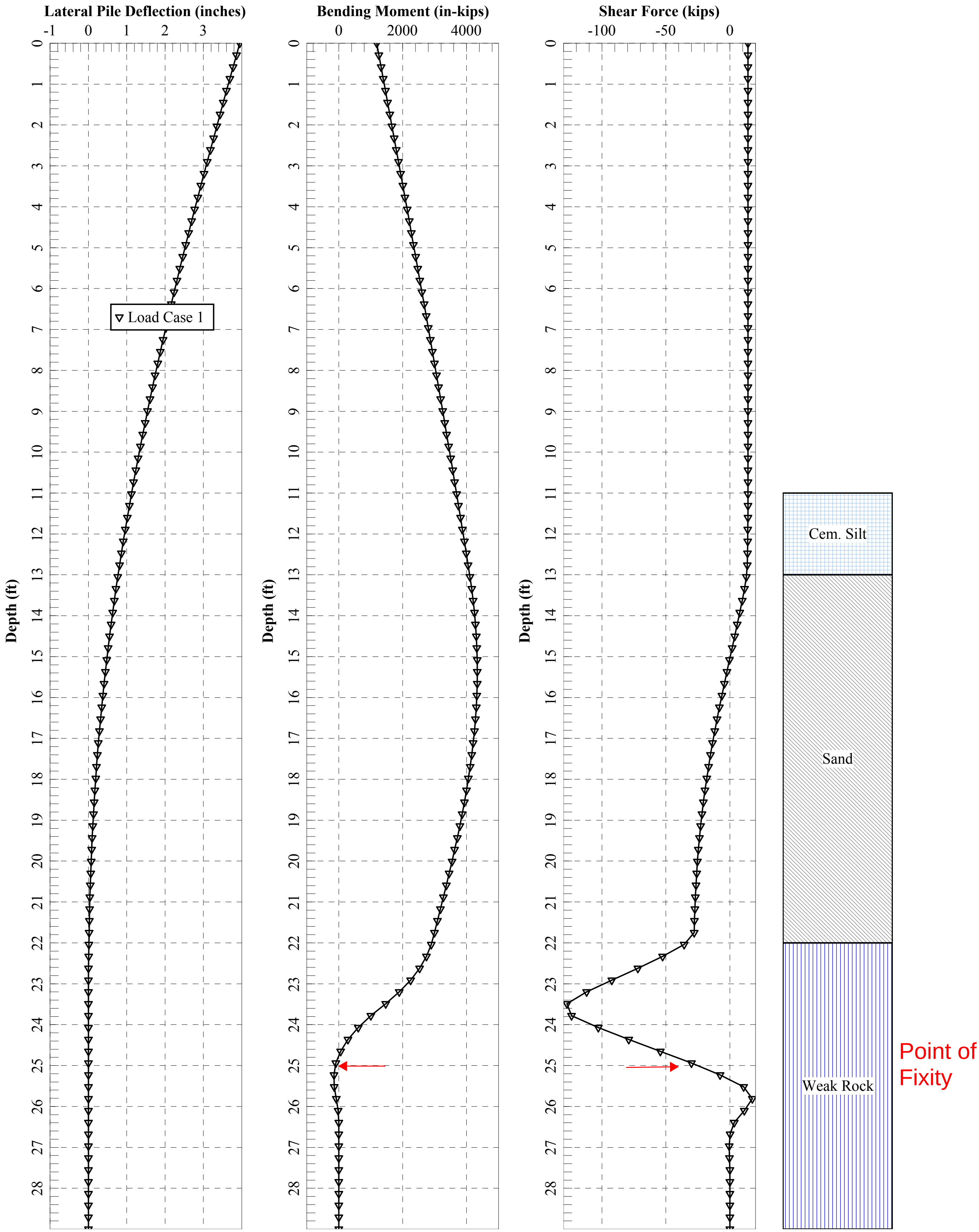
Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	14100.	M, in-lb	1188100.	225000.	3.9493	-0.02518	-127306.	4337122.

Maximum pile-head deflection = 3.9492709428 inches
Maximum pile-head rotation = -0.0251772797 radians = -1.442552 deg.

This analysis ended normally



Lateral Pile Deflection (inches)
Bending Moment (in-kips)
Shear Force (kips)
Depth (ft)
Load Case 1
Cem. Silt
Sand
Weak Rock
Point of Fixity

Close, Jensen and Miller, P.C.

BY DC DATE 5/11/16 SUBJECT Rehab of Bridge 01349 SHEET NO. ... OF ...
CHKD. BY ... DATE ... Proposed widening Pier 2 Analysis JOB NO. ...
HP 14 x 117 piles

Pier 2 (Rehabilitation)

Pile Analysis

HP 14 X 117 $A = 34.4\ in^2$ $I = 1220\ in^4$
$S = 172\ in^3$

$P_{u\ Axial Force} = 225$ Kips ← from Midas

$P_n^{Allow} = 9 \times 34.4 = 309.6$ Kips estimated

ϕP_n HP 14 x 117

$R_n = P_{allow} / \phi = .6$ K/pile

$= 225 / .6 = 375.0$ Kips

Horizontal Load = .9 Kips

AASHTO 6.9.5.1

$P_{allow} = \phi (.66)^{\lambda} F_y A_s$ if $\lambda < 2.25$

$= (.65)(.66)^{\lambda} (50)(34.4)$

$.88 F_y A_s / \lambda$ if $\lambda \geq 2.25$

$\lambda = (KL / r_s \pi)^2 (F_y / E)$

$\lambda = \left(\frac{2 \times 20 \times 12}{3.59\ \pi} \right)^2 \left(\frac{50}{29000} \right) = 3.12$

$P_{allow} = \frac{(.88)(50)(34.4)}{3.12} = 485$ Kips

$\phi P_{allow} = (.8)(485) = 291$ Kips

$C/D = 291\ \text{Kips} / 225\ \text{Kips} = 1.3$

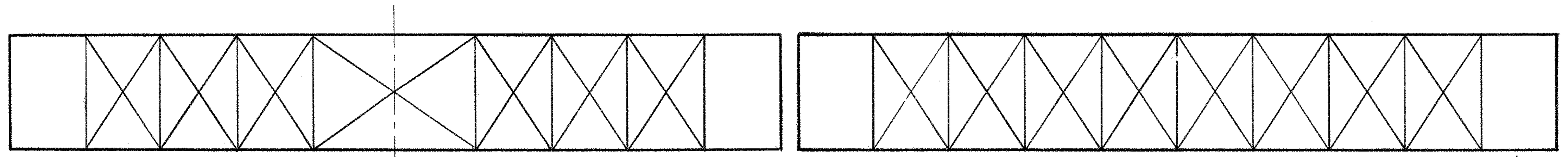
BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

PROJECT NO. 158-212

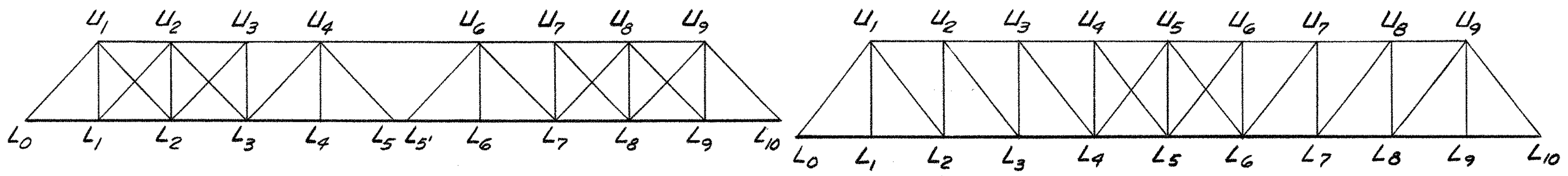
<u>EXISTING PLANS</u>

FHWA REGION	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WEST PORT	–	158-150	1989	136	20-1	72

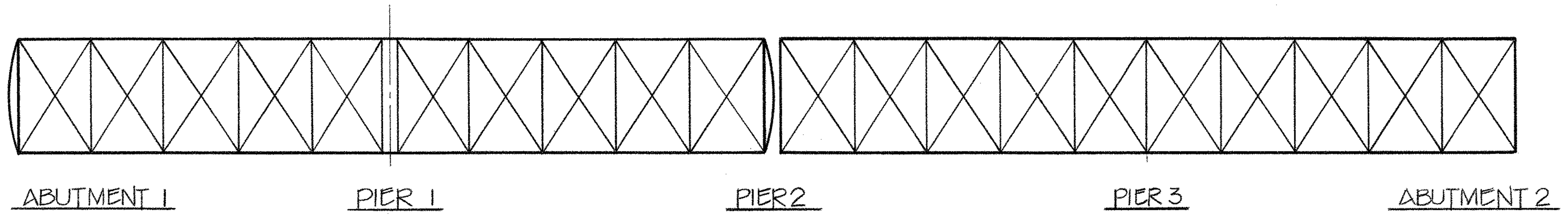
FORM NO. ENG. 158 ED 4-80



TOP CHORD BRACING



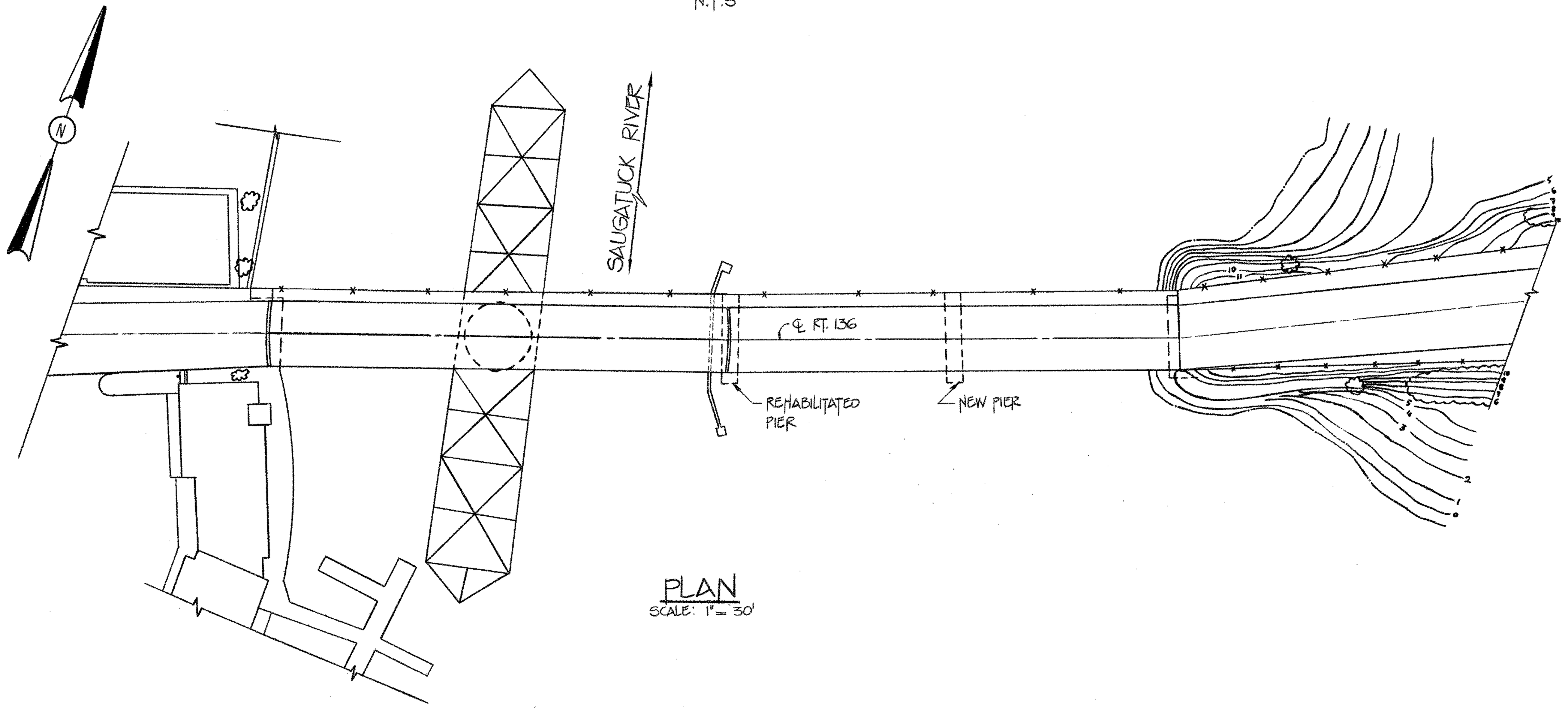
ELEVATION NORTH TRUSS (LOOKING NORTH)



LOWER CHORD BRACING

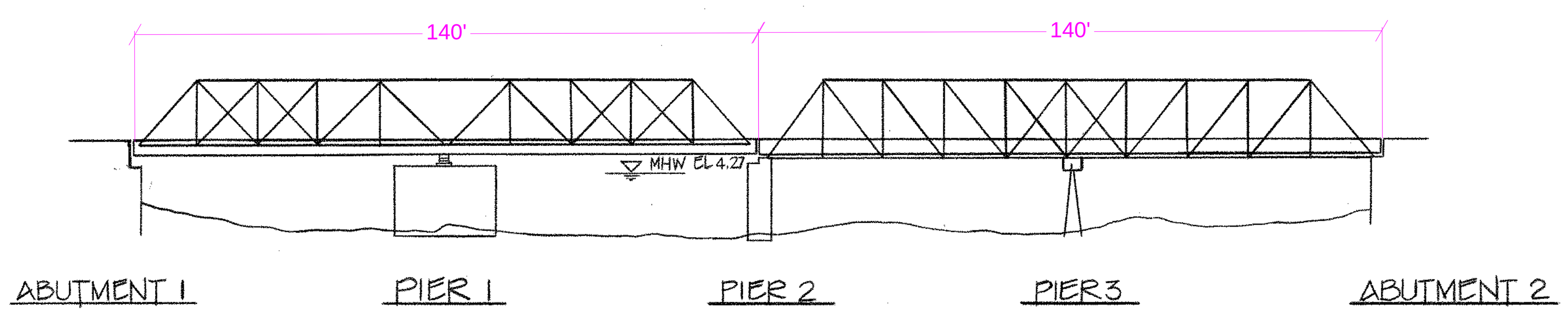
EXISTING TRUSS LAYOUT

N.T.S.



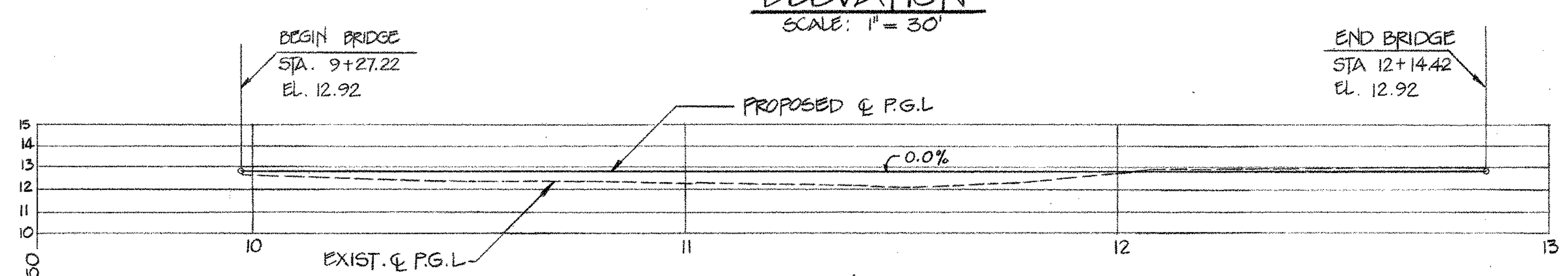
PLAN

SCALE: 1" = 30'



ELEVATION

SCALE: 1" = 30'



PROFILE

SCALE: HORIZONTAL: 1" = 30'-0"

VERTICAL: 1" = 6'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

ESTIMATED QUANTITIES

ITEM DESCRIPTION	UNIT	QUANTITY
STRUCTURE EXCAVATION-EARTH (COMPLETE)	C.Y.	8
BITUMINOUS CONCRETE - CLASS 1	TON	52
BITUMINOUS CONCRETE - CLASS 12	TON	35
TEMPORARY CROSSING - BRIDGE	L.S.	1
REHABILITATION OF EXISTING TRUSSES	L.S.	1
REMOVAL OF SUPERSTRUCTURE - EXISTING FLOOR SYSTEM	L.S.	1
BRIDGE SCUPPER	EA.	24
PREFABRICATED EXPANSION JOINT (MOVEMENT CAPACITY 2")	LF	20
ELASTOMERIC BEARING SYSTEM	EA.	20
CLASS 'A' CONCRETE	C.Y.	139
DEFORMED STEEL BARS - EPOXY COATED	LBS	13,200
STRUCTURAL STEEL - BRIDGE No. 01349	L.S.	1
STRUCTURAL STEEL	CWT	5
FURNISHING AND INSTALLING EXODERMIC BRIDGE DECK	L.S.	1
REPOINTED MASONRY	S.Y.	71
CONCRETE CYLINDER CURING BOX	EA.	1
FURNISHING STEEL PILES (PIER #3)	LBS.	26,350
DRIVING STEEL PILES (PIER #3)	LF.	360
SPLICING STEEL PILES (PIER #3)	EA.	8
POINT REINFORCEMENT FOR STEEL PILES (PIER #3)	EA.	8
BITUMEN COATING OF PILES (PIER #3)	LF.	360
REMOVAL OF EXISTING FENDER SYSTEM	L.S.	1
METAL FOR FENDER SYSTEM AND SIDEWALK	LBS	6,200
TIMBER FOR FENDER SYSTEM AND SIDEWALK	M.B.F.	23
FURNISHING TREATED TIMBER PILES (50' LONG)	L.F.	2130
DRIVING TREATED TIMBER PILES	L.F.	2130
MEMBRANE WATERPROOFING (WOVEN GLASS FABRIC)	S.Y.	635
PROTECTIVE COMPOUND FOR BRIDGES	S.Y.	205
METAL BEAM RAIL - BRIDGE	L.F.	575
METAL HAND RAIL - PEDESTRIAN	L.F.	290
REMOVAL OF EXISTING MASONRY	C.Y.	36
ELASTOMERIC SHEET	SF	110
REHABILITATION OF SWING PIER - (PIER # 1)	L.S.	1
1½" POLYVINYL CHLORIDE PLASTIC PIPE	L.F.	105
	—	—
	—	—
PILE ENCASEMENT CONCRETE (PIER #3)	LF	116
ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE No. 1)	L.S.	1
CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE No. 1)	LS	1

(CONTINUE ON STRUCTURE SHEET No. 3....)

NOTICE TO BRIDGE INSPECTORS

THE DEPARTMENT'S BRIDGE SAFETY PROCEDURES REQUIRE THIS BRIDGE TO BE INSPECTED FOR, BUT NOT LIMITED TO, ALL APPROPRIATE COMPONENTS INDICATED IN THE GOVERNING MANUALS FOR BRIDGE INSPECTION. ATTENTION MUST BE GIVEN TO INSPECTING THE FOLLOWING SPECIAL COMPONENTS AND DETAILS (THE LISTING OF COMPONENTS FOR SPECIFIC ATTENTION SHALL NOT BE CONSTRUED TO REDUCE THE IMPORTANCE OF INSPECTION OF ANY OTHER COMPONENT OF THE STRUCTURE.) THE FREQUENCY OF INSPECTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE GOVERNING MANUALS FOR BRIDGE INSPECTION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OF BRIDGE AND STRUCTURE, OR NOTED BELOW.

	COMPONENT OR DETAIL	BR. SH. REF.
FIXED SPAN	FIELD SPLICE	11 OF 24
	SIDEWALK END PLATE CONNECTION	11 OF 24
SWING SPAN	FIELD SPLICES	16 & 18 OF 24
	SIDEWALK END PLATE CONNECTION	11 OF 24
	PIVOT GIRDER	17 OF 24
	TRUSS TO PIVOT GIRDER CONNECTION	20 OF 24

BIDDERS SHALL EXAMINE AND MAKE THEIR OWN DETERMINATIONS AS TO THE WORK INVOLVED AND CONDITIONS TO BE ENCOUNTERED.

INSP. OF FIELD WELDS

METHOD	UNIT	QTY.
RADIO-GRAPHIC OR ULTRASONIC	IN	0
MAGNETIC PARTICLE	LF	0
ULTRASONIC	IN	4276

CONCRETE DISTRIBUTION

	UNIT	QTY.
SUPERSTRUCTURE	CY	0
SUBSTRUCTURE	CY	139
TOTAL	CY	139

NO.	DATE	DESCRIPTION

REVISIONS

GENERAL NOTES

SPECIFICATIONS

CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 814 (1988), SUPPLEMENTAL SPECIFICATIONS 1 JULY 1989 AND SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS:

STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (AASHTO-1983), WITH THE INTERIM SPECIFICATIONS UP TO AND INCLUDING (1988), AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE MANUAL (1985)

ALLOWABLE DESIGN STRESSES:

CLASS "A" CONCRETE BASED ON	$f'_c = 3{,}000$ PSI	
CLASS "F" CONCRETE BASED ON	$f'_c = 4{,}000$ PSI	
REINFORCEMENT (ASTM A615 GRADE 60)	$f_s = 24{,}000$ PSI	
STRUCTURAL STEEL		
ASTM A588 (PAINTED)	$F_t = 27{,}000$ PSI	ALL THICKNESS TO 4" INCLUSIVE

LIVE LOAD:

HS 20-44

FUTURE PAVING ALLOWANCE

NONE

COMPOSITE CONSTRUCTION

NO TEMPORARY INTERMEDIATE SUPPORTS SHALL BE USED DURING THE PLACING AND SETTING OF THE EXODERMIC DECK MODULES. TEMPORARY SUPPORTS MAY BE USED FOR STRUCTURAL STEEL ERECTION ONLY. LIVE AND SUPERIMPOSED DEAD LOADS WILL BE PERMITTED WHEN DIRECTED BY THE ENGINEER, BUT NOT LESS THAN 10 DAYS AFTER THE FINAL PORTION OF THE EXODERMIC DECK MODULES JOINTS HAVE BEEN PLACED. SEE SPECIAL PROVISIONS FOR INSTALLATION OF THE EXODERMIC DECK MODULES. AND CONCRETE MIX FOR MODULE TOP SURFACE.

CLASS "A" CONCRETE

CLASS "A" CONCRETE SHALL BE USED FOR THE ENTIRE SUBSTRUCTURE EXCEPT FOR PILE ENCASEMENT AND CONCRETE FILL FOR STEEL PIPE PILES. (SEE SPECIAL PROVISION)

CLASS "F" CONCRETE

CLASS "F" CONCRETE SHALL BE USED FOR THE EXODERMIC DECK MODULES CAST IN PLACE JOINTS, AND FILL FOR STEEL PIPE PILES.

EXPOSED EDGES

EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1"x 1" UNLESS DIMENSIONED OTHERWISE

STRUCTURAL STEEL

SEE STRUCTURE SHEET NUMBERS 18 OF 24 FOR ASTM DESIGNATIONS

REINFORCEMENT

ALL REINFORCEMENT SHALL BE ASTM A615 GRADE 60

EPOXY COATED REINFORCING BARS

ALL REINFORCEMENT SHALL BE EPOXY COATED.

JOINT SEAL: (SEE SPECIAL PROVISIONS)

PAINT

PAINT SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIAL PROVISION FOR "STRUCTURAL STEEL - BRIDGE NO. 01349" AND "ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)". THE COLOR OF THE TOPCOAT MATERIAL ON THE STRUCTURAL STEEL SHALL CONFORM TO FEDERAL STANDARD COLOR NO. 26329. [APPROXIMATELY THE DEPARTMENT'S STANDARD BRIDGE COLOR NO. 606 (BLUE)]. APPLY COATING SYSTEM ONE.

BITUMINOUS CONCRETE OVERLAY

THIS SHALL CONSIST OF TWO LIFTS. THE FIRST SHALL BE BITUMINOUS CONCRETE CLASS (12) (1" THICK MIN.) AND THE SECOND SHALL BE BITUMINOUS CONCRETE CLASS (1) (1½" THICK).

FOUNDATIONS PRESSURES AND PILE LOADS.

THE VARIOUS GROUP LOADINGS NOTED ON THE SUBSTRUCTURE PLAN SHEETS REFER TO THE GROUP LOADS AS GIVEN IN THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

CONSTRUCTION JOINTS

CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.

DECIMAL DIMENSIONS

WHEN DIMENSIONS ARE GIVEN TO LESS THAN THREE DECIMAL PLACES, THE OMITTED DIGITS SHALL BE ASSUMED TO BE ZEROS.

VERIFICATION OF DIMENSIONS

DIMENSIONS OF THE EXISTING STRUCTURE SHOWN ON THE PLANS ARE FOR GENERAL REFERENCE ONLY AND THEY ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.

(GENERAL NOTES CONTINUED ON BRIDGE SHEET No. 2 OF 24)

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

GENERAL PLAN I

ENGINEER: H. W. LOCHNER, INC.

DESIGNER: LM | DRAFTER: Duc Phan Huynh | CHECKER: LM

APPROVED: Arvo T. Ola | DATE: 9-6-89

STRUCTURE NO. 158-150-1 | BRIDGE LOG NO. 01349 | STRUCTURE SHEET NO. 1 OF 24

158-150

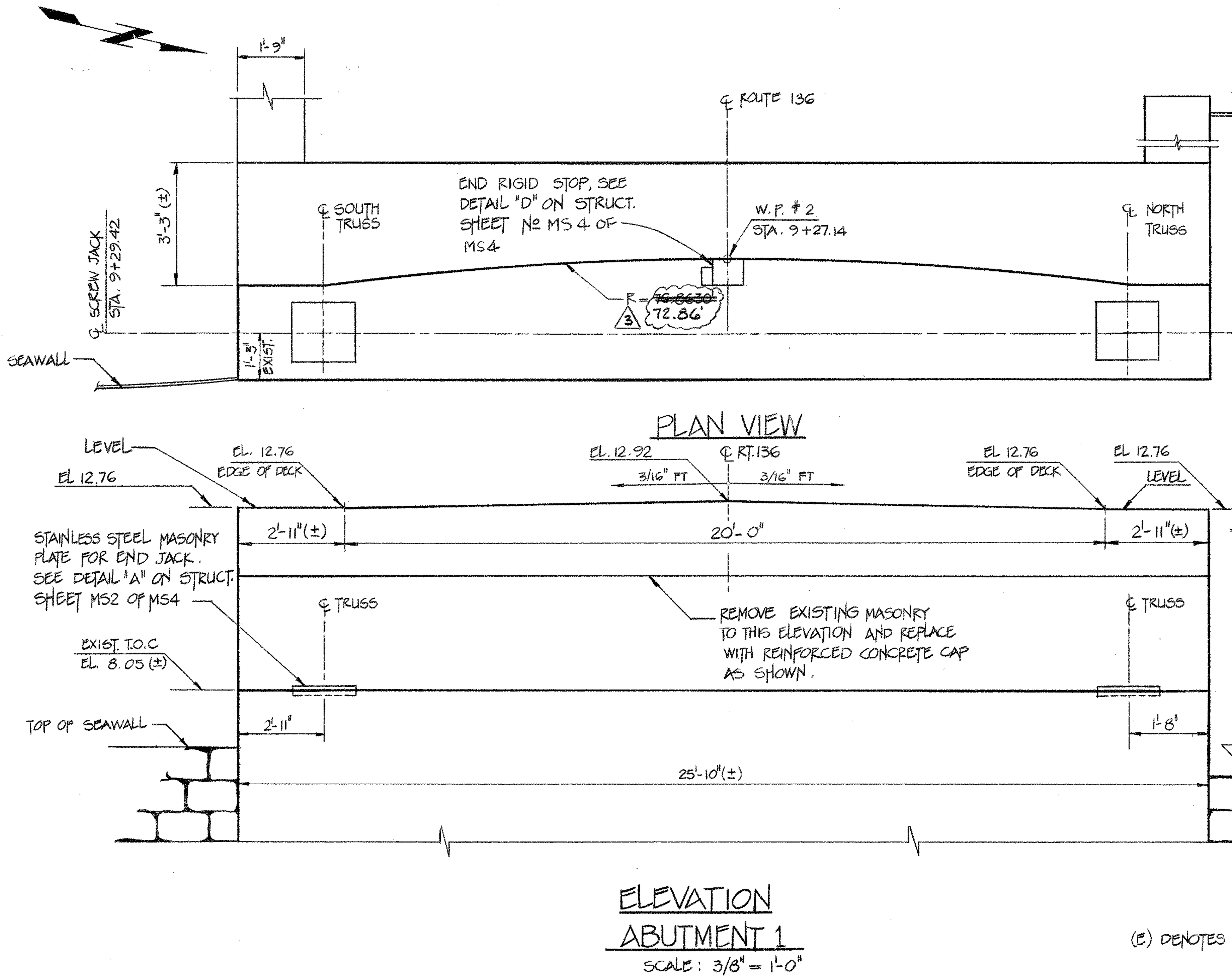
270-01

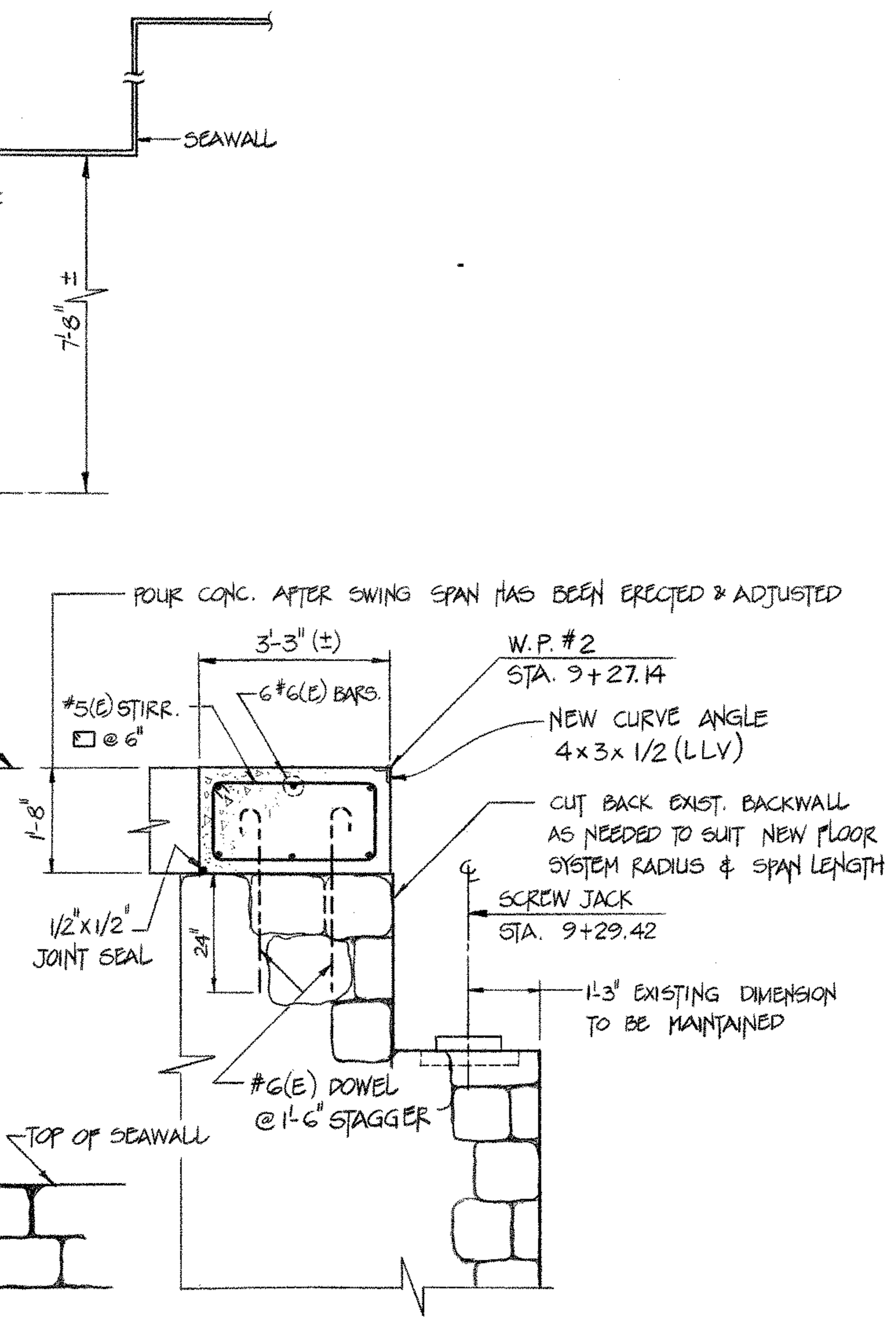
20-1

STATE OF CONNECTICUT - DEPT. OF TRANSPORTATION

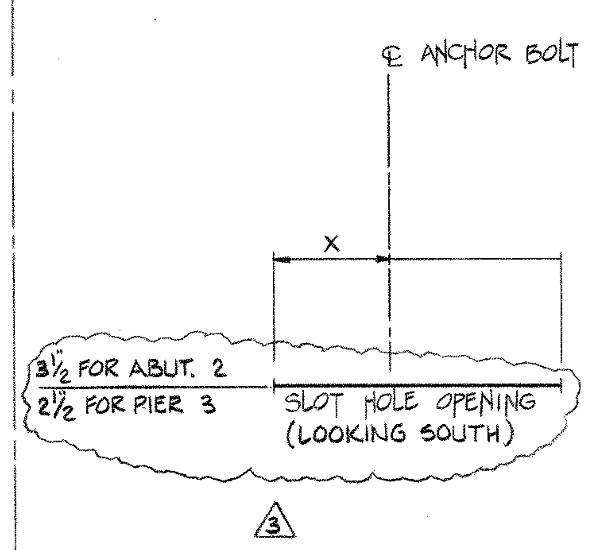
FORM NO. ENG. 158 ED 3-86

F.H.W.A. REGION NO.	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT	–	158 - 150	1989	136	27-2	72



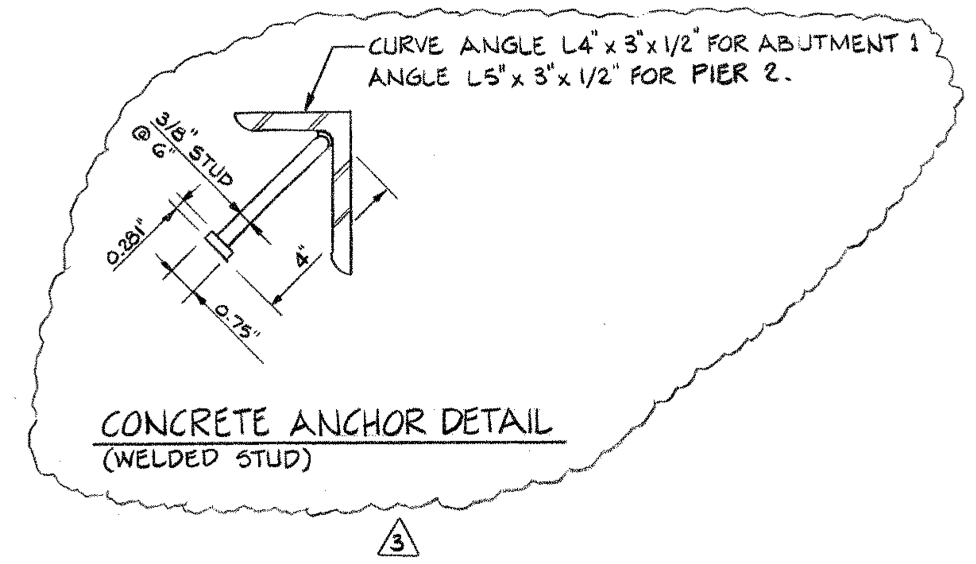


(E) DENOTES EPOXY COATED BARS

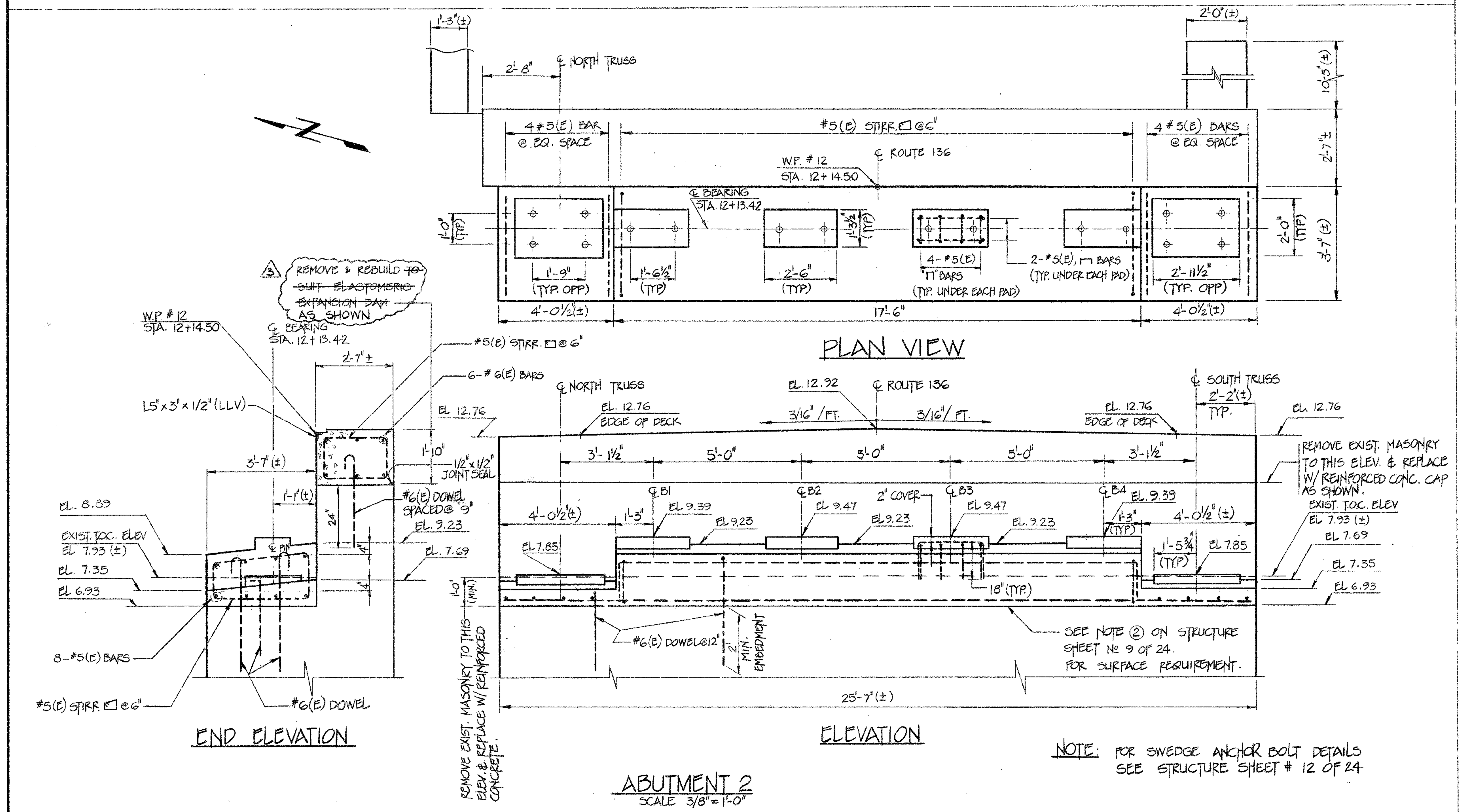


ANCHOR BOLT INSTALLATION NOTES.

AMBIENT TEMPERATURE	"X" DISTANCE PIER 3	"X" DISTANCE ABUTMENT 2
50° F	1.3319"	1.9138"
55° F	1.3046"	1.8592"
60° F	1.2773"	1.8046"
65° F	1.25"	1.75"
70° F	1.2227"	1.6954"
75° F	1.1954"	1.6408"
80° F	1.1681"	1.5862"



CONCRETE ANCHOR DETAIL
(WELDED STUD)



NOTE: FOR SWEDGE ANCHOR BOLT DETAILS SEE STRUCTURE SHEET # 12 OF 24

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
3	6/8/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

ABUTMENTS- 1 & 2

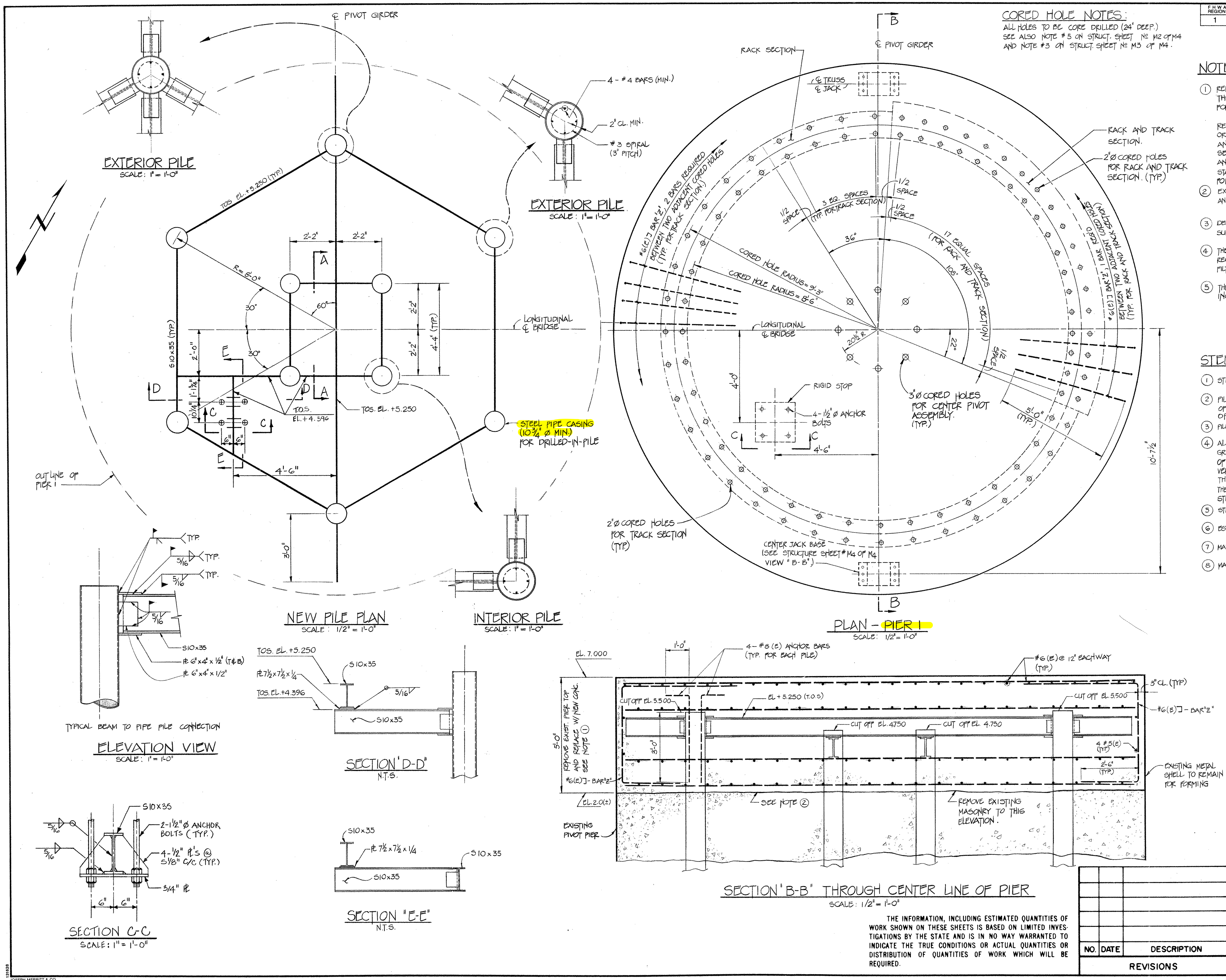
ENGINEER H. W. LOCHNER, INC.
DESIGNER LM — DRAFTER — CHECKER JD
APPROVED — DATE 9-6-89
STRUCTURE NO. 158-150-1 — BRIDGE LOG NO. 01349 — STRUCTURE SHEET NO. 8 OF 24

158-150

270-01

27-2

F.H.W.A. REGION	STATE	TOWN	FED AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WEST PORT	—	158-150	1989	136	28-1	72



NOTES

1. REMOVE EXISTING PIER CONCRETE AND STONE TO ELEVATION +2.0 OR LOWER THE EXISTING METAL SHELL SHALL REMAIN AND SHALL BE USED AS A FORM FOR THE NEW CONCRETE. (SEE ALSO NOTE 5)

   REMOVAL SHALL NOT PROCEED UNTIL A METHOD TO PREVENT CONSTRUCTION DEBRIS OR OTHER MATERIALS FROM ENTERING THE WATERCOURSE HAS BEEN SUBMITTED TO AND APPROVED BY THE ENGINEER, AND SUCH METHOD HAS BEEN IMPLEMENTED AS THE SEQUENCE OF CONSTRUCTION NECESSITATES. THESE MATERIALS SHALL BE COLLECTED AND DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER AS DETERMINED BY FEDERAL STATE AND LOCAL LAW. (SEE SPECIAL PROVISION " BEST MANAGEMENT PRACTICES FOR PROTECTION OF THE ENVIRONMENT").
2. EXISTING SURFACE SHALL BE FREE OF ALL DUST, GREASE, LOOSE STONE OR CONCRETE AND ANY OTHER DEBRIS (SEE SPECIAL PROVISIONS)
3. DESIGN OF THE DRILLED-IN-PILES SHALL BE A RESPONSIBILITY OF THE CONTRACTOR SUBJECT TO APPROVAL BY THE ENGINEER (SEE SPECIAL PROVISIONS)
4. THE DRILLING SHALL NOT RELEASE DRILL SPOIL INTO THE WATERCOURSE. DRILLING FLUID RECIRCULATION IS REQUIRED. ALL WASTE AND SPOIL SHALL BE PUMPED INTO SEDIMENTATION FILTRATION POOL. (SEE SPECIAL PROVISIONS).
5. THE COST OF REPAIR TO DAMAGED METAL SHELL DUE TO CONCRETE REMOVAL TO BE INCLUDED IN THE ITEM " REHABILITATION OF SWING PIER - PIER № 1."

STEEL PIPE PILE NOTES:

1. STEEL PIPE PILE SHALL CONFORM TO ASTM A252 - GRADE 2
2. PILES SHALL BE SEAMLESS STEEL PIPE PILES (GRADE 2) WITH A MINIMUM OUTSIDE DIAMETER OF 10 3/4" WITH A MINIMUM NOMINAL WALL THICKNESS OF 3/8"; AND SHALL HAVE A MINIMUM OF 4.20 IN² CORE STEEL.
3. PILES SHALL BE DRILLED-IN-PILES SOCKETED 6 FT. INTO THE BEDROCK.
4. ALL PILES SHALL BE FILLED W/ CLASS "F" CONCRETE AND REINFORCED WITH ASTM A615, GRADE 60 REINFORCEMENTS. THESE ITEMS ARE INCLUDED IN THE PAY ITEM " REHABILITATION OF SWING PIER - (PIER #1).
   VERTICAL REINFORCEMENT SHALL CONSIST OF NOT LESS THAN FOUR BARS
   THE FULL LENGTH OF VERTICAL REINFORCEMENT SHALL BE ENCLOSED W/ SPIRAL REINFORCEMENT. THE REINFORCEMENT SHALL BE PLACED AT A CLEAR DISTANCE OF NOT LESS THAN 2" FROM THE STEEL SHELL.
5. STRUCTURAL STEEL FOR PILE TOP FRAMING SHALL CONFORM TO ASTM A36.
6. ESTIMATED PILE ORDER LENGTH = 50 FT.
7. MAXIMUM PILE DESIGN LOAD = 110 TONS.
8. MAXIMUM TORSION AT TOP OF PIER = 385 FT-KIP.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
		REVISIONS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT

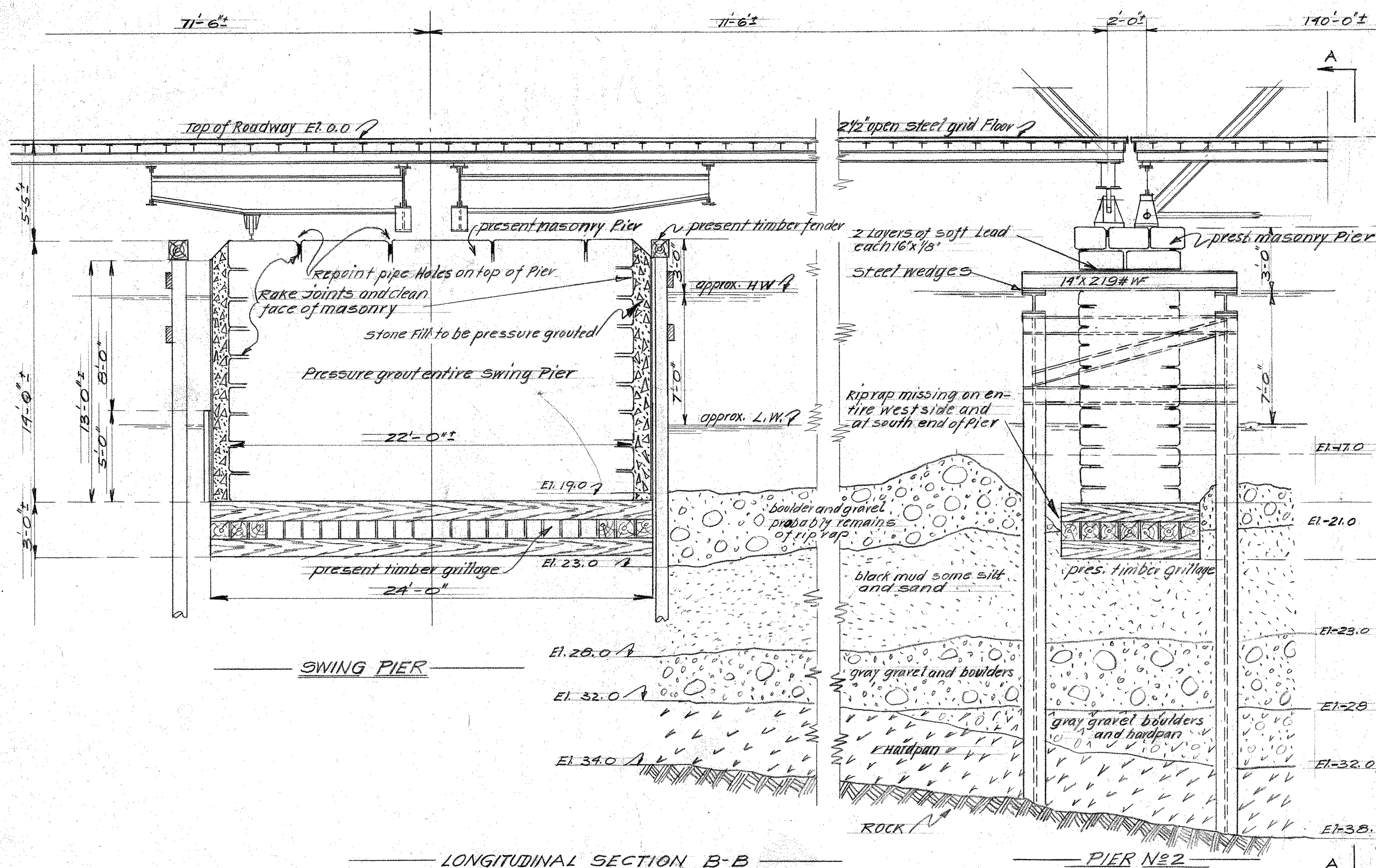
BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

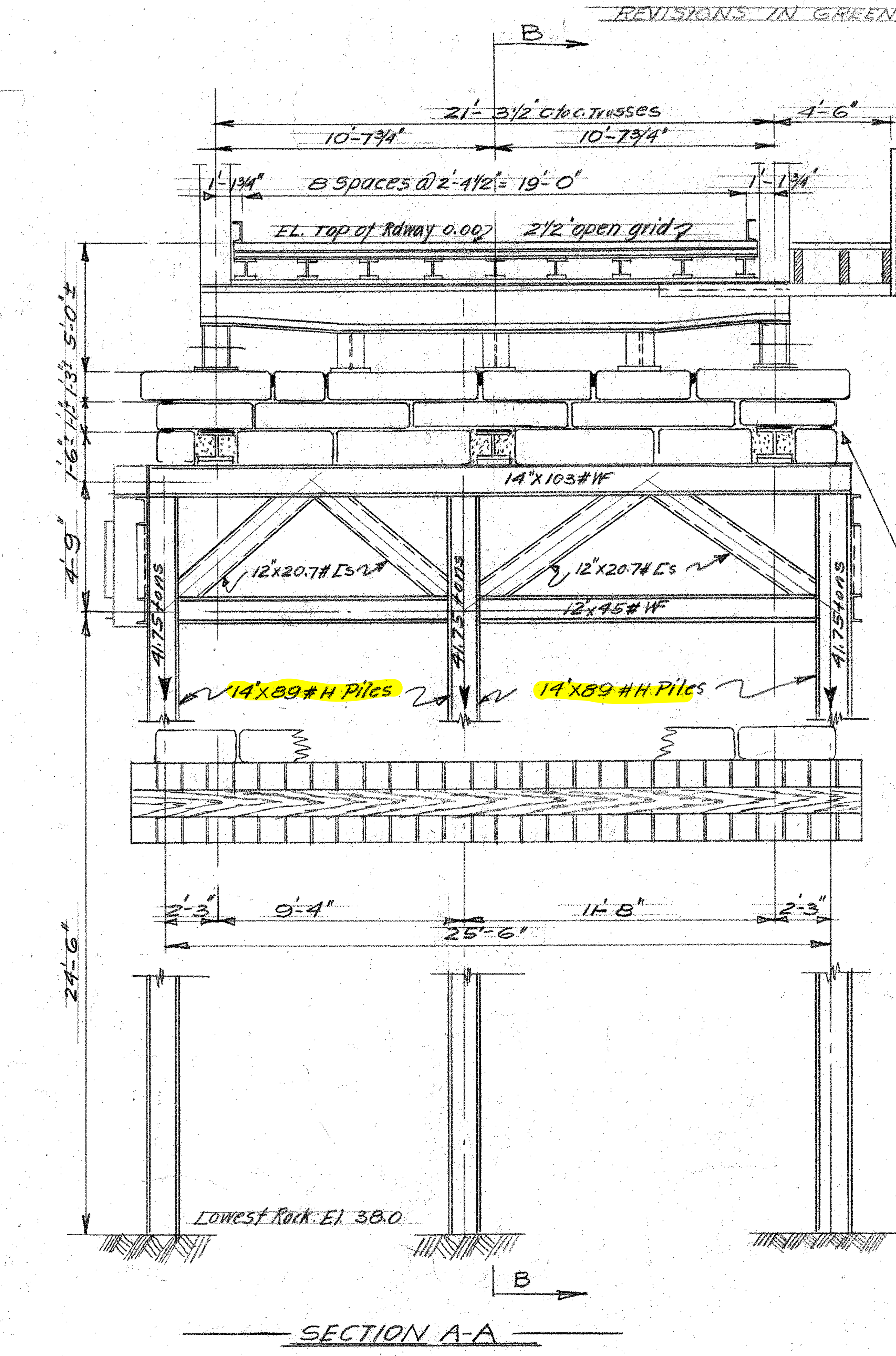
PIER 1 REHABILITATION

ENGINEER	H. W. LOCHNER, INC.		
DESIGNER LM	DRAFTER [signature]	CHECKER JD	
APPROVED [signature]		DATE 9-6-89	
STRUCTURE NO. 158-150-1		BRIDGE LOG NO. 01349	STRUCTURE SHEET NO. 9 of 24

PUB ROAD DIV NO	STATE	TOWN	FED AID PROJ NO	FISCAL YEAR	ROUTE NO	SHEET NO	TOTAL SHEETS
1	CONN	Westport		1951	136	2	8

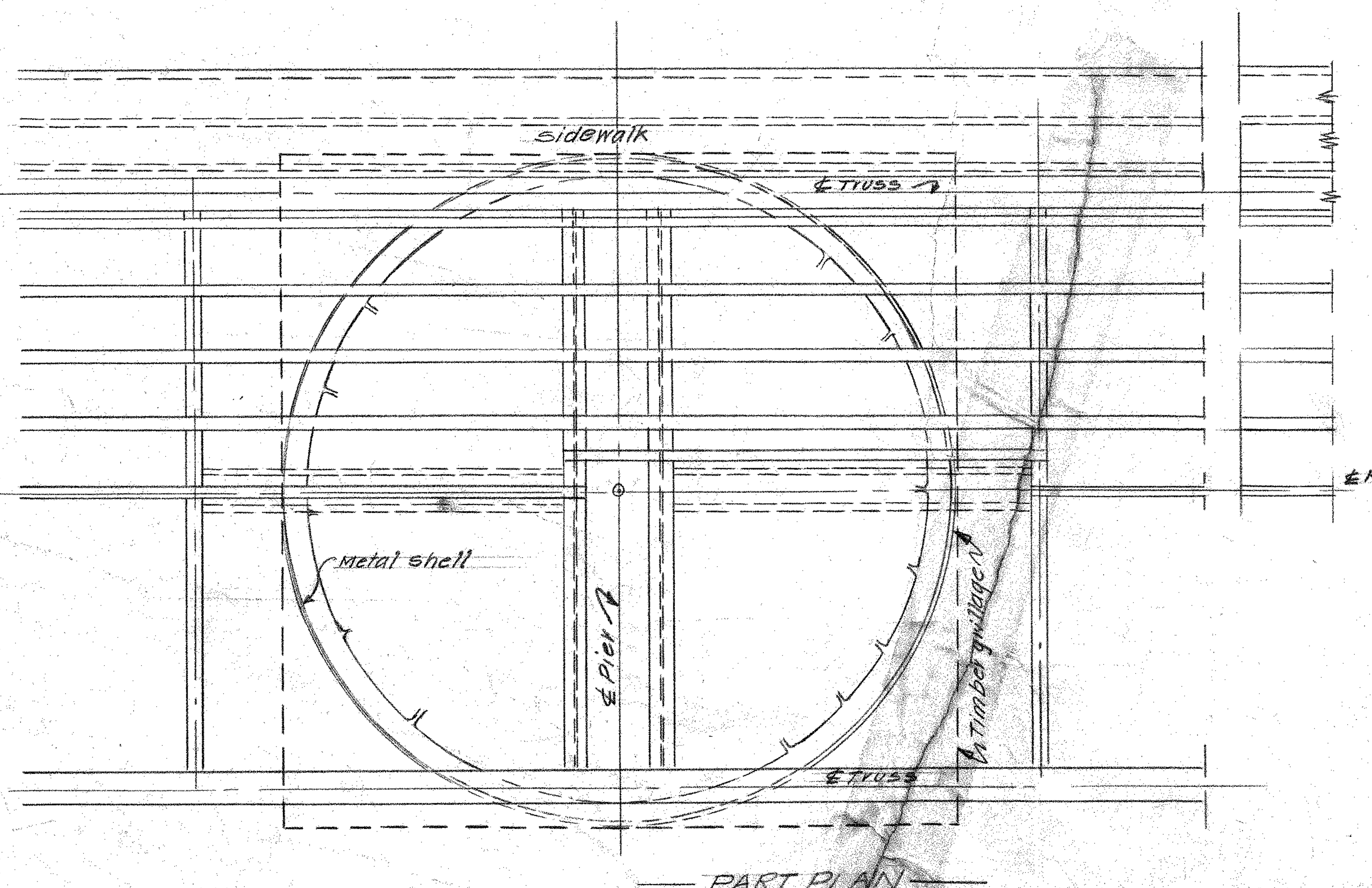
REVISIONS IN GREEN TO SHOW BRIDGE AS CONSTRUCTED

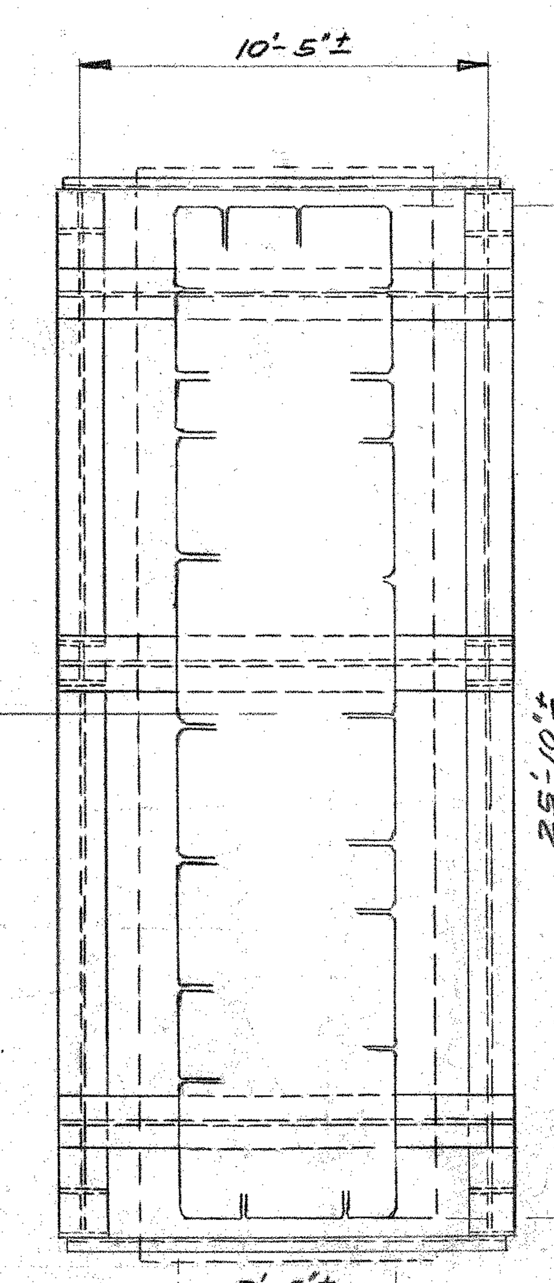




NOTE: Dimensions on plans are approximate only and must be checked by contractor

Rake joints, clean face of masonry and repoint masonry from low water to top, and also top of pier





QUANTITIES

ALTERATION TO MASONRY	LS.
FURNISHING STEEL PILES	34590 Lb.
DRIVING STEEL PILES	240 L.F.
PORTLAND CEMENT	8 Bbl.
RAKING JOINTS & CLEANING FACE OF MASONRY	210 SY.
STRUCTURAL STEEL	5721 Lb.
METAL SHELL AROUND SWING PIER	15600 Lb.
STONE FILL	56 tons
LIQUID ACCELERATING AND WATER RESISTING AGENT	62 gal.
POWDER ACCELERATING AND WATER RESISTING AGENT	248 Lb.
REPOINTING MASONRY JOINTS	598 L.F.
DENSIFYING AND RETARDING AGENT	120 Lb.
PRESSURE GROUTING OF STONE FILL	218 bags
PRESSURE GROUTING SWING PIER	160 bags

GENERAL NOTES

CONN. STATE HWY. DEPT. SPECIFICATIONS FORM 807. ALL NEW STEEL EXCEPT THE METAL SHELL AROUND SWING PIER SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND IRON OXIDE AND TWO FIELD COATS OF PAINT OF A COLOR AND SHADE SELECTED BY THE ENGINEER

REVISIONS

No	DATE	DESCRIPTION

CONNECTICUT
STATE HIGHWAY DEPARTMENT

BRIDGE No 136-09 Rt 136
OVER SAUGATUCK RIVER
IN THE TOWN OF
WESTPORT
PLANS SHOWING
PROPOSED REPAIRS TO PIERS

DESIGNED BY A.E.
SCALE: ¼" = 1'-0"
MADE BY A. Schenfeld DATE: 5/14/51
CHECKED BY GAH DATE: 5/19/51
APPROVED J. O. Drury DATE: 6/11/51

PROJECT No M.C.-18
Bridge Sheet No 1 of 2

MC-18 FORMERLY 158 58

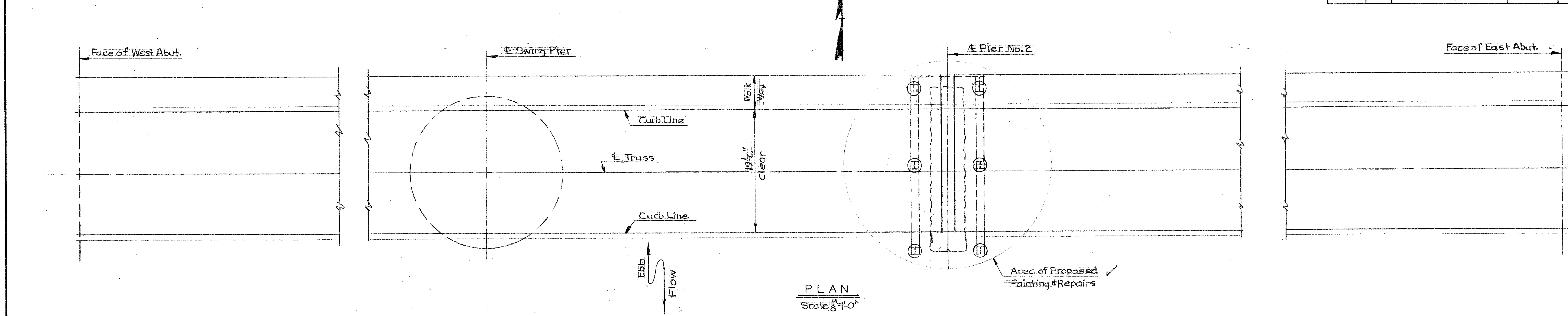
165 05

MC-18 FORMERLY 158 58

165 05

FORM NO. ENG. 158 ED. 1-75

FHWA REGION	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT		158-125	1979	136	2	7



PLAN
Scale 1/8"=1'-0"

ELEVATION
Scale 1/8"=1'-0"

GENERAL NOTES

Specifications: Connecticut Department of Transportation Form 811 (1974), Interim Specifications and Special Provisions.
Design Specifications: Standard Specifications for Highway Bridges AASHTO-1977, with the Interim Specifications up to and including 1978, as supplemented by the Connecticut Department of Transportation Bridge Manual (1964).
Allowable Design Stresses:
Concrete f'c = 5000 psi
Reinforcement ASTM A 615 Grade 40 fs (tensile) = 20,000 psi
Structural Steel ASTM A 36 Ft = 20,000 psi All Thicknesses
Reinforcement: Grade 60 bars may be substituted for grade 40 bars. Size and spacing shall be the same as for grade 40 bars.
Decimal Dimensions: When dimensions are given to less than three decimal places, the omitted digits shall be assumed to be zeros.
Charpy V-Notch Tests: Replacement steel bracing will not require Charpy V-Notch Tests
Welding: Welding of Structural Steel shall be done in accordance with the American Welding Society Structural Welding Code AWS D1.1-75, as modified by the 1977 AASHTO Standard Specifications for Welding of Structural Steel Highway Bridges.

QUANTITES		
ITEM	UNIT	AMOUNT
Underwater Steel Pile Repair	L.F.	100
Underwater Steel Protective Coating	S.F.	460

NOTE WELL: THIS BRIDGE HAS A RESTRICTED LOAD CAPACITY. COMPLETION OF THIS PROJECT WILL NOT CHANGE THE RESTRICTION.

INSPECTION OF FIELD WELDS		
METHOD	UNIT	QUANTITY
Radiographic or Ultrasonic	in.	0
Ultrasonic	in.	0
Magnetic Particle	l.f.	0

NOTES

✓ Ⓐ Remove Existing "LOAD LIMIT" Sign and Erect R12-1 (10 Tons).
✓ Ⓑ Remove Existing "LOW CLEARANCE" Sign and Erect W12-2 (13'-4") on Existing Post.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
REVISIONS		

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT
CONN. RTE. 136
OVER
SAUGATUCK RIVER
SUBSTRUCTURE REPAIRS
GENERAL PLAN

ENGINEER Bridge Design Unit
DESIGNER W.F.C. | DRAFTSMAN F.T.R. | CHECKER W.F.C.
APPROVED Milton Q. Johnson / HJK | DATE 12-26-78
STRUCTURE NO. 158-125-01349 | BRIDGE LOG NO. 01349 | STRUCTURE SHEET NO. 1 of 2

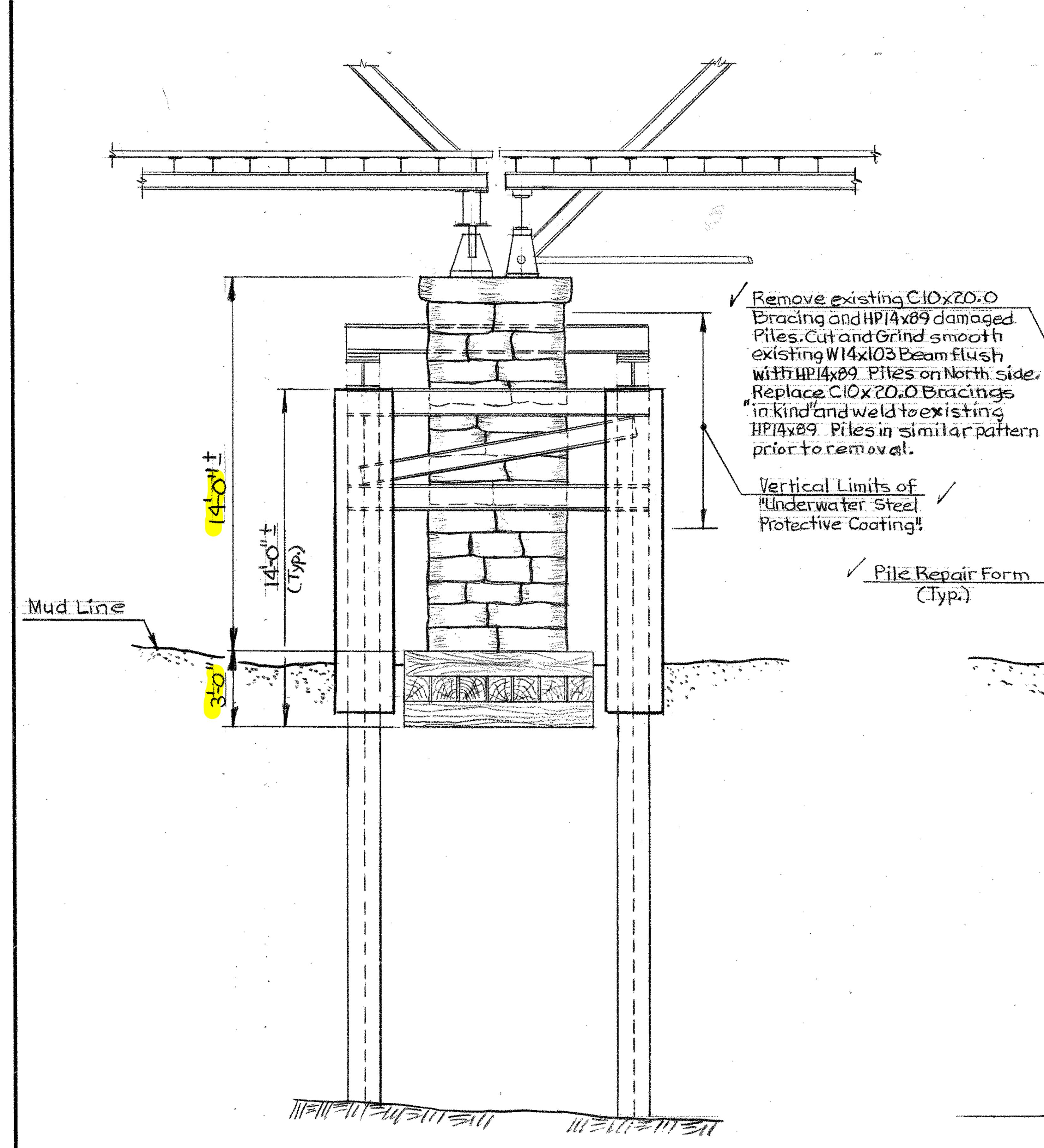
OGILVIE PRESS BUFFALO, N.Y.

158 125

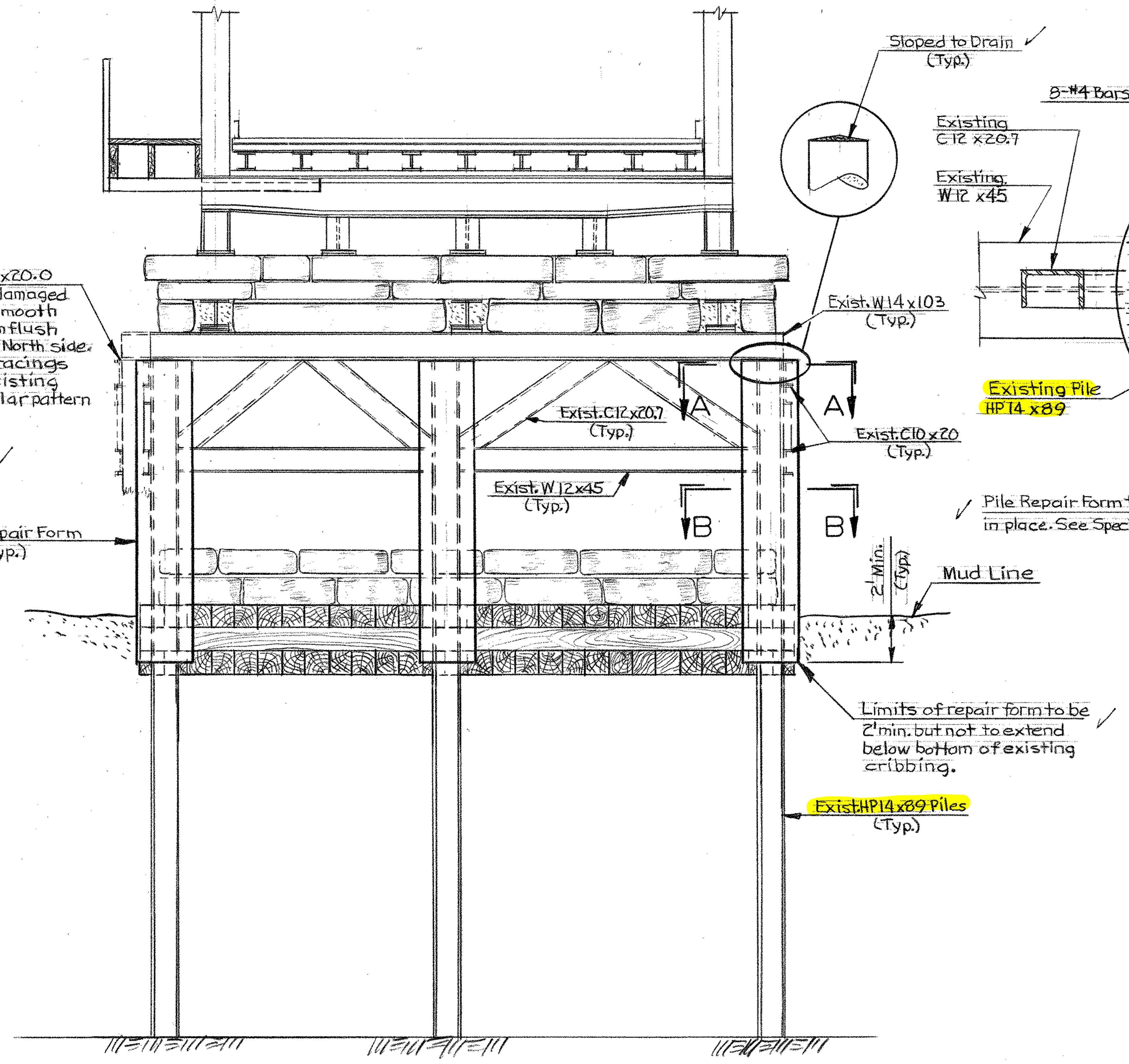
2

FORM NO. ENG. 158 ED. 1-75

F.H.W.A. REGION	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT		158-125	1979	136	3	7

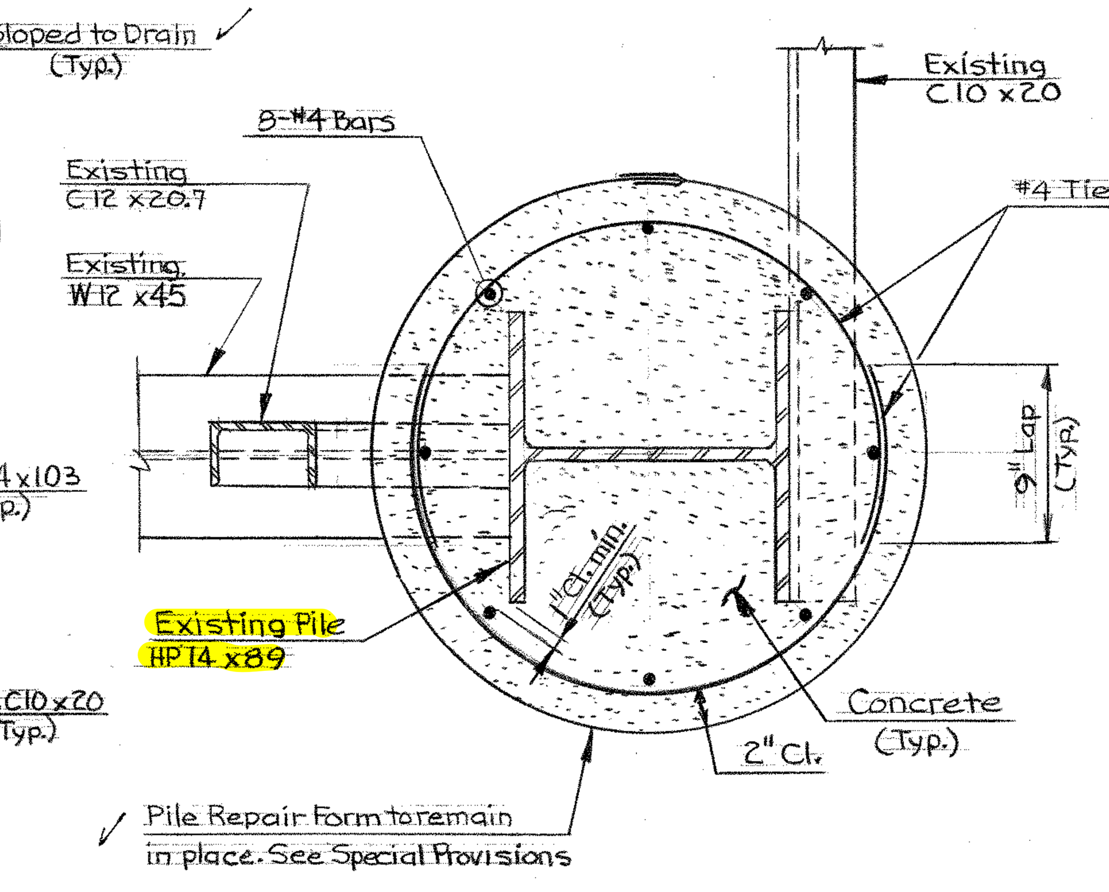


SOUTH END VIEW
Scale $\frac{1}{4}$"=1'-0"

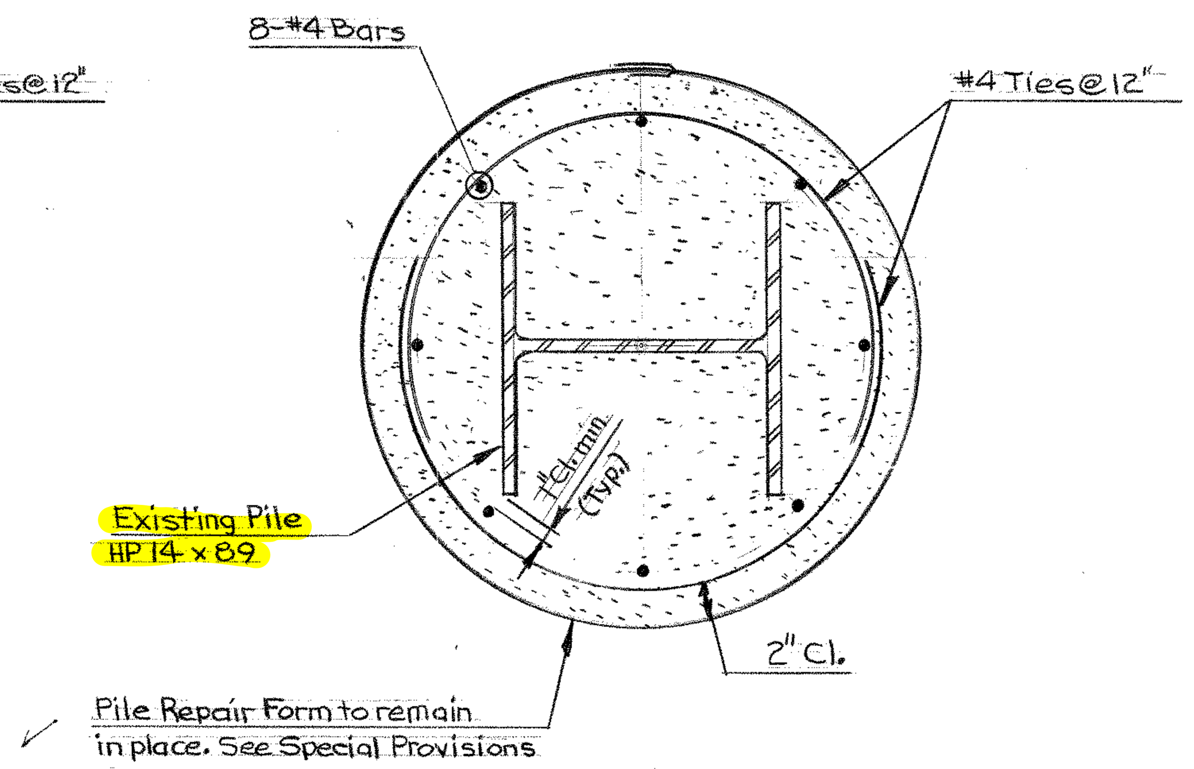


WEST ELEVATION
Scale $\frac{1}{4}$"=1'-0"

PROPOSED REPAIRS - PIER NO. 2



SECTION A-A
Scale $1\frac{1}{2}$"=1'-0"



SECTION B-B
Scale $1\frac{1}{2}$"=1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
		REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

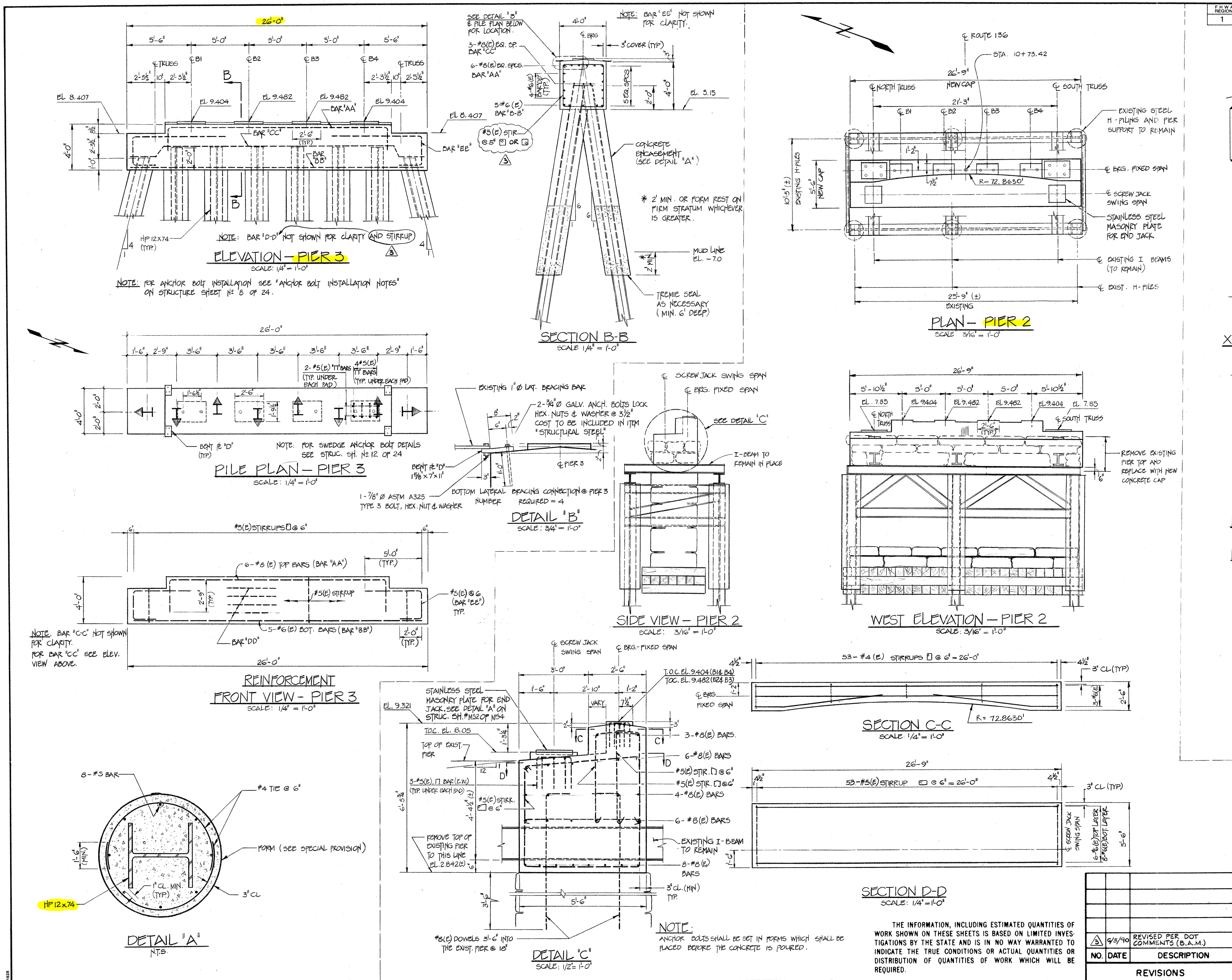
CONN. RTE. 136
OVER
SAUGATUCK RIVER
SUBSTRUCTURE REPAIRS

DETAIL SHEET

ENGINEER Bridge Design Unit
DESIGNER W.F.C. DRAFTSMAN F.T.R. CHECKER W.F.C.
APPROVED Milton A. Johnson / HJK DATE 12-26-78
STRUCTURE NO. 158-125-01349 BRIDGE LOG NO. 01349 STRUCTURE SHEET NO. 2 of 2

OGILVIE PRESS BUFFALO, N.Y.

158 125 10 3



PILE SPLICE NOTES

1. PILES SHALL NOT BE SPLICED EXCEPT W/ APPROVAL OF THE ENGINEER
2. FOR PILES TO BE SPLICED DURING DRIVING THE UPPER PILE SECTION, WITH SPLICE PLATES ATTACHED SHALL BE SET IN PLACE ON TOP OF THE DRIVEN SECTION AND TAPPED SEVERAL TIMES WITH THE HAMMER TO IMPROVE THE BEARING CONTACT, AFTER WHICH WELDING SHALL BE COMPLETED.
3. PILES TO BE SPLICED BEFORE DRIVING SHALL BE WELDED BY USING A 100% SINGLE BEVEL, BUTT WELD, ALL AROUND AS PER "STRUCTURAL WELDING CODE" AWS
4. PREFABRICATED SPLICING DEVICES MAY BE USED IF APPROVED BY THE ENGINEER.

PILE NOTES

1. ALL PILES ARE HP12x74 TO BE COAL-TAR-EPOXY COATED FOR PROTECTION AGAINST CORROSION IN THE ORGANIC DEPOSITS AS PER SPECIAL PROVISION
2. ALL EXPOSED PILES SHALL BE ENCASED IN CONCRETE TO 2 FEET BELOW THE MUDLINE
3. ⊢⊣ DESIGNATES BATTER PILES
4. PILES TO BE DRIVEN TO REFUSAL IN THE GRANULAR DEPOSITS OR ON THE BEDROCK
5. ALL PILES TO HAVE A MINIMUM YIELD STRENGTH Fy = 50 KSI
6. THE HAMMER USED SHALL BE CAPABLE OF DELIVERING NOT LESS THAN 36,000 FT-LBS OF ENERGY PER BLOW
7. ESTIMATED PILE ORDER LENGTH = 50 FT.
8. MAX. PILE LOAD = 98 TONS (GROUP I)

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
3	9/5/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

PIER 2 AND PIER 3 REHABILITATION

ENGINEER	H.W. LOCHNER, INC.		
DESIGNER	LM	DRAFTER	CHECKER JD
APPROVED		DATE	9-6-89
STRUCTURE NO.	158-150-1	BRIDGE LOG NO. 01349	STRUCTURE SHEET NO. 10 OF 24

		Pedestal for truss 1 at the west abutment has a 1' diameter hollow area, 1' diameter x 1/4" deep scale and a 2' x 1' area of map cracking. The pedestal for girder 4 at the east abutment has a 4" diameter x 1/2" deep spall. Also, see the Underwater Inspection Report dated 12/7/2012. See field sheets 19 - 20 and photo 38.
ABUTMENTS-BACKWALL:	7	Both backwalls have isolated vertical hairline cracks up to full height. The east abutment backwall has a 1' wide x 1' high area of map cracking. See field sheets 19 - 20.
ABUTMENTS-FOOTINGS:	N	Not visible.
ABUTMENTS-SETTLEMENT:	8	None noted.
ABUTMENTS-WINGWALLS:	N	Stone masonry abutment end faces. Rating revised to N.
PIERS/BENTS-CAPS:	6	The pier caps have hairline cracks and areas of map cracking with efflorescence and rust. The north and south faces of pier 4 have spalls up to 22" long x 10" high x 4" deep. The cap beams at pier 2 have isolated areas of light rust. The carrier beams have areas of heavy laminted rust. The north and south carrier beam top flange shim plates at the east elevation of pier 2 have section loss with as little as 2' long x 3" wide x 1/8" remaining thickness (north beam). See field sheets 21 - 26 and photo 39 - 42.
PIERS/BENTS-PILE BENT:	5	There are concrete encased H-piles with fiberglass jackets at piers 2 and 3. The fiberglass jackets at pier 2 are loose and/or missing. The exposed concrete has scaling up to full perimeter x 3' high x up to 4" deep with exposed rebar. Also, see the Underwater Inspection Report dated 12/07/2012. See field sheets 21 - 26 and photos 40, 41 and 43.
PIERS/BENTS-COLUMNS:	5	The pier 1 steel jackets have heavy laminated rust and rusted through holes up to 1' diameter that expose the concrete. The exposed concrete has severe scale and spalls. Also, see the Underwater Inspection Report dated 12/7/2012. See field sheets 21 - 22 and photo 39.
PIERS/BENTS-FOOTING:	N	Per the 2012 Underwater Inspection Report the footing is intermittently exposed and undermined up to 1.8' long x 1.3' high x 2.1' deep at the southwest and the northwest corners of pier 2. The timber cribbing has splits and shown marine borer activity. The steel framework installed to repair the pier uses carrier beams to transfer load from the pier cap to the steel piles, leaving the timber cribbing to carry only the dead load of the masonry pier stem. Rating revised to 'N'.
PIERS/BENTS-SETTLMT:	8	None detected.
EROSION-SCOUR:	5	Per the 2012 Underwater Inspection Report there is scour up to 1.3' deep along the west abutment and up to 0.7' deep along pier 1. There is 2.4' of aggraddation along piers 2 and 3. The mudline is unchanged along the east abutment.
CONCRETE CRACK-SPALL:	5	See items above.
STEEL CORROSION:	5	The steel diagonal cross-bracing members at pier 2 have heavy rust and perforations up to 3' long x full height. The southeast cross-brace horizontal member is completely detached. Also, see "Piers/Bent Columns" and "Piers/Bents Caps" items above and the 2012 Underwater Inspection Report. See sheets 23 and 24 and photo 44.
PAINT:	N	-

1A

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

subject: **BMM No.** 11-133
Bridge No. 01349
Route 136 over Saugatuck River
Westport

MEMORANDUM

date: 3/4/11

to: Mr. Robert P. Mongillo
Transportation Maintenance Administrator
Bureau of Highway Operations

from: Joseph C. Kozlowski
Transportation Supervising Engineer
Bureau of Engineering and Construction

Attached are two copies of our most recent inspection report for the subject structure, which indicates the location of the following structural deficiencies:

1. The turnbuckles for the barrier gate stay wires are not provided with lock nuts at each end of the turnbuckle and were noted to be loose.
2. The west abutment and Pier 2 end floor beams have a 10 in. hole cut in the solid end diaphragm at each end allowing pigeon access and there is an accumulation of debris including pigeon debris inside, especially pier 2. See report photos 20 and 22.
3. The east abutment joint has a 6 ft. length of missing steel extrusion with a 1 ft. x 4 in. x 2 in. deep spall in the elastomeric header, see report photo 15.

Please direct persons under your jurisdiction to:

1 installed
1. Provide lock nuts at the turnbuckles for the barrier gates to secure wires.
2. Provide pigeon screens that are removable for mechanical inspection access.
3. Repair or replace joint (20 LF).

3 replaced

All repairs shall be performed utilizing appropriate approved materials and tried and proven methods unless otherwise specified.

NOT DONE 2

Item No. 1 should be considered Priority C. The remaining items should be considered Priority D. There are also other deficiencies which are considered routine maintenance that should be corrected. In addition, the inspection report contains listings of various mechanical and electrical items from previous reports that have not been addressed.

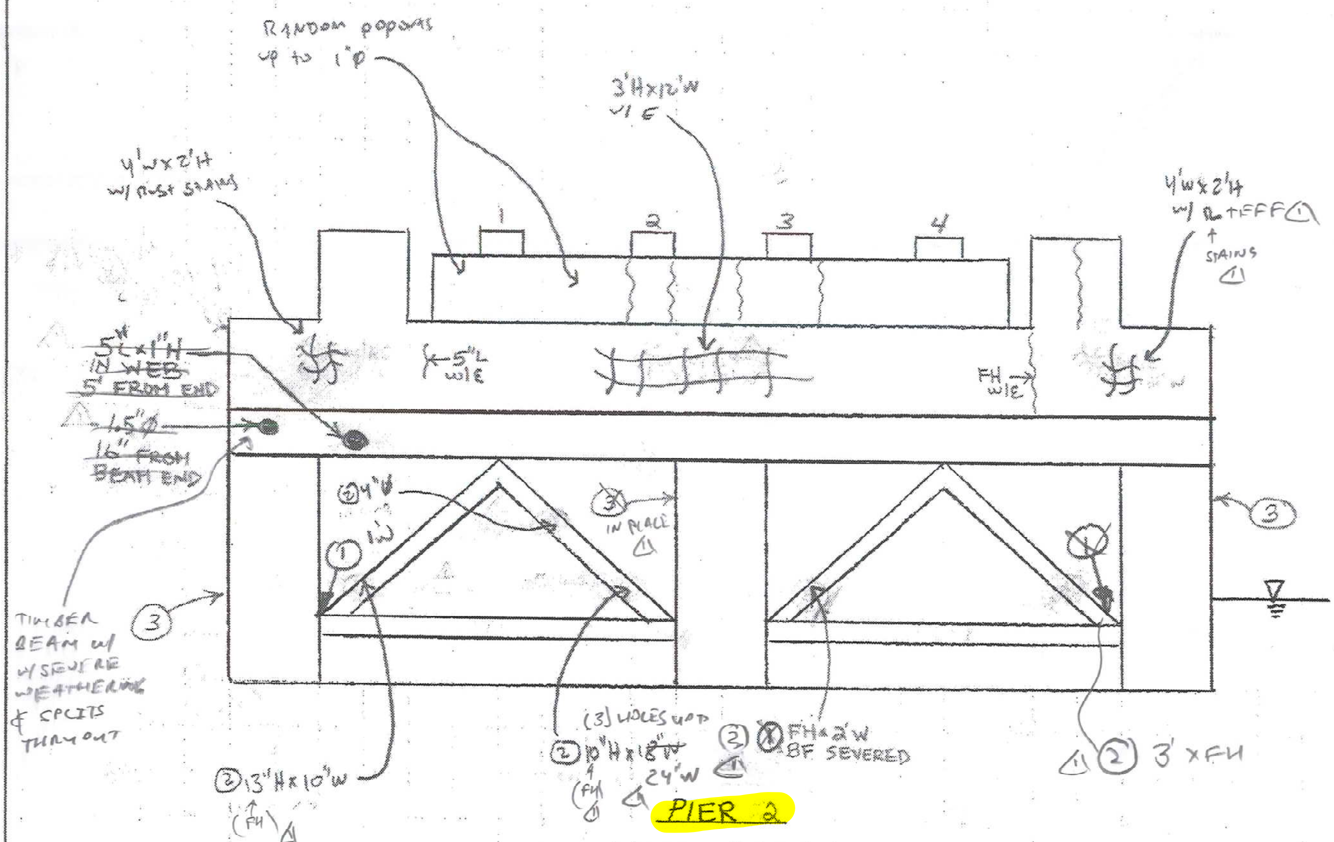
TranSystems®

Field Notes

PROJECT NO P712100021 BRIDGE NO 01349

DATE 11/9/2012 SHEET 23

CREW GAH / NPH / ASW



PIER 2

WEST ELEVATION

LEGEND:

- MAPCRACKING
- HAIRLINE CRACK/CRK
- HOLE
- W/E W/EFFLO
- W/R W/RUST
- W/RS W/RUST STAINS
- BF BOTTOM FLANGE
- FH FULL HEIGHT

GENERAL NOTES:

SEE NOTE ② △1

① ~~STEEL CROSS BRACING HAS SEVERAL LOCATIONS OF 100% SECTION LOSS UP TO 2'W @ THE ENDS. (UN CONNECTED TO PILES) @ THESE LOCATIONS~~

② RUSTED THROUGH HOLE IN WEB

③ FIBERGLASS SHELL MISSING, EXPOSED CONC. PILE W/ HEAVY SCALING & SPALLING, FULL PERIMETER × 3'H × UP TO 4"D W/ EXP. REBAR △1

- HEAVY BARNACLE GROWTH IN TIDAL ZONE
- LT SAND ACCUMULATION ON PIER CAP
- CONCRETE SKIMCOAT PEELING @ RANDOM LOCATIONS

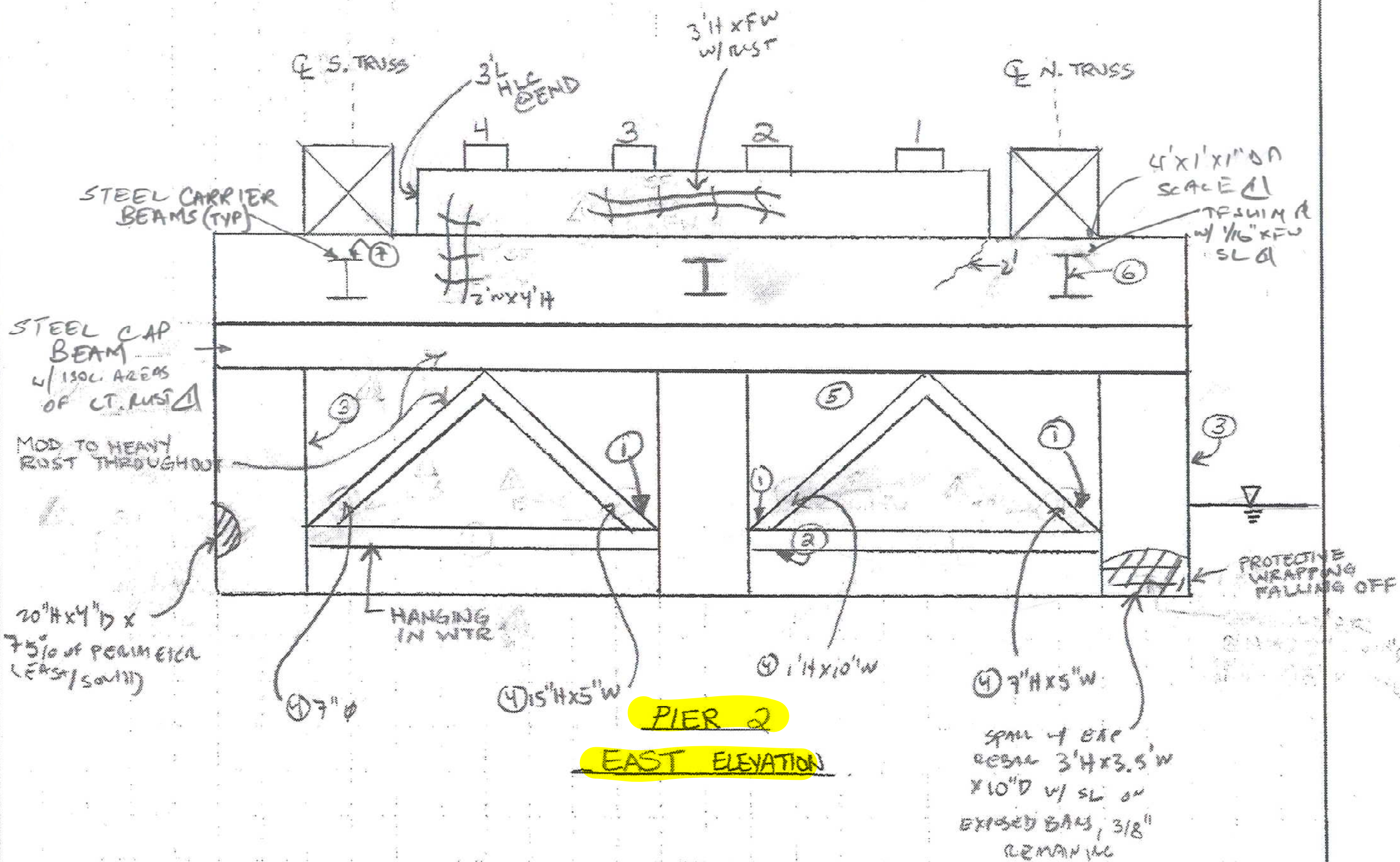
REVISION △1	DATE 11/3/14	CREW YS, JPM (TSC)	REVISION △2	DATE	CREW
REVISION △3	DATE	CREW	REVISION △4	DATE	CREW

Calculations for 1/4 US Grid

TranSystems®

Field Notes

PROJECT NO. P712100021 | BRIDGE NO. 01349
DATE 11/9/2012 | SHEET 24
CREW GAH / NPM / ASW



PIER 2

EAST ELEVATION

NOT VISIBLE DUE TO HIGH WATER △1

△1 ⑦ SHIM ℞ w/ 2'L x 3"W x 1/8" REM.

LEGEND:

- ~ CRACK / HLCC
- 井 MAP CRACK / HL MAP CR
- HOLLOW AREA / HA
- SPALL
- SPALL w/ EXPOSED REBAR
- W/E : EFFLORESCENCE

GENERAL NOTES:

1. STEEL CROSS BRACING HAS SEVERAL LOCATIONS OF 100% SECTION LOSS x UP TO 2"W @ THE ENDS. (UNCONNECTED TO PILES @ THESE LOCATIONS)
2. 100% BOTTOM FLG LOSS x 2'L
3. FIBERGLASS SHELL MISSING, EXPOSED CONC. PILE w/ HEAVY SCALING UP TO FULL PERIMETER x 3'H x UP TO 4"D
4. RUSTED THROUGH HOLE IN WEB
5. 3'L x 1.5'W x 5"D CHIP STONE & 15"D MOTAR VOID
6. STEEL CARRIER △1 BEAMS ~~ENCASED~~ △1 ~~IN PIER CAP~~ w/ ~~HVY LAM. RUST~~ AREAS OF RUST; CR IN TF SHIM ℞ (TYP.) △1

- HEAVY BARNACLE GROWTH IN TIDAL ZONE
- CONCRETE SKIMCOAT PEELING @ RANDOM LOCATIONS
- LT SAND ACCUMULATION ON PIER CAP

REVISION △1	DATE 11/4/14	CREW YS, JPM (TSC)	REVISION △2	DATE	CREW
REVISION △3	DATE	CREW	REVISION △4	DATE	CREW

Calculations for 1/4 US Grid

Bridge No.	01349	**Inspected by 1:**	Y. Skoplyak
Town:	Westport	**Inspected by 2:**	J. McKenna
Feature Carried:	Route 136 (Bridge Street)	**Date Inspected:**	11/3/2014
Feature Crossed:	Saugatuck River	**Project No.:**	170-3225

Photo 39: **Pier 1, east elevation. Note the fender system.**

Photo 40: **Pier 2, east elevation.**

Prepared by TranSystems

Bridge No.	01349	**Inspected by 1:**	Y. Skoplyak
Town:	Westport	**Inspected by 2:**	J. McKenna
Feature Carried:	Route 136 (Bridge Street)	**Date Inspected:**	11/3/2014
Feature Crossed:	Saugatuck River	**Project No.:**	170-3225

Photo 43: **Pier 2, west elevation, pile 1 with detached fiberglass jacket and spalling.**

Photo 44: **Rusted out cross bracing at the west elevation of pier 2.**

5/28

Connecticut Department of Transportation

UNDERWATER INSPECTION

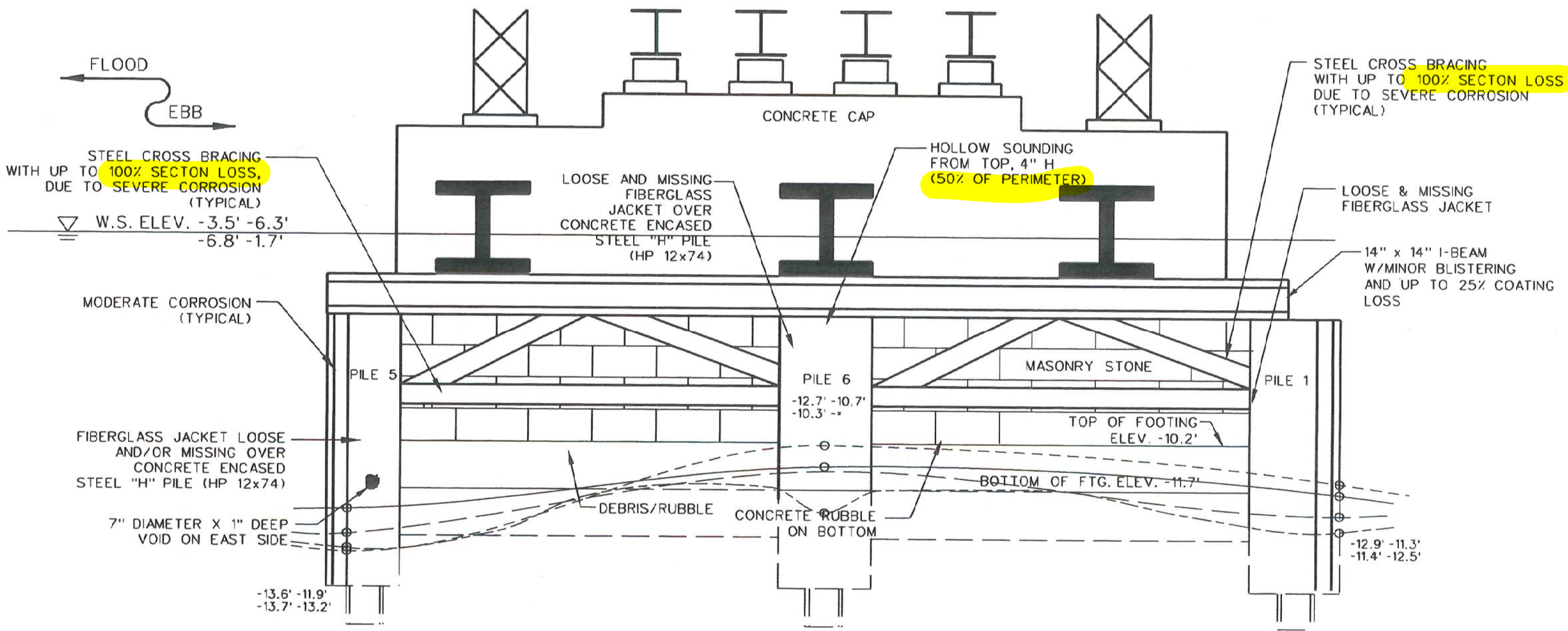
BRI-58 Form

Bridge No:	**01349**	**Town:**	**WESTPORT**
Inspection Date:	**12/7/2012**	**Route Carried:**	**00136**
		Feature Crossed:	**SAUGATUCK RIVER**

ITEM	*RATING*	*REMARKS*
		jacket.
PILES (RDT 4/23/13; 5 For Pile Condition; For Bracing Rating = "2")	4	The piles exhibit areas of missing or loose fiberglass jacket. The exposed concrete encasement at Pile 4 (worst case scenario) exhibits delamination and spalls up to 3.5' W x 3' H x 7" D with exposed reinforcement. This spall also exposes the southeast flange of Pile 4. The exposed flange portion is in good condition. The reinforcement exhibits moderate to severe corrosion. Pile 5 exhibits a loose and or missing fiberglass jacket and a void up to 7" dia x 1" D, Pile 6 exhibits hollow sounding area up to 4" H x 50% of perimeter. The steel cross bracing members between the piles display severe corrosion with up to 100% section loss. (Sheet 12, 13 & 14; Photos 9, 13 & 15) Deficiencies in cross bracing members and pile jackets noted on BMM No. 06-091 and have not been addressed (See Sheet 19, Item Nos. 1 & 3).
STEM (RDT 4/23/13)	5	Stone masonry section exhibits mortar loss up to 25% with up to 2.5' penetration into the joints.
FOOTING (4; RDT 4/23/13)	5	Concrete footing on timber cribbing: The non-structural footing is intermittently exposed. The timber cribbing is no longer exposed. The footing is no longer bearing the live load since the installation of the concrete encased H piles. (Sheets 12, 13 & 14)
SCOUR	5	Mudline elevations primarily exhibit aggradation up to 2.0' since the 2010 inspection. (Sheets 12, 13 & 14)
SETTLEMENT	7	SW Corner undermining 30'L x 5"H x 4"dp – exposed timber
General remarks:		cribbing w/ splitting + marine borers. NW corner undermined 22'L x 16"H x 25"dp (Void – cribbing eroded away)
[illegible] NO. 3	6	Concrete cap supported by eight concrete encased H piles with plastic jacket.
PILES	7	Eight concrete encased steel H piles with plastic jackets. No deficiencies noted. (Sheets 15 & 16; Photos 10 & 11)
STEM	N	
FOOTING	N	
SCOUR	6	Mudline elevations exhibit aggradation up to 2.4, since the 2010 inspection. (Sheets 15 & 16) RDT 4/23/13
SETTLEMENT	8	
General remarks:		

61. CHANNEL& CHANNEL PROTECTION:

RDT 4/23/13	5	
CHANNEL SCOUR (5; Isolated minor undermine @ P2)	6	Mudline elevations exhibit random areas of scour with no specific pattern up to 3.6', with the exception of the areas surrounding Pier Nos. 2 & 3, that exhibits aggradation of 3' to 5' since the 2008 and 2010 inspection. (Sheet 7 & 8)
EMBANKMENT EROSIO	8	
DEBRIS	7	Minor scattered debris.
VEGETATION	8	
CHANNEL CHANGE	7	No notable channel change was observed.
FENDER SYSTEM	5	Timber piles and horizontal wales exhibit splits and checks 1/4" to 1/2" w. throughout. Several piles with up to 30% section loss at mudline were abandoned and or part of the old Fender system. The hardware exhibits moderate to heavy corrosion in the tidal zone. Wales at random locations exhibit minor abrasion damage, possibly due to impact.
SPUR DIKES & JETTIE	N	



NOTES:

- MISSING MORTAR UP TO 25% WITH 2.5' HORIZONTAL PENETRATION INTO THE PIER, BETWEEN THE STONEWORK.
- INTERMITTENT CRACKS IN THE STONEWORK AND CAPPING WAS OBSERVED.

PIER 2 (WEST ELEVATION)

N.T.S.

LEGEND FOR BOTTOM ELEVATIONS

DEC, 2010→ -0.0' -0.0' ←DEC, 2012
DEC, 2008→ -0.0' -0.0' ←DEC, 2006

LEGEND FOR MUDLINE PROFILES

———— (solid)	DEC, 2012
— — — —	DEC, 2010
- - - - -	DEC, 2008
—— ——	DEC, 2006

LEGEND FOR SYMBOLS

⊕ DATUM ELEV. 0.0 TAKEN FROM BOTTOM OF CONCRETE CAP ON SOUTH END OF PIER 3.

▽ W.S. ELEV. -3.5' -6.3' -6.8' -1.7'

* INDICATES NO INFORMATION

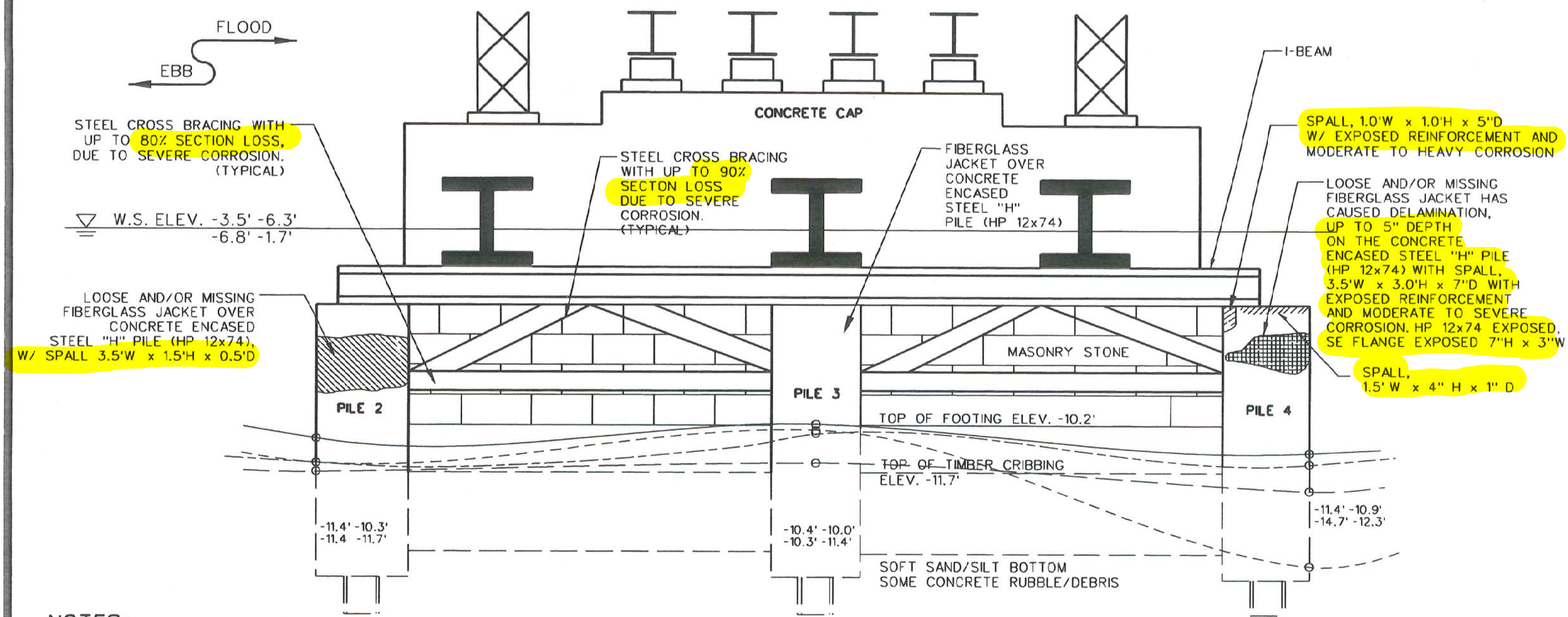
A.DiCesare Associates, P.C.
690 Clinton Ave, Bridgeport, CT 06604
Phone: 203-696-0444, Fax: 203-696-1094
Email: dicesare@adicesarepc.com

CONNECTICUT DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 01349
ROUTE 136 OVER SAUGATUCK RIVER
WESTPORT CONNECTICUT

PIER 2 (WEST ELEVATION)

INSPECTED BY: BM REVISED BY: DM	SCALE: AS SHOWN	DATE OF INSPECTION 12 / 07 / 12	DRAWING NO. 01349F



NOTES:

- MISSING MORTAR, UP TO 5%, ABOVE THE WATERLINE AND 25% BELOW THE WATERLINE, WITH UP TO 2.5' HORIZONTAL PENETRATION INTO THE PIER, BETWEEN THE STONE WORK.
- INTERMITTENT CRACKS IN THE STONEWORK AND CAPPING WAS OBSERVED.

PIER 2 (EAST ELEVATION)

N.T.S.

LEGEND FOR BOTTOM ELEVATIONS

DEC, 2010 → -0.0' -0.0' ← DEC, 2012
DEC, 2008 → -0.0' -0.0' ← DEC, 2006

LEGEND FOR MUDLINE PROFILES

DEC, 2012
DEC, 2010
DEC, 2008
DEC, 2006

LEGEND FOR SYMBOLS

DATUM ELEV. 0.0 TAKEN FROM BOTTOM OF CONCRETE CAP ON SOUTH END OF PIER 3.

W.S. ELEV. -3.5' -6.3' -6.8' -1.7'

• INDICATES NO INFORMATION

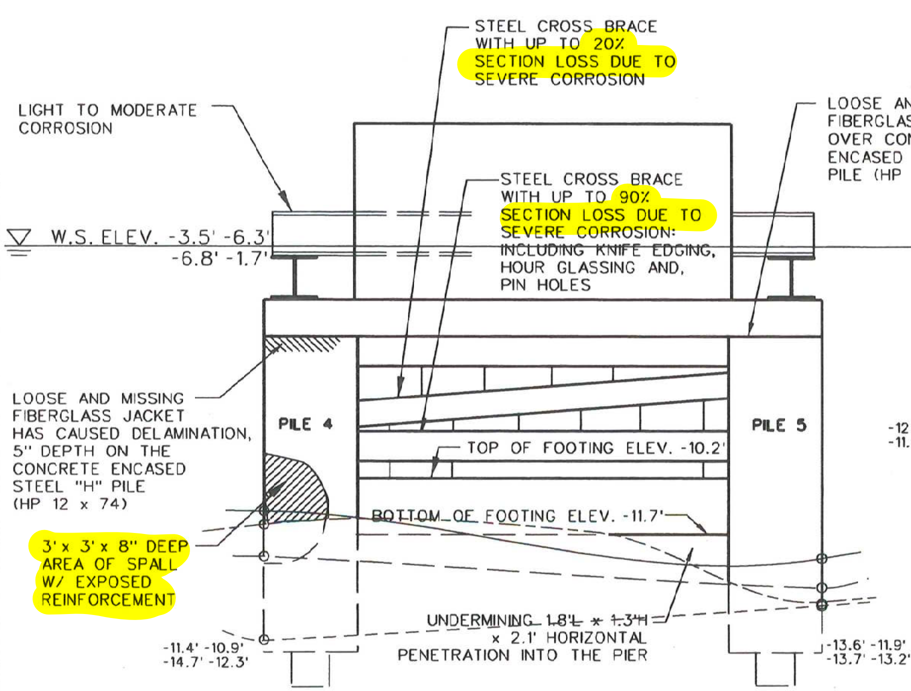
A.DiCesare Associates, P.C.
690 Clinton Ave, Bridgeport, CT 06604
Phone: 203-696-0444, Fax: 203-696-1094
Email: dicesare@adicesarepc.com

CONNECTICUT DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 01349
ROUTE 136 OVER SAUGATUCK RIVER
WESTPORT CONNECTICUT

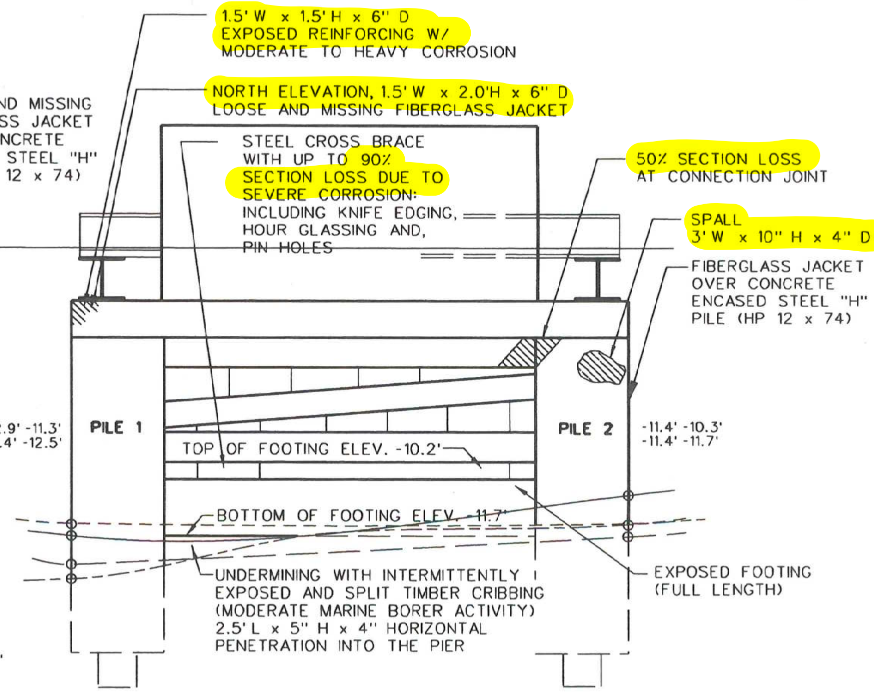
PIER 2 (EAST ELEVATION)

INSPECTED BY: BM REVISED BY: DM	SCALE: AS SHOWN	DATE OF INSPECTION 12 / 07 / 12	DRAWING NO. 01349G



PIER 2 (NORTH ELEVATION)

N.T.S.



PIER 2 (SOUTH ELEVATION)

N.T.S.

NOTES:

- MISSING MORTAR, UP TO 20% WITH 2.5' HORIZONTAL PENETRATION INTO THE PIER, BETWEEN THE STONEWORK.

LEGEND FOR BOTTOM ELEVATIONS

DEC, 2010 → -0.0' -0.0' ← DEC, 2012
DEC, 2008 → -0.0' -0.0' ← DEC, 2006

LEGEND FOR MUDLINE PROFILES

DEC, 2012
DEC, 2010
DEC, 2008
DEC, 2006

LEGEND FOR SYMBOLS

DATUM ELEV. 0.0 TAKEN FROM BOTTOM OF CONCRETE CAP ON SOUTH END OF PIER 3.

W.S. ELEV. -3.5' -6.3' -6.8' -1.7'

* INDICATES NO INFORMATION

A.DiCesare Associates, P.C.
690 Clinton Ave, Bridgeport, CT 06604
Phone: 203-696-0444, Fax: 203-696-1094
Email: dicesare@adicesarepc.com

CONNECTICUT DEPARTMENT OF TRANSPORTATION

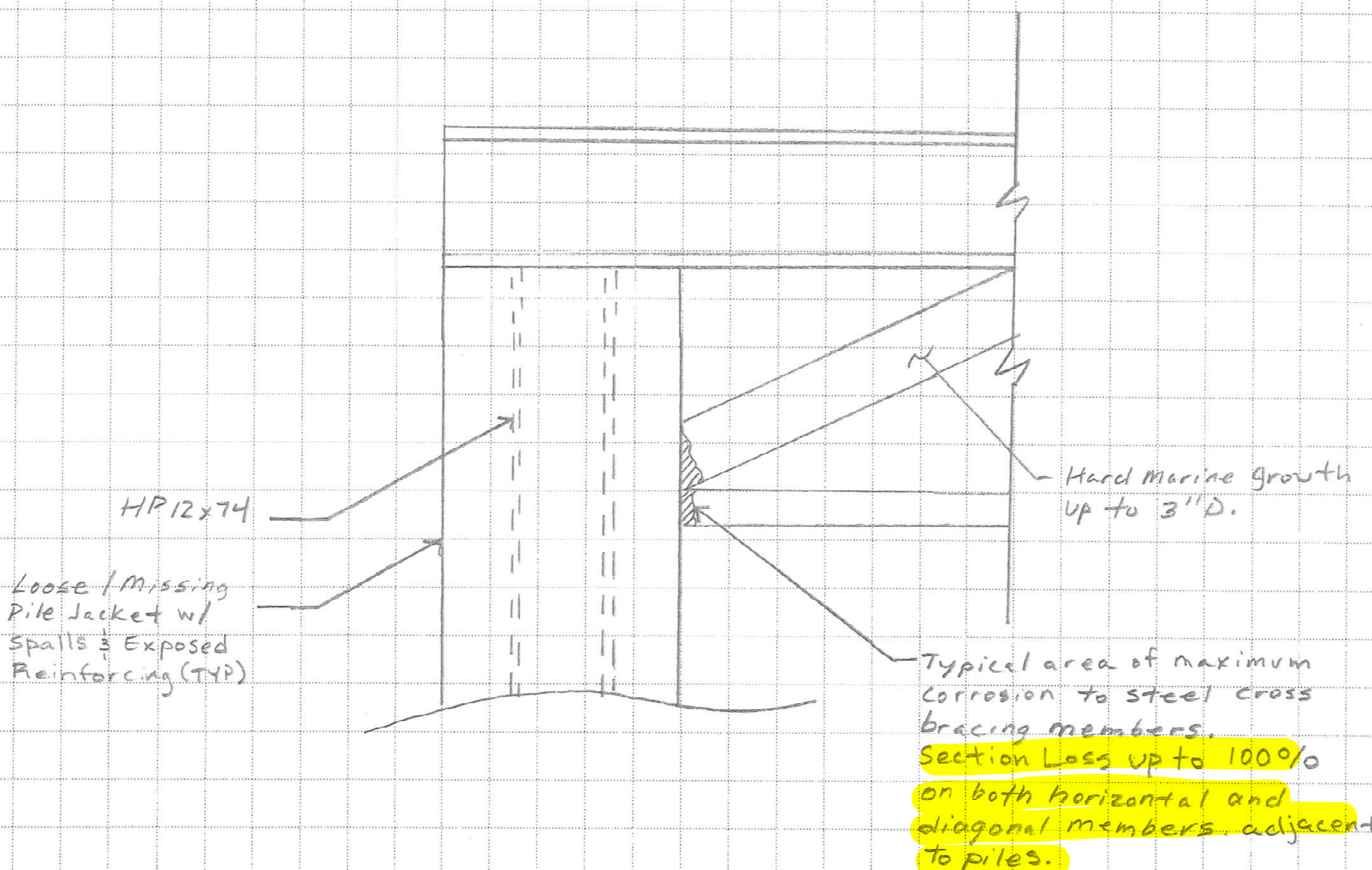
BRIDGE NO. 01349
ROUTE 136 OVER SAUGATUCK RIVER
WESTPORT CONNECTICUT

PIER 2 NORTH AND SOUTH ELEVATIONS

INSPECTED BY: BM
REVISED BY: DM
SCALE: AS SHOWN
DATE OF INSPECTION 12 / 07 / 12
DRAWING NO. 01349H

A. DiCesare Associates, P.C.
690 Clinton Avenue
Bridgeport, Connecticut 06604
(203) 696-0444 • dicesare@adicesarepc.com

JOB BR No. 01349
SHEET NO. 14a OF 28
CALCULATED BY BM DATE 12/7/2012
CHECKED BY DATE
SCALE NTS



Pier 2 Typical Section Loss to Steel Cross Brace Members
NTS

A.DiCesare Associates, P.C.

Bridge No.	01349	**Project No.**	170-3013
Town	Westport	**Inspected By**	Bill McLachlan
Feature Carried	Route 136	**Inspected By**	Clay Carlson/Kurt Gabrielson
Feature Crossed	Saugatuck River	**Date Inspected**	12/7/2012

Photo No. 9:
Pier No. 2 (East Elevation)

Photo No. 10:
Pier No. 3 (West Elevation)

A.DiCesare Associates, P.C.

Bridge No.	01349	**Project No.**	170-3013
Town	Westport	**Inspected By**	Bill McLachlan
Feature Carried	Route 136	**Inspected By**	Clay Carlson/Kurt Gabrielson
Feature Crossed	Saugatuck River	**Date Inspected**	12/7/2012

Photo No. 13:
Typical Section Loss up to 100% in Cross Bracing at Pier No. 2

Photo No. 14:
Typical Missing Mortar in Stone Masonry

A.DiCesare Associates, P.C.

Bridge No.	01349	**Project No.**	170-3013
Town	Westport	**Inspected By**	Bill McLachlan
Feature Carried	Route 136	**Inspected By**	Clay Carlson/Kurt Gabrielson
Feature Crossed	Saugatuck River	**Date Inspected**	12/7/2012

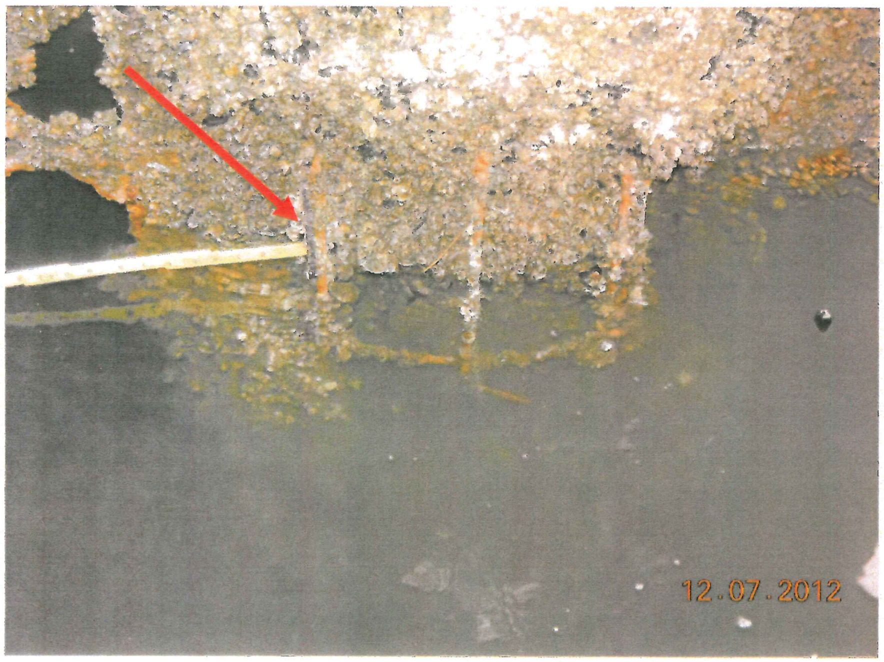
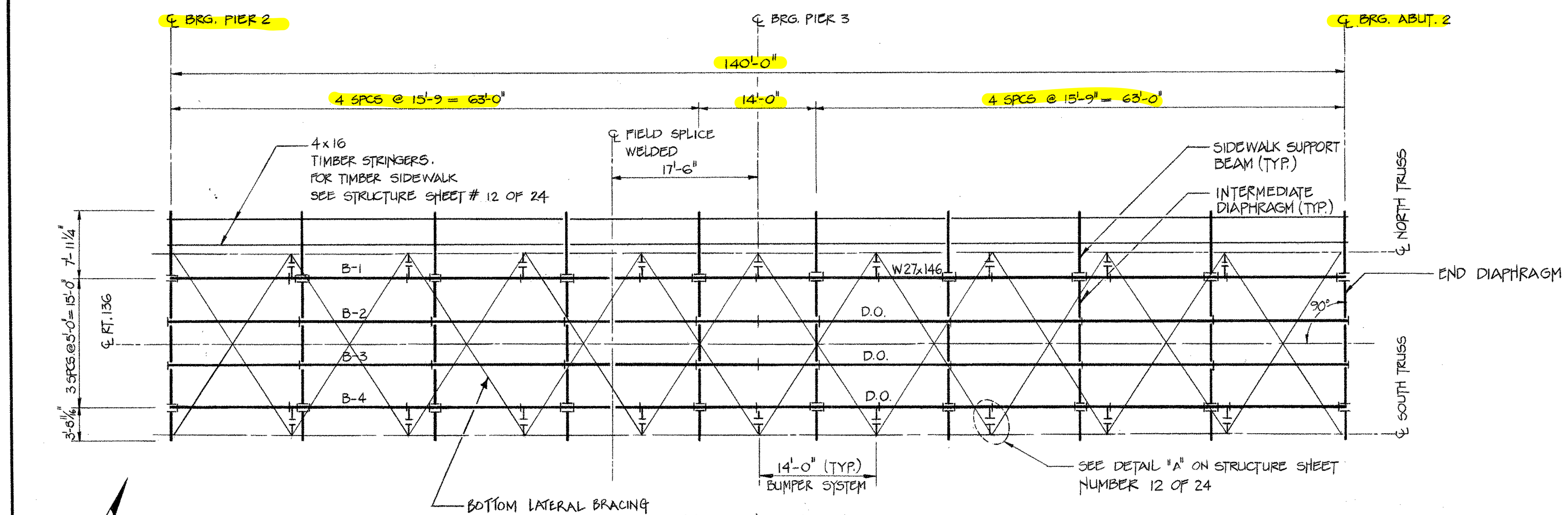


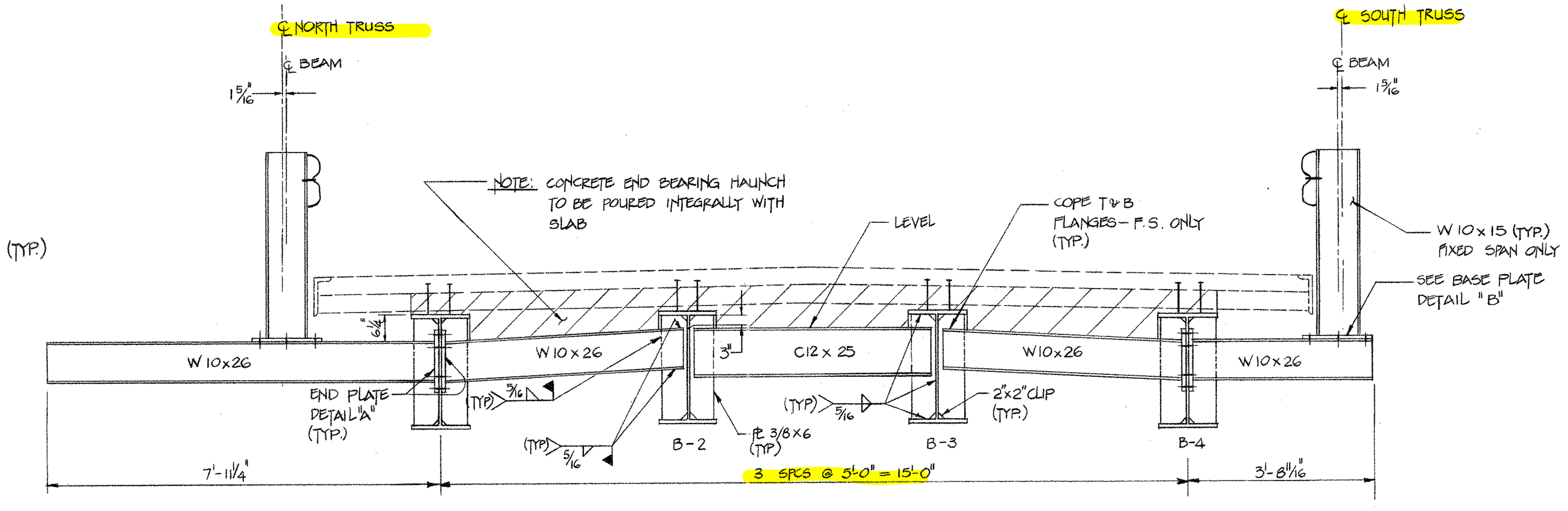
Photo No. 15:
Spalling of Protective Jacket Pile No. 4, Pier No. 2
Note Flange of Steel Pile Exposed 5"H , Edges Remain Square

Photo No. 16:
Failing Epoxy Repair at Abutment (Typ.)

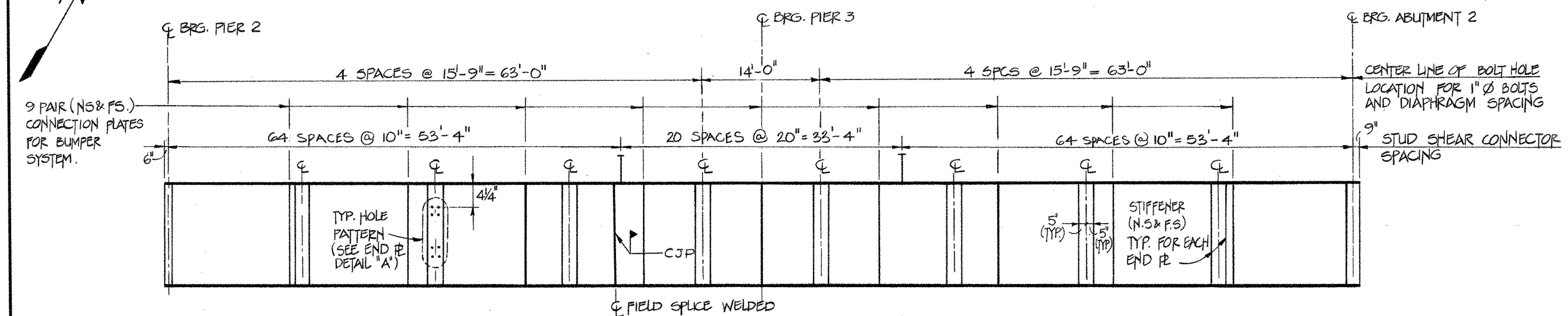
F H W A REGION	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT	–	158-150	1989	136	30	72



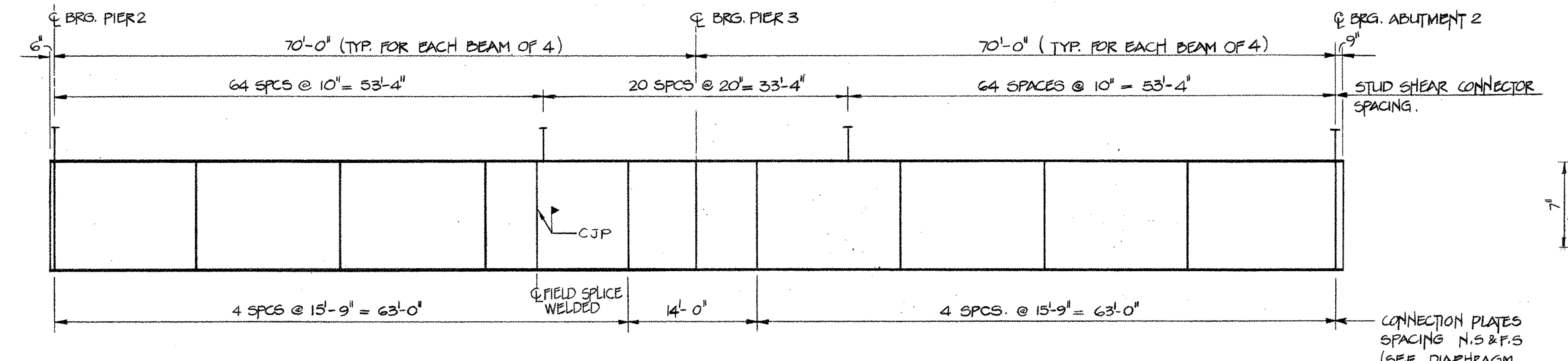
FRAMING PLAN
SCALE: 3/32" = 1'-0"



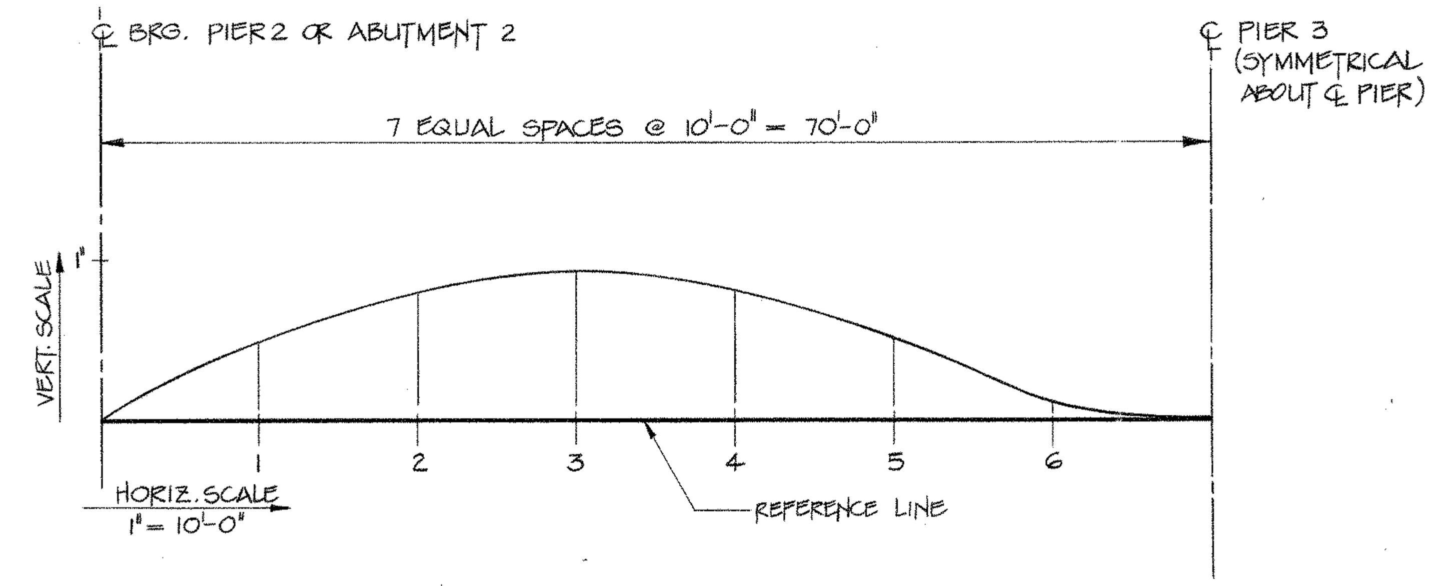
END BEARING DIAPHRAGM & METAL BEAM RAIL SUPPORT
SCALE: 1/2" = 1'-0"



ELEVATION - BEAM 1 & 4 (W27 x 146)



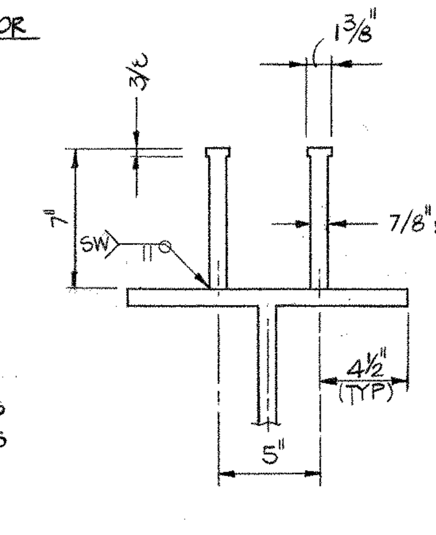
ELEVATION - BEAM 2 & 3 (W27x146)
SCALE: HORIZ. 3/32" = 1'-0"
VERT. 1/2" = 1'-0"



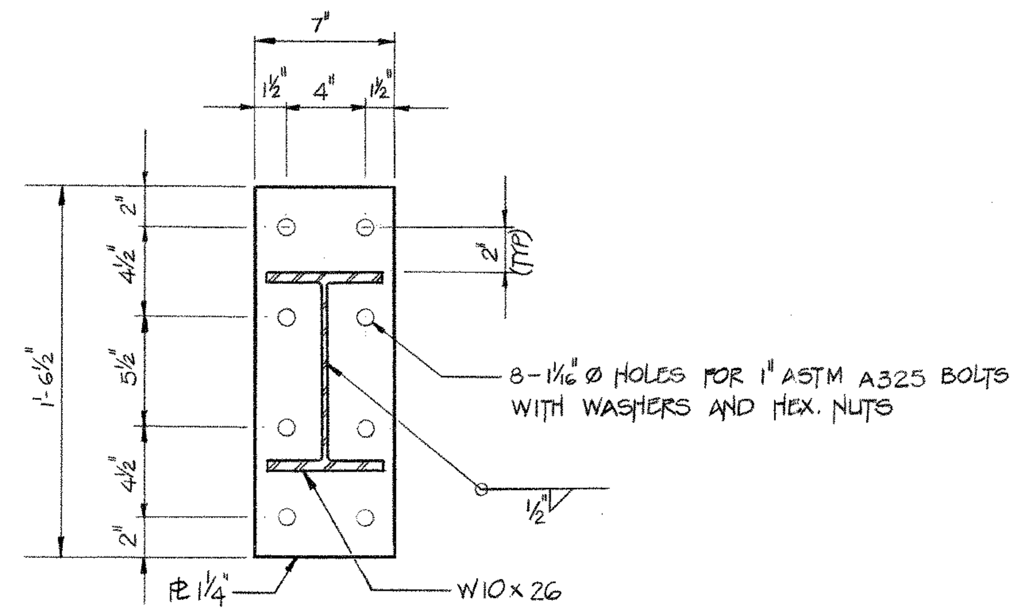
TYPICAL TOTAL CAMBER DIAGRAM

DEAD LOAD DEFLECTION & CAMBER (INCH)

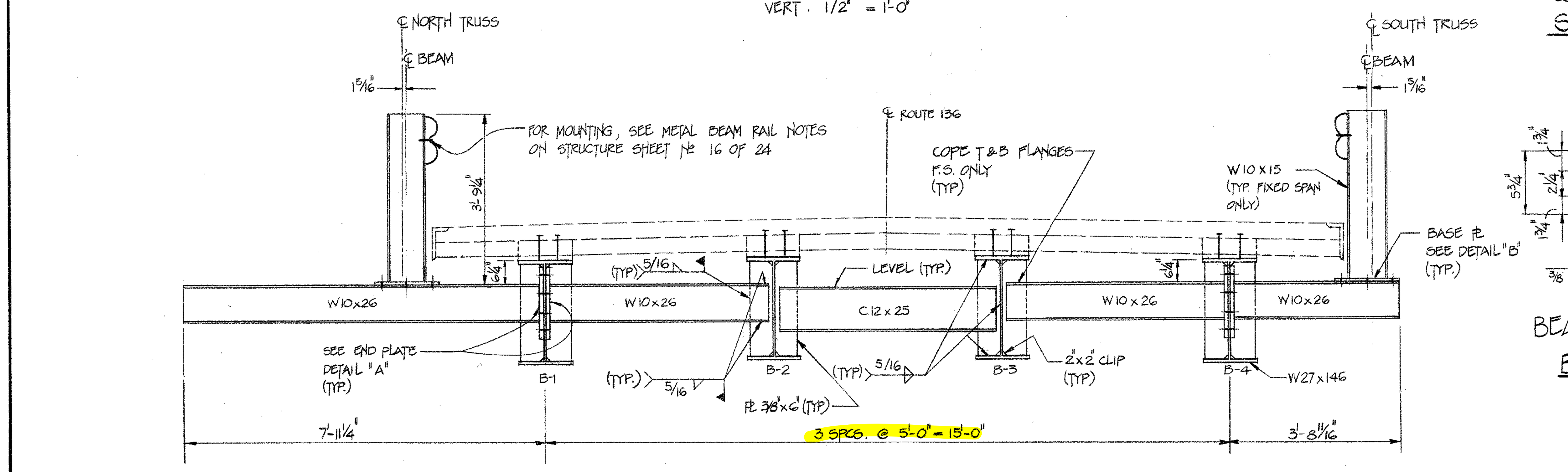
	PT	STRUCTURAL STEEL	OTHER DEAD LOADS	TOTAL DEAD LOADS DEFLECTION	TOTAL CAMBER
BEAM B1	1	.110	.367	.477	.477
	2	.187	.623	.810	.810
	3	.212	.706	.918	.918
	4	.184	.613	.797	.797
	5	.116	.386	.502	.502
	6	.039	.129	.168	.168
BEAM B2	1	.110	.353	.463	.463
	2	.187	.600	.787	.787
	3	.212	.679	.891	.891
	4	.184	.590	.774	.774
	5	.116	.372	.488	.488
	6	.039	.124	.163	.163
BEAM B3	1	.110	.339	.449	.449
	2	.187	.576	.763	.763
	3	.212	.653	.865	.865
	4	.184	.567	.751	.751
	5	.116	.357	.473	.473
	6	.039	.119	.158	.158
BEAM B4	1	.110	.325	.435	.435
	2	.187	.553	.740	.740
	3	.212	.626	.838	.838
	4	.184	.544	.728	.728
	5	.116	.343	.459	.459
	6	.039	.115	.154	.154



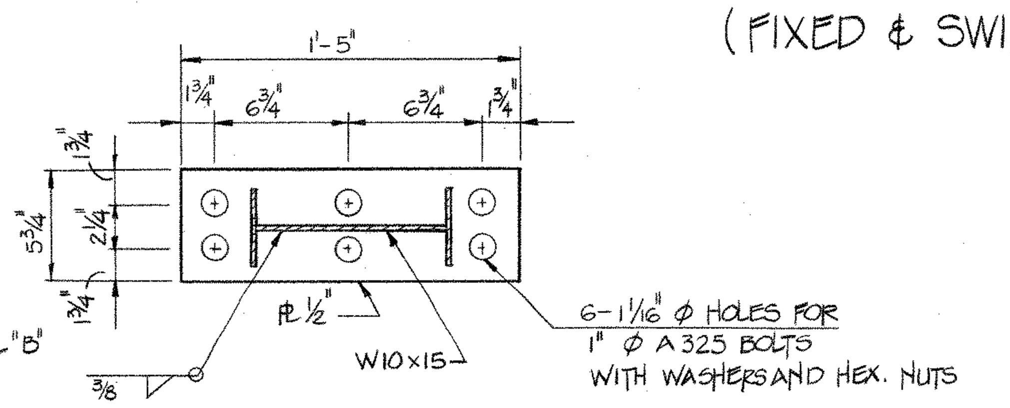
ESTIMATED № OF STUD = 1192
SHEAR CONNECTOR
SCALE: 1½" = 1'-0"



END PLATE DETAIL "A"
SCALE: 1½" = 1'-0"
(FIXED & SWING SPANS)



INTERMEDIATE DIAPHRAGM & METAL BEAM RAIL SUPPORT
SCALE: 1/2" = 1'-0"



BEAM RAIL POST - FIXED SPAN ONLY
BASE PLATE DETAIL "B"
SCALE: 1½" = 1'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION

REVISIONS

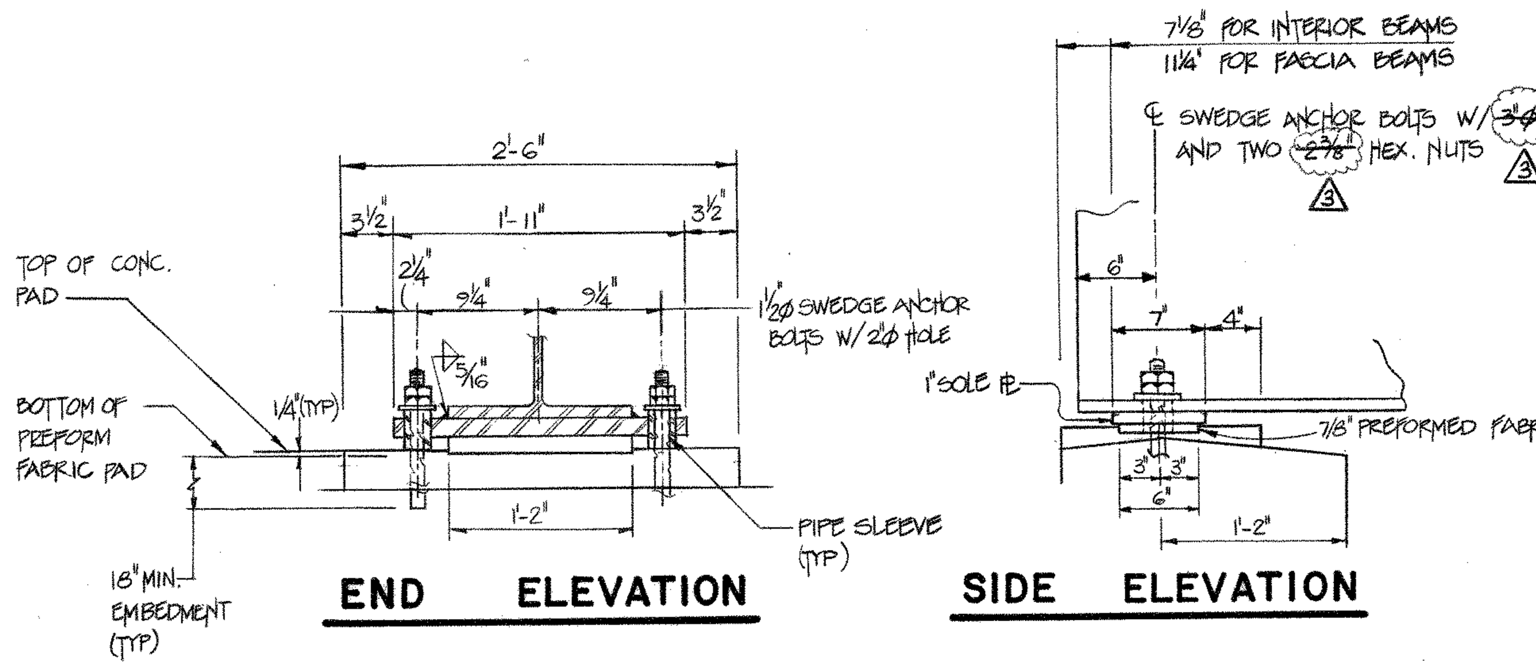
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

FIXED SPAN - FRAMING PLAN & DETAILS

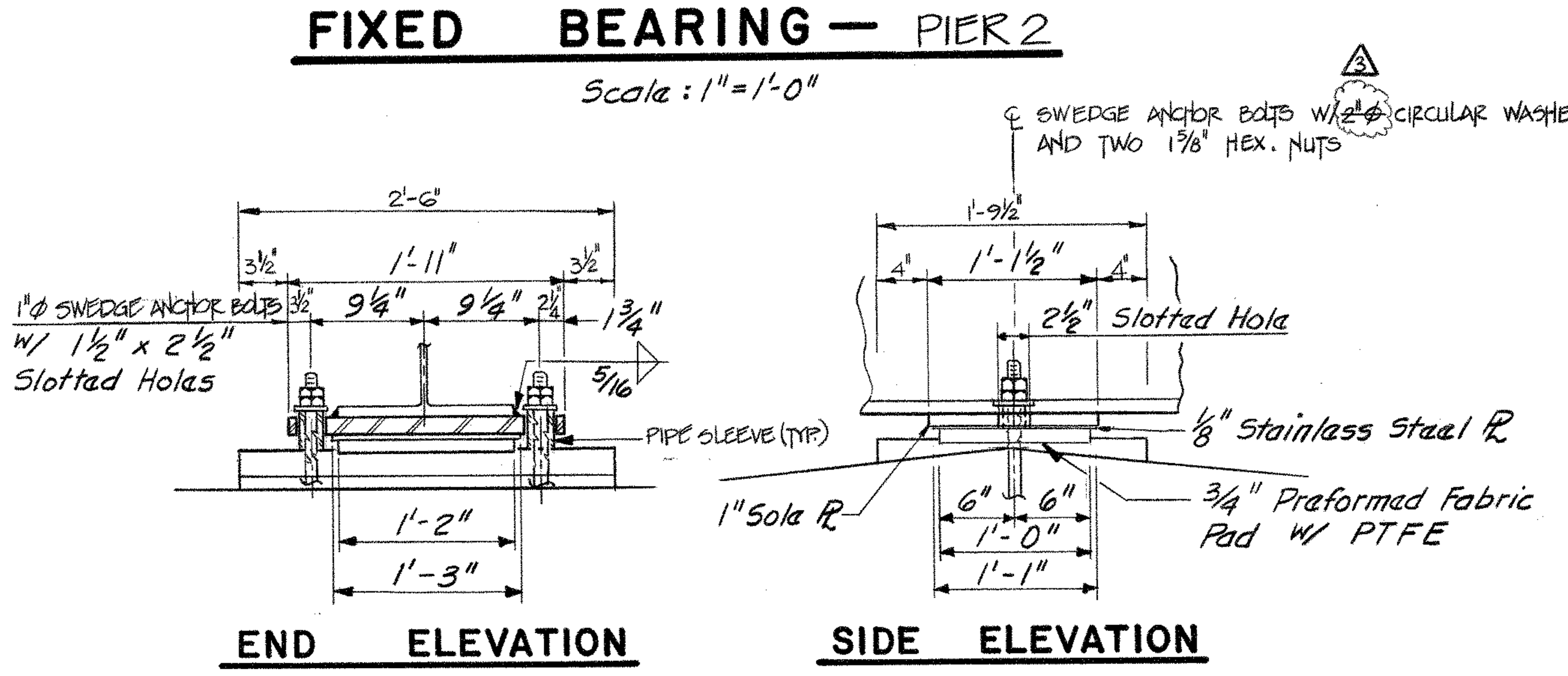
ENGINEER H.W. LOCHNER, INC.
DESIGNER LRT & TO | DRAFTER Duc Phan Huynh | CHECKER LM
APPROVED | DATE 9-6-89
STRUCTURE NO. 158-150-1 | BRIDGE LOG NO. 01349 | STRUCTURE SHEET NO. 11 of 24

F.H.W.A. REGION	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT	—	158-150	1989	136	31-2	72



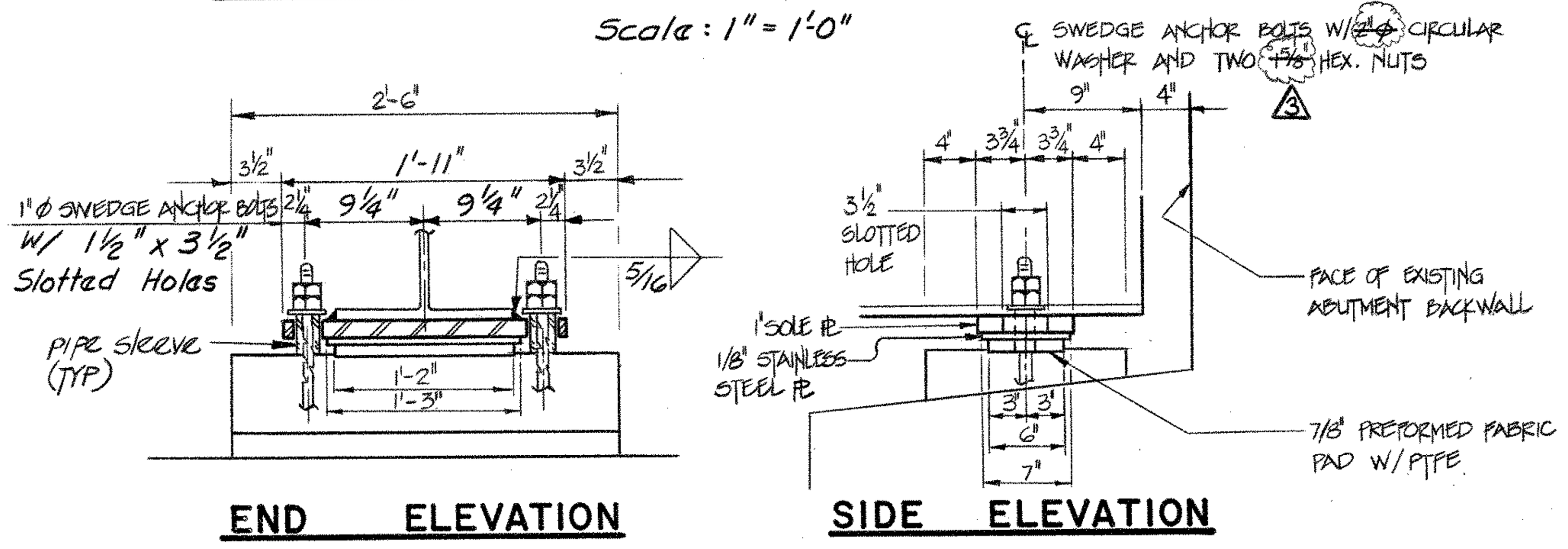
FIXED BEARING — PIER 2

Scale: 1" = 1'-0"



EXPANSION BEARING — PIER 3

Scale: 1" = 1'-0"



EXPANSION BEARING — ABUTMENT 2

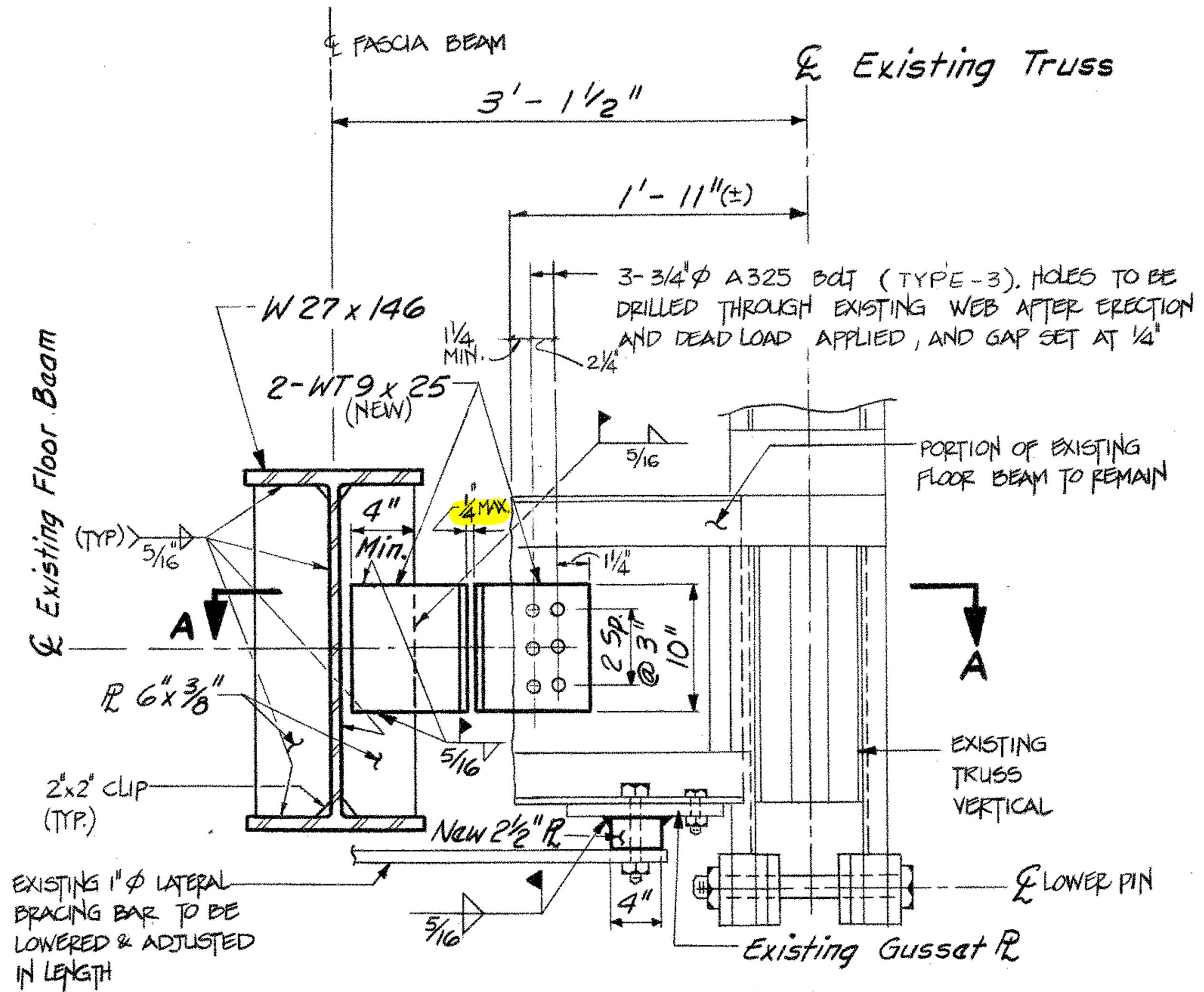
Scale: 1" = 1'-0"

NOTES:

1. ALL SOLE PLATES SHALL BE BEVELED TO GRADE.
2. THE COST OF FURNISHING AND INSTALLING SWEDGE ANCHOR BOLTS TO BE INCLUDED IN THE PAY ITEM "ELASTOMERIC BEARING SYSTEM".
3. ALL SWEDGE ANCHOR BOLT, WASHER AND NUT SHALL BE GALVANIZED.

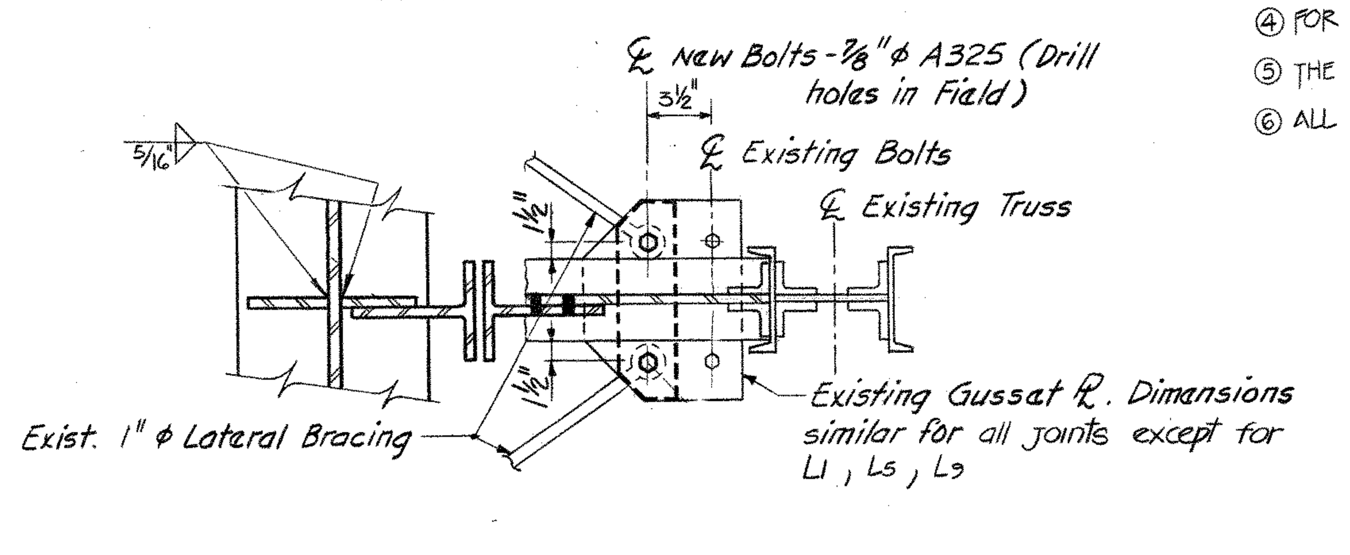
TIMBER FOR SIDEWALK NOTES:

4 ~~① TIMBER SHALL BE SOUTHERN PINE NO. 1 AND PRESSURE TREATED WITH CREOSOTE.~~
② SIDEWALK PLANK SHALL BE FIRMLY ATTACHED WITH TWO 4" WOOD SCREWS TO EACH SUPPORTING TIMBER STRINGER. SCREWS SHALL BE COUNTERSUNK AND THE RECESSES FILLED WITH HOT WATERPROOFING ASPHALT.
SEE SPECIAL PROVISIONS
GAP BETWEEN TWO ADJACENT PLANKS SHALL NOT EXCEED ⅛"



DETAIL A - ELEVATION

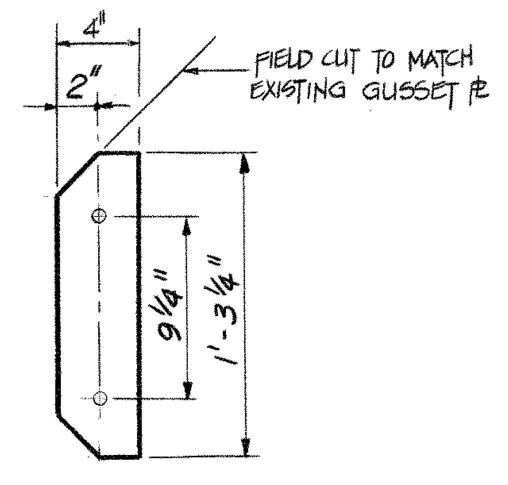
Scale: 1" = 1'-0"



SECTION A-A

Scale: 1" = 1'-0"

NOTE: FOR ANCHOR BOLT INSTALLATION, SEE "ANCHOR BOLT INSTALLATION NOTES" ON STRUCTURE SHEET No. 8 OF 24.

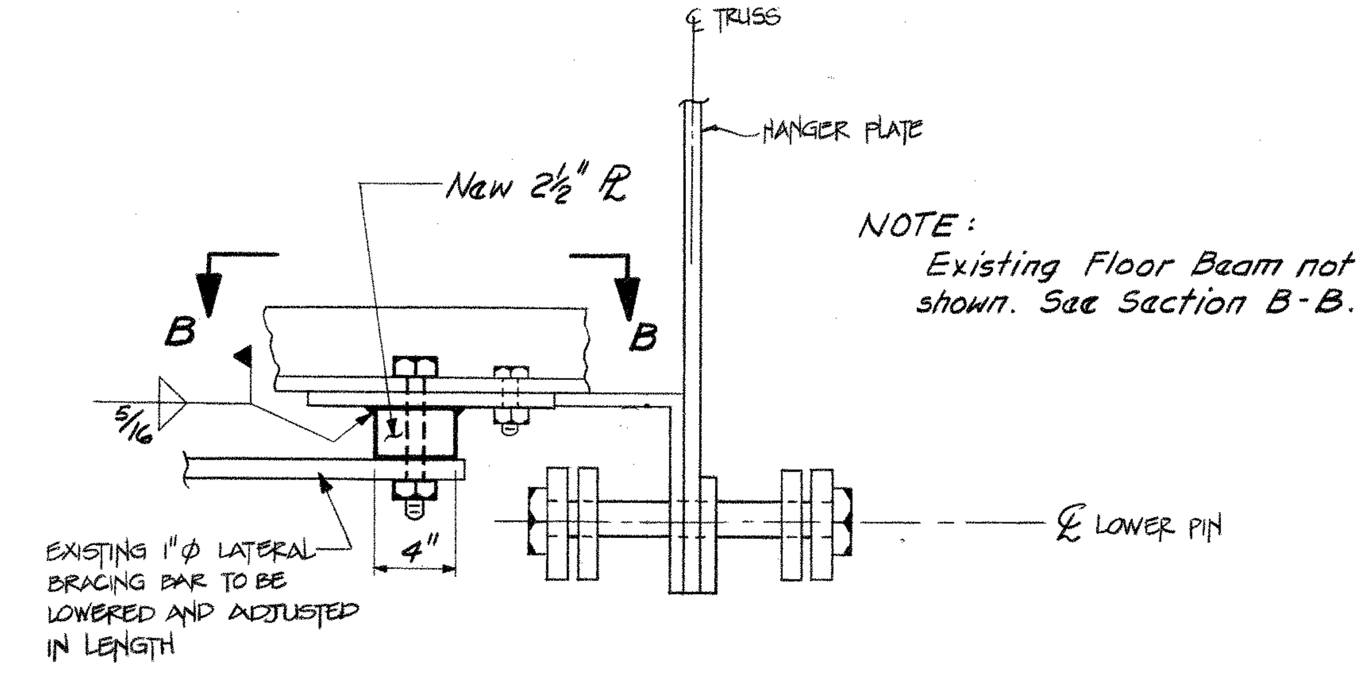


PLAN — NEW PLATE

Scale: 1½" = 1'-0"

NOTES:

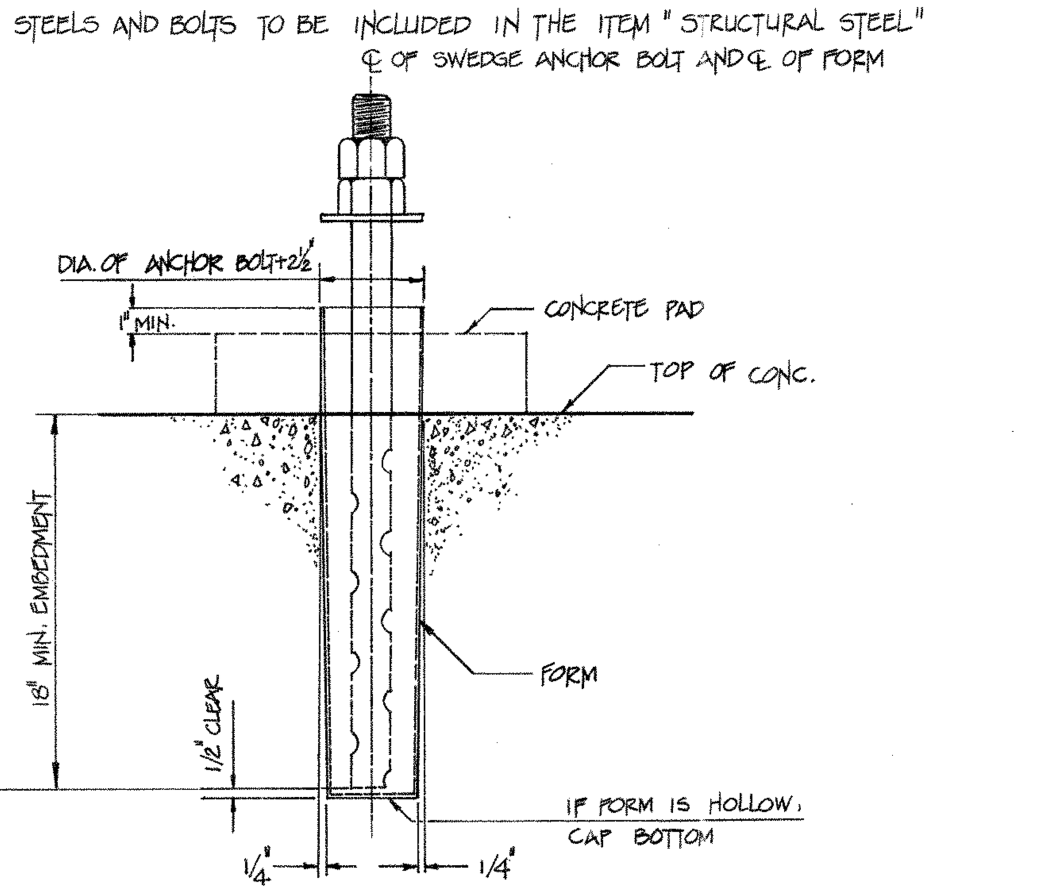
1. BOTTOM LATERAL BRACING MODIFICATIONS. SEE STRUCTURE SHEET 1 FOR EXISTING PLAN AND BOTTOM LATERAL BRACINGS. LENGTH OF LATERAL BRACINGS CAN BE ADJUSTED BY EXISTING TURNBUCKLE ON EACH BAR.
2. EXISTING TRUSS FLOOR BEAM REMOVAL. FOR THE EXTENT OF FLOOR BEAM REMOVAL SEE STRUCTURE SHEET No. 15 OF 24. AND DETAIL "A" ELEVATION ON THIS SHEET.
3. FOR LOCATION OF DETAIL "A", SEE STRUCTURE SHEET No. 11 OF 24
4. FOR LOCATION OF DETAIL "B", SEE "TYPICAL TIMBER SIDEWALK" ON THIS SHEET
5. THE COST OF DRILLING TO EXISTING TRUSS TO BE INCLUDED IN THE ITEM "FIELD DRILLING".
6. ALL NEW STEELS AND BOLTS TO BE INCLUDED IN THE ITEM "STRUCTURAL STEEL"



ELEVATION — BOTTOM LATERAL BRACING MODIFICATIONS — JOINTS L1 & L9

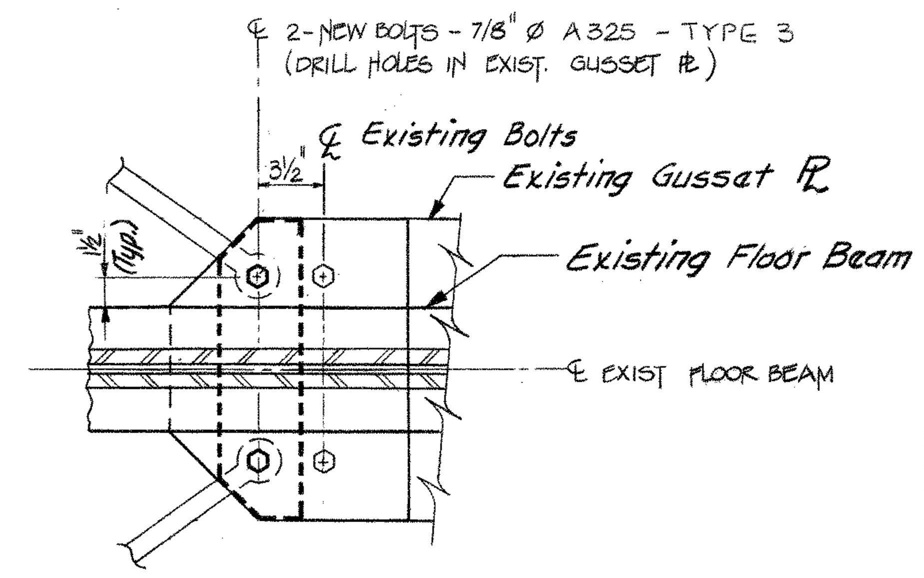
SCALE: 1½" = 1'-0"

(FOR OTHER JOINTS SEE DETAIL "A" ON THIS SHEET)



NOTE: FORM SHALL BE UNOILED, HELD IN PLACE ACCURATELY BY TEMPLATE, AND REMOVED AFTER CONCRETE HAS HARDENED. ANCHOR BOLTS SHALL BE SET ACCURATELY AND GROUTED WITH NON-SHRINK GROUT. THE COST OF FURNISHING AND INSTALLING FORMS TO BE INCLUDED IN THE ITEM "CLASS A CONCRETE"

ANCHOR BOLTS FORMS @ PIER 2 & 3, AND ABUTMENT 2



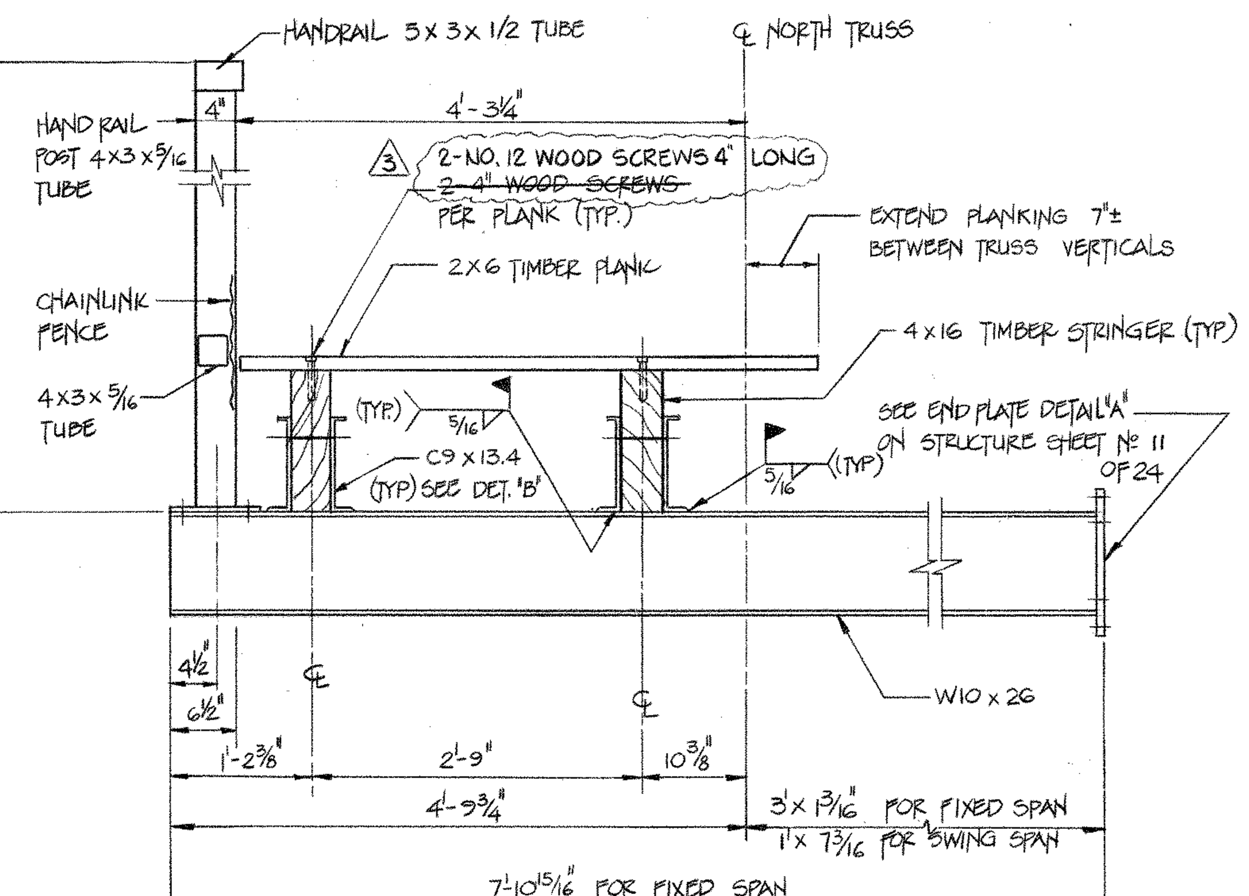
SECTION B-B

Scale 1½" = 1'-0"

NOTE TO THE CONTRACTOR

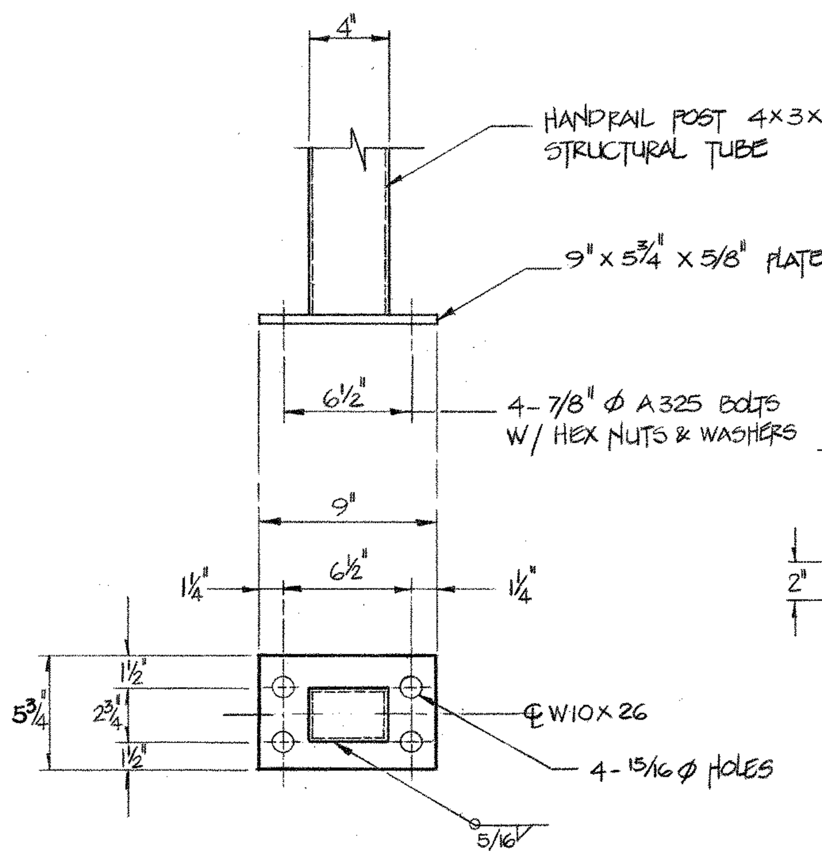
THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT, DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS.

MEASUREMENTS: THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS BEFORE ANY REPAIR, RECONSTRUCTION OR REPLACE WORK IS BEGUN.



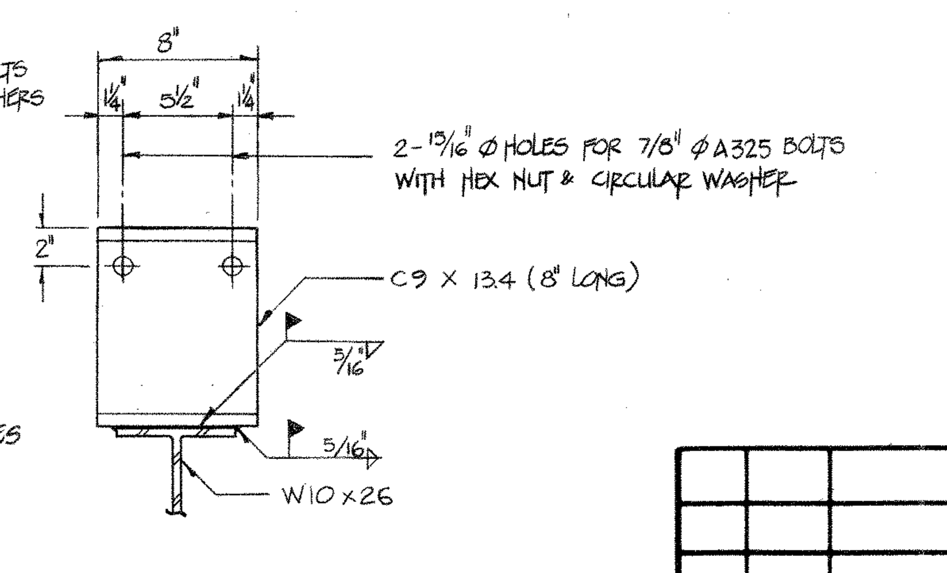
TYPICAL TIMBER SIDEWALK

SCALE: ¾" = 1'-0"



HANDRAIL POST BASE PLATE DETAIL

SCALE: 1½" = 1'-0"



DETAIL "B"

SCALE: 1½" = 1'-0"

NO.	DATE	DESCRIPTION
4	11-21-90	Revise Timber for Sidewalk
3	6/5/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT
BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER
BEARING AND STEEL DETAILS

ENGINEER H. W. LOCHNER, INC.
DESIGNER L.R.T. DRAFTER CHECKER LM
APPROVED DATE 9-6-89
STRUCTURE NO. 158-150-1 BRIDGE LOG NO. 01349 STRUCTURE SHEET NO. 12 of 24

158-150

270-61

32-2

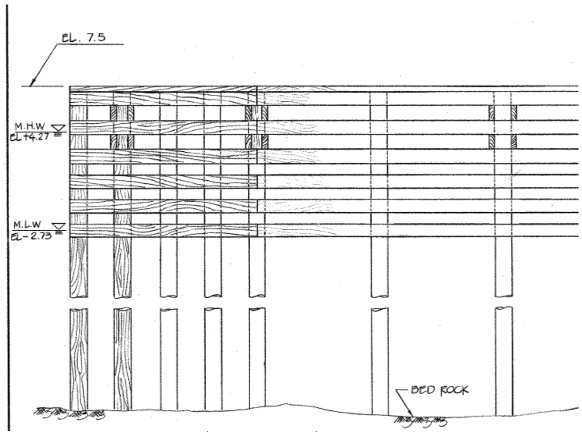
BRIDGE NO. 01349
ROUTE 136 OVER
SAUGATUCK RIVER
WESTPORT, CONNECTICUT

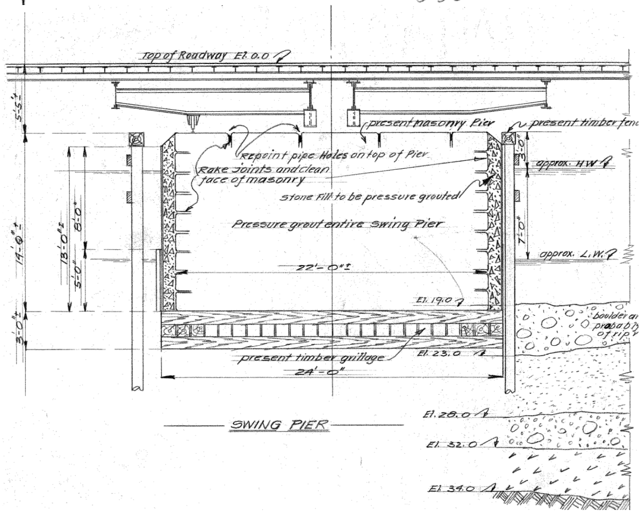
PROJECT NO. 158-212

<u>VESSEL COLLISION ANALYSIS</u>

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

BARGE AND VESSEL COLLISION





$EL._{MHW}$	=	4.27	ft
$EL._{MUD}$	=	-19	ft

$$D_{water} = EL._{MHW} - EL._{MUD}$$

$$= 4.27 - -19$$

$$D_{water} = 23.27 \text{ ft}$$

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

DESIGN SHIP

G.S. TABLE 3.5.2-1

DWT =	1000	tonnes
LOA =	200	ft
B_M =	29.2	ft
D_B =	27.2	
D_L =	14.1	ft
W_L =	1500	tonnes
D_{EB} =	3.5	ft
D_{ES} =	7.1	ft
W_E =	600	tonnes

DESIGN BARGE

35	ft	by	195	ft
d_{empty} =	200	ton		

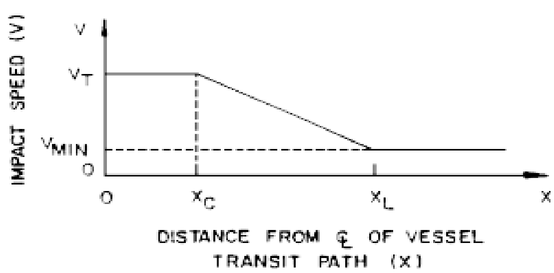
AASHTO 3.14.1

depth =	12	ft
D_E =	1.7	ft
D_L =	8.7	ft
DWT =	1700	ton

AASHTO 3.14.11

DESIGN COLLISION VELOCITY

AASHTO FIG. 3.14.6-1



V_T = typical vessel transity velocity in channel under normal environmental conditions
V_{MIN} = minimum design impact velocity taken as not less than the yearly mean current velocity
X = distance to face of pier from centerline of channel
X_C = distance to edge of channel
X_L = distance equal to three times the length overall of the design vessel

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

WIDTH OF CHANNEL, $C =$ 50 ft

$V_T =$ 5 knots
$=$ 8.439049 ft/s

$V_{MIN} =$ 1 knots — min. 1 recommended
$=$ 1.68781 ft/s

$X =$ 25 ft
$X_C =$ 25 ft

FOR SHIP
$X_L =$ 3 x LOA = 3 x 200
$=$ 600 ft

$V =$ 8.439049 ft/s

FOR BARGE
$X_L =$ 3 x LOA = 3 x 195
$=$ 585 ft

$V =$ 8.439049 ft/s

<u>VESSEL SHIP COLLISION</u>

<u>VESSEL COLLISION ENERGY, KE</u>

UNDERKEEL
if draft > 0 , $UK = D_{water} - D_E$
$= 23.27 - 7.1$
$= 16.17$ ft
if draft < 0 , $UK = 0$

$D_E =$ 7.1 > 0 , therefore

$UK =$ 16.17 ft

$C_H =$ hydrodynamic mass coefficient

if UK > 0.5 x D_E , $C_H =$ 1.05 — AASHTO EQ. 3.14.7-2
if 16.17 > 7.1 , $C_H =$ 1.05

if UK < 0.1 x D_E , $C_H =$ 1.25 — AASHTO EQ. 3.14.7-3
if 16.17 < 7.1 , $C_H =$ 1.25

$C_H =$ 1.05

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

W = 600 tonnes Vessel + Cargo + Ballast G.S. 3.8
V = 8.439049 ft/s

$$KE = \frac{C_H \times W \times V^2}{29.2}$$ AASHTO EQ. 3.14.7-1

$$= \frac{1.05 \times 600 \times 8.439^2}{29.2}$$

KE = 1536.543 k-ft

<u>EQUIVALENT STATIC VESSEL IMPACT FORCE ON PIER, P_S</u>

DEADWEIGHT TONNAGE OF VESSEL
DWT = 1000 tonnes

$P_S = 8.15 \times V \times DWT^{0.5}$ AASHTO EQ. 3.14.8-1
$= 8.15 \times 8.439 \times 1000^{0.5}$
P_S = 2174.959 kips

<u>SHIP BOW DAMAGE LENGTH</u>

$$a_S = 1.54 \times \frac{KE}{P_S}$$ AASHTO EQ. 3.14.9-1

$$= 1.54 \times \frac{1536.5}{2175}$$

a_S = 1.087964 ft

<u>SHIP COLLISION FORCE ON SUPERSTRUCTURE</u>

COLLISION WITH BOW
D_B = 27.2 ft
D_{SUPER} = 17.75 ft

$R_{BH} = D_{SUPER} / D_B = 17.75 / 27.2 = 0.6526$

$P_{BH} = R_{BH} \times P_S$ AASHTO EQ. 3.14.10.1-1
$= 0.653 \times 2175$
P_{BH} = 1419.321 kips

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

COLLISION WITH DECKHOUSE

DWT = 1000 tonnes

IF DWT > 100000 , R_{DH} = 0.1

IF DWT < 100000 , $R_{DH} = 0.2 - \left(\frac{DWT}{100000}\right) \times 0.1$ — AASHTO EQ. 3.14.10.2-2

$= 0.2 - \left(\frac{1000}{100000}\right) \times 0.1 = 0.199$

DWT = 1000 < 100000 , therefore

R_{DH} = 0.199

$P_{BH} = R_{DH} \times P_S$ — AASHTO EQ. 3.14.10.1-1

$= 0.199 \times 2175$

P_{BH} = 432.8169 kips

BARGE COLLISION

BARGE COLLISION ENERGY, KE

UNDERKEEL

if draft > 0 , UK = $D_{water} - D_E$

= 23.27 - 1.7

= 21.57 ft

if draft < 0 , UK = 0

D_E = 1.7 > 0 , therefore

UK = 21.57 ft

C_H = hydrodynamic mass coefficient

if UK > 0.5 x D_E , C_H = 1.05 — AASHTO EQ. 3.14.7-2

if 21.57 > 0.85 , C_H = 1.05

if UK < 0.1 x D_E , C_H = 1.25 — AASHTO EQ. 3.14.7-3

if 21.57 < 0.17 , C_H = 1.25

C_H = 1.05

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

W = 200 ton
V = 8.439049 ft/s

$$KE = \frac{C_H \times W \times V^2}{29.2}$$ AASHTO EQ. 3.14.7-1

$$= \frac{1.05 \times 200 \times 8.439^2}{29.2}$$

KE = 512.181 k-ft

BARGE BOW DAMAGE DEPTH

$$a_B = \left(\sqrt{1 + \frac{KE}{5672}} - 1\right) \times 10.2$$ AASHTO EQ. 3.14.12-1

$$= \left(\sqrt{1 + \frac{512.18}{5672}} - 1\right) \times 10.2$$

a_B = 0.450578 ft

EQUIVALENT STATIC BARGE IMPACT FORCE, P_B

FOR $a_B <$ 0.34, $P_B = 4112 \times a_B$ AASHTO EQ. 3.14.11-1
$= 4112 \times 0.4506$
$=$ 1852.8 kips

FOR $a_B \geq$ 0.34, $P_B = 1349 + 110 \times a_B$ AASHTO EQ. 3.14.11-2
$= 1349 + 110 \times 0.4506$
$=$ 1398.6 kips

a_B = 0.450578 ≥ 0.34, therefore

P_B = 1398.564 kips

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

<u>VESSEL CRUSHING FORCE (PIER IMPACT LOAD)</u>

FENDER STIFFNESS

KE = 1536.543 k-ft
= 18438.52 k-in
X = deformation
= 0.5 in

KE = 1/2 x k x X ^{2} G.S. C7.3.1-2
18439 = 1/2 x k x 0.5 ^{2}

k = 12292.34 k/in

x = depth of timber cribbing framework
= 8.75 ft

F = KE / x G.S. C7.3.1.1-1
1536.543 / 8.75
F = 175.6049 kips

<u>PILE SUPPORTED FENDER SYSTEM</u>

SPRING CONSTANT OF PILE AND FENDER, K_p AND K_f G.S. FIGURE C7.3.2-7

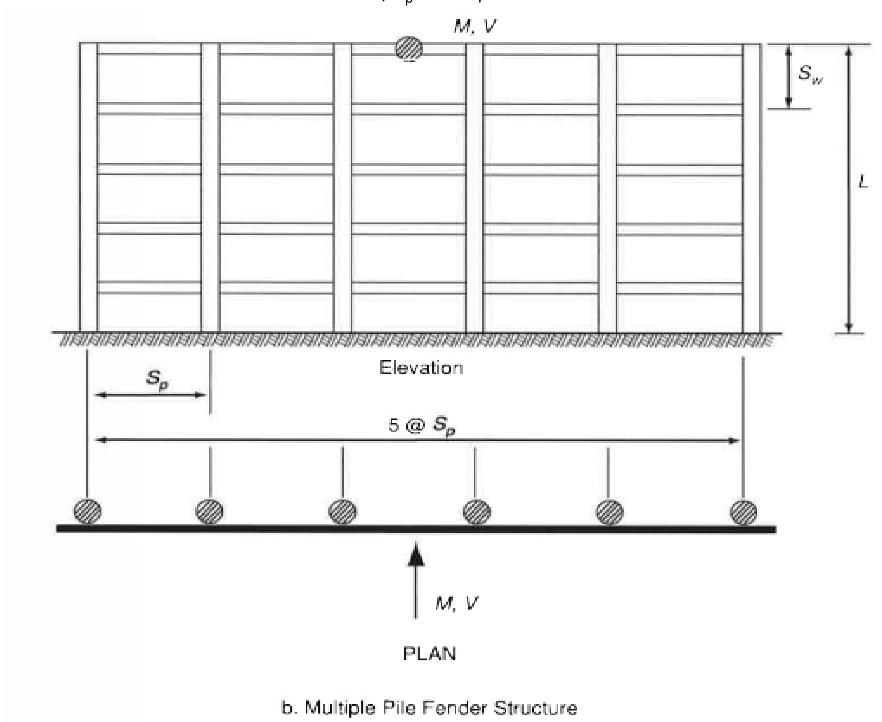


Figure C7.3.2-7—Typical Pile-Structure Geometry for Derucher's Dynamic Analysis

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

$E = 1600$ ksi

$L = 41$ ft
$= 492$ in

$$I_p = \frac{\pi \times r^4}{4}$$

$$= \frac{3.141593 \times 13^4}{4}$$

$I_p = 22431.76\ in^4$ $\quad$ $I_w = 415.28\ in^4$ $\quad$ SEE CUTSHEET

$S_p = 7.75$ ft $\quad$ $S_w = 9.5$ ft
$= 93$ in $\quad$ $= 114$ in

$$Dy = E \times I_p / S_p$$
$$= 1600 \times 22432 / 93$$
$$Dy = 385922.7$$

$$Dx = E \times I_w / S_w$$
$$= 1600 \times 415.28 / 114$$
$$Dx = 5828.491$$

$$F = 3.5 \times 10^{-13}\ Dy^2 + 3.1 \times 10^{-7}\ Dy + 0.335 \qquad \text{G.S. C7.3.2-6}$$
$$= 3.5 \times 10^{-13}\ 385923^2 + 3.1 \times 10^{-7}\ 385923 + 0.335$$
$$F = 0.506764$$

$$DF = \left(-6E\text{-}07 \times Dx + F \right) \times L^{-0.006} \qquad \text{G.S. C7.3.2-5}$$
$$= \left(-6E\text{-}07 \times 5828.5 + 0.5068 \right) \times 492^{-0.006}$$
$$DF = 0.484894$$

$$\Delta_p = \left(\frac{L^3}{3 \times E \times I_p} \right) \times DF \qquad \text{G.S. C7.3.2-4}$$
$$= \left(\frac{492^3}{3 \times 1600 \times 22432} \right) \times 0.4849$$

$\Delta_p = 0.536336$ in

$$K_p = 1 / \Delta_p = 1 / 0.5363 \qquad \text{G.S. C7.3.2-3}$$
$$= 1.864502$$

$K_f = 1$

$$K = \frac{K_p \times K_f}{K_p + K_f} \qquad \text{G.S. C7.3.2-2}$$
$$= \frac{1.864502 \times 1}{1.864502 + 1}$$

$K = 0.650899$

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

MAXIMUM SYSTEM DEFLECTION, Y (in)

$V = 8.439$ ft/s
$= 101.269$ in/s

$DWT = 1000$ tonnes
$= 2205$ kips

$a_g = 32$ ft/s^2
$= 384$ in/s^2

$M = DWT \ / \ a_g$
$= 2205 \ / \ 384$
$M = 5.742188$ $kips\text{-}s_2/in$

$\lambda = \sqrt{K \ / \ M}$ G.S. C7.3.2

$= \sqrt{0.650899 \ / \ 5.7422}$
$\lambda = 0.336681$

$Y = V \ / \ \lambda$
$= 101.269 \ / \ 0.3367$
$Y = 300.7853$ in

ACCELERATION, a AND STOPPING TIME, t

$a = V \ x \ \lambda$
$= 101.269 \ x \ 0.3367$
$= 34.095$ in/s^2

$t = \pi \ / \ 2 \ x \ \lambda$
$= 3.141593 \ / \ 2 \ x \ 0.3367$
$t = 4.665538$ seconds

VESSEL COEFFICIENT, C

$C = C_H = 1.05$ for head on impact G.S. C7.3.2

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

APPLIED FORCE TO STRUCTURE, P

$P = K \times Y \times C$ G.S. C7.3.2-1

$= 0.650899 \times 300.79 \times 1.05$

$P = 205.5699$ kips

$N_{piles} = 20$ ea

$P_1 = P / N_{piles}$

$= 205.5699 / 20$

$\mathbf{P_1 = 10.2785}$ **kip/pile**

SINGLE-SPAN BEAM ANALYSIS

For Simple, Propped, Fixed, or Cantilever Beams

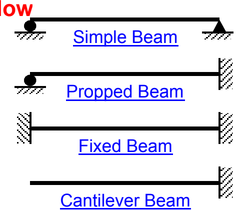
Job Number:	158-212	Originator:	BM	Subject:	BR. 01349 RT. 136 OVER SAUGATUCK RIVER
Date:	3/17/2016	Checker:	BA	[redacted]	VESSEL COLLISION ON FENDER

The drop-down beams consider bending in the strong axis direction only.
To consider a beam not in the drop-down, choose "User defined"
and enter your own Ix & Sx below

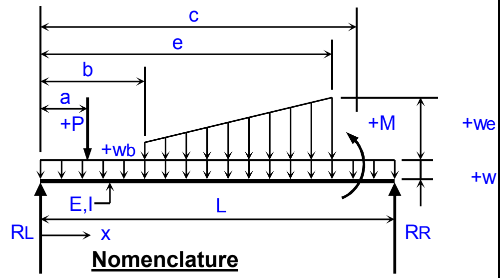
Input Data:

Beam Data:

Span Type?	Simple	
Span, L =	7.7500	ft.
Modulus, E =	1600	ksi
Size:	User defined	
Inertia, Ix =	2491.68	in.^4
Sec. Mod. Sx =	442.98	in.^3
User defined Ix =	2491.68	in.^4
User defined Sx =	442.98	in.^3



Enter your values for Ix & Sx down here



Nomenclature

Beam Loadings: Sect. prop. for 6 layers

Full Uniform: w = 0.0000 kips/ft.

Distributed:	Start b (ft.)	Wb (kips/ft.)	End e (ft.)	We (kips/ft.)
#1:				
#2:				
#3:				
#4:				
#5:				
#6:				
#7:				
#8:				

Results:

Reactions:

RL =	87.80 k	RR =	87.80 k
ML =	N.A.	MR =	N.A.

Maximum Moments:

+M(max) =	340.23 ft-k	@ x =	3.88 ft.
-M(max) =	0.00 ft-k	@ x =	0.00 ft.

Maximum Deflections:

-Δ(max) =	-0.738 in.	@ x =	3.88 ft.
+Δ(max) =	0.000 in.	@ x =	0.00 ft.
Δ(ratio) =	L/126		

Enter Allowable Stress for Beam Material

Allowable Stress, Sa = 2640.00 psi

Note: Southern Pine or Equivalent 2.64ksi Allowable = 2640 psi

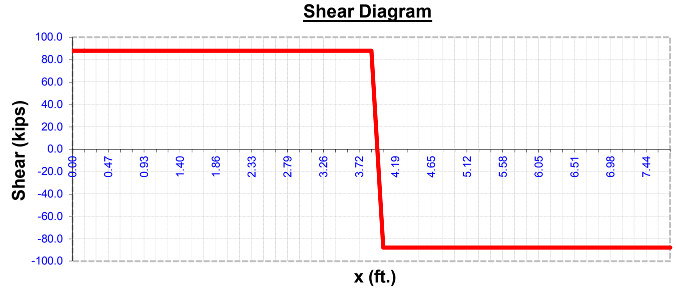
Maximum Bending Stress:

Smax =	9,216 psi
Stress Ratio =	3.49

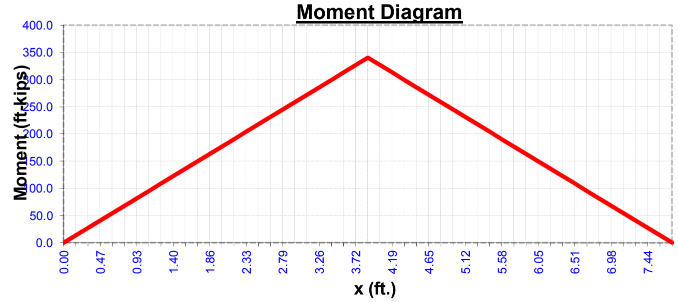
Allowable Stress is Exceeded

Point Loads:	a (ft.)	P (kips)
#1:	3.8750	175.60
#2:		
#3:		
#4:		
#5:		
#6:		
#7:		
#8:		
#9:		
#10:		
#11:		
#12:		
#13:		
#14:		
#15:		

Shear Diagram



Moment Diagram



Moments:	c (ft.)	M (ft-kips)
#1:		
#2:		
#3:		
#4:		

SINGLE-SPAN BEAM ANALYSIS

For Simple, Propped, Fixed, or Cantilever Beams

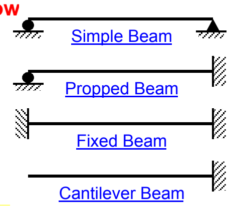
Job Number:	158-212	Originator:	BM	Subject:	BR. 01349 RT. 136 OVER SAUGATUCK RIVER
Date:	3/17/2016	Checker:	BA	[redacted]	VESSEL COLLISION ON PILE

The drop-down beams consider bending in the strong axis direction only.
To consider a beam not in the drop-down, choose "User defined"
and enter your own Ix & Sx below

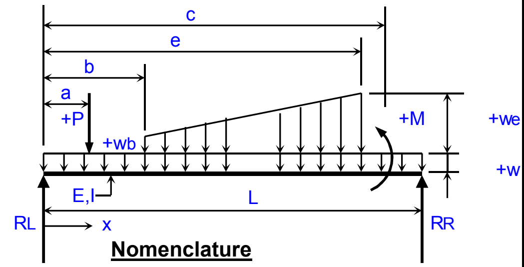
Input Data:

Beam Data:

Span Type?	Cantilever	
Span, L =	41.0000	ft.
Modulus, E =	1600	ksi
Size:	User defined	
Inertia, Ix =	490.87	in.^4
Sec. Mod. Sx =	98.17	in.^3
User defined Ix =	490.87	in.^4
User defined Sx =	98.17	in.^3



Enter your values for Ix & Sx down here



Nomenclature

Beam Loadings: Sect. prop. Averaged

Full Uniform: w = 0.0000 kips/ft.

Distributed:	Start b (ft.)	Wb (kips/ft.)	End e (ft.)	We (kips/ft.)
#1:				
#2:				
#3:				
#4:				
#5:				
#6:				
#7:				
#8:				

Enter Allowable Stress for Beam Material

Allowable Stress, Sa = 2640.00 psi

Note: Southern Pine or Equivalent 2.64ksi Allowable = 2640 psi

Results:

Reactions:

RL =	N.A.	RR =	10.28 k
ML =	N.A.	MR =	-421.42 ft-k

Maximum Moments:

+M(max) =	0.00 ft-k	@ x =	0.00 ft.
-M(max) =	-421.42 ft-k	@ x =	41.00 ft.

Maximum Deflections:

-Δ(max) =	-519.534 in.	@ x =	0.00 ft.
+Δ(max) =	0.000 in.	@ x =	0.00 ft.
Δ(ratio) =	L/1		

Maximum Bending Stress:

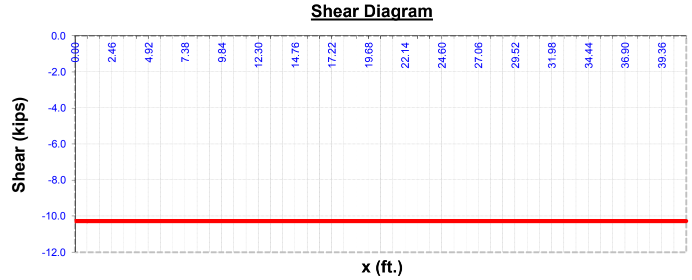
Smax =	51,510 psi
Stress Ratio =	19.51

Allowable Stress is Exceeded

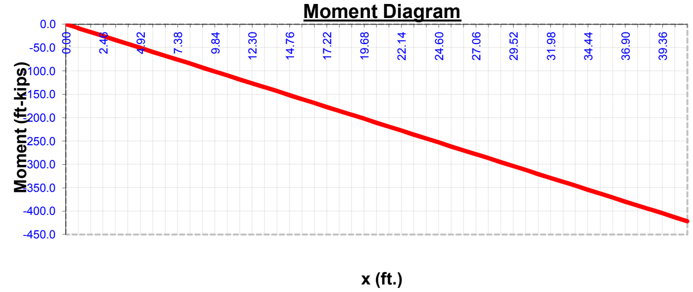
Point Loads:	a (ft.)	P (kips)
#1:	0.0000	10.28
#2:		
#3:		
#4:		
#5:		
#6:		
#7:		
#8:		
#9:		
#10:		
#11:		
#12:		
#13:		
#14:		
#15:		

Moments:	c (ft.)	M (ft-kips)
#1:		
#2:		
#3:		
#4:		

Shear Diagram



Moment Diagram



BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

VESSEL COLLISION ON PILE

d_{pile} = 13 in
= 1.0833 ft

H = 10.278 k
e = 26.25 ft
B = 1.0833 ft
γ_{soil} = 0.125 kcf
Φ = 38 degrees

LF = 1.5
R_{Kp} = 0.75

H_u = LF x H
= 1.5 x 10.278
H_u = 15.418 k

RANKINE COEFFICIENT OF PASSIVE PRESSURE

$$K_p = \frac{1 + \sin(\Phi)}{1 - \sin(\Phi)}$$
$$= \frac{1 + \sin(38)}{1 - \sin(38)}$$
$$= \frac{1 + 0.6157}{1 - 0.6157}$$

K_p = 4.2037

Reduced K_p = 0.75 x 4.204
= 3.1528

REQUIRED EMBEDMENT, L
Moments about the bottom must be zero.

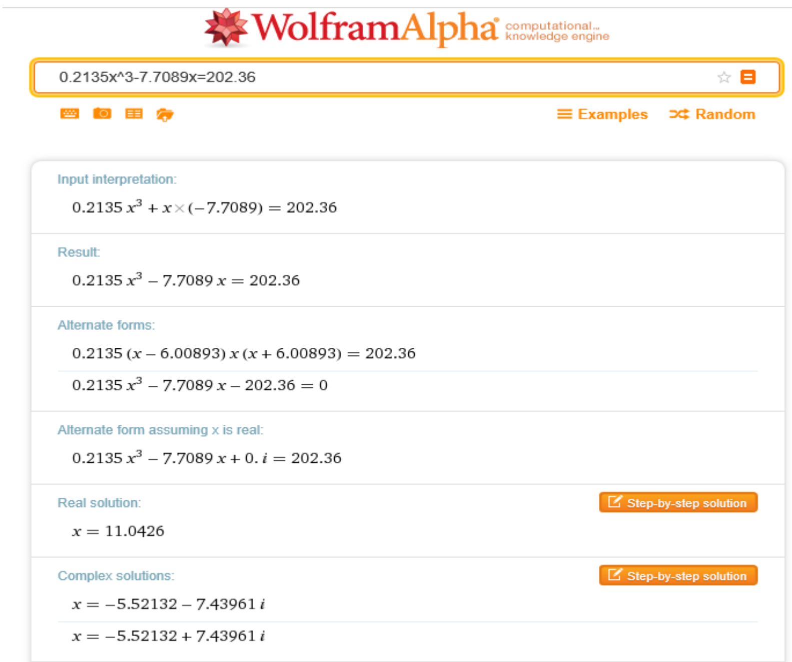
p = 3 x B x γ_{soil} x L x K_p
= 3 x 1.0833 x 0.125 x L x 3.153
p = 1.2808 x L

M_{bot} = H_u x(e + L)- 1/6 x p x L^2
0 = 15.418 x(26.25 + L)- 1/6 x(1.281 x L)x L^2
0 = 404.72 +(15.418 x L)- 0.213 x L^3

404.72 = 0.213 x L^3 - 15.42 x L

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

Solved Equation (See Wolfram Alpha)



$L = 11.043$ ft

$p = 3 \times B \times \gamma_{soil} \times L \times K_p$
$= 3 \times 1.0833 \times 0.125 \times 11.04 \times 3.153$
$p = 14.144$ k/ft

ZERO SHEAR LOCATION, f

$p_f = 3 \times B \times \gamma_{soil} \times f \times K_p$
$= 3 \times 1.0833 \times 0.125 \times f \times 3.153$
$p_f = 1.2808 \times f$

$V_f = H_u - 1/2 \times p_f \times f$
$0 = 15.418 - 1/2 \times 1.281 \times f \times f$
$15.418 = 0.6404 \times f^2$
$24.075 = f^2$

$f = 4.9066$ ft

$p_f = 1.2808 \times f$
$= 1.2808 \times 4.9066$
$p_f = 6.2845$ k/ft

$V_f = H_u - 1/2 \times p_f \times f$
$= 15.418 - 1/2 \times 6.285 \times 4.907$
$V_f = 0$ k CHECKS

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

FACTORED MOMENT AT f

$M_{max} = H_u \times (e + f) - 1/6 \times p_f \times f^2$
$= 15.418 \times (26.25 + 4.907) - 1/6 \times 6.285 \times 4.907^2$
$M_{max} = 455.15$ k-ft

Ratio L/B

Ratio $= L / B < 10$
$= 11.043 / 1.0833 < 10$
$10.193 \sim 10$ METHOD IS VALID

ACTUAL EMBEDMENT, L_{act}
Moments about the bottom must be zero.

$L_{act} = 15$ ft

$p = 3 \times B \times \gamma_{soil} \times L \times K_p$
$= 3 \times 1.0833 \times 0.125 \times 15 \times 3.153$
$p = 19.212$ k/ft

$M_{bot} = H_u \times (e + L) - 1/6 \times p \times L^2$
$= 15.418 \times (26.25 + 15) - 1/6 \times 19.21 \times 15^2$
$= 635.98 - 720.47$
$M_{bot} = -84.48$ k-ft

STRESS OF PILE

MAXIMUM NEGATIVE MOMENT AT BOTTOM OF PILE
$M_{bot} = -84.48$ k-ft
$= -1014$ k-in

$S_{pile} = \dfrac{\pi \times d^3}{32}$
$= \dfrac{3.1416 \times 13^3}{32}$
$S_{pile} = 215.69$ in^3

$\sigma_{max} = 2460$ psi
$= 2.46$ ksi

$\sigma_{max} > \dfrac{M_{bot}}{S_{pile}}$
$2.46 > \dfrac{1014}{215.69}$

$2.46 < 4.7003$ ksi NO GOOD

MAXIMUM MOMENT AT LOCATION f
$M_{max} = 455.15$ k-ft
$= 5462$ k-in

BR. 01349 IN WESTPORT
ROUTE 136 OVER SAUGATUCK RIVER

$$S_{pile} = \frac{\pi \times d^3}{32}$$

$$= \frac{3.1416 \times 13^3}{32}$$

S_{pile} = 215.69 in^3

σ_{max} = 2640 psi
= 2.64 ksi

$$\sigma_{max} > \frac{M_{bot}}{S_{pile}}$$

$$2.64 > \frac{5462}{215.69}$$

2.64 < 25.322 ksi NO GOOD

3.12.6—Settlement

Force effects due to extreme values of differential settlements among substructures and within individual substructure units shall be considered. Estimates of settlement for individual substructure units may be made in accordance with the provisions in Article 10.7.2.3.

C3.12.6

Force effects due to settlement may be reduced by considering creep. Analysis for the load combinations in Tables 3.4.1-1 and 3.4.1-2 which include settlement should be repeated for settlement of each possible substructure unit settling individually, as well as combinations of substructure units settling, that could create critical force effects in the structure.

3.12.7—Secondary Forces from Post-Tensioning, *PS*

The application of post-tensioning forces on a continuous structure produces reactions at the supports and internal forces that are collectively called secondary forces, which shall be considered where applicable.

C3.12.7

In frame analysis software, secondary forces are generally obtained by subtracting the primary prestress forces from the total prestresssing.

3.13—FRICTION FORCES: *FR*

Forces due to friction shall be established on the basis of extreme values of the friction coefficient between the sliding surfaces. Where appropriate, the effect of moisture and possible degradation or contamination of sliding or rotating surfaces upon the friction coefficient shall be considered.

C3.13

Low and high friction coefficients may be obtained from standard textbooks. If so warranted, the values may be determined by physical tests, especially if the surfaces are expected to be roughened in service.

3.14—VESSEL COLLISION: *CV*

3.14.1—General

The provisions of this Article apply to the accidental collision between a vessel and a bridge. These provisions may be revised as stated in Article 3.14.16 to account for intentional collisions.

All bridge components in a navigable waterway crossing, located in design water depths not less than 2.0 ft, shall be designed for vessel impact.

The minimum design impact load for substructure design shall be determined using an empty hopper barge drifting at a velocity equal to the yearly mean current for the waterway location. The design barge shall be a single 35.0-ft × 195-ft barge, with an empty displacement of 200 ton, unless approved otherwise by the Owner.

Where bridges span deep draft waterways and are not sufficiently high to preclude contact with the vessel, the minimum superstructure design impact may be taken to be the mast collision impact load specified in Article 3.14.10.3.

C3.14.1

Intentional collision between a vessel and a bridge may be considered when conducting security studies.

The determination of the navigability of a waterway is usually made by the U.S. Coast Guard.

The requirements herein have been adapted from the AASHTO *Guide Specifications and Commentary for Vessel Collision Design of Highway Bridges* (*1991*) using the Method II risk acceptance alternative, and modified for the second edition (2009). The 1991 Guide Specifications required the use of a single vessel length overall (*LOA*) selected in accordance with the Method I criteria for use in estimating the geometric probability and impact speed to represent all vessel classifications. This was a conservative simplification applied to reduce the amount of effort required in the analysis. With the introduction of personal computers and programming, the simplification can be lifted and *AF* can be quickly obtained for each design vessel, which was originally envisioned. The end result is a more accurate model for the vessel collision study as well as more informative conclusions about the vessel fleet and associated probabilities of collision.

Another source of information has been the proceedings of an international colloquium, Ship Collisions with Bridges and Offshore Structures (IABSE, 1983).

Barges are categorized by ton = 2,000 lbs. and ships by tonne = 2,205 lbs.

$$R_{DH} = 0.2 - \left(\frac{DWT}{100,000}\right)(0.10) \quad (3.14.10.2\text{-}2)$$

3.14.10.3—Collision with Mast

The mast collision impact force on a superstructure shall be taken as:

$$P_{MT} = 0.10 P_{DH} \quad (3.14.10.3\text{-}1)$$

where:

P_{MT} = ship mast impact force (kip)
P_{DH} = ship deck house impact force specified in Eq. 3.14.10.2-1 (kip)

C3.14.10.3

Eq. 3.14.10.3-1 was developed by estimating the impact forces based on bridge girder and superstructure damage from a limited number of mast impact accidents.

3.14.11—Barge Collision Force on Pier

For the purpose of Article 3.14, the standard hopper barge shall be taken as an inland river barge with:

width	=	35.0 ft
length	=	195.0 ft
depth	=	12.0 ft
empty draft	=	1.7 ft
loaded draft	=	8.7 ft
DWT	=	1,700 tons

The collision impact force on a pier for a standard hopper barge shall be taken as:

- If $a_B < 0.34$ then:

$$P_B = 4,112 a_B \quad (3.14.11\text{-}1)$$

- If $a_B \geq 0.34$ then:

$$P_B = 1,349 + 110 a_B \quad (3.14.11\text{-}2)$$

where:

P_B = equivalent static barge impact force (kip)
a_B = barge bow damage length specified in Eq. 3.14.12-1 (ft)

C3.14.11

There is less reported data on impact forces resulting from barge collisions than from ship collision. The barge collision impact forces determined by Eqs. 3.14.11-1 and 3.14.11-2 were developed from research conducted by Meir-Dornberg (*1983*) in West Germany. Meir-Dornberg's study included dynamic loading with a pendulum hammer on barge bottom models in scale 1:4.5, static loading on one bottom model in scale 1:6, and numerical analysis. The results for the standard European Barge, Type IIa, which has a similar bow to the standard hopper barge in the United States, are shown in Figure C3.14.11-1 for barge deformation and impact loading. No significant difference was found between the static and dynamic forces measured during the study. Typical barge tow impact forces using Eqs. 3.14.11-1 and 3.14.11-2 are shown in Figure C3.14.11-2.

where:

E_B = deformation energy (kip-ft)
$\bar{P}_B$ = average equivalent static barge impact force resulting from the study (kip)

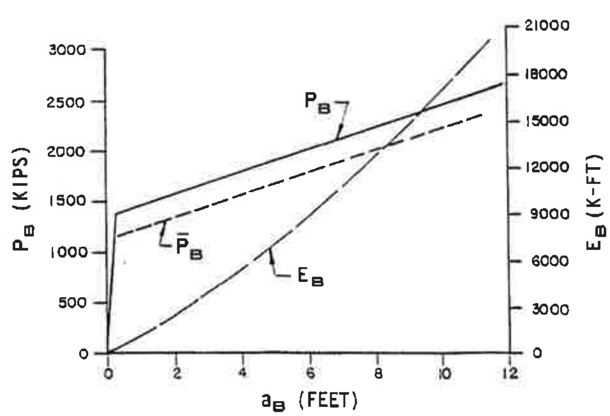
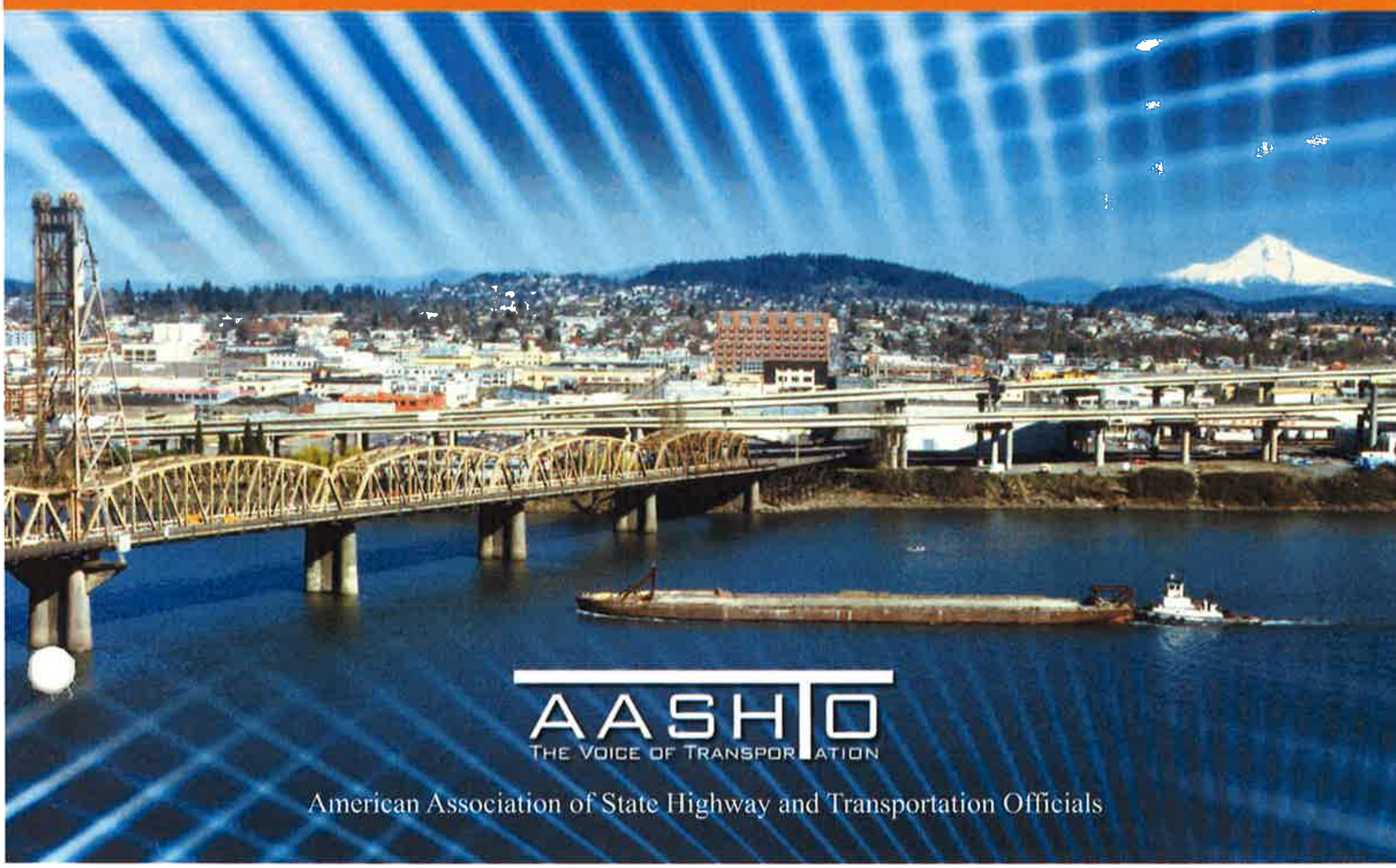


Figure C3.14.11-1—Barge Impact Force, Deformation Energy, and Damage Length Data

Guide Specifications and Commentary for

Vessel Collision Design of Highway Bridges

Second Edition, 2009



AASHTO

THE VOICE OF TRANSPORTATION

American Association of State Highway and Transportation Officials

Table 3.5.2-1—Typical Bulk Carrier Ship Characteristics

				Fully Loaded		Ballasted		
Ship *DWT*, tonnes	Length *LOA*, ft	Beam, B_M, ft	Bow Depth D_B	Draft D_L, (ft)	Displacement W_L, tonnes	Draft D_{EB}, ft	Draft D_{ES}, ft	Displacement W_E, tonnes
1,000	200	29.2	27.2	14.1	1,500	3.5	7.1	600
3,000	289	41.7	38.2	22.3	4,200	5.6	11.2	1,600
5,000	341	48.9	45.2	21.3	6,800	5.3	10.7	2,600
10,000	459	61.4	57.6	26.6	13,100	6.7	13.3	4,900
15,000	515	70.5	64.2	29.5	19,300	7.4	14.8	7,200
20,000	558	77.8	68.4	31.5	25,500	7.9	15.8	9,600
25,000	577	82.4	70.8	32.2	31,500	8.1	16.1	11,800
30,000	630	89.6	74.1	34.8	37,500	8.7	17.4	14,100
40,000	682	99.1	77.8	37.4	49,400	9.4	18.7	18,500
50,000	728	107.0	80.2	39.0	61,100	9.8	19.5	22,900
60,000	771	109.3	83.7	40.4	72,800	10.1	20.2	27,300
80,000	850	120.1	86.2	43.3	95,800	10.8	21.7	35,900
100,000	902	137.8	92.8	52.8	118,600	13.2	26.4	44,500
150,000	1027	146.0	99.7	59.1	174,700	14.8	29.6	65,500

Table 3.5.2-2—Typical Product Carrier/Tanker Ship Characteristics

				Fully Loaded		Ballasted		
Ship *DWT*, tonnes	Length *LOA*, ft	Beam B_M, ft	Bow Depth, D_B	Draft D_L, ft	Displacement W_L, tonnes	Draft D_{EB}, ft	Draft D_{ES}, ft	Displacement W_E, tonnes
1,000	187	30.8	25.0	13.8	1,400	3.5	6.9	500
3,000	279	42.0	35.4	19.4	4,100	4.9	9.7	1,500
5,000	335	48.2	41.8	22.6	6,700	5.7	11.3	2,500
10,000	456	62.3	53.6	26.6	13,000	6.7	13.3	4,900
15,000	515	71.2	60.2	29.5	19,300	7.4	14.8	7,200
20,000	561	78.1	65.1	32.2	25,400	8.1	16.1	9,500
25,000	577	83.7	68.7	33.1	31,500	8.3	16.6	11,800
30,000	637	89.2	71.7	34.8	37,500	8.7	17.4	14,100
40,000	692	98.1	75.8	38.4	49,500	9.6	19.2	18,600
50,000	741	105.3	78.5	41.0	61,400	0.3	20.5	23,000
60,000	774	111.5	81.8	42.0	73,200	0.5	21.0	27,500
80,000	853	122.4	83.6	45.6	96,500	11.4	22.8	36,200
100,000	886	128.0	85.0	47.9	119,700	12.0	24.0	44,900
120,000	915	138.9	88.2	50.9	142,600	12.7	25.5	53,500
150,000	955	145.0	90.6	58.7	176,800	14.7	29.4	66,300

Table 9-4. Comparative Merits of Different Construction Materials in Energy-Absorption Capacity

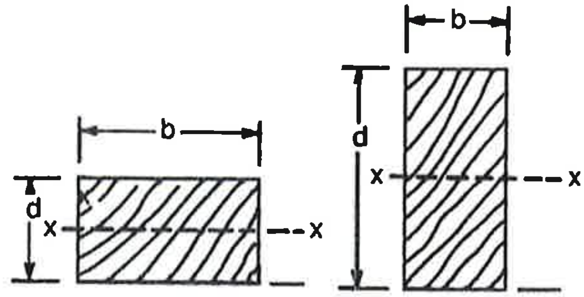
Comparative Merits of Different Construction Materials In Energy-Absorption Capacity a

Material	Modulus of elasticity (1,000 psi)	State bending stress: At proportional limit (psi)	State bending stress: At allowable working stress due to transient loading (psi)	Internal strain [b] energy capacity (each pile): At proportional limit (in.-tons)	Internal strain [b] energy capacity (each pile): At allowable working stress due to transient loading (in.-tons)	No. of piles required [c]	Maximum spacing of fender piles [d] (ft)
Douglas Fir 12" x 12".	1,600	4,580 [a]	2,640	31.5	10.5	43	3.6
Southern Yellow Pine 12" x 12".	1,600	4,580 [a]	2,640	31.5	10.5	43	3.6
Douglas Fir or Southern Yellow Pine 14" diam.	1,600	4,580	2,640	25.2	8.4	54	2.8
Douglas Fir or Southern Yellow Pine 12" diam.	1,600	4,580	2,640	18.6	6.2	73	2.1
Greenheart 12" x 12".	3,200	12,000 [a]	6,900	108.0	36.0	13	12.5
Oak 12" x 12".	1,400	3,940	2,270	26.7	8.9	51	3.0
12WF190	29,000	36,000	20,000	. . . .	28.2	16	10.0
12WF65	29,000	50,000	20,000	. . . .	9.6	47	3.2
Steel cylindrical fender 34.5-inch diam by 0.5-inch thick.	29,000	36,000	20,000	. . . .	18.7		
Steel cylindrical fender 34.5-inch diam by 0.5-inch thick.	29,000	62,000	34,400	. . . .	53.0		
ASTM A-242, A-440 (rolled fender piles), A-441 (welded fender pile) 12" x 12" WF190.	29,000	50,000	27,800	. . . .	54.4		
Reinforced concrete 12" x 12" (3.000 psi. n = 10).	29,000	. . . . .	1,200	. . . .	1.16	387	Not suitable.
Prestressed concrete 14" x 14" (17-7/16" diam).	29,000	. . . . .	1,630	. . . .	2.50	180	Not suitable when impact acted near waterline.

a Assume 12% reduction of basic proportional limit of extreme fiber strew in bending at 5,270 psi, allowing for knots.
B Assume the supported length of pile as 50 feet.
c Number of piles required to absorb 450 in.-tons of designed capacity (transient-load allowable working stress) or to absorb 1,350 in.-tons of maximum capacity (stressed at nearly the safe elastic limit of materials).
d Assume the ship berths broadside with a length of contact of 150 feet, which is the shortest parallel wall side of cargo ship

(2A)

Table 16-2. —Section properties of structural lumber[a]



Nominal size b x d (in.)	Dressed size b x d (in.)	Area A (in²)	S (in³)	I (in⁴)	Volume (ft³/ft)	Weight[b] (lb/ft)
1 x 3	3/4 x 2-1/2	1.88	0.78	0.98	0.01	0.65
1 x 4	3/4 x 3-1/2	2.63	1.53	2.68	0.02	0.91
1 x 6	3/4 x 5-1/2	4.13	3.78	10.40	0.03	1.43
1 x 8	3/4 x 7-1/4	5.44	6.57	23.82	0.04	1.89
1 x 10	3/4 x 9-1/4	6.94	10.70	49.47	0.05	2.41
1 x 12	3/4 x 11-1/4	8.44	15.82	88.99	0.06	2.93
2 x 3	1-1/2 x 2-1/2	3.75	1.56	1.95	0.03	1.30
2 x 4	1-1/2 x 3-1/2	5.25	3.06	5.36	0.04	1.82
2 x 6	1-1/2 x 5-1/2	8.25	7.56	20.80	0.06	2.86
2 x 8	1-1/2 x 7-1/4	10.88	13.14	47.63	0.08	3.78
2 x 10	1-1/2 x 9-1/4	13.88	21.39	98.93	0.10	4.82
2 x 12	1-1/2 x 11-1/4	16.88	31.64	177.98	0.12	5.86
2 x 14	1-1/2 x 13-1/4	19.88	43.89	290.78	0.14	6.90
3 x 1	2-1/2 x 3/4	1.88	0.23	0.09	0.01	0.65
3 x 2	2-1/2 x 1-1/2	3.75	0.94	0.70	0.03	1.30
3 x 4	2-1/2 x 3-1/2	8.75	5.10	8.93	0.06	3.04
3 x 6	2-1/2 x 5-1/2	13.75	12.60	34.66	0.10	4.77
3 x 8	2-1/2 x 7-1/4	18.13	21.90	79.39	0.13	6.29
3 x 10	2-1/2 x 9-1/4	23.13	35.65	164.89	0.16	8.03
3 x 12	2-1/2 x 11-1/4	28.13	52.73	296.63	0.20	9.77
3 x 14	2-1/2 x 13-1/4	33.13	73.15	484.63	0.23	11.50
3 x 16	2-1/2 x 15-1/4	38.13	96.90	738.87	0.26	13.24
4 x 1	3-1/2 x 3/4	2.63	0.33	0.12	0.02	0.91
4 x 2	3-1/2 x 1-1/2	5.25	1.31	0.98	0.04	1.82
4 x 3	3-1/2 x 2-1/2	8.75	3.65	4.56	0.06	3.04
4 x 4	3-1/2 x 3-1/2	12.25	7.15	12.51	0.09	4.25
4 x 6	3-1/2 x 5-1/2	19.25	17.65	48.53	0.13	6.68
4 x 8	3-1/2 x 7-1/4	25.38	30.66	111.15	0.18	8.81
4 x 10	3-1/2 x 9-1/4	32.38	49.91	230.84	0.22	11.24
4 x 12	3-1/2 x 11-1/4	39.38	73.83	415.28	0.27	13.67
4 x 14	3-1/2 x 13-1/4	46.38	102.41	678.48	0.32	16.09
4 x 16	3-1/2 x 15-1/4	53.38	135.66	1,034.42	0.37	18.54
6 x 1	5-1/2 x 3/4	4.13	0.52	0.19	0.03	1.43
6 x 2	5-1/2 x 1-1/2	8.25	2.06	1.55	0.06	2.86
6 x 3	5-1/2 x 2-1/2	13.75	5.73	7.16	0.10	4.77
6 x 4	5-1/2 x 3-1/2	19.25	11.23	19.65	0.13	6.68

[a] Based on dressed (S4S) sizes.

[b] Based on a unit weight of 50 lb/ft³.

Timber Pile
Design and Construction
Manual

Timber Piling Council
American Wood Preservers Institute

Table 3-3 provides specified butt circumferences with corresponding minimum tips sizes for Southern pine. Table 3-4 provide specified tip circumferences with corresponding minimum butt circumferences for Southern Pine. The corresponding tables for Douglas fir and other western species are in Tables 3-5 and 3-6.

Table 3-2
Allowable Pile Capacity in Compression (kips)

Timber Species	Allowable Pile Capacity in Compression (kips)					
	Pile Tip Diameter (inches)					
	7	8	9	10	11	12
Southern Pine	46	60	76	94	114	136
Douglas Fir	48	63	80	98	119	141

Table 3-3 Southern Pine Foundation Piling – Specified Butt Circumferences with Corresponding Minimum Tip Circumferences [A,B,C,D,E] (from ASTM D25 - Table X1.3)

[Approximate Diameters in Brackets]

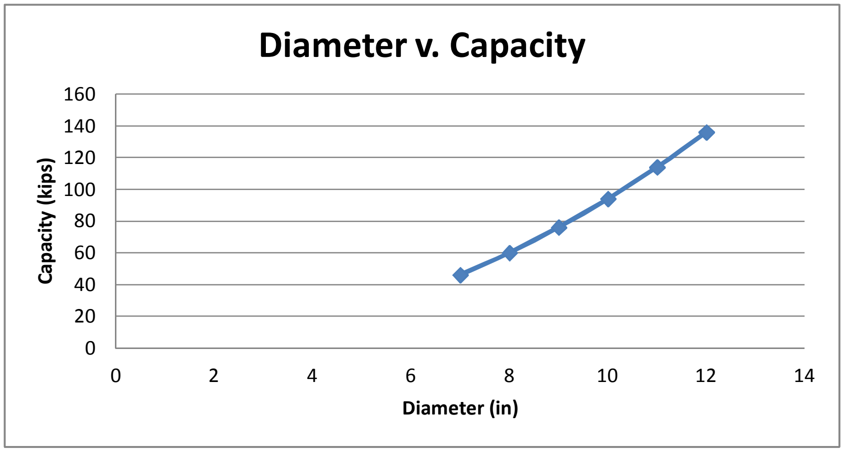
Required Minimum Circumference, in. 3 ft from Butts	22 [7]	25 [8]	28 [9]	31 [10]	35 [11]	38 [12]	41 [13]	44 [14]	47 [15]	50 [16]	57 [18]
Length (ft)	Minimum Tip Circumferences, in.										
20	16 [5.1]	16 [5.1]	18 [5.7]	21 [6.7]	25 [8.0]	**28 [8.9]**	**31 [9.9]**	**34 [10.8]**	**37 [11.8]**	40 [12.7]	47 [15.0]
25	16 [5.1]	16 [5.1]	17 [5.4]	20 [6.4]	24 [7.6]	**27 [8.6]**	**30 [9.5]**	**33 [10.5]**	**36 [11.4]**	39 [12.4]	46 [14.6]
30	16 [5.1]	16 [5.1]	16 [5.1]	19 [6.0]	23 [7.3]	**26 [8.3]**	**29 [9.2]**	**32 [10.2]**	**35 [11.1]**	38 [12.1]	45 [14.3]
35				18 [5.7]	22 [7.0]	**25 [8.0]**	**28 [8.9]**	**31 [9.9]**	**34 [10.8]**	37 [11.8]	44 [14.0]
40				17 [5.4]	21 [6.7]	**24 [7.6]**	**27 [8.6]**	**30 [9.5]**	**33 [10.5]**	36 [11.4]	43 [13.7]
45					20 [6.4]	**23 [7.3]**	**26 [8.3]**	**29 [9.2]**	**32 [10.2]**	35 [11.1]	42 [13.4]
50					19 [6.0]	**22 [7.0]**	**25 [8.0]**	**28 [8.9]**	**31 [9.9]**	34 [10.8]	41 [13.0]
55						**21 [6.7]**	**24 [7.6]**	**27 [8.6]**	**30 [9.5]**	33 [10.5]	40 [12.7]
60						**20 [6.4]**	**23 [7.3]**	**26 [8.3]**	**29 [9.2]**	32 [10.2]	39 [12.4]
65						19 [6.0]	**22 [7.0]**	**25 [8.0]**	**28 [8.9]**	31 [9.9]	38 [12.1]
70						18 [5.7]	**21 [6.7]**	**24 [7.6]**	27 [8.6]	30 [9.5]	37 [11.8]
75							**20 [6.4]**	23 [7.3]	26 [8.3]	29 [9.2]	36 [11.4]
80							19 [6.0]	22 [7.0]	25 [8.0]	28 [8.9]	35 [11.1]
85							18 [5.7]	21 [6.7]	24 [7.6]	27 [8.6]	34 [10.8]

Commonly available sizes are shown within the bold outline:

[A] Where the taper applied to the butt circumferences calculate to a circumference at the tip of less than 16 in., the individual values have been increased to 16 in. to ensure a minimum of 5-in. tip for purposes of driving.
[B] To convert to metric dimensions, 1 in. = 25.4 mm.
[C] Class A piles are all those listed with a specified required minimum circumference of 44 in. at 3 ft from butt.
[D] Class B piles are those listed with a specified required minimum circumference at 3 ft from butt of 35 in. and lengths of 20 to 25 ft minimum circumference at 3 ft from butt of 38 in. and lengths of 20 to 50 ft, and minimum circumference at 3 ft from butt of 41 in. and lengths of 55 to 80 ft.
[E] Southern Yellow Pine piles are generally available in lengths shorter than 70 ft or girth of less than 50 in. at 3 ft from butt. The purchaser should inquire as to availability of sizes below the lines.

FROM TIMBER MANUAL

Diameter	Capacity
7	46
8	60
9	76
10	94
11	114
12	136



USING LINE OF BEST FIT:

Diameter	Capacity
1	4
2	6
3	10
4	16
5	24
6	34
7	46
8	60
9	76
10	94
11	114
12	136
13	160
14	186
15	214
16	244
17	276
18	310
19	346
20	384


5
MPH

FORM NO. ENG 158 ED 4-80

FHWA REGION	STATE	TOWN	FED AID PROJ NO	PROJ. NO	YEAR	ROUTE NO	SHEET NO	TOTAL SHEETS
1	CONN	WESTPORT	–	158-150	1989	136	41-1	72

LEGEND:

- (5) INDICATE CONNECTION TYPE
- ● INDICATE EXISTING FENDER PILES (TIMBER) TO BE REMOVED
- ○ INDICATE NEW FENDER PILES (TIMBER)

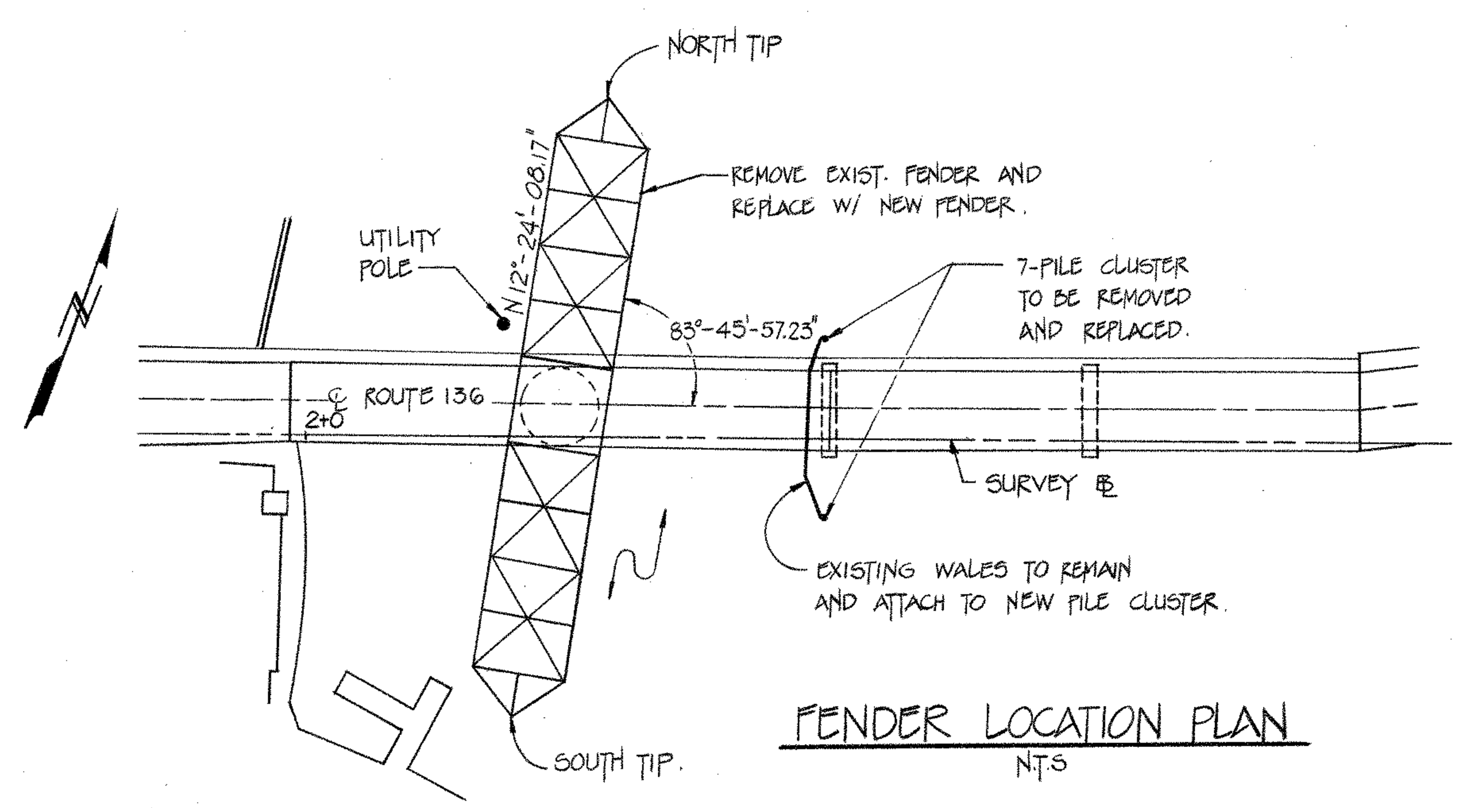
PIVOT PIER FENDER – PLAN

SCALE: 3/16" = 1'-0"

NOTE: FOR POLE BRACING AND GUY WIRE ANCHORAGE, SEE BRIDGE PLAN ELECTRICAL WORK SHEET # E1 OF E7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING THE UTILITY POLE.

PIVOT PIER FENDER – ELEVATION

SCALE: 3/16" = 1'-0"



FENDER LOCATION PLAN

NTS

POINT	SURVEY ℄ STATION	OFFSET	COORDINATES NORTH	COORDINATES EAST
NORTH TIP	2+76.99	93.17'	106065.663	429172.941
SOUTH TIP	2+56.37	76.30'	105898.918	429209.609

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION

REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

FENDER SYSTEM – I

ENGINEER H.W. LOCHNER, INC.

DESIGNER LM | DRAFTER [signature] | CHECKER JD

APPROVED [signature] | DATE 9-6-89

STRUCTURE NO. 158-150-1 | BRIDGE LOG NO 01349 | STRUCTURE SHEET NO. 22 OF 24

158-150

270-01

41-1

F.H.W.A. REGION NO.	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT	—	158 – 150	1989	136	42	72

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
		REVISIONS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

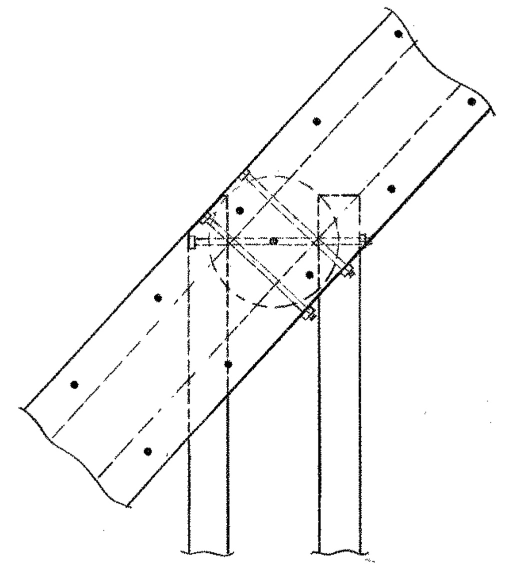
FENDER SYSTEM – II

ENGINEER	H.W. LOCHNER, INC.		
DESIGNER	LM	DRAFTER	CHECKER JD
APPROVED			DATE 9-6-89
STRUCTURE NO.	158-150-1	BRIDGE LOG NO. 01349	STRUCTURE SHEET NO. 23 of 24

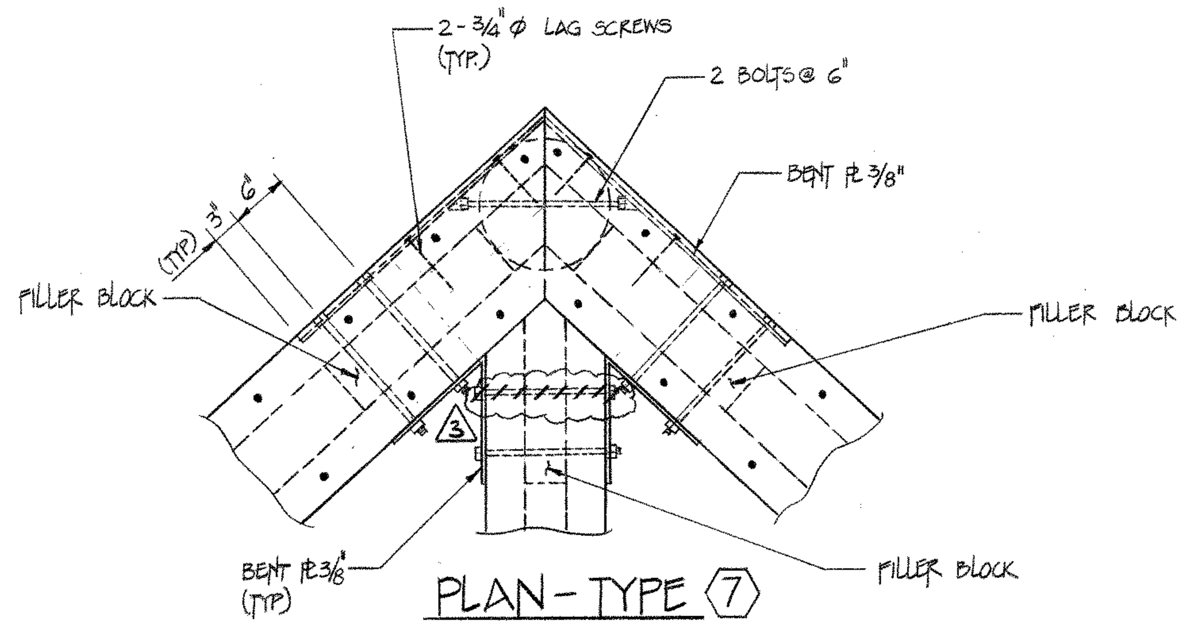
158-150

270-01

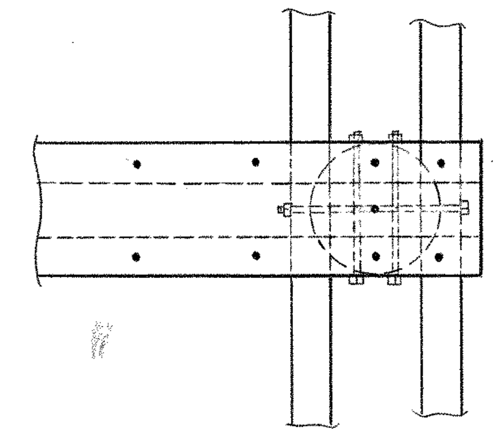
42



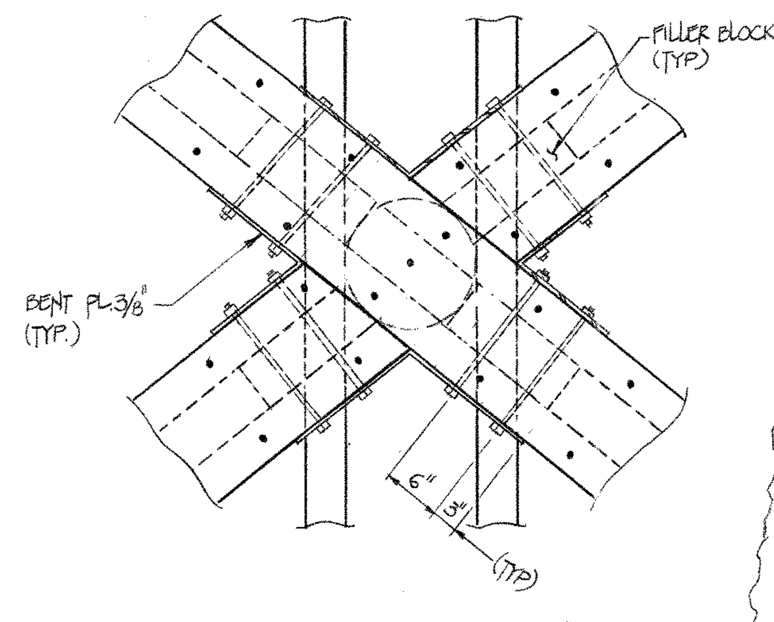
PLAN – TYPE 6



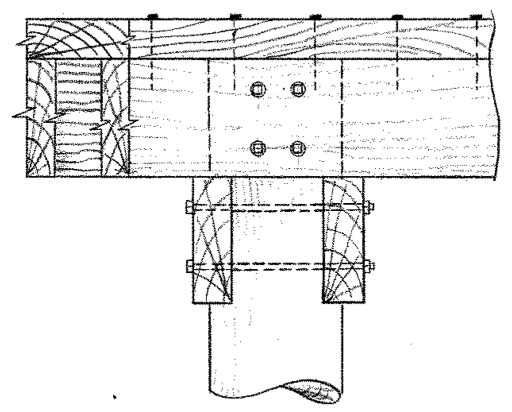
PLAN – TYPE 7



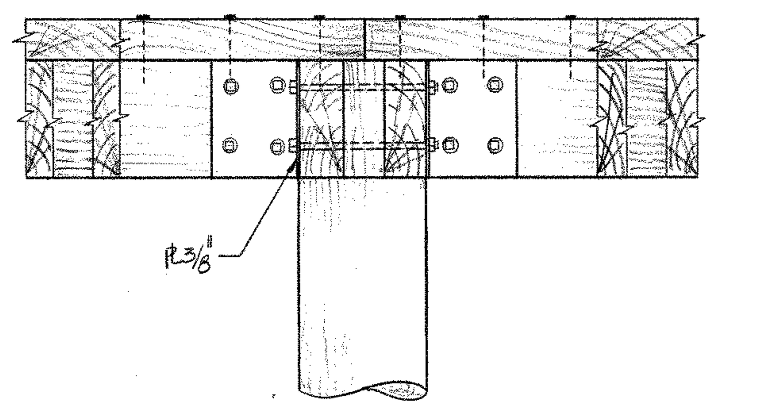
PLAN – TYPE 8



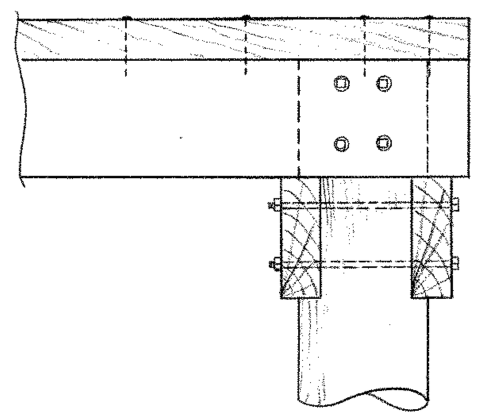
PLAN – TYPE 9



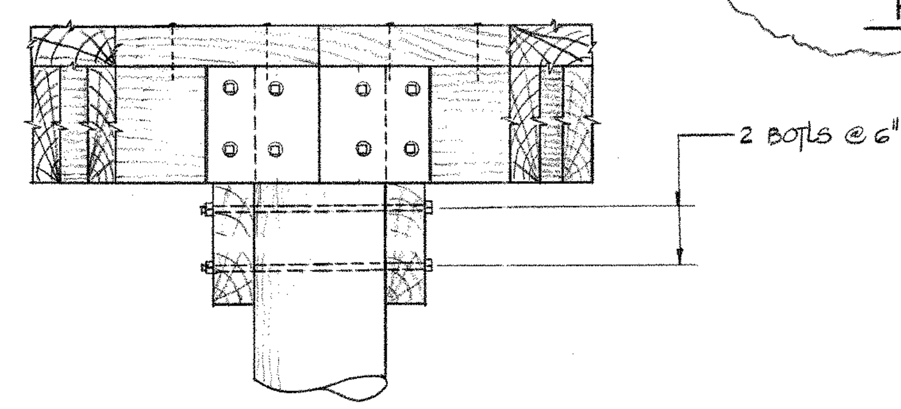
ELEVATION – TYPE 6



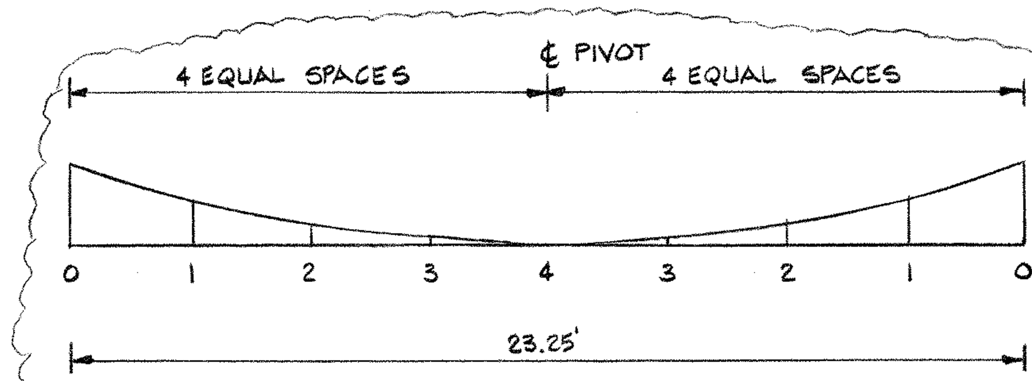
ELEVATION – TYPE 7



ELEVATION – TYPE 8



ELEVATION – TYPE 9



PIVOT GIRDER - CAMBER

DEAD LOAD DEFLECTION AND CHAMBER - PIVOT GIRDER

POINT #	STRUCTURAL STEEL	OTHER DEAD LOAD	TOTAL DEAD LOAD	TOTAL CHAMBER (FEET)
0	0.00022	0	0.00022	0.00022
1	0.00015	0	0.00015	0.00015
2	0.00008	0	0.00008	0.00008
3	0.00002	0	0.00002	0.00002
4	0	0	0	0

PIVOT GIRDER CAMBER DIAGRAM

3

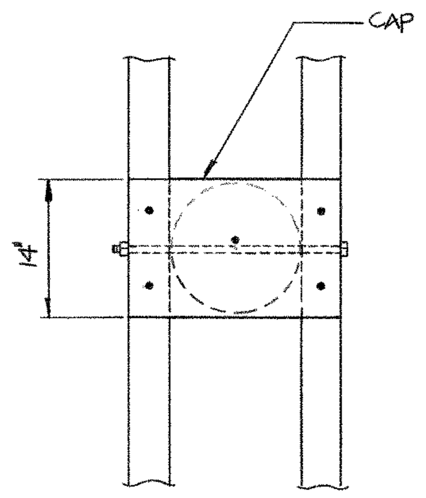
NOTES:

1. ALL TIMBER SHALL BE SOUTHERN YELLOW PINE AND PRESSURE TREATED WITH CREOSOTE. (SEE SPECIAL PROVISIONS.)
2. ALL HARDWARE SHALL BE GALVANIZED.
3. 4-3/4"Ø BOLTS SHALL BE USED TO SECURE WALES TO PILES.
4. 5-3/4"Ø BOLTS SHALL BE USED TO SECURE WALES TO BLOCKS WHEN SPLICING.
5. PILES SHALL HAVE A MINIMUM BUTT CIRCUMFERENCE OF 41" AND SHALL CONFORM TO ASTM D25 "STANDARD SPECIFICATIONS FOR ROUND TIMBER PILES".
6. PILE TOP SHALL HAVE TREATMENT AS SPECIFIED IN SPECIAL PROVISION.
7. PILES TO BE DRIVEN TO REFUSAL IN THE GRANULAR DEPOSITS OR ON THE BEDROCK
8. ALL BOLTS SHALL BE 3/4"Ø UNLESS NOTED OTHERWISE. BOLTS SHALL HAVE WASHERS UNDERNEATH THE HEADS AND THE NUTS
9. ESTIMATED PILE ORDER LENGTH = 50 FT

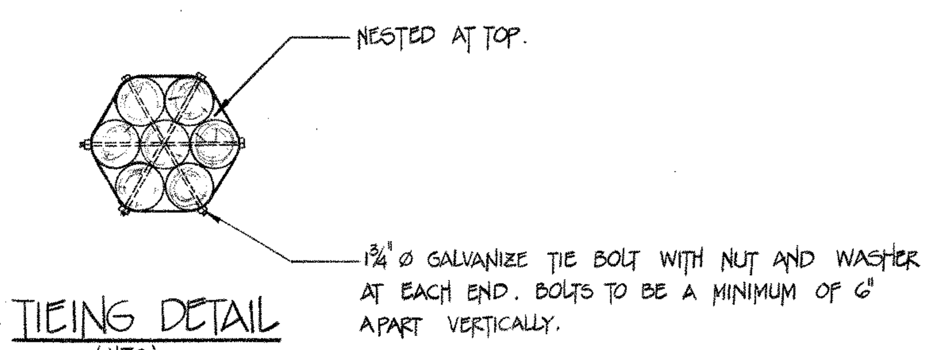
SCALE: 3/4" = 1'-0"
UNLESS NOTED OTHERWISE

DEAD LOAD DEFLECTIONS AT CENTER LINE OF SPAN (FEET)			CAMBERS AT CENTER LINE OF SPAN (FEET)			
GIRDER / BEAM DESCRIPTION	STRUCT. STEEL	OTHER DEAD LOADS	TOTAL DEAD LOADS	VERTICAL CURVE ORDINATE	EXTRA	TOTAL
END FLOOR BEAM	0.00058	0	0.00058	0	0	.00058

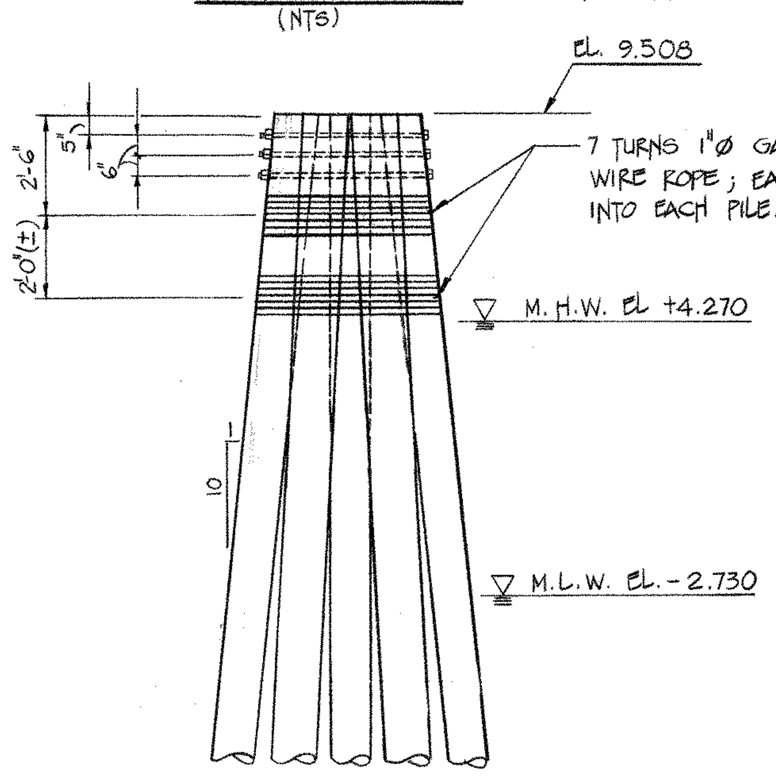
3



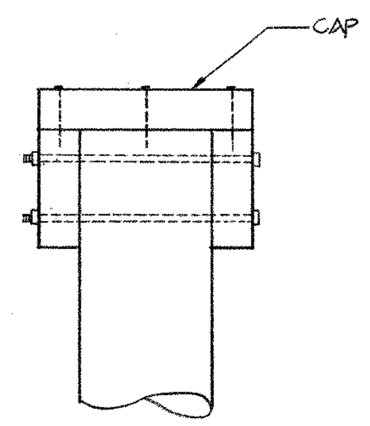
PLAN – TYPE 10



TIEING DETAIL
(NTS)



7-PILE CLUSTER
SCALE: 1/4" = 1'-0"



ELEVATION – TYPE 10

SCALE: 3/4" = 1'-0"

7-PILE CLUSTER NOTES

EXISTING WALES SHALL BE PROPERLY DETACHED FROM EXISTING CLUSTER AND SECURELY ATTACHED BACK TO THE NEW CLUSTER.

THE INTERIOR PILE SHALL BE DRIVEN VERTICALLY, AND THE 6 OUTSIDE PILES SHALL BE DRIVEN WITH A SLOPE OF 1:10. THE PILES SHALL BE DRAWN TOGETHER AT THE TOP. WRAP CLUSTER AT TWO ELEVATIONS APPROXIMATELY 2 FT. APART, EACH WITH 7 TURNS OF 1"Ø, 6X19 GALVANIZED WIRE ROPE, EACH CABLE SHALL BE SECURED TO THE FACE OF EACH PILE WITH 3/8"Ø GALVANIZED IRON STAPPLES.

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY THE STATE AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
3	6/5/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

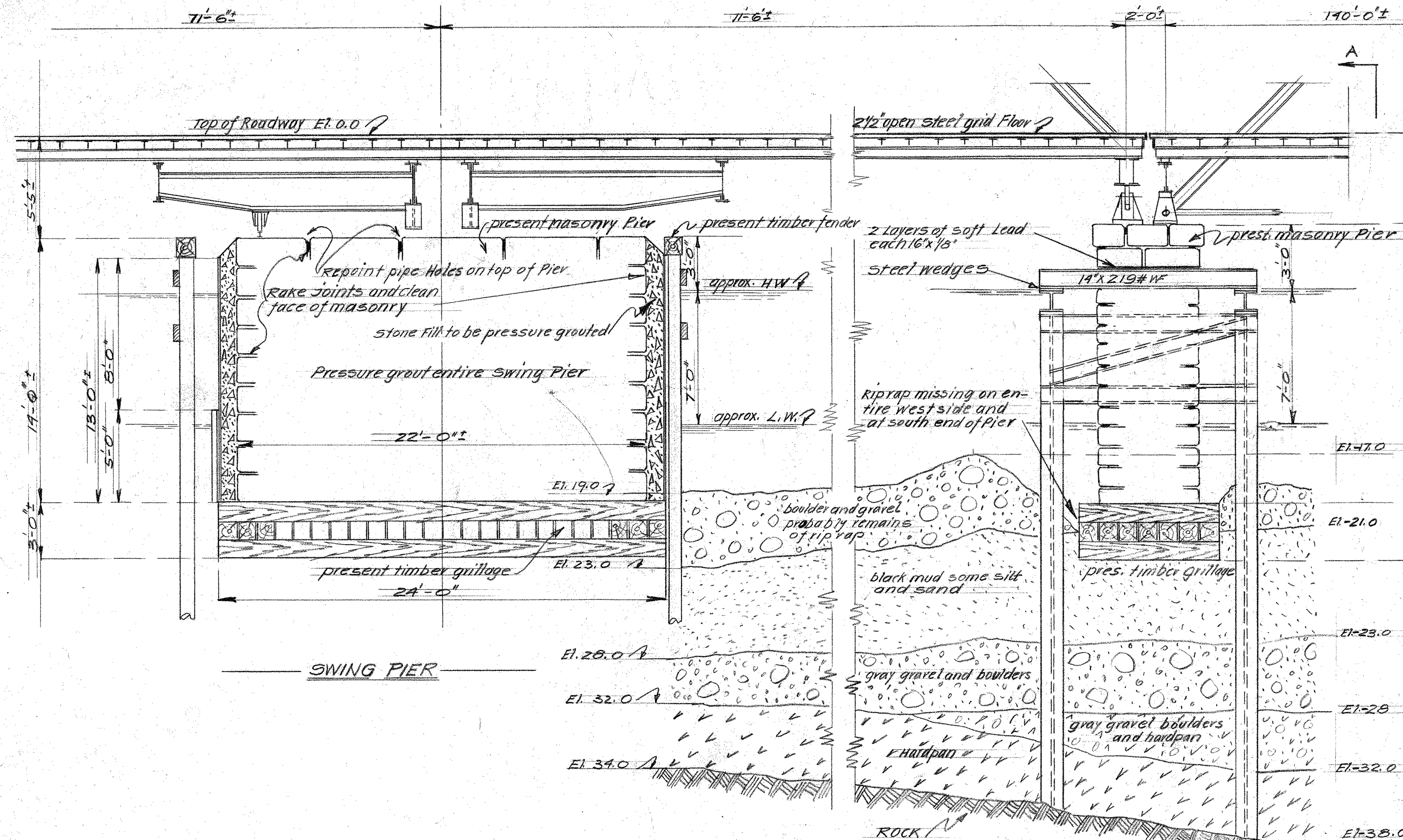
BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

FENDER SYSTEM—III

ENGINEER	H. W. LOCHNER, INC.		
DESIGNER LM	DRAFTER DPH	CHECKER JD	
APPROVED	Avo T. Ora	DATE 9-6-89	
STRUCTURE NO. 158-150-1		BRIDGE LOG NO. 01348	STRUCTURE SHEET NO. 24 OF 24

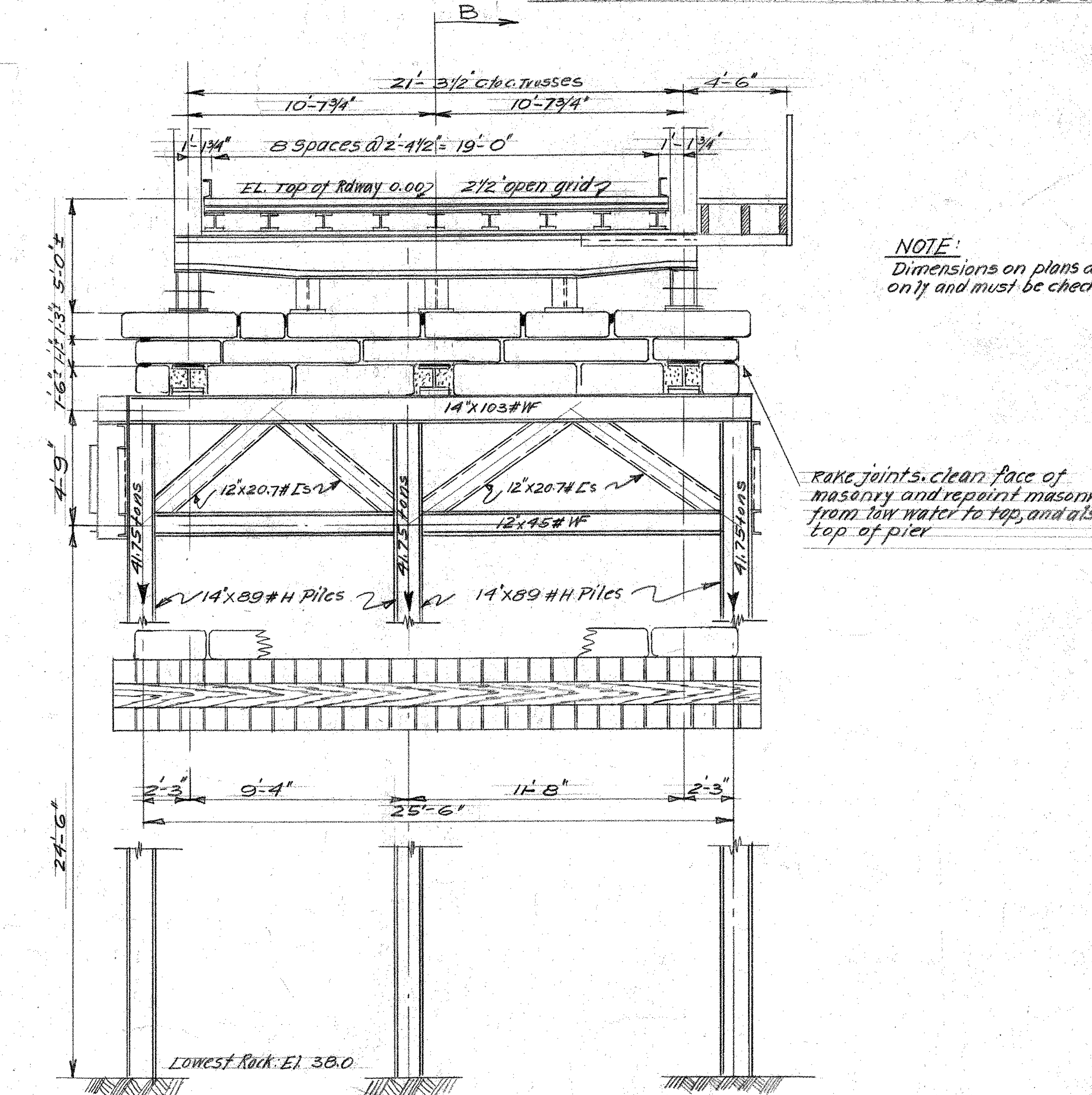
PUB ROAD DIV. NO	STATE	TOWN	FED AID PROJ. NO	FISCAL YEAR	ROUTE NO	SHEET NO.	TOTAL SHEETS
1	CONN	Westport		1951	136	2	3

REVISIONS IN GREEN TO SHOW BRIDGE AS CONSTRUCTED



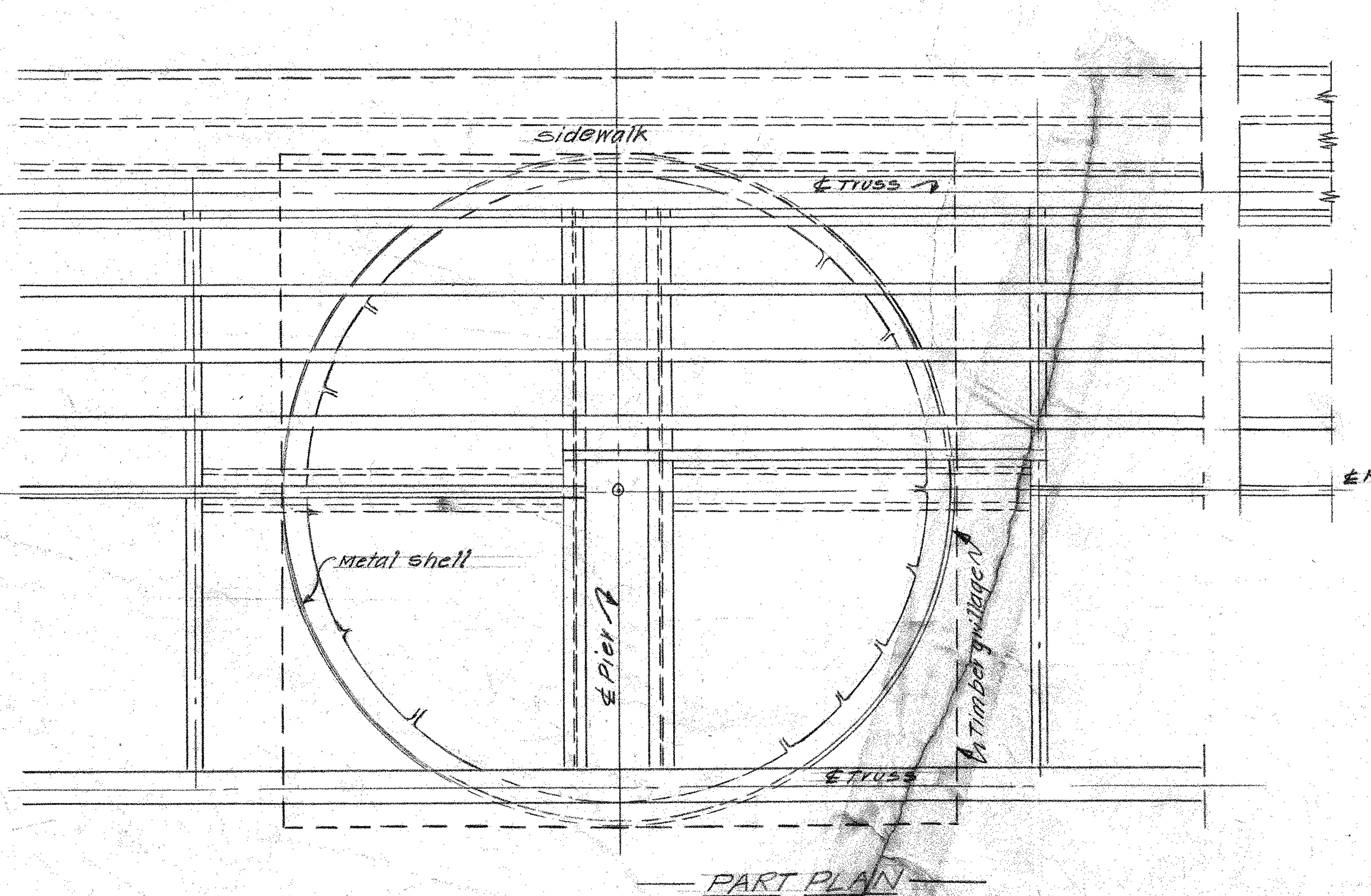
LONGITUDINAL SECTION B-B

PIER No 2

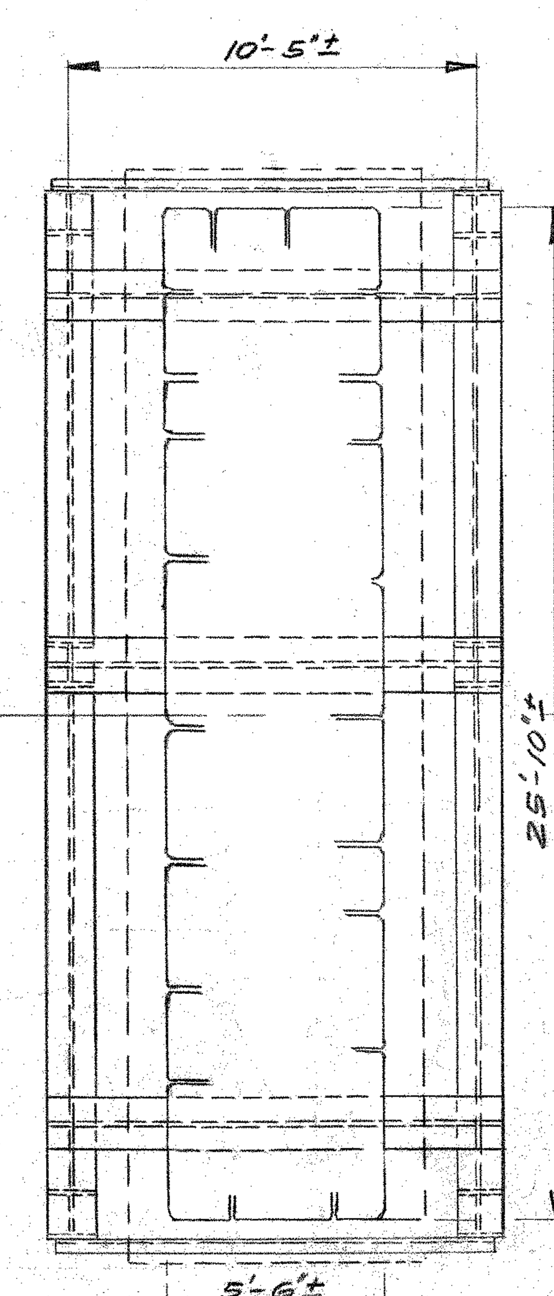


NOTE: Dimensions on plans are approximate only and must be checked by contractor

SECTION A-A



PART PLAN



QUANTITIES

ALTERATION TO MASONRY	LS.
FURNSHING STEEL PILES	34590 Lb.
DRIVING STEEL PILES	240 LF.
PORTLAND CEMENT	8 Bbl.
RAKING JOINTS & CLEANING FACE OF MASONRY	210 SY.
STRUCTURAL STEEL	5721 Lb.
METAL SHELL AROUND SWING PIER	15600 Lb.
STONE FILL	56 tons
LIQUID ACCELERATING AND WATER RESISTING AGENT	62 gal.
POWDER ACCELERATING AND WATER RESISTING AGENT	248 Lb.
REPOINTING MASONRY JOINTS	598 LF.
DENSIFYING AND RETARDING AGENT	120 Lb.
PRESSURE GROUTING OF STONE FILL	218 bags
PRESSURE GROUTING SWING PIER	160 bags

GENERAL NOTES

CONN. STATE HWY. DEPT. SPECIFICATIONS FORM 807.
ALL NEW STEEL EXCEPT THE METAL SHELL AROUND SWING PIER SHALL BE PAINTED ONE SHOP COAT OF ZINC CHROMATE AND IRON OXIDE AND TWO FIELD COATS OF PAINT OF A COLOR AND SHADE SELECTED BY THE ENGINEER

REVISIONS		
No	DATE	DESCRIPTION

CONNECTICUT
STATE HIGHWAY DEPARTMENT

BRIDGE No 136-09 Rt 136
OVER SAUGATUCK RIVER
IN THE TOWN OF
WESTPORT
PLANS SHOWING
PROPOSED REPAIRS TO PIERS

DESIGNED BY A.E.
SCALE: ¼"=1'-0"
MADE BY A. Ehrenfels — DATE: 5/14/51
CHECKED BY GAH — DATE: 5/14/51
APPOVED J. O. Drury — DATE: 6/11/51

PROJECT No M.C.-18
Bridge Sheet No 1 of 2

MC-18 FORMERLY 158 58

165 05

2

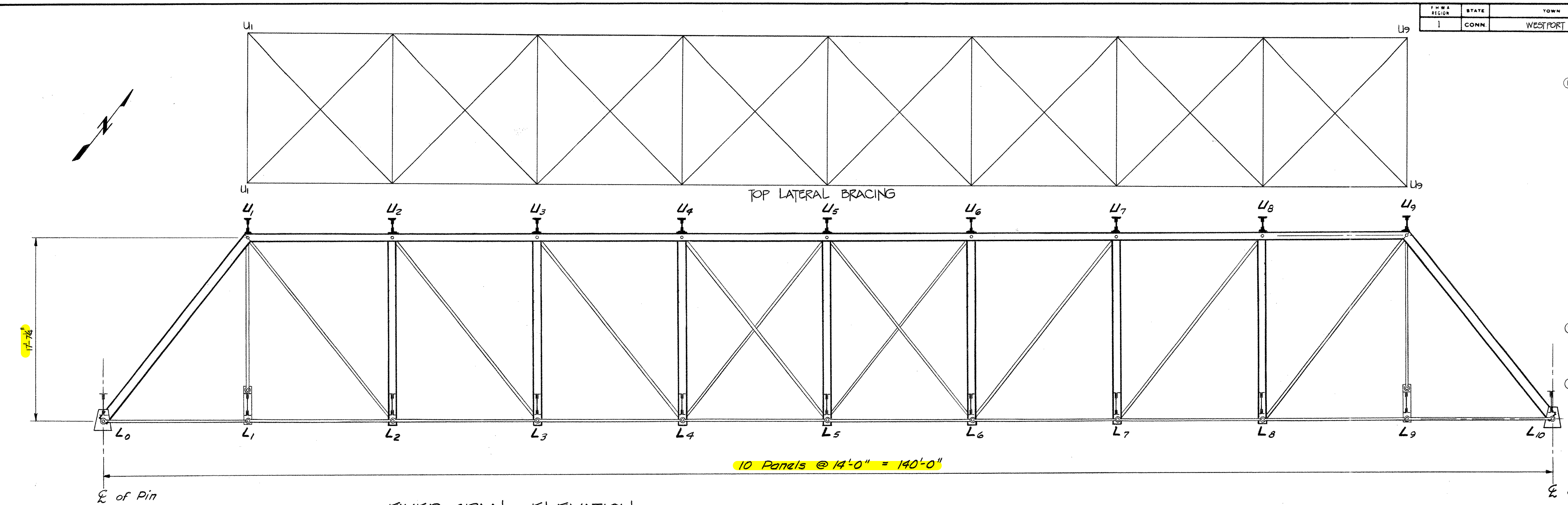
158-150

270-01

33-1

FORM NO ENG 158 ED 4-80

FHWA REGION	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO	TOTAL SHEETS
1	CONN.	WESTPORT	—	158-150	1989	136	34-1	72



PIER 2
(FIXED END)

FIXED SPAN – ELEVATION
SCALE: 3/16" = 1'-0"

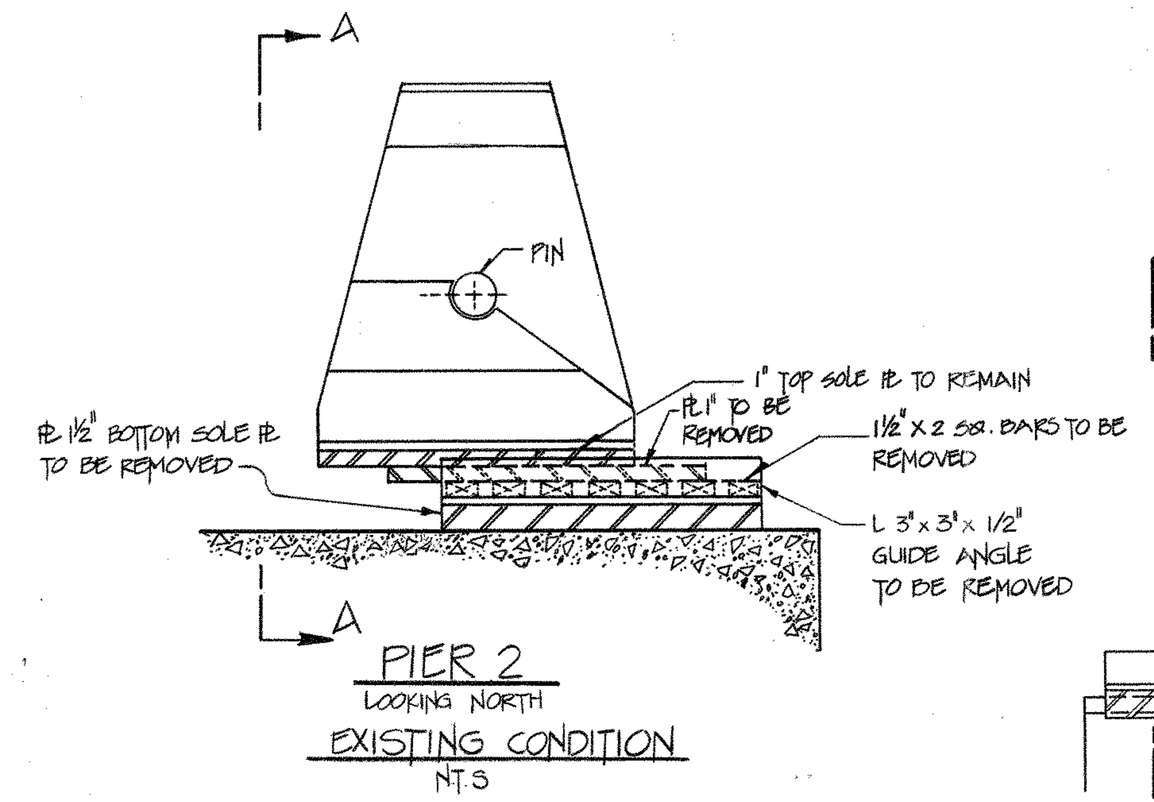
ABUTMENT 2
(EXPANSION END)

NOTES:

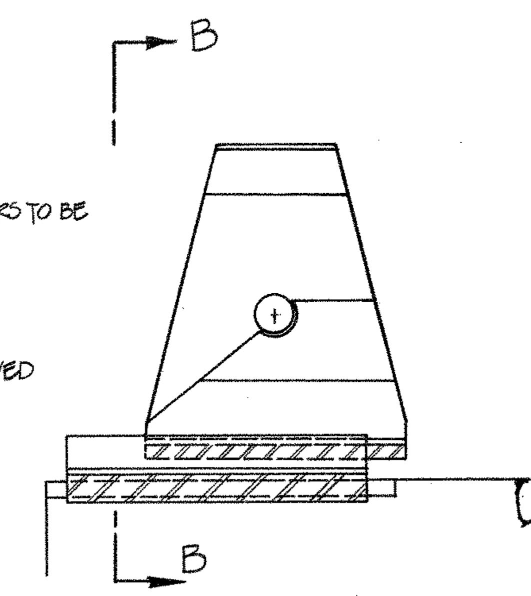
1. DIMENSIONS OF THE EXISTING STRUCTURE SHOWN ON THE PLANS ARE FOR GENERAL REFERENCE ONLY. THEY ARE BASED ON LIMITED FIELD INVESTIGATIONS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL TAKE ALL FIELD MEASUREMENTS NECESSARY TO ASSURE PROPER FIT OF THE FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENTS ARE SUBMITTED FOR APPROVAL, THE FIELD MEASUREMENTS SHALL ALSO BE SUBMITTED FOR REFERENCE BY THE REVIEWER.
2. REPAIR OF EXISTING TRUSS MEMBERS SHALL CONFORM TO THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT № 271 "GUIDE LINES FOR EVALUATION AND REPAIR OF DAMAGED STEEL BRIDGE MEMBERS."
3. THE COST OF WELDED THREADED STUDS FOR TRUSS BEARING REPAIR WILL BE INCLUDED IN THE PAY ITEM "REHABILITATION OF EXISTING TRUSSES".

TRUSS REPAIR

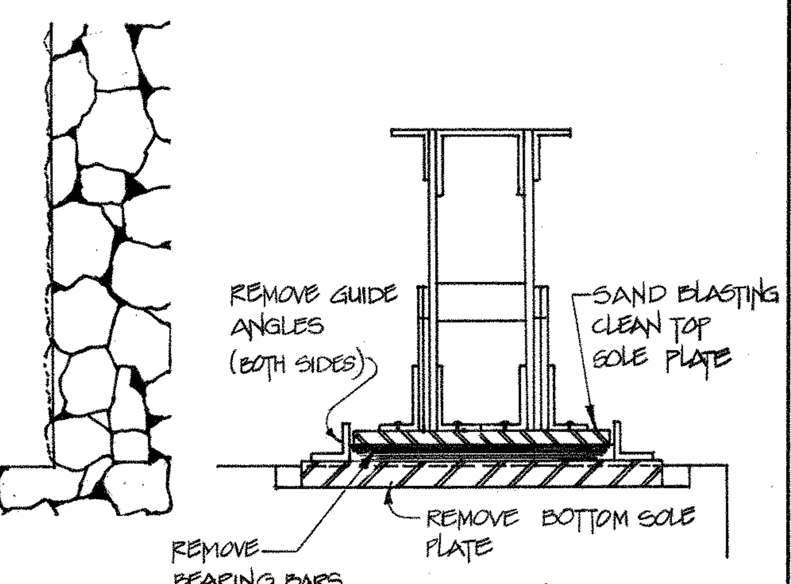
MEMBER	DESCRIPTION	NORTH/SOUTH TRUSS	TYPE OF DAMAGE	REPAIR/REPLACE	REMARKS
U_9U_9	TOP LATERAL	N/A	BENT & TWISTED	REPAIR	SEVERE
U_8U_8	TOP LATERAL		BENT & TWISTED		SEVERE
U_7U_7	TOP LATERAL		BENT		MINOR
U_8U_9	TOP X-BRACING				SEVERE
U_7U_8	TOP X-BRACING				MINOR
L_2U_1	DIAGONAL	NORTH			SEVERE
L_4U_3	DIAGONAL				SEVERE
$L_{10}U_9$	DIAGONAL		LOOSE		MINOR
L_9U_9	VERTICAL		BENT		SEVERE
L_8U_8	VERTICAL				MINOR
L_7U_7	VERTICAL				MINOR
L_3U_3	VERTICAL				SEVERE
L_1U_1	VERTICAL				SEVERE



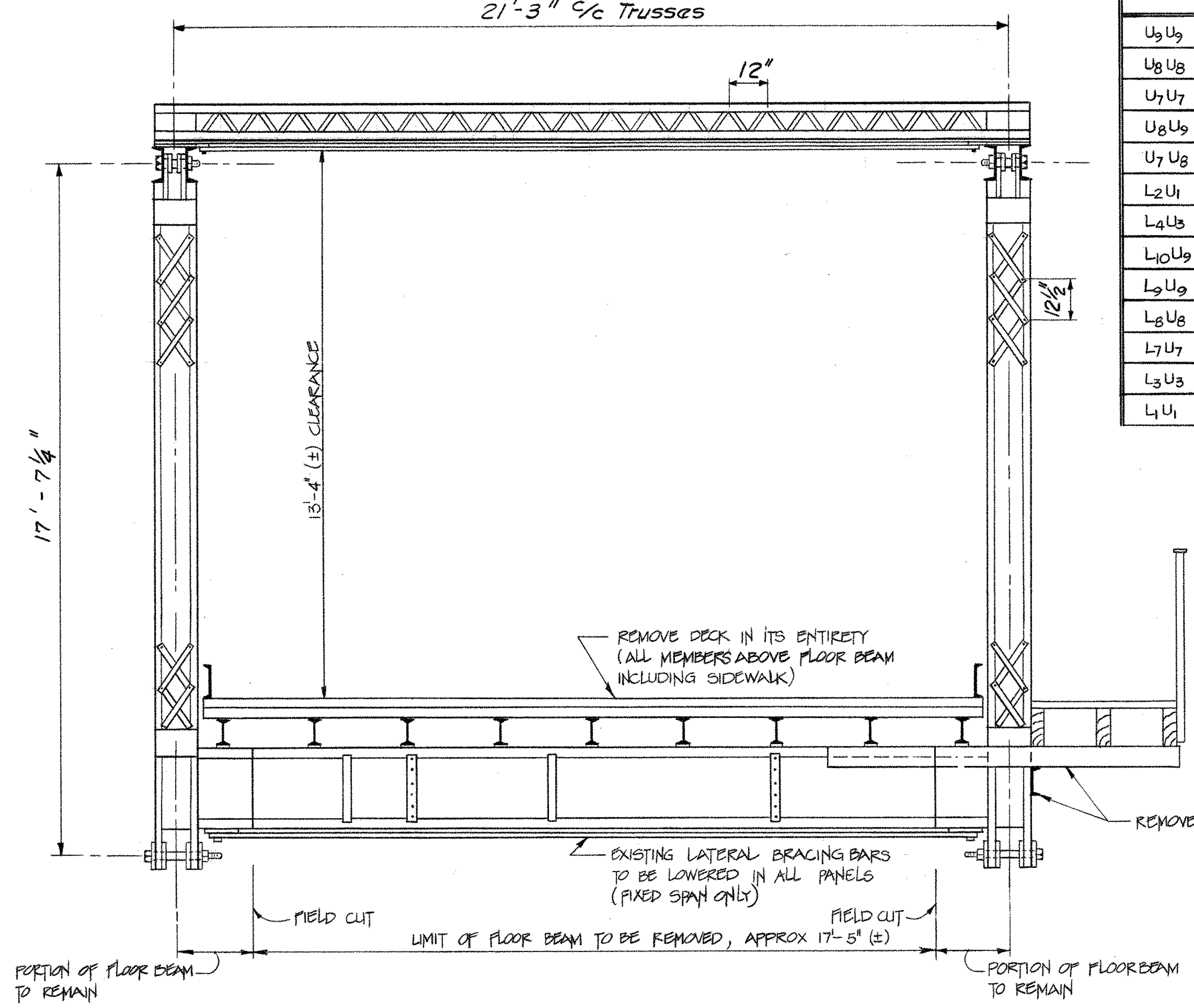
PIER 2
LOOKING NORTH
EXISTING CONDITION
NTS



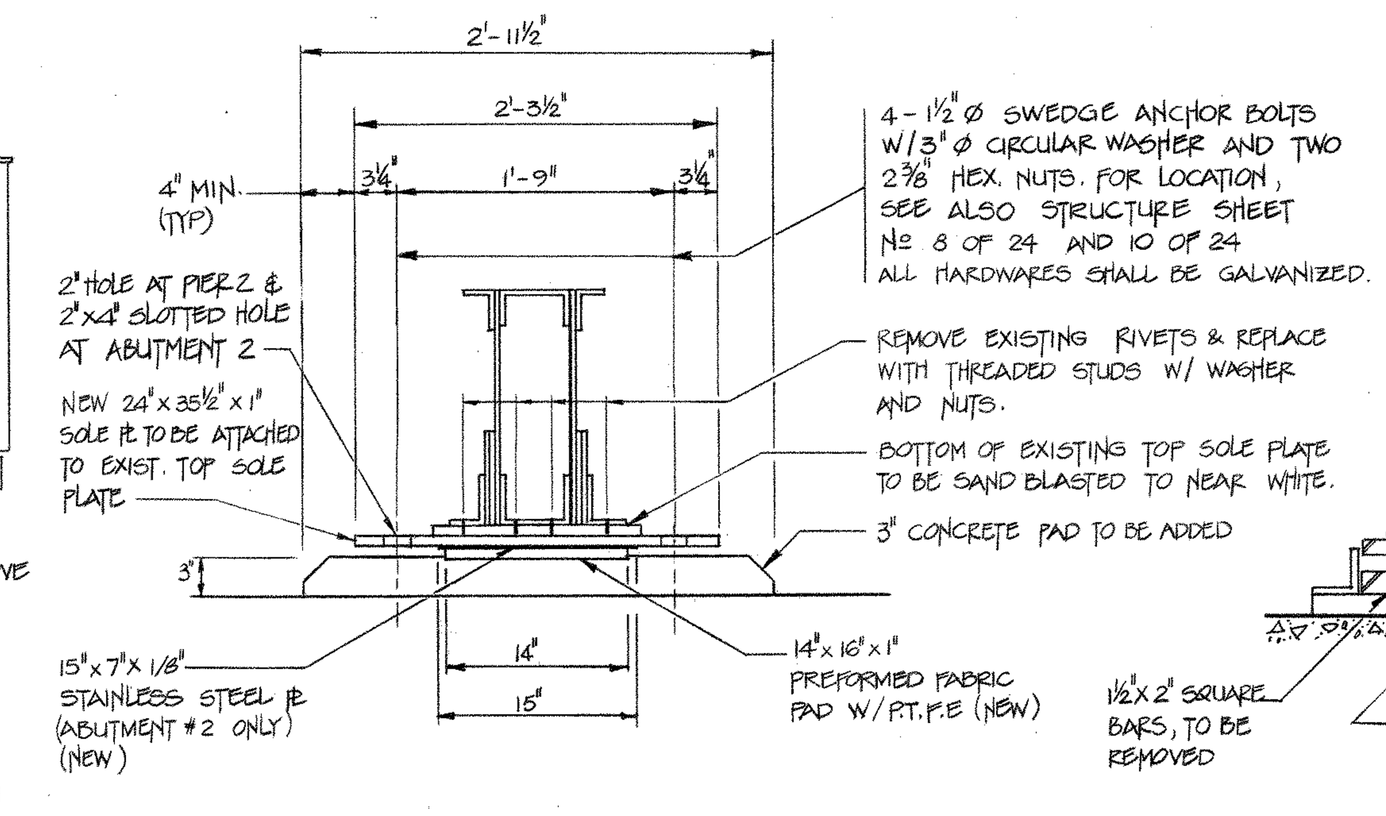
ABUTMENT 2
LOOKING NORTH
EXISTING CONDITION
NTS.



SECTION B-B
(N.T.S)

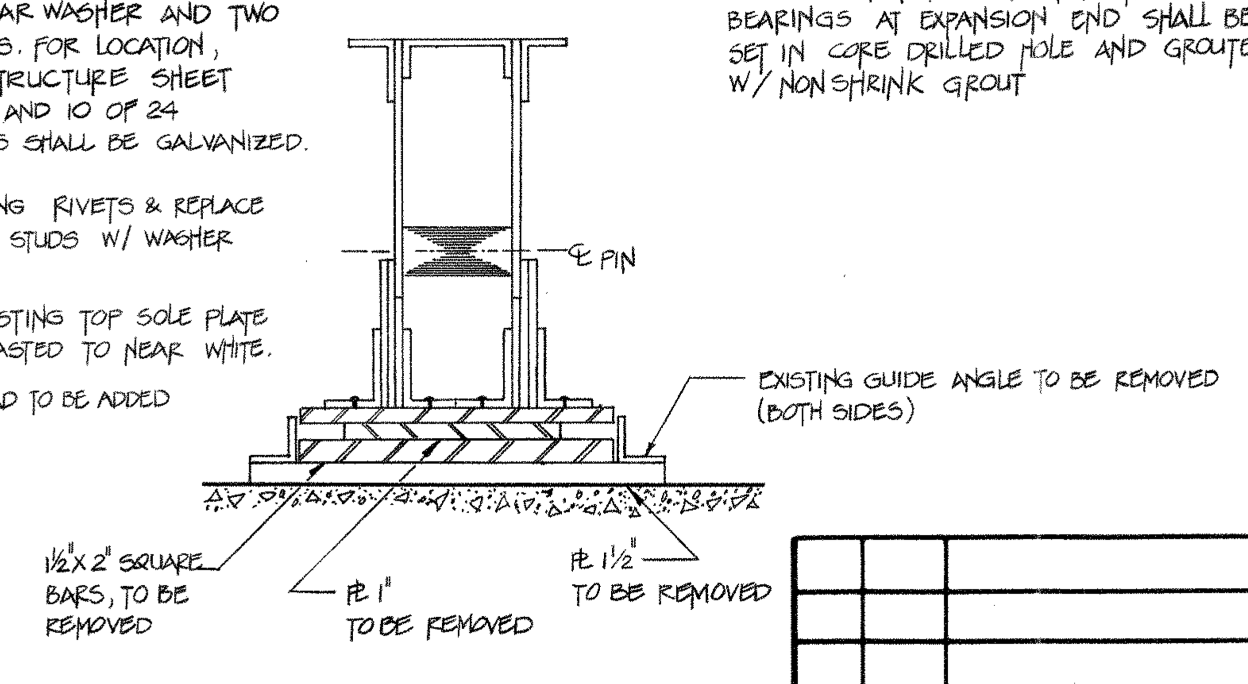


TYPICAL CROSS SECTION
SCALE 3/8" = 1'-0"



TRUSS BEARING REPAIR
FIXED SPAN
(N.T.S.)

NOTE: FOR ANCHOR BOLT INSTALLATION SEE "ANCHOR BOLT INSTALLATION NOTES" ON STRUCT. SHEET № 8 OF 24.



SECTION A-A
(N.T.S.)

NOTE:
SWEDGE ANCHOR BOLTS FOR TRUSS BEARINGS AT EXPANSION END SHALL BE SET IN CORE DRILLED HOLE AND GROUTED W/ NONSHRINK GROUT

NO.	DATE	DESCRIPTION

REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT
BRIDGE REHABILITATION OF
U.S. ROUTE 136
OVER
SAUGATUCK RIVER

FIXED SPAN – EXISTING TRUSS REHABILITATION

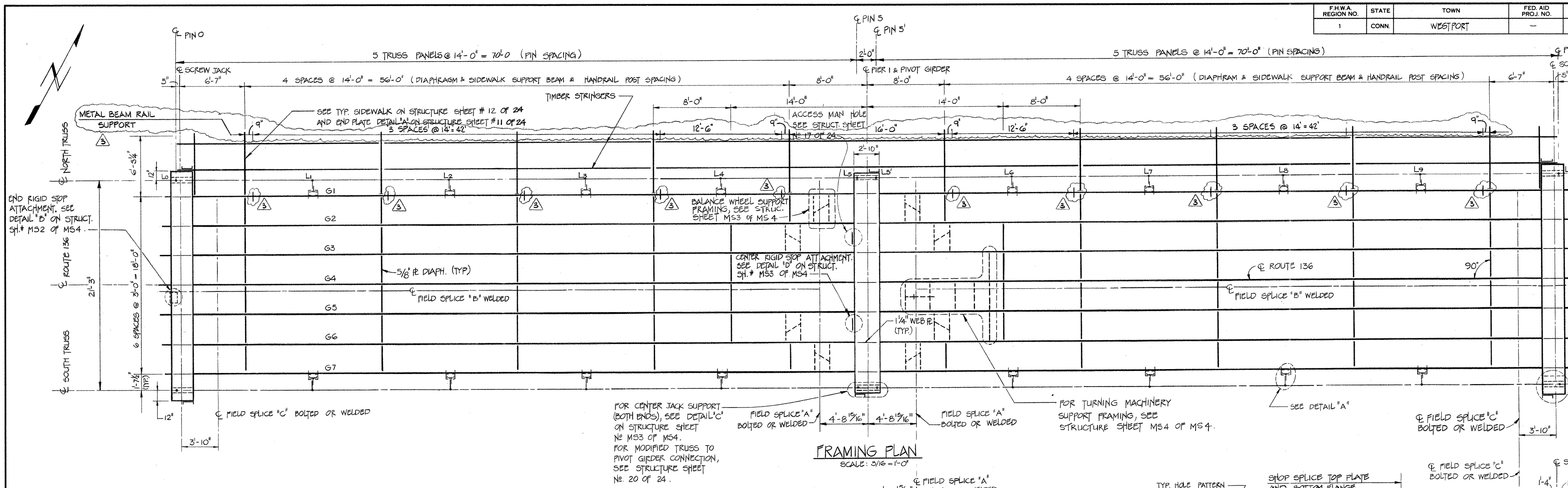
ENGINEER H. W. LOCHNER, INC.
DESIGNER LM
DRAFTER Due Phan Hugh
CHECKER JD
APPROVED Arvo T. Ora
DATE 9-6-89
STRUCTURE NO. 158-150-1
BRIDGE LOC NO 01349
STRUCTURE SHEET NO. 15 of 24

158 — 150

270-01

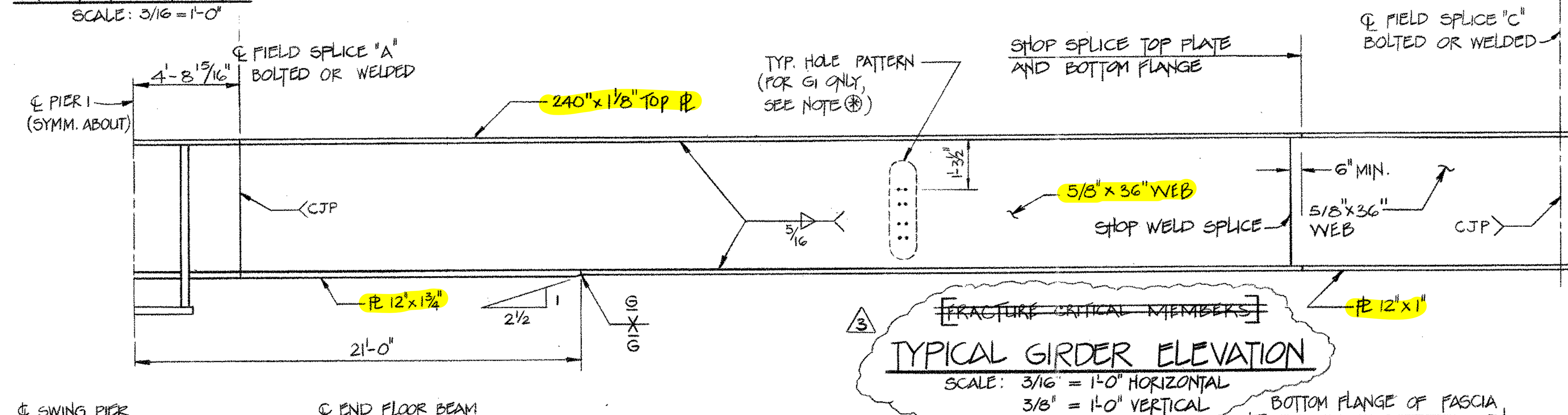
34-1

F.H.W.A. REGION NO.	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT	—	158 - 150	1989	136	35-2	72



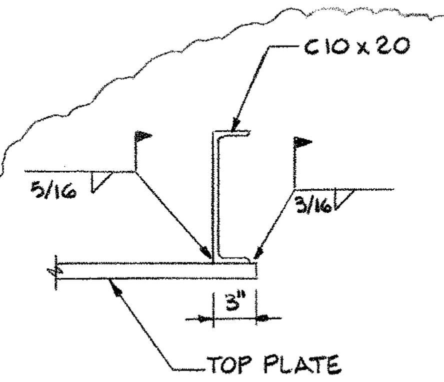
FRAMING PLAN
SCALE: 3/16" = 1'-0"

NOTE
THE CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER FOR MACHINERY SUPPORT FRAMING LOCATION, AND ALSO REFER TO MECHANICAL DRAWINGS FOR BALANCE WHEEL SUPPORT FRAMING AND EXACT LOCATION.



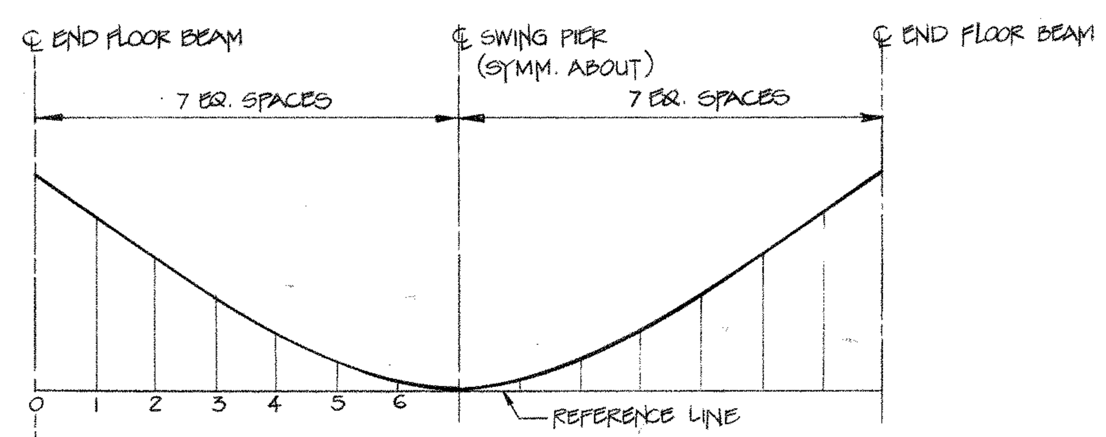
TYPICAL GIRDER ELEVATION
SCALE: 3/16" = 1'-0" HORIZONTAL; 3/8" = 1'-0" VERTICAL

NOTE ⊛
FOR SIDEWALK SUPPORT BEAM END CONNECTION PLATE AND BOLT HOLES, SEE END PLATE DETAIL "A" ON STRUCTURE SHEET № 11 OF 24



CURBING ATTACHMENT
SCALE: 1" = 1'-0"

SWING SPAN CURBING NOTES:
1. C10 x 20 CURB SHALL HAVE 1/8" OPEN JOINT AT SPLICES A & C, AND TWO OPEN JOINTS BETWEEN ADJACENT SPLICE A AND SPLICE C.
2. COPE BOTTOM FLANGE OF C10 x 20 TO CLEAR SPLICE PLATE.



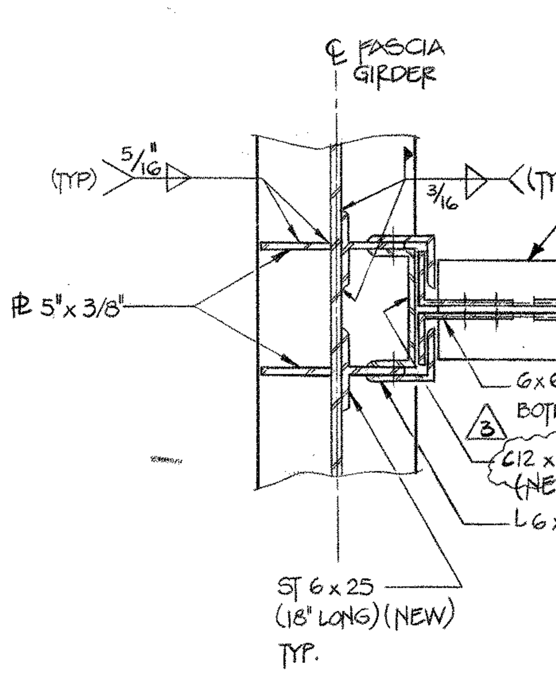
TYPICAL TOTAL CAMBER DIAGRAM

DEAD LOAD DEFLECTION AND CAMBER (FEET)					
	PT	STRUCTURAL STEEL	OTHER DEAD LOAD	TOTAL DEAD LOAD	TOTAL CAMBER
GIRDER (G1 TO G7)	0	0.222	0.014	0.236	0.236
	1	0.179	0.012	0.191	0.191
	2	0.137	0.009	0.146	0.146
	3	0.096	0.007	0.103	0.103
	4	0.059	0.005	0.064	0.064
	5	0.029	0.003	0.032	0.032
	6	0.009	0.001	0.010	0.010

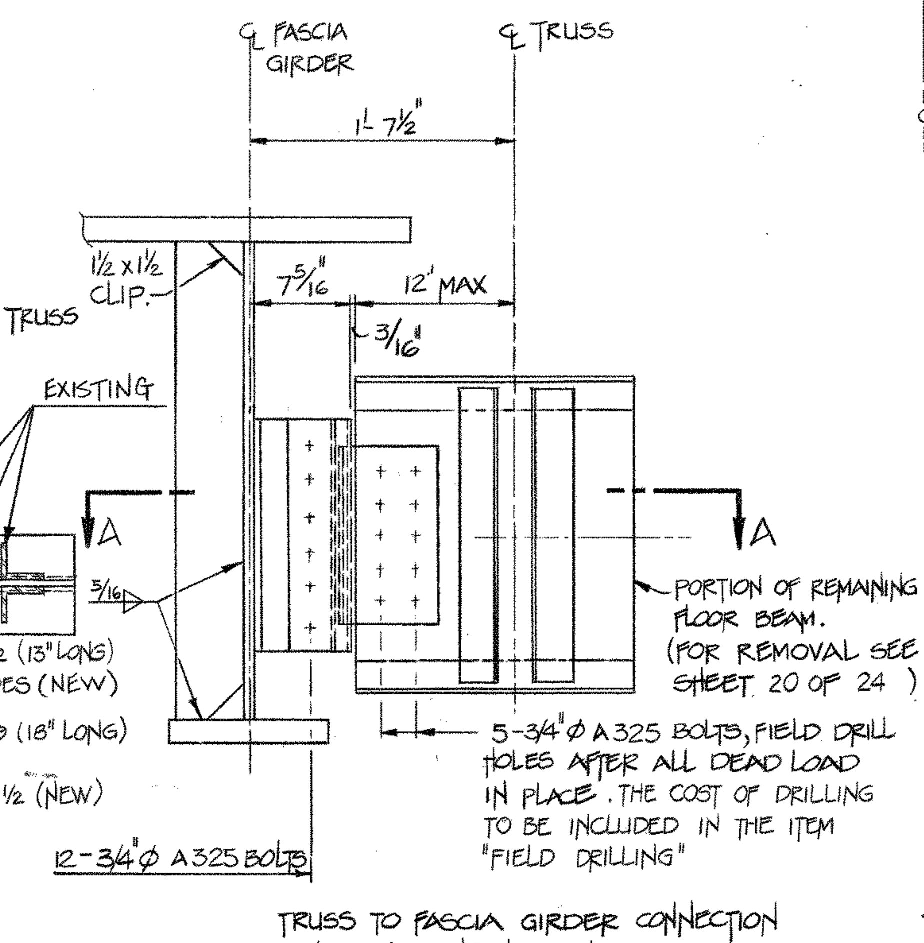
(SYMMETRICAL ABOUT CENTER LINE OF PIER 1)

METAL BEAM RAIL NOTE

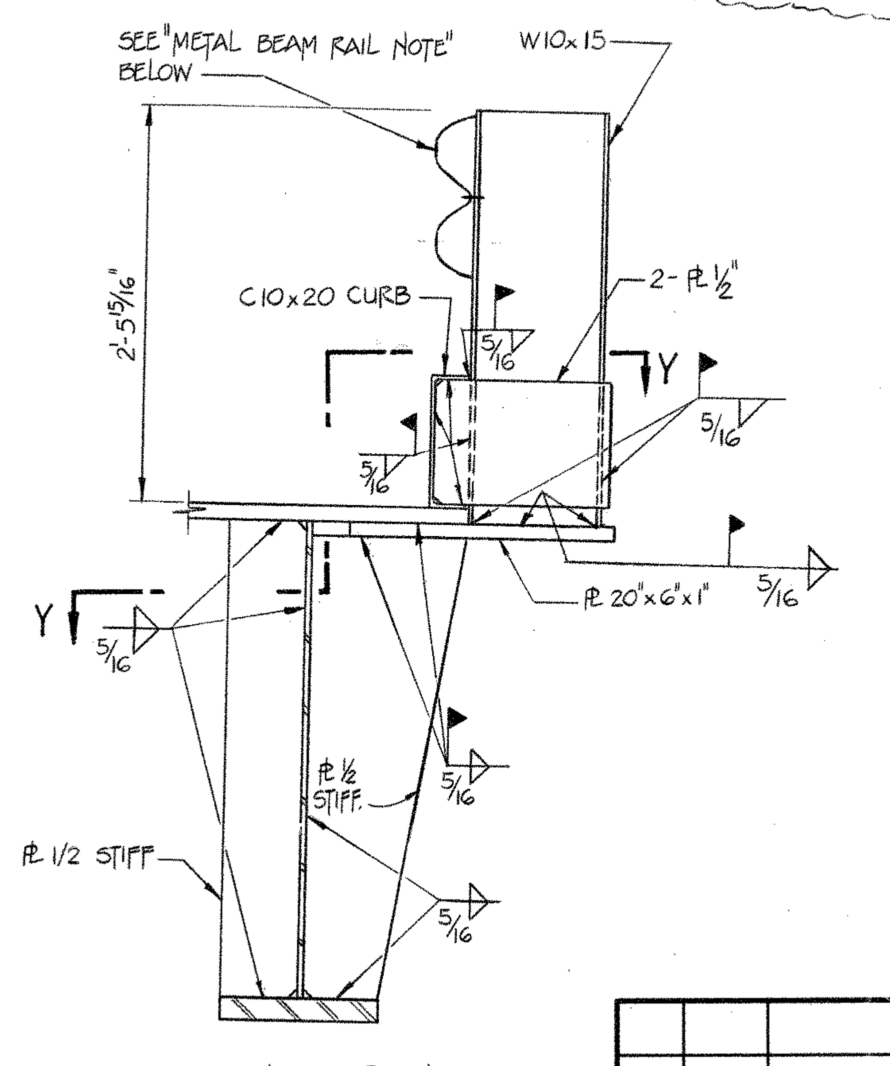
METAL BEAM RAIL SHALL BE MOUNTED TO THE POST IN ACCORDANCE WITH DETAIL "C", DETAIL "F", DETAIL "H", DETAIL "I", AND DETAIL "J" AS SHOWN ON THE CDOT STANDARD DRAWING NUMBER 220-F, METAL BEAM RAIL (TYPE R-I).



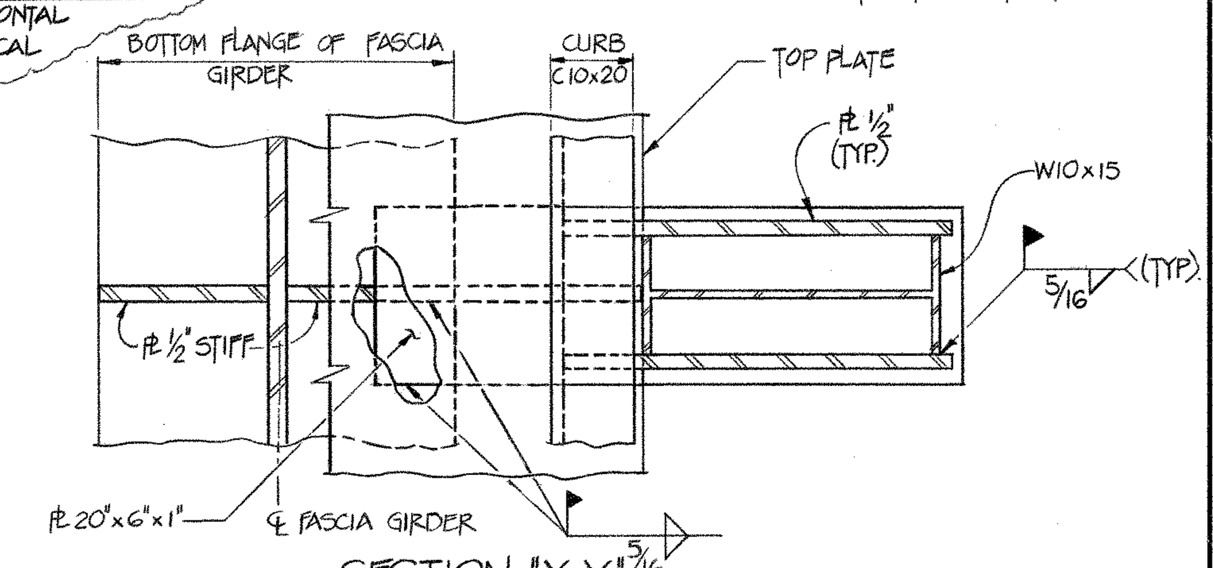
SECTION "A-A"
SCALE: 1" = 1'-0"



DETAIL "A" - ELEVATION
SCALE: 1" = 1'-0"



SWING SPAN METAL BEAM RAIL SUPPORT
SCALE: 1" = 1'-0"
(FOR LOCATION SEE STRUCT. SHEET № 19 OF 24)



SECTION "Y-Y"
N.T.S.

NO.	DATE	DESCRIPTION
3	6/5/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

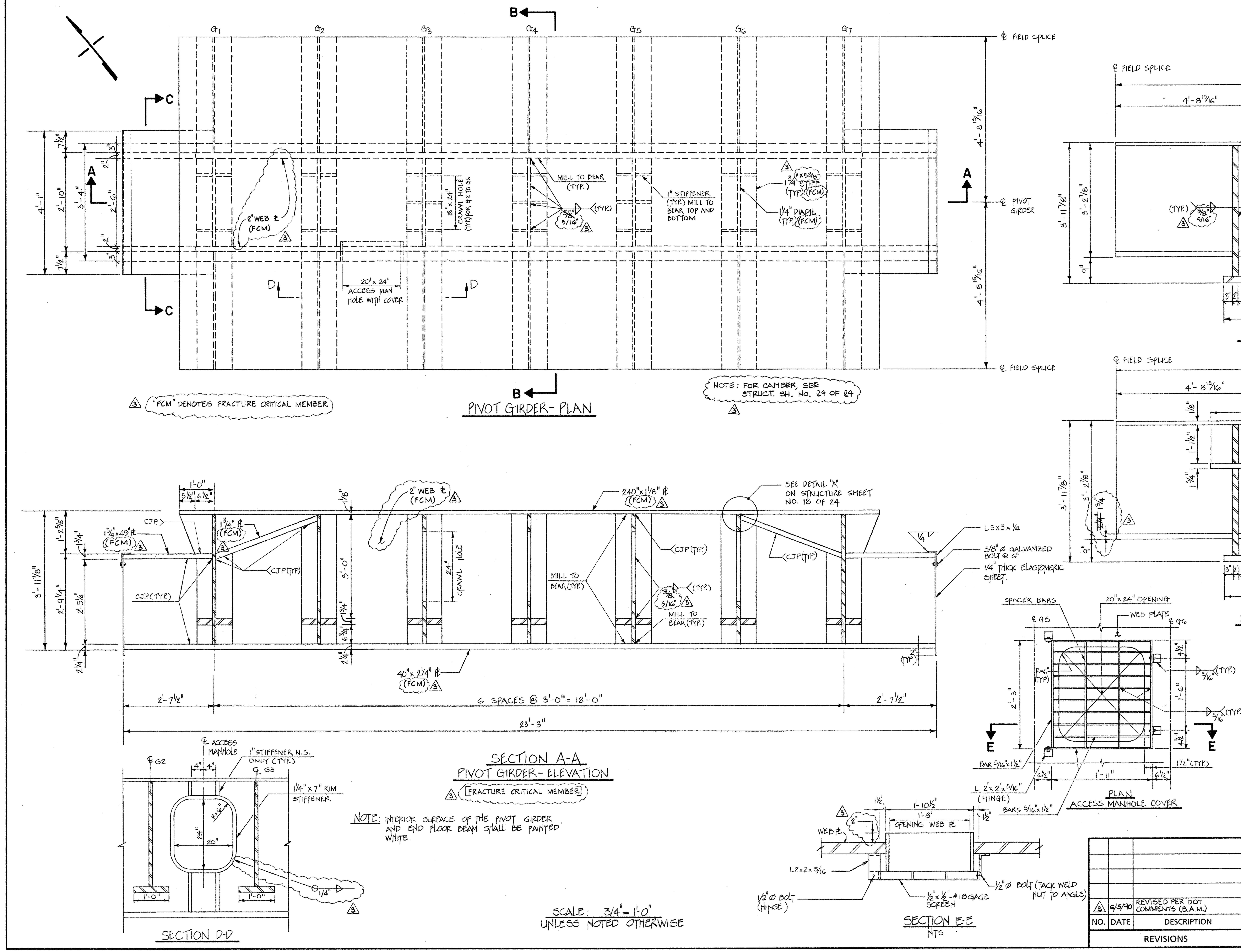
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
WESTPORT
BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER
SWING SPAN—FRAMING PLAN AND DETAILS I

ENGINEER H.W. LOCHNER, INC.
DESIGNER LM | DRAFTER Duc Phan Huynh | CHECKER TO
APPROVED Cuo T. Ora | DATE 9-6-89
STRUCTURE NO. 158-150-1 | BRIDGE LOG NO. 01349 | STRUCTURE SHEET NO. 16 OF 24

STATE OF CONNECTICUT - DEPT. OF TRANSPORTATION

FORM NO. ENG. 158 ED 3-86

F.H.W.A. REGION NO.	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT	—	158-150	1989	136	36-1	72



NO.	DATE	DESCRIPTION
3	9/3/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION

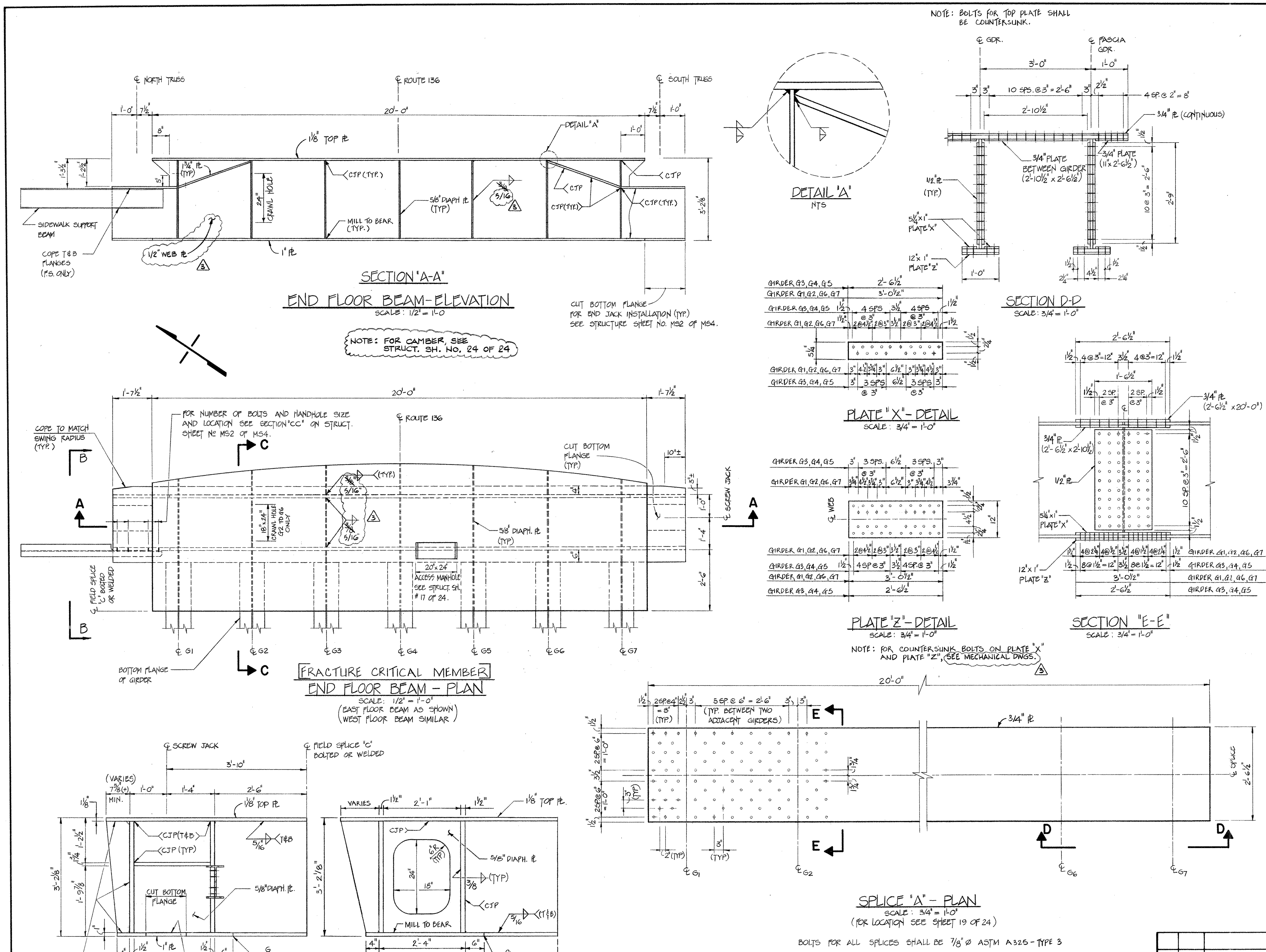
WESTPORT

BRIDGE REHABILITATION OF
U.S. ROUTE 136
OVER
SAUGATUCK RIVER

SWING SPAN - PIVOT GIRDER & DETAILS

ENGINEER H.W. LOCHNER, INC.
DESIGNER LM | DRAFTER RAH./DPH. | CHECKER JD
APPROVED | DATE 9-6-89
STRUCTURE NO. 158-150-1 | BRIDGE LOG NO. 01349 | STRUCTURE SHEET NO. 17 of 24

158-150　　270-01　　36-1



NOTE:
ALL COMPONENTS OF END FLOOR BEAM ARE FRACTURE CRITICAL MEMBER.

~~THE~~ INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ~~ON THESE~~ SHEETS IS BASED ~~ON LIMITED~~ INVESTIGATIONS BY THE STATE ~~AND IS IN NO~~ WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH ~~WILL BE REQUIRED~~.

STATE OF CONNECTICUT - DEPT. OF TRANSPORTATION

FORM NO ENG 15A ED 4-80

F H W A REGION	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WEST PORT	—	158-150	1989	136	37-1	72

STRUCTURAL STEEL NOTES

1. STRUCTURAL STEEL (LOW ALLOY) SHALL CONFORM TO ASTM A588 (PAINTED)
2. WELDING DETAILS, PROCEDURES AND TESTING METHODS SHALL CONFORM TO THE AWS D1.5-(88) AS ~~MODIFIED BY THE AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, UNLESS OTHERWISE NOTED ON THE PLANS.~~ (3)
3. WELD FIELD SPLICES, OTHER THAN THOSE INDICATED ON THE PLANS, WILL NOT BE ALLOWED EXCEPT WITH THE WRITTEN PERMISSION OF THE ENGINEER PRIOR TO THE SUBMISSION OF SHOP PLANS. IF ALLOWED, THESE SPLICES SHALL BE DESIGNED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. THE COST OF THESE SPLICES, INCLUDING THE COST OF DESIGN AND THE NONDESTRUCTIVE TESTING OF THEIR WELDS, AS DETERMINED BY THE ENGINEER, SHALL BE AT NO EXTRA EXPENSE TO THE STATE.
4. ALL SHOP GROOVE WELDS IN THE WEB AND FLANGES SHALL BE COMPLETELY INSPECTED BY RADIOGRAPHIC OR ULTRASONIC TESTING AND FINISHED SMOOTH AND FLUSH WITH THE BASE METAL ON ALL SURFACES BY GRINDING IN THE DIRECTION OF APPLIED STRESS LEAVING THE SURFACES FREE FROM DEPRESSIONS. CHIPPING MAY BE USED PROVIDED IT IS FOLLOWED BY SUCH GRINDING. (THE GRINDING SHALL NOT REDUCE THE THICKNESS OF THE BASE METAL BY MORE THAN 1/32 OF AN INCH OR (5%) OF THE THICKNESS WHICHEVER IS SMALLER.
5. ALL WEB TO FLANGE AND WEB TO BEARING STIFFENER FILLET WELDS SHOULD BE INSPECTED BY THE MAGNETIC PARTICLE METHOD. AT LEAST ONE (1) FOOT OF EVERY TEN (10) FOOT LENGTH OF FILLET WELD AND ONE (1) FOOT OF EACH FILLET WELD LESS THAN TEN (10) FEET IN LENGTH SHALL BE TESTED. IF UNACCEPTABLE DISCONTINUITIES ARE FOUND IN ANY TEST LENGTH OF WELD, THE FULL LENGTH OF THE WELD, OR FIVE (5) FEET ON EITHER SIDE OF THE TEST LENGTH, WHICHEVER IS LESS, SHALL BE TESTED.
6. MULTIPLE PASS WELDS, INSPECTED BY THE MAGNETIC PARTICLE METHOD SHALL HAVE EACH PASS OR LAYER INSPECTED AND ACCEPTED BEFORE PROCEEDING TO THE NEXT PASS OR LAYER, AS DETERMINED BY THE ENGINEER.
7. SHOP WEB SPLICES SHALL BE LOCATED WITHIN THE MIDDLE THIRD OF SPAN.
8. SHOP FLANGE SPLICES SHALL BE LOCATED A MINIMUM OF SIX (6) INCHES FROM WEB SPLICES.
9. STIFFENERS AND CONNECTION PLATES SHALL BE LOCATED A MINIMUM OF SIX (6) INCHES FROM FLANGE OR WEB SPLICES.
10. BEARING STIFFENERS AND THE ENDS OF GIRDERS OR BEAMS SHALL BE VERTICAL AFTER THE APPLICATION OF FULL DEAD LOADS.- FIXED SPAN ONLY.
11. THE STRUCTURAL STEEL FABRICATORS SHALL BE CERTIFIED UNDER THE AISC CONTROL PROGRAM, ~~CATEGORY III - MAJOR STEEL BRIDGES~~.
12. FLANGE AND WEB PLATES & OTHER COMPONENTS (3) ~~DENOTED~~ AS FRACTURE CRITICAL MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "GUIDE SPECIFICATIONS FOR FRACTURE CRITICAL NON-REDUNDANT STEEL BRIDGE MEMBERS (AASTHO-1978)," INCLUDING THE LASTEST INTERIM SPECIFICATIONS.
13. THE CONTRACTOR SHALL TAKE THE PROPER PRECAUTIONS TO INSURE THE STABILITY OF ALL STRUCTURAL ELEMENTS UNTIL THE TOTAL STRUCTURE IS IN BEING.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ANY ADDITIONAL TEMPORARY BRACING REQUIRED TO MAINTAIN THE GEOMETRY OF THE INDIVIDUAL GIRDERS, AS WELL AS THE TOTAL STEEL STRUCTURE, THROUGHOUT ALL PHASES OF CONSTRUCTION INCLUDING PLACEMENT OF THE CONCRETE DECK.
15. CONNECTION BOLTS SHALL CONFORM TO ASTM A325 - TYPE 3 UNLESS INDICATED OTHERWISE.
16. (3) IF BACK-UP BARS ARE USED, THEY MUST BE REMOVED AND THE JOINTS SHALL BE GROUND FLUSH.

NO.	DATE	DESCRIPTION
3	6/5/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

BRIDGE REHABILITATION OF
U.S. ROUTE 136
OVER
SAUGATUCK RIVER

SWING SPAN- FRAMING PLAN & DETAILS II

ENGINEER	H.W. LOCHNER, INC.		
DESIGNER	LM	DRAFTER DPH	CHECKER JD
APPROVED	[illegible]		DATE 9-6-89
STRUCTURE NO. 158-150-1		BRIDGE LOG NO. 01349	STRUCTURE SHEET NO. 18 of 24

JOSEPH MERRITT & CO.

158-150

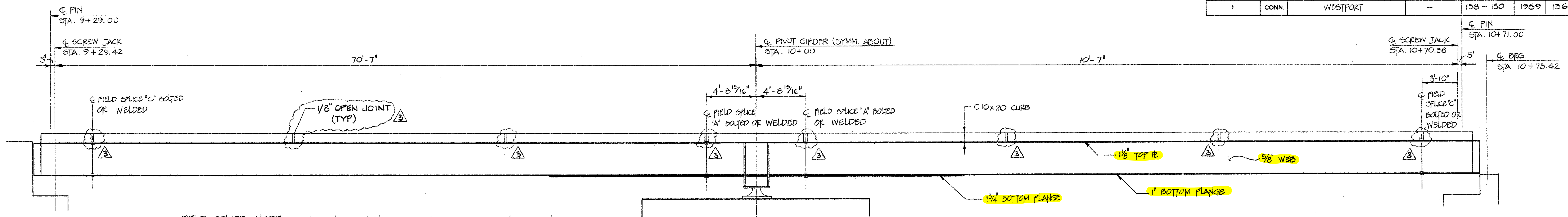
270-01

37-1

STATE OF CONNECTICUT - DEPT. OF TRANSPORTATION

FORM NO. ENG. 158 ED 3-86

F.H.W.A. REGION NO.	STATE	TOWN	FED. AID PROJ. NO.	PROJ. NO.	YEAR	ROUTE NO.	SHEET NO.	TOTAL SHEETS
1	CONN.	WESTPORT	–	158 – 150	1989	136	38-1	72



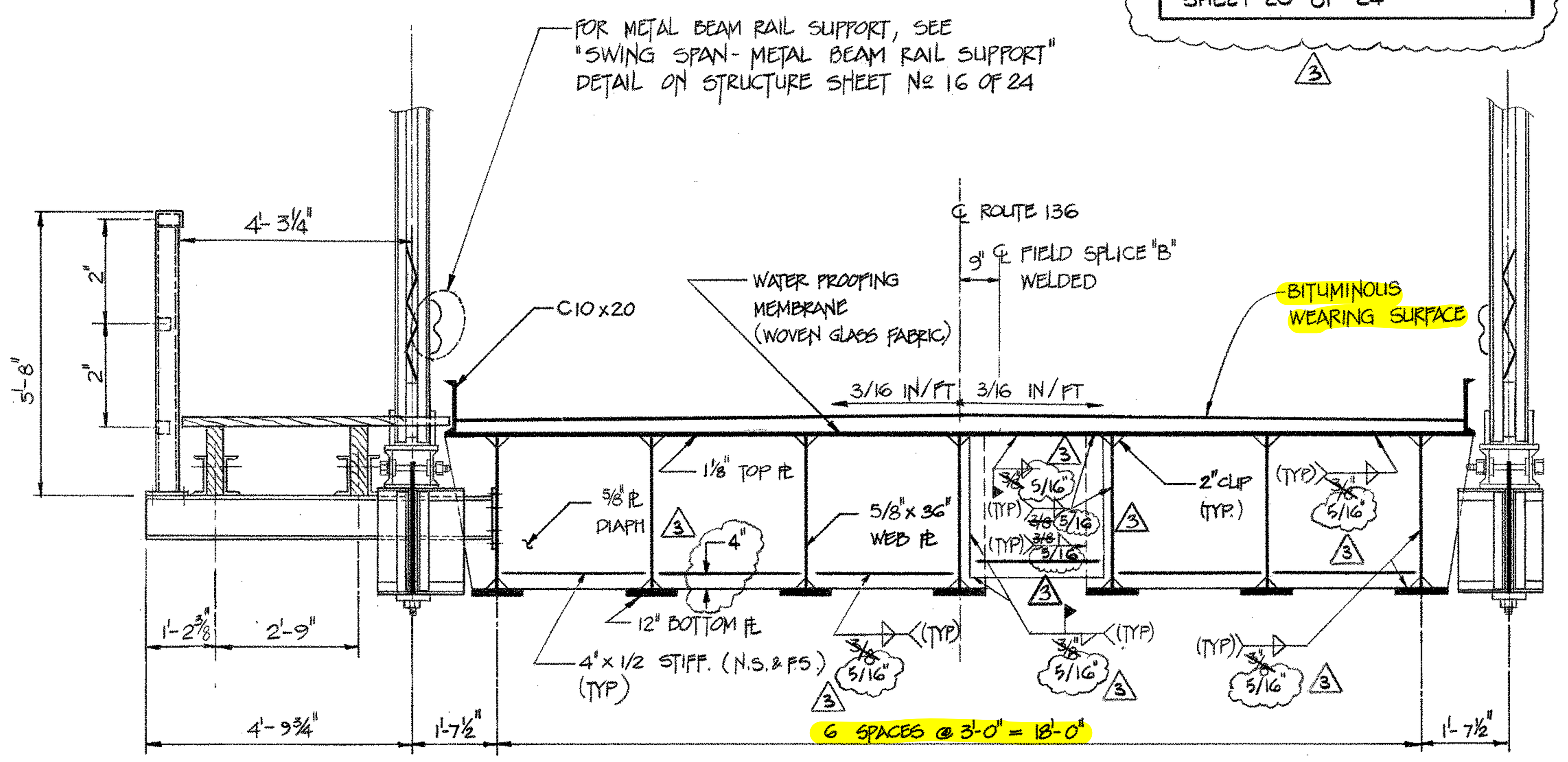
ELEVATION – SWING SPAN

SCALE: 3/16" = 1'-0"

PROPOSED DECK PLAN – SWING SPAN

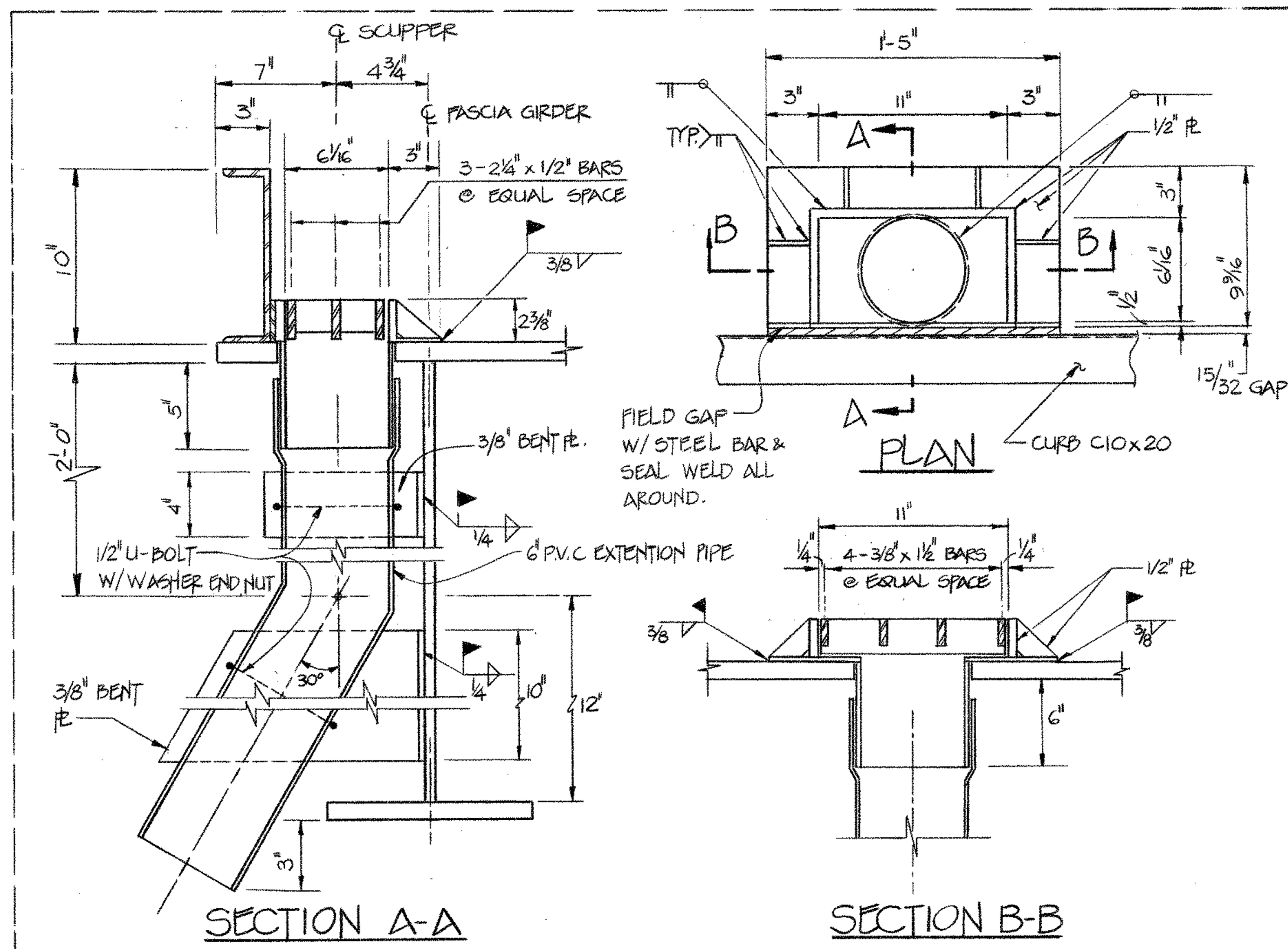
SCALE: 3/16" = 1'-0"

FOR TYPICAL DRAIN DETAIL FOR SWING SPAN SEE SHEET 20 OF 24



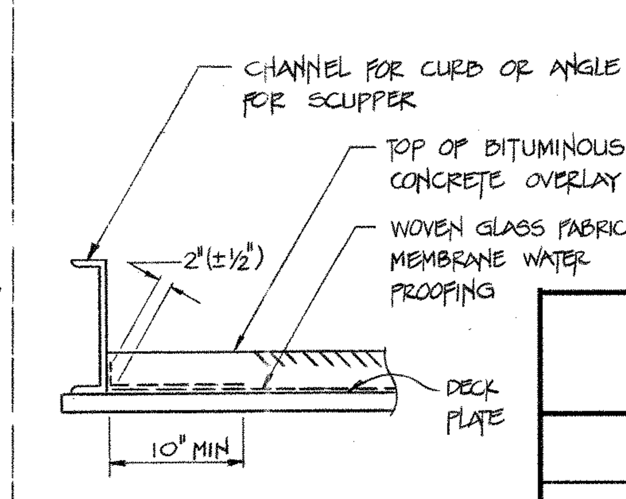
PROP. CROSS SECTION – SWING SPAN

SCALE: 3/8" = 1'-0"

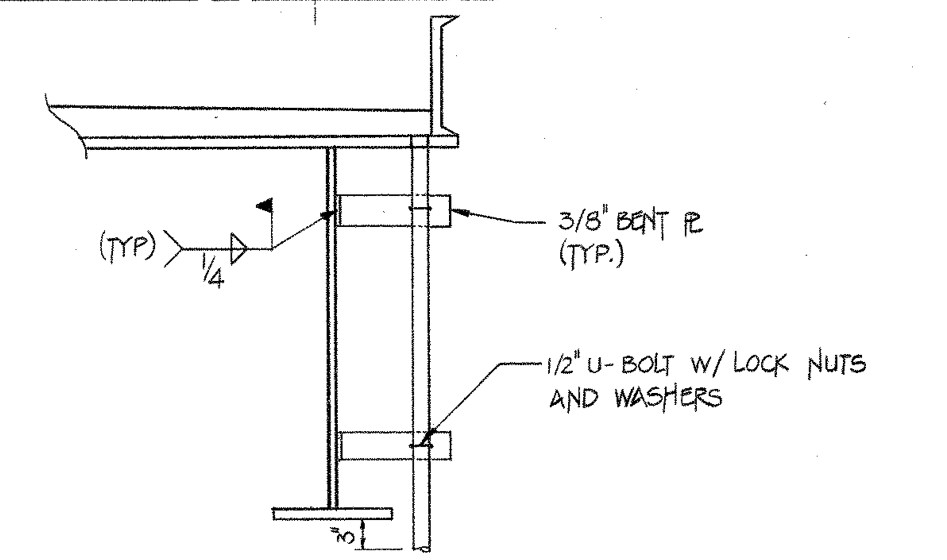


SWING SPAN SCUPPER

SCALE: 1 1/2" = 1'-0"



TREATMENT OF MEMBRANE WATER PROOFING FOR SWING SPAN (N.T.S.)



DECK DRAIN BRACING (NTS)

NO.	DATE	DESCRIPTION
3	6/5/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

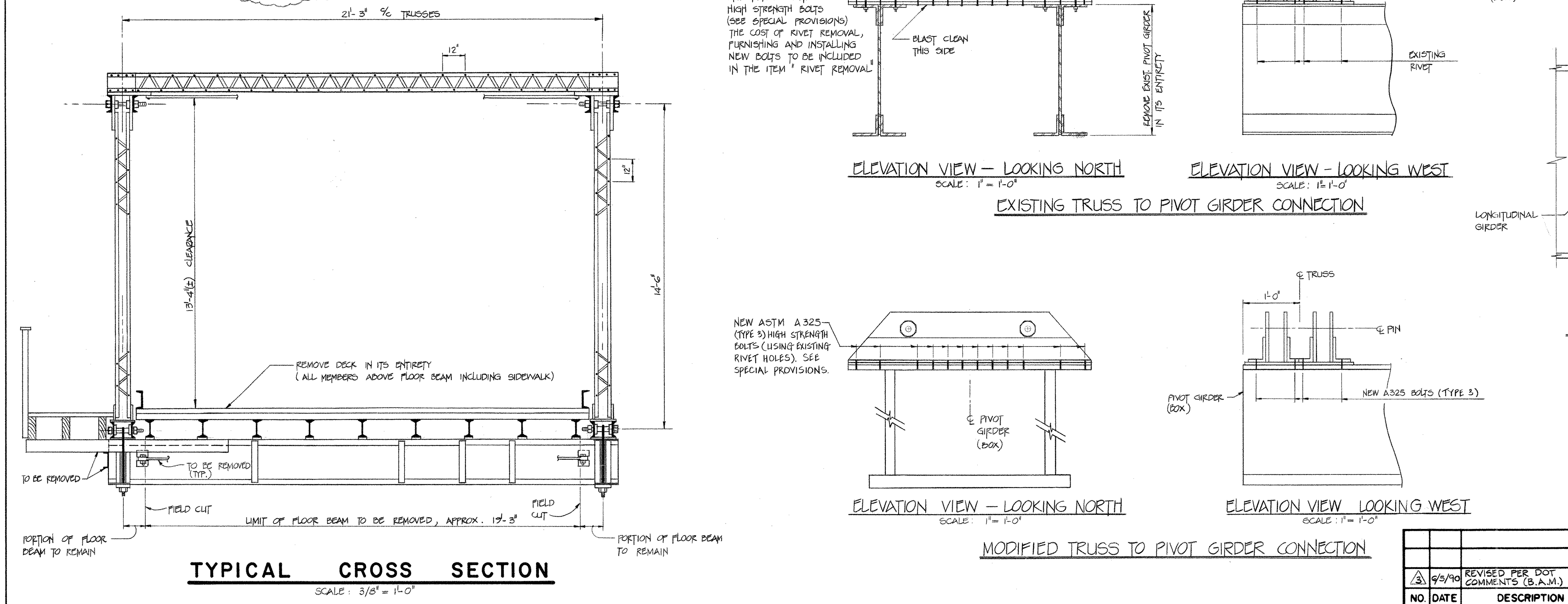
SWING SPAN DECK PLAN & DETAILS

ENGINEER	H.W. LOCHNER, INC.		
DESIGNER	LM	DRAFTER	CHECKER JD
APPROVED		DATE 9-6-89	
STRUCTURE NO.	158-150-1	BRIDGE LOG NO. 01349	STRUCTURE SHEET NO. 19 of 24

158-150 270-01 38-1

FORM NO. ENG. 158 ED 4-80

FHWA REGION	STATE	TOWN	FED AID PROJ. NO	PROJ. NO	YEAR	ROUTE NO	SHEET NO	TOTAL SHEETS
1	CONN	WESTPORT	—	158-150	1989	136	39-2	72



NO.	DATE	DESCRIPTION
3	6/5/90	REVISED PER DOT COMMENTS (B.A.M.)

REVISIONS

CONNECTICUT
DEPARTMENT OF TRANSPORTATION

WESTPORT

BRIDGE REHABILITATION OF U.S. ROUTE 136 OVER SAUGATUCK RIVER

SWING SPAN - EXISTING TRUSS REHABILITATION

ENGINEER H. W. LOCHNER, INC.
DESIGNER LM | DRAFTER Duc Phan Huynh | CHECKER JD
APPROVED [signature] | DATE 9-6-89
STRUCTURE NO. 158-150-1 | BRIDGE LOC NO 01349 | STRUCTURE SHEET NO 20 of 24