City of Puyallup
Building
REVIEWED
FOR
COMPLIANCE
BSnowden
01/22/2025
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Calculations required to be provided by the Permittee on site for all Inspections

PRCTI20250032

Structural Calculations

PREPARED FOR:

Welcome Ramp Systems Inc.
3902 B St Ste B, Auburn, WA 98001

PROJECT:

Centeris Puyallup
Exterior Stairs
2241016.20

PREPARED BY:

Andrew McEachern, P.E., S.E.
Principal

DATE:

December 2024

Structural Calculations

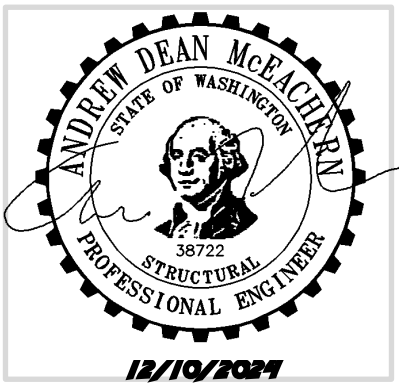
For

Welcome Ramp Systems

Centeris Exterior Stairs

Project # 2241015.20

Project Principal	Drew McEachern, PE, SE
Project Manager	Andy Pflueger, PE, SE



Design Criteria

Design Codes and Standards

Codes and Standards: Structural design and construction shall be in accordance with the applicable sections of the following codes and standards: International Building Code, 2021 Edition.

Structural Design Criteria:

Live Load Criteria (IBC):

1607.9 Loads on handrails, guards, grab bars and sets.

Handrails and guards shall be designed to resist a linear load of 50 pounds per linear foot (plf) in accordance with Section 4.5.1.1 of ASCE 7.

Exception: (1) For one- and two-family dwellings, only the single concentrated load required by Section 1607.8.1.1 shall be applied.

1607.9.1.1 Concentrated Load

Handrails and guards shall be designed to resist a concentrated load of 200 pounds in accordance with Section 4.5.1 of ASCE 7

1607.9.1.2 Guard Component Loads

Balusters, panel fillers and guard infill components, including all rails except the handrail and the top rail, shall be designed to resist a concentrated load of 50 pounds in accordance with Section 4.5.1.2 of ASCE 7.

Live Load Criteria (ASCE 7):

4.5.1 Handrail and Guardrail Systems.

Handrail and guardrail systems shall be designed to resist a single concentrated load of 200 lb applied in any direction at any point on the handrail or top rail to produce the maximum load effect on the element being considered and to transfer this load through the supports to the structure.

4.5.1.1 Uniform Load.

Handrail and guardrail systems shall also be designed to resist a load of 50 lb/ft (pound-force per linear foot) applied in any direction along the handrail or top rail and to transfer this load through the supports to the structure. This load need not be assumed to act concurrently with the concentrated load specified in Section 4.5.1.

EXCEPTIONS: The uniform load need not be considered for the following occupancies: 1. One- and two-family dwellings…

4.5.1.2 Guardrail System Component Loads.

Balusters, panel fillers, and guardrail infill components, including all rails except the handrail and the top rail, shall be designed to resist a horizontally applied normal load of 50 lb on an area not to exceed 12 in. by 12 in., including openings and space between rails and located so as to produce the maximum load effects. Reactions due to this

loading are not required to be superimposed with the loads specified in Sections 4.5.1 and 4.5.1.1.

Wind Load Criteria:

Ultimate Wind Speed	104 mph
Risk Category	III
Wind Exposure	B
Topographic Factor	1.0

Seismic Criteria:

Risk Category			III
Seismic Importance Factor			1.25
S_s	= 1.258	S_1	= 0.434
S_{ds}	= 1.006	S_{d1}	= N/A
Site Class			= D - default
Seismic Design Category			= D

Component Amplification Factor (a_p): = 1

Component Response Modification Factor (R_p): = 2 ½

Soil Criteria:

Allowable Soil Bearing Capacity: 1,500 psf unless verified by geotechnical report or building official.

Materials Specifications:

The 1 ½" aluminum handrail shall be ASTM 6063-T5 with a yield stress of 16 ksi. All other aluminum parts shall be ASTM 6061-T6 aluminum with a yield stress of 35 ksi. Density of aluminum used shall be 170 lbs. per cubic foot.

Connections:

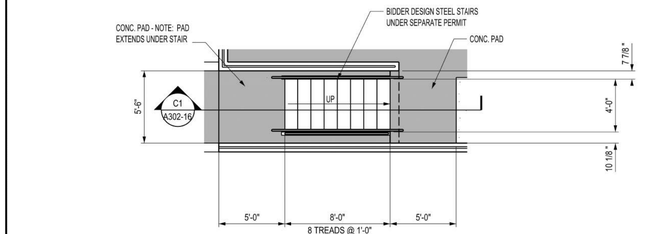
All bolts shall be grade 5 zinc plated, unless otherwise specified. Locking washers must be provided under all nuts and anchor bolts unless otherwise specified. All tech screws shall be zinc plated #10 x 1 ¼", self-tapping. All welding shall be in accordance with AWS D1.2 code and sized as shown on drawings. Sleeves shall be designed to resist moment and shear of sleeved connection.

Project Description:

This structural scope of work for this project involves the design of exterior stairs. It is the intention of the structural design to satisfy the force levels of the 2021 International Building Code.

The typical stair assembly consists of pre-engineered planking spanning between aluminum edge beams. The beams span between a concrete slab on grade and a concrete retaining wall.

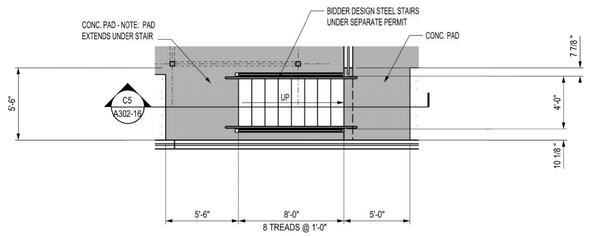

Centeris Voltage Park
Puyallup
Legend
Centeris
Feature 1
College Way
Google Earth
Image Landsat / Copernicus
Centeris
Centeris
500 ft
N
Builders Capital



N

G1 ENLARGED PLAN - STAIR 1

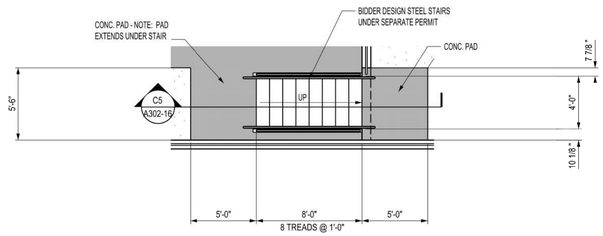
SCALE: 1/4 1'-0"



N

G5 ENLARGED PLAN - STAIR 2

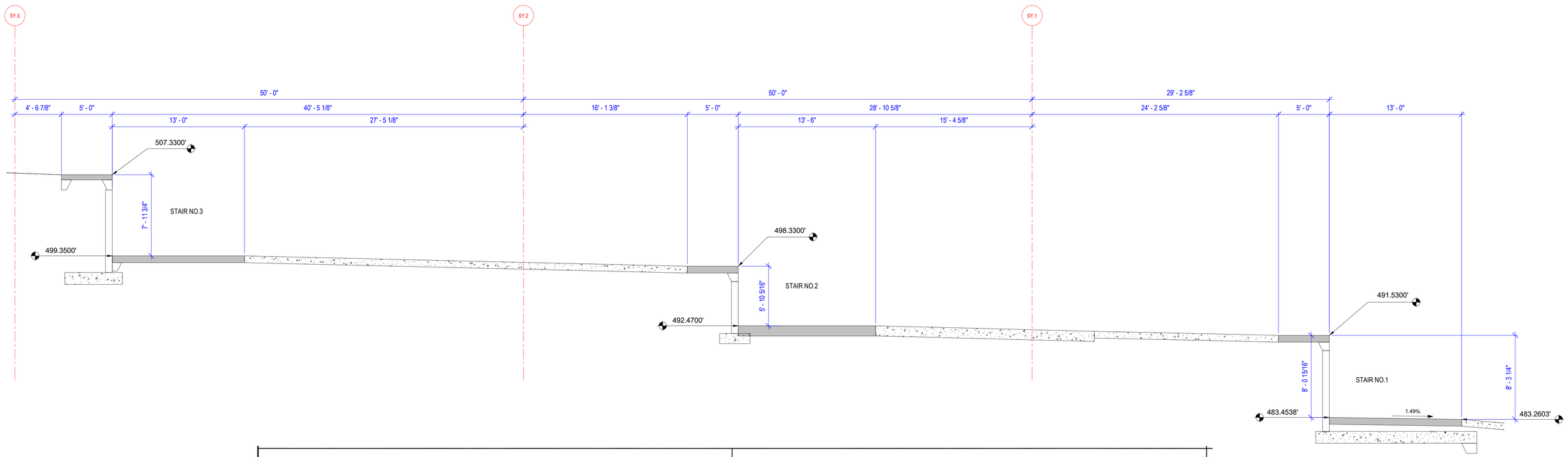
SCALE: X" = 1'-0"

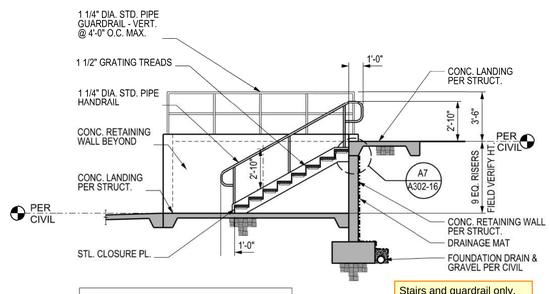


N

G9 ENLARGED PLAN - STAIR 3

SCALE: X" = 1'-0"



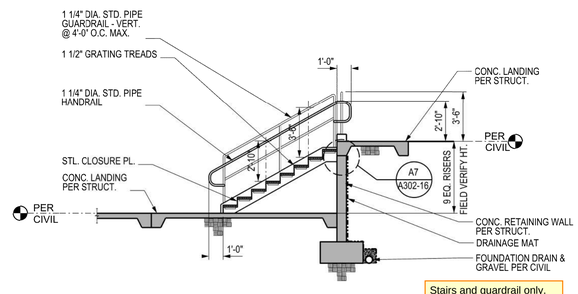


NOTE: PROVIDE GUARDRAIL ON OPP. SIDE SIMILAR TO RAIL SHOWN ON SECTION C5/A301-16.

Stairs and guardrail only. Retaining wall, landing, etc. per separate permit.

C1 SECTION - STAIR 1

SCALE: 1/4" = 1'-0"



Stairs and guardrail only. Retaining wall, landing, etc. per separate permit.

C5 SECTION - STAIR 2 & 3

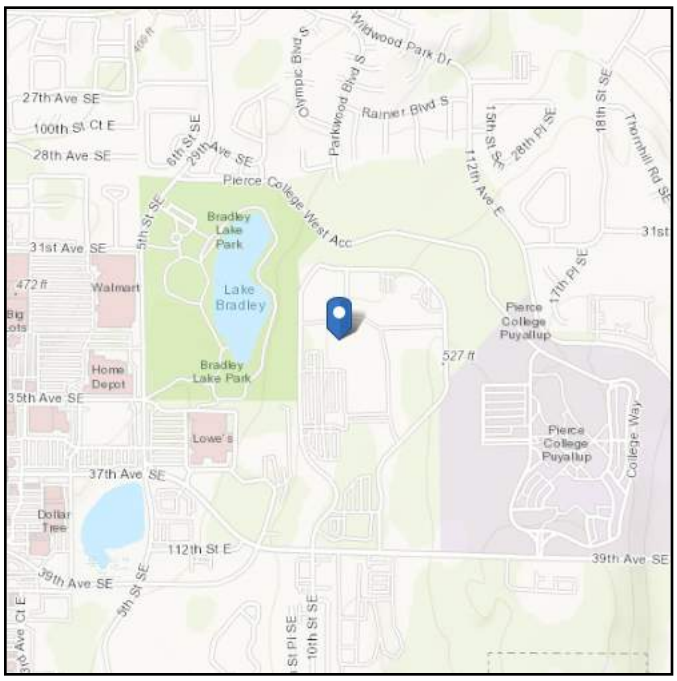
SCALE: 3" = 1'-0"

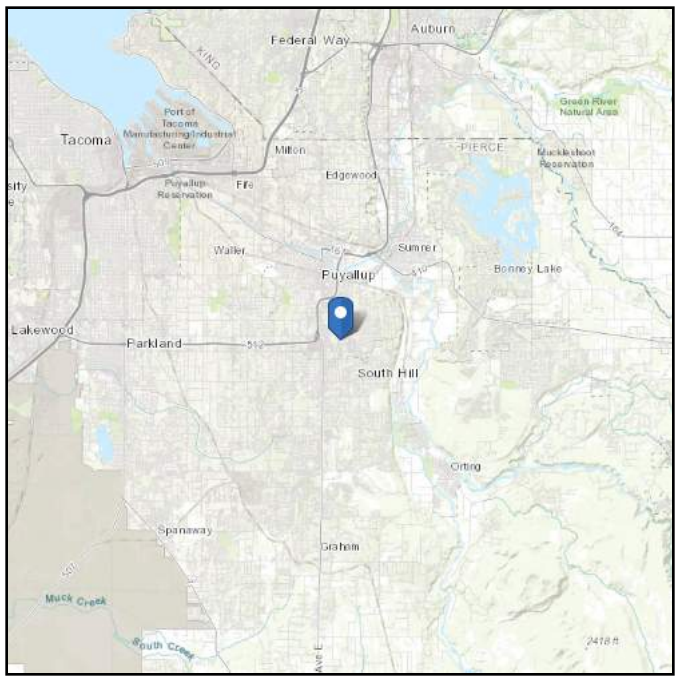
DESIGN CRITERIA

ASCE Hazards Report

Address:
1019 39th Ave SE
Puyallup, Washington
98374

Standard:	ASCE/SEI 7-16	**Latitude:**	47.159875
Risk Category:	III	**Longitude:**	-122.280772
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	478.38217596439716 ft (NAVD 88)





Wind

Results:

Wind Speed	104 Vmph
10-year MRI	67 Vmph
25-year MRI	73 Vmph
50-year MRI	78 Vmph
100-year MRI	83 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Tue Dec 10 2024

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Seismic

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.258	S_{D1} :	N/A
S_1 :	0.434	T_L :	6
F_a :	1.2	PGA :	0.5
F_v :	N/A	PGA_M :	0.6
S_{MS} :	1.509	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1.25
S_{DS} :	1.006	C_v :	1.352

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Tue Dec 10 2024

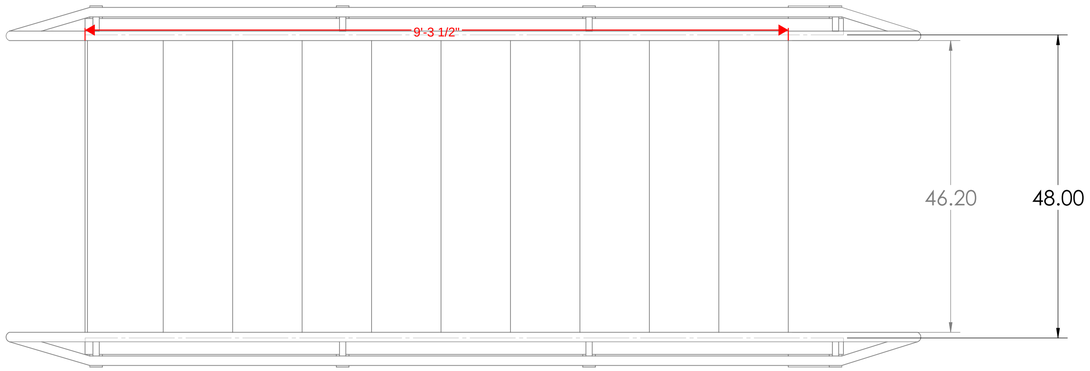
Date Source: USGS Seismic Design Maps

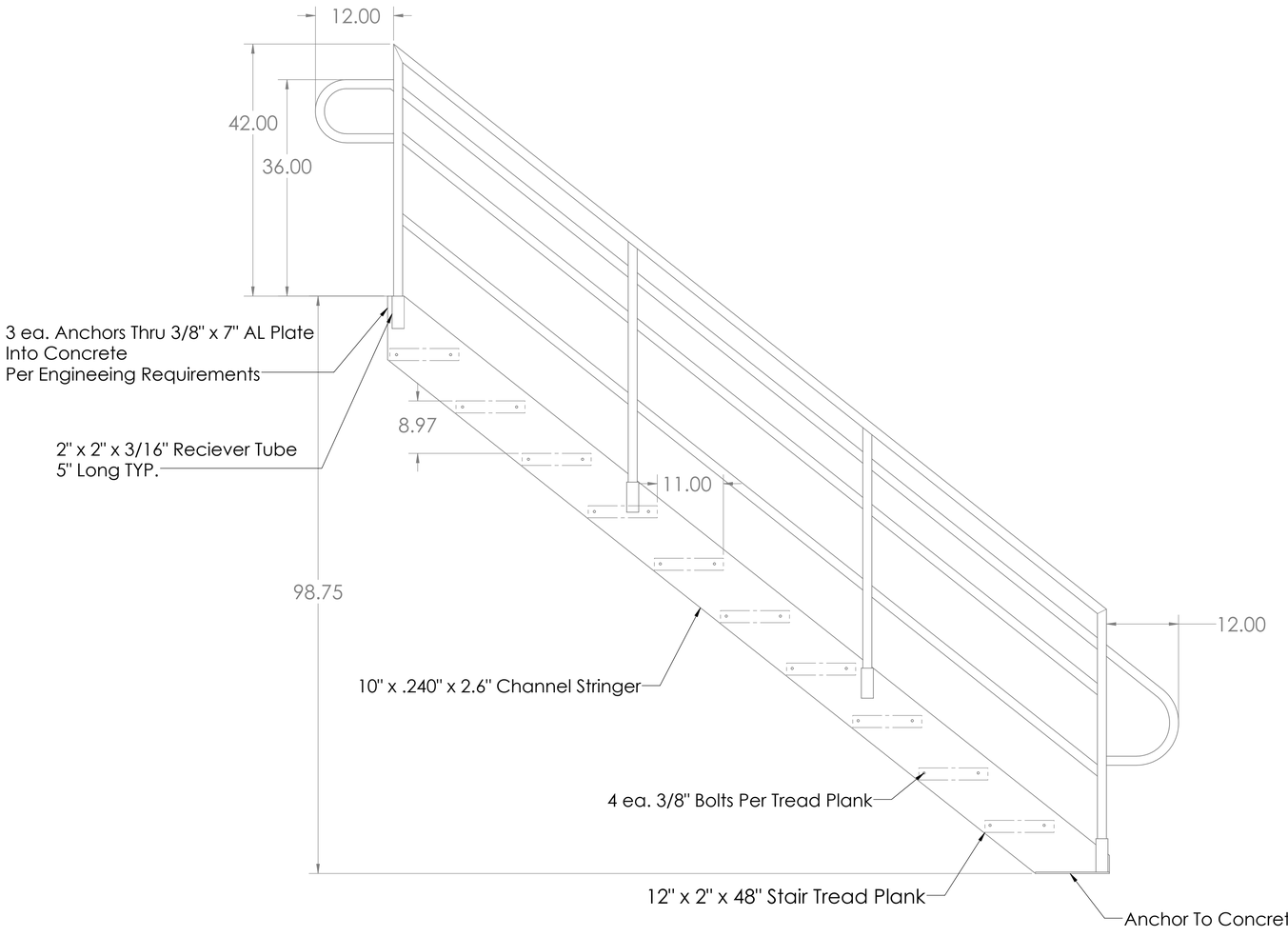
The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.

STAIR SHOP DRAWINGS





Code Compliance

1. Stair Rise = 9-1/2" Max
2. Design Loading:

2.1. Platform 100 PSF Min.
2.2. Stair Tread 300 LBS./Tread min.
2.3. Railing 50 PLF/200 LBS. CONC.
2.4. Lateral Load 600# Pedestrian Dynamic
2.5. Wind Load 135 MPH, EXP C, Kzt=2.0
2.6. Seismic Load Sds= 1.0, Seismic CAT. 'D'

3. Graspable Continuous Round Handrail At 36" Off Stair Nosing. Install Both Sides Of Stairs.

4. Platforms To Have 4" Toe Kick.

5. Footing Information
Pre Manufactured ABS Pads Under All Adjustable Legs On Asphalt Or Soils

Material Specifications

Planking

- Platform: All Planking Shall Be 13 GA. 12" W x 1-1/2" Deep
- Stairs: All Planking Shall Be 11 GA. 12" W x 2" Deep

Legs

- Leveling Feet Assumed To Be Placed On Suitable Firm Bearing Ground.
- Leg Material Shall Be 1-1/2" sq. x .125" AL. Tubing.
- Leg Pockets Shall Be 1.781" sq. x .125" AL Tubing.
- Adjustable Bolt- 3/8" x 2-1/4" Grade 5 Cap Screw W/Nylon Lock Nut, Zinc Plated

Aluminum

- The 1-1/2" AL. Round Handrail Shall Be 6063 T-5 With A Yield stress Of 16 KSI.
- All Other Aluminum Parts Shall Be 6061 Aluminum With A Yield Stress Of 35 KSI.

Hand Rails

- Stairs: Use 1-1/2" Sq. x .156" Thick Walled Tubing For Posts And Horizontal Rails Except The 1-1/2" Round Graspable Handrail.
- Platform: Use 1-1/2" Sq. x .156" Thick Walled Tubing For Posts And All Horizontal Rails.

Welding

- All References To Welding On Plan Set Refer To In-Plant Fabrication. No On Site Welding Is Required.
- Fabrication Plant Welding By Welders In Accordance With ANSI/AWS D1.2 Code.
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Bolts

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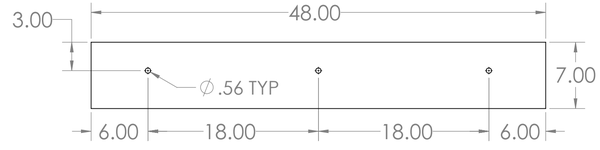
- High Strength Bolts Are Designed At less Than 50% Capacity For Additional Factor Of Safety And Do Not Require Special Inspection.

Tech Screws

- Zinc Plated # 12 x 1-1/4" Pan Head



Stair Mounting Plate

UNLESS OTHERWISE SPECIFIED:
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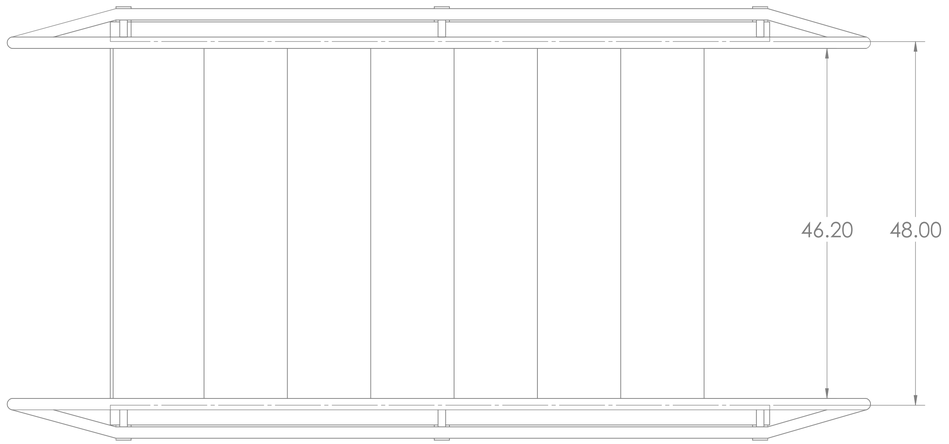
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±
INTERPRET GEOMETRIC TOLERANCING PER:
MATERIAL 6061 T-6 Aluminum 6063 T-5 Aluminum Galvanized Steel
FINISH
NEXT ASSY USED ON
APPLICATION
DO NOT SCALE DRAWING

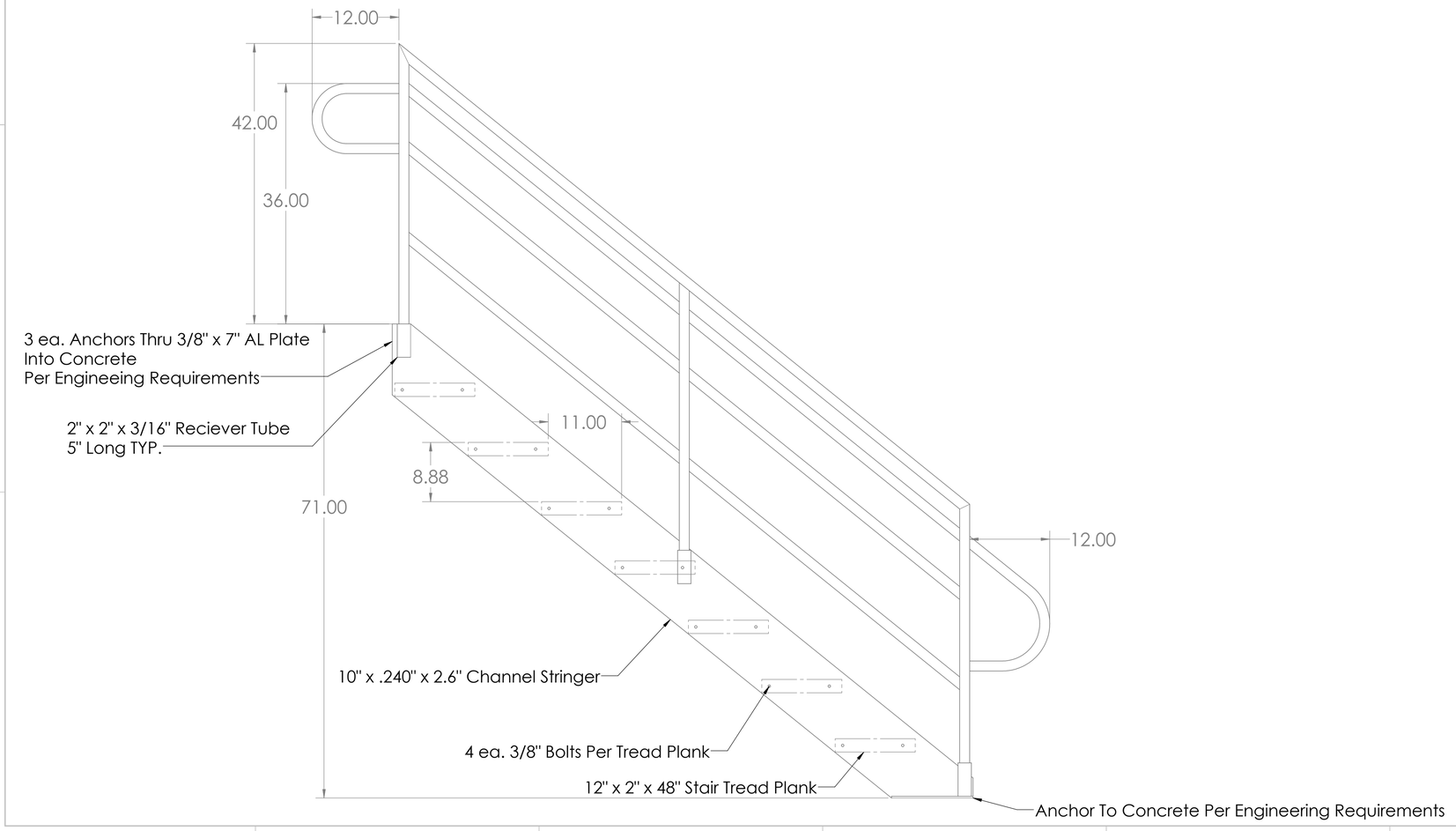
	NAME	DATE
DRAWN	Kyle G	10/25/42
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Client: Howard S Wright
Location
Centaris Puyallup

SIZE D | Title: Stair 1 | REV
SCALE: NTS | SHEET 1 OF 1





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2.5. Wind Load 135 MPH, EXP C, Kzt=2.0
2.6. Seismic Load Sds= 1.0, Seismic CAT. 'D'

3. Graspable Continuous Round Handrail At 36" Off Stair Nosing. Install Both Sides Of Stairs.

4. Platforms To Have 4" Toe Kick.

5. Footing Information
Pre Manufactured ABS Pads Under All Adjustable Legs On Asphalt Or Soils

Material Specifications

Planking

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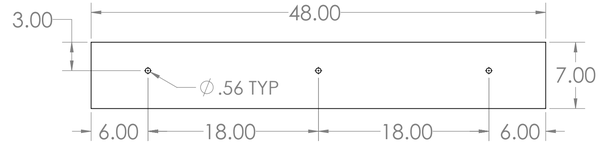

Stair Mounting Plate

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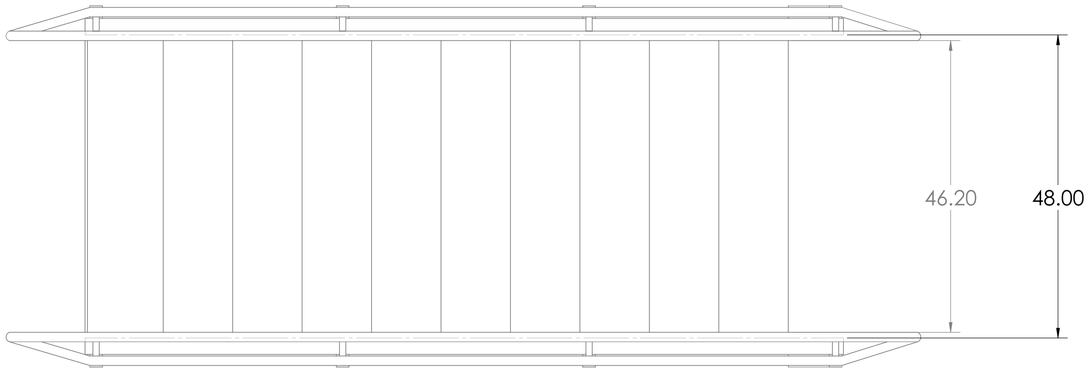
NEXT ASSY USED ON
APPLICATION DO NOT SCALE DRAWING

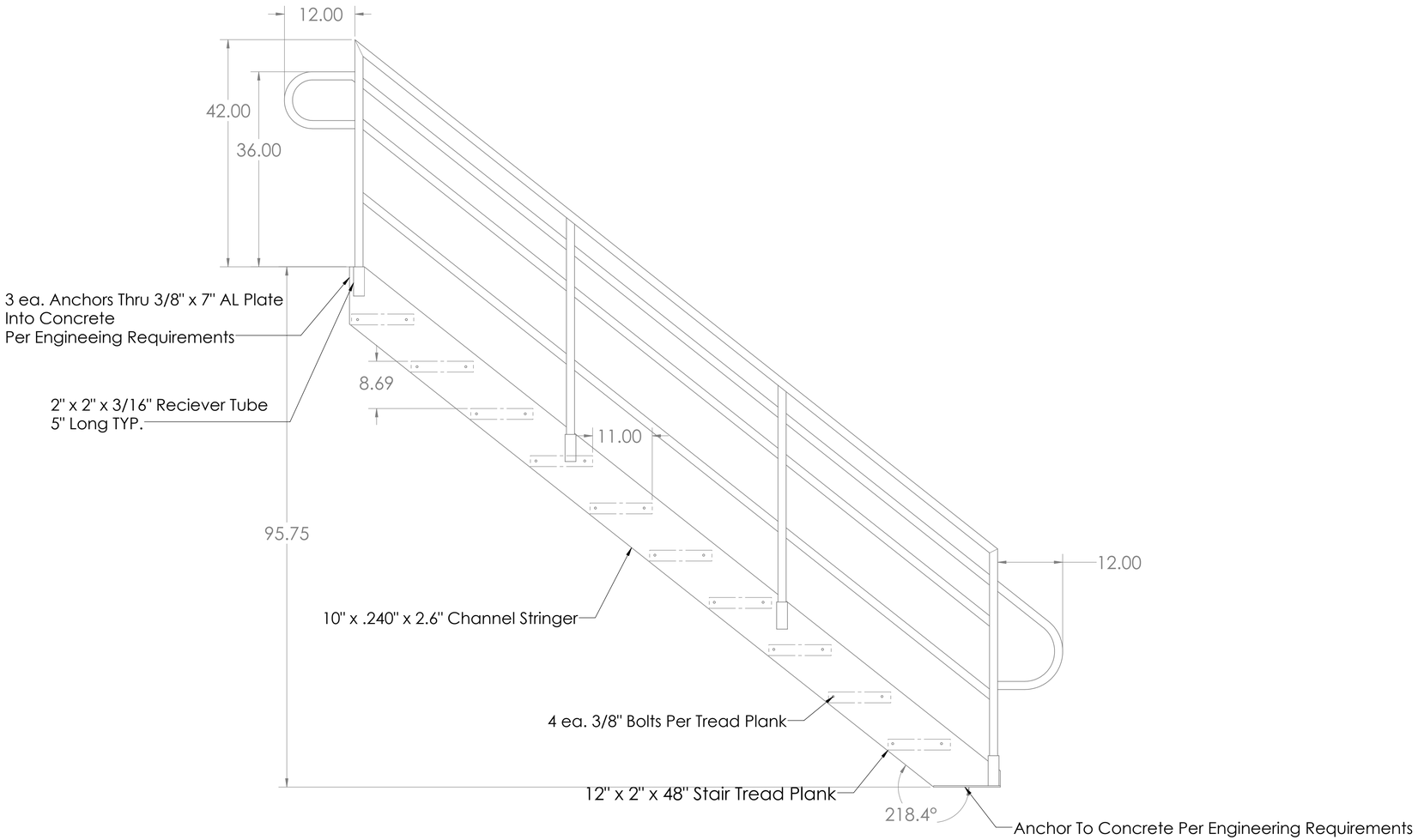
	NAME	DATE
DRAWN	Kyle G	10/25/42
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

Client: Howard S Wright
Location
Centaris Puyallup

SIZE D | Title: Stair 2 | REV
SCALE: NTS | SHEET 1 OF 1





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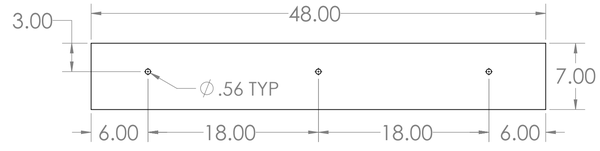

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Q.A.		

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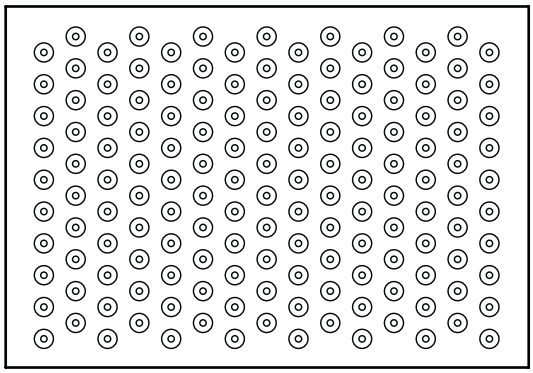
SIZE D | Title: Stair 3 | REV
SCALE: NTS | SHEET 1 OF 1

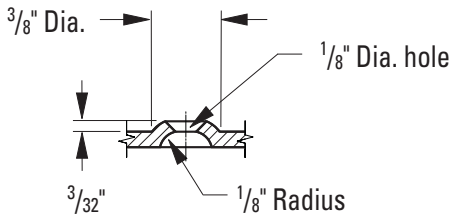
TREAD AND PLANK PROPERTIES

GRATING PACIFIC

TRACTION TREAD™ PLANK GRATING SIZES & OPTIONS

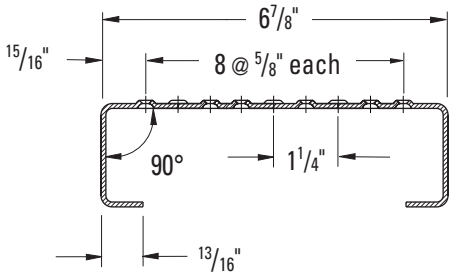


Standard Pattern



Button Detail

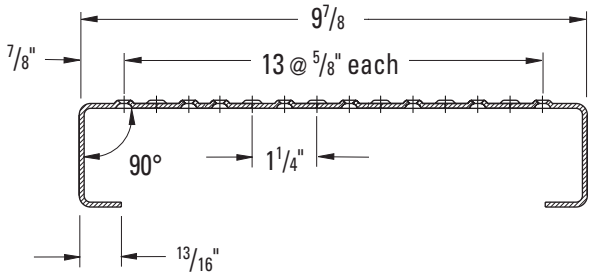
7" Nominal Width



Part No.	Width	Channel Depth	Gauge	Weight per LF
13 Ga. Pre-Galvanized Steel*				
TT-71513 GL	7"	1-1/2"	13	3.4
TT-72013 GL	7"	2"	13	3.7
TT-73013 GL	7"	3"	13	4.1
11 Ga. Pre-Galvanized Steel*				
TT-71511 GL	7"	1-1/2"	11	4.7
TT-72011 GL	7"	2"	11	5.2
TT-73011 GL	7"	3"	11	6.1
.125" 5052 Aluminum				
TT-715125 AL	7"	1-1/2"	.125"	1.6
TT-720125 AL	7"	2"	.125"	1.8

* To indicate HRPO carbon steel, add the suffix "-B" to the above stated part numbers.

10" Nominal Width



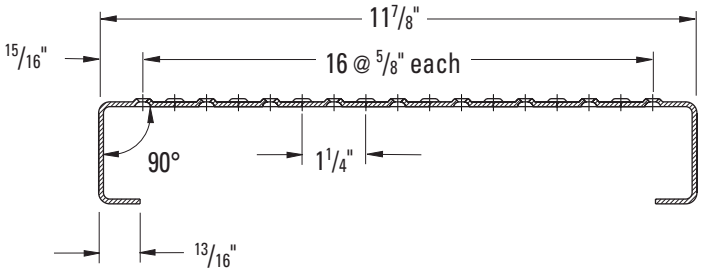
Part No.	Width	Channel Depth	Gauge	Weight per LF
13 Ga. Pre-Galvanized Steel*				
TT-101513 GL	10"	1-1/2"	13	4.3
TT-102013 GL	10"	2"	13	4.6
TT-103013 GL	10"	3"	13	5.3
11 Ga. Pre-Galvanized Steel*				
TT-101511 GL	10"	1-1/2"	11	6.0
TT-102011 GL	10"	2"	11	6.4
TT-103011 GL	10"	3"	11	7.5
.125" 5052 Aluminum				
TT-1015125 AL	10"	1-1/2"	.125"	2.1
TT-1020125 AL	10"	2"	.125"	2.2

* To indicate HRPO carbon steel, add the suffix "-B" to the above stated part numbers.

GRATING PACIFIC

TRACTION TREAD™ PLANK GRATING SIZES & OPTIONS

12" Nominal Width



Part No.	Width	Channel Depth	Gauge	Weight per LF
13 Ga. Pre-Galvanized Steel*				
TT-121513 GL	12"	1-1/2"	13	5
TT-122013 GL	12"	2"	13	5.3
TT-123013 GL	12"	3"	13	5.9
11 Ga. Pre-Galvanized Steel*				
TT-121511 GL	12"	1-1/2"	11	6.9
TT-122011 GL	12"	2"	11	7.3
TT-123011 GL	12"	3"	11	8.2
.125" 5052 Aluminum				
TT-1215125 AL	12"	1-1/2"	.125"	2.4
TT-1220125 AL	12"	2"	.125"	2.5

* To indicate HRPO carbon steel, add the suffix "-B" to the above stated part numbers.

Stock plank lengths available in 10' and 12'
Custom lengths available upon special order.

ALUMINUM TREAD OPTION CALCULATIONS

Project ALUMINUM TREADS | Project No. 2240502.20 | ☐ Page ____ of ____

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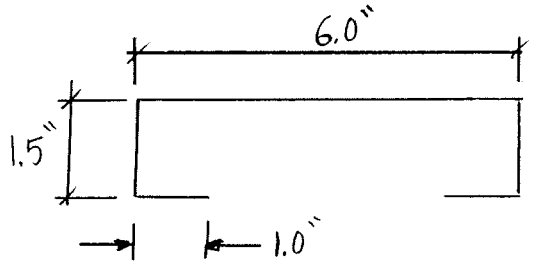
MATERIAL: 0.125" 5052 H32 AL

E: 10,100 ksi, F_{ty} = 23 ksi, F_{cy} = 20.7 ksi, F_{tu} = 31 ksi

LOADING: 100psf or 300 lb

DESIGN 1 – 1.5" × 6" × 48" TREADS



SECTION PROPERTIES (ENERCALC)

$Z_x = 0.5894\ in^3$

$S_t = 0.4376\ in^3$

$S_c = 0.8907\ in^3$

LOADING (A): 100 PSF

$$V = \frac{wl}{2} = \frac{(100PSF \times 0.5ft)(4ft)}{2} = 100\ lb$$

$$M = \frac{wl^2}{8} = \frac{(50plf)(4ft)^2}{8} = 100\ lb\text{-}ft \Rightarrow 1200\ lb\text{-}in$$

LOADING (B): 300 lb @ MIDSPAN

$$V = \frac{P}{2} = \frac{300\ lb}{2} = 150\ lb \leftarrow$$

$$M = \frac{PL}{4} = \frac{300lb(4ft)}{4} = 300\ lb\text{-}ft \Rightarrow 3600\ lb\text{-}in \leftarrow$$

Project ALUMINUM TREADS | Project No. 2240502.20 | ☐ Page ____ of ____

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FLEXURAL DESIGN

CHAPTER F - ALUMINUM DESIGN MANUAL

- YIELDING CHECK:

$$M_{np} = \text{LESSER OF} \begin{cases} Z_x F_{cy} = 0.5894\,in^3\,(20.7\,ksi) = 12.2\,k\text{-}in & \text{CONTROLS} \\ 1.5\,S_t\,F_{ty} = 1.5(0.4376\,in^3)(23\,ksi) = 15.1\,k\text{-}in \\ 1.5\,S_c\,F_{cy} = 1.5(0.8907\,in^3)(20.7\,ksi) = 27.7\,k\text{-}in \end{cases}$$

$$\frac{M_{np}}{\Omega} = \frac{12.2\,k\text{-}in}{1.65} = 7.39\,k\text{-}in > 3.6\,k\text{-}in$$

OK

- RUPTURE CHECK:

$$\frac{M_{nu}}{\Omega} = \frac{Z_x F_{tu}}{K_t\,(1.95)} = \frac{0.5894\,in^3\,(31\,ksi)}{(1.0)\;1.95} = 9.37\,k\text{-}in > 3.6\,k\text{-}in$$

OK

- LOCAL BUCKLING CHECK:

$$\frac{M_{nlb}}{\Omega} = \frac{F_b S_c}{\Omega}$$

$$\frac{b}{t} = \frac{(6\,in - 2\times 0.125\,in)}{0.125\,in} = 46$$

$= 17.64\,ksi\,(0.8907\,in^3)$ TABLE 2-9 => FLAT ELEMENTS SUPPORTED ON BOTH EDGES

$\frac{M_{nlb}}{\Omega} = 15.7\,k\text{-}in > 3.6\,k\text{-}in$

OK

$\lambda_1 = 35.4 \quad \lambda_2 = 103$

$\therefore \lambda_1 < b/t < \lambda_2$

$\therefore$ INELASTIC BUCKLING $\Rightarrow \frac{F_b}{\Omega} = 22.7 - 0.110\frac{b}{t}$

$= 17.64\,ksi$

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SHEAR DESIGN

CHAPTER G - ALUMINUM DESIGN MANUAL

$b/t = \frac{1.25in}{0.125in} = 10$ TABLE 2-9 $\Rightarrow \lambda_1 = 41.8 \quad \therefore b/t < \lambda_1$

$\frac{F_v}{\Omega} = 8.4 \text{ ksi}$

$\frac{V_n}{\Omega} = \frac{F_v}{\Omega} \frac{A_v}{K_t} = 8.4 \text{ ksi} (2 \times 0.125in \times 1.25in)$

$= 2.63 \text{ kips} > 0.150 \text{ kips}$ OK

DEFLECTION CHECK

CHAPTER L - ALUMINUM DESIGN MANUAL

• EFFECTIVE WIDTH, $b_e \Rightarrow$ If $f_a \leq F_e$, $b_e = b$

If $f_a > F_e$, $b_e = b\sqrt{F_e/f_a}$

$F_e = \frac{\pi^2 E}{(1.6\, b/t)^2} = \frac{\pi^2 (10{,}100 \text{ ksi})}{(1.6 \times 46)^2} = 18.4 \text{ ksi}$

f_a = MAX. COMPRESSIVE STRESS = $F_b = 17.64 \text{ ksi} \times 1.65 = 29.1 \text{ ksi}$

$\therefore b_e = 5.75in \sqrt{\frac{18.4}{29.1}} = 4.57in$

UPDATED SECTION PROPERTIES $\Rightarrow$ $I_x = 0.4091 in^4$
$Z_x = 0.5815 in^3$

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LOADING (A): 100 PSF

$$\Delta = \frac{5wl^4}{384EI} = \frac{5(0.05\,k/ft \div 12)(48in)^4}{384(10,100\,ksi)(0.4091in^4)} = 0.07in$$

LOADING (B): 300 lb

$$\Delta = \frac{Pl^3}{48EI} = \frac{0.30\,k(48in)^3}{48(10,100\,ksi)(0.4091in^4)} = 0.167in \leftarrow$$

$$\frac{l}{360} = \frac{48in}{360} = 0.133in \quad \underline{NG}$$

$$0.167in \Rightarrow \frac{l}{287}$$

* HSS 3×1½×⅛ STIFFENER READ

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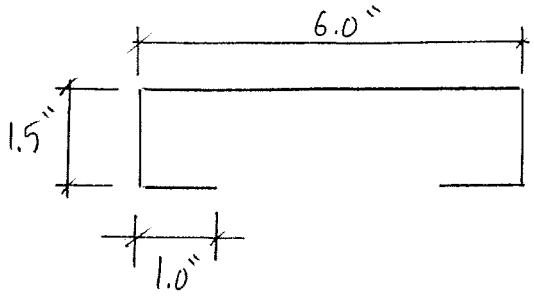
DESIGN 2 - 1.5" × 6" × 60" TREADS



SECTION PROPERTIES (SAME AS DSGN 1)

$Z_x = 0.5894\ in^3$

$S_t = 0.4376\ in^3$

$S_c = 0.8907\ in^3$

LOADING (A): 100 PSF

$$V = \frac{wl}{2} = \frac{50plf\ (5ft)}{2} = 125\ lb$$

$$M = \frac{wl^2}{8} = \frac{50plf\ (5ft)^2}{8} = 156\ lb\text{-}ft \Rightarrow 1875\ lb\text{-}in$$

LOADING (B): 300 lb @ MIDSPAN

$$V = \frac{P}{2} = 150\ lb \leftarrow$$

$$M = \frac{PL}{4} = \frac{300lb\ (5ft)}{4} = 375\ lb\text{-}ft \Rightarrow 4500\ lb\text{-}in \leftarrow$$

> FLEXURAL & SHEAR STRENGTHS SAME AS DESIGN (1)
OK BY INSPECTION

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DEFLECTION CHECK

LOADING (A) : 100 PSF

$$\Delta = \frac{5wl^4}{384EI} = \frac{5(0.05\ k/ft \div 12)(60in)^4}{384(10{,}100\ ksi)(0.4091\ in^4)} = 0.17in$$

LOADING (B) : 300 lb

$$\Delta = \frac{Pl^3}{48EI} = \frac{0.30k\,(60in)^3}{48(10{,}100\ ksi)(0.4091\ in^4)} = 0.327in$$

$$\frac{l}{360} = \frac{60in}{360} = 0.167in \quad \underline{NG}$$

$$0.327in \Rightarrow \frac{l}{184}$$

* HSS 3x1½x⅛ STIFFENER REQ'D

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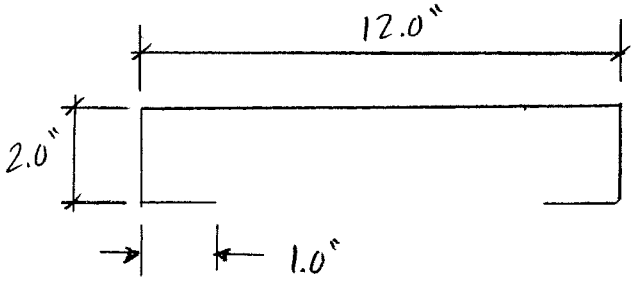
DESIGN 3 - 2" × 12" × 48" STEPS



SECTION PROPERTIES : (ENERCALC)

$Z_x = 0.9161\ in^3$

$S_t = 0.693\ in^3$

$S_c = 2.244\ in^3$

LOADING (A): 100 PSF

$$V = \frac{wl}{2} = \frac{(100psf \times 1ft)(4ft)}{2} = 200lb \leftarrow$$

$$M = \frac{wl^2}{8} = \frac{(100plf)(4ft)^2}{8} = 200\ lb\text{-}ft \Rightarrow 2400\ lb\text{-}in$$

LOADING (B): 300lb @ MIDSPAN

$$V = \frac{P}{2} = \frac{300lb}{2} = 150lb$$

$$M = \frac{PL}{4} = \frac{300lb\ (4ft)}{4} = 300lb\text{-}ft \Rightarrow 3600\ lb\text{-}in \leftarrow$$

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SHEAR DESIGN

$\frac{b}{t} = \frac{1.75\,in}{0.125\,in} = 14$ TABLE 2-9 $\Rightarrow \lambda_1 = 41.8$ $\therefore b/t < \lambda_1$

$$\frac{F_v}{\Omega} = 8.4\,ksi$$

$$\frac{V_n}{\Omega} = \frac{F_v}{\Omega}\frac{A_v}{n_t} = 8.4\,ksi\,(2 \times 0.125in \times 1.75in)/1.0$$

$$= 3.675\,kips > 0.2\,kips \quad OK$$

DEFLECTION CHECK

$$F_e = \frac{\pi^2 E}{(1.6\,b/t)^2} = \frac{\pi^2 (10{,}100\,ksi)}{(1.6 \times 94)^2} = 4.4\,ksi$$

$$f_a = F_b = 12.36\,ksi \times 1.65 = 20.4\,ksi$$

$f_a > F_c \therefore b_e = b\sqrt{F_e/f_a}$

$= 11.75in\sqrt{4.4/20.4}$

$= 5.5\,in$

UPDATED SECTION PROPERTIES $\Rightarrow I_x = 0.843\,in^4$

$Z_x = 0.9074\,in^3$

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LOADING (A): 100 PSF

$$\Delta = \frac{5wl^4}{384EI} = \frac{5(0.10\ k/ft \div 12)(48in)^4}{384(10,100\ ksi)(0.843\ in^4)} = 0.068\ in$$

LOADING (B): 300 lb

$$\Delta = \frac{Pl^3}{48EI} = \frac{0.30^k(48in)^3}{48(10,100\ ksi)(0.843\ in^4)} = 0.081\ in \leftarrow$$

$$\frac{l}{360} = \frac{48in}{360} = 0.133in > 0.081in \quad \underline{OK}$$

AHBL, Inc.
2215 North 30th Street, Suite 200
Tacoma, WA 98403
(253) 383-2422

Project Title: Welcome Ramp Aluminum Treads
Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 6" Aluminum Treads

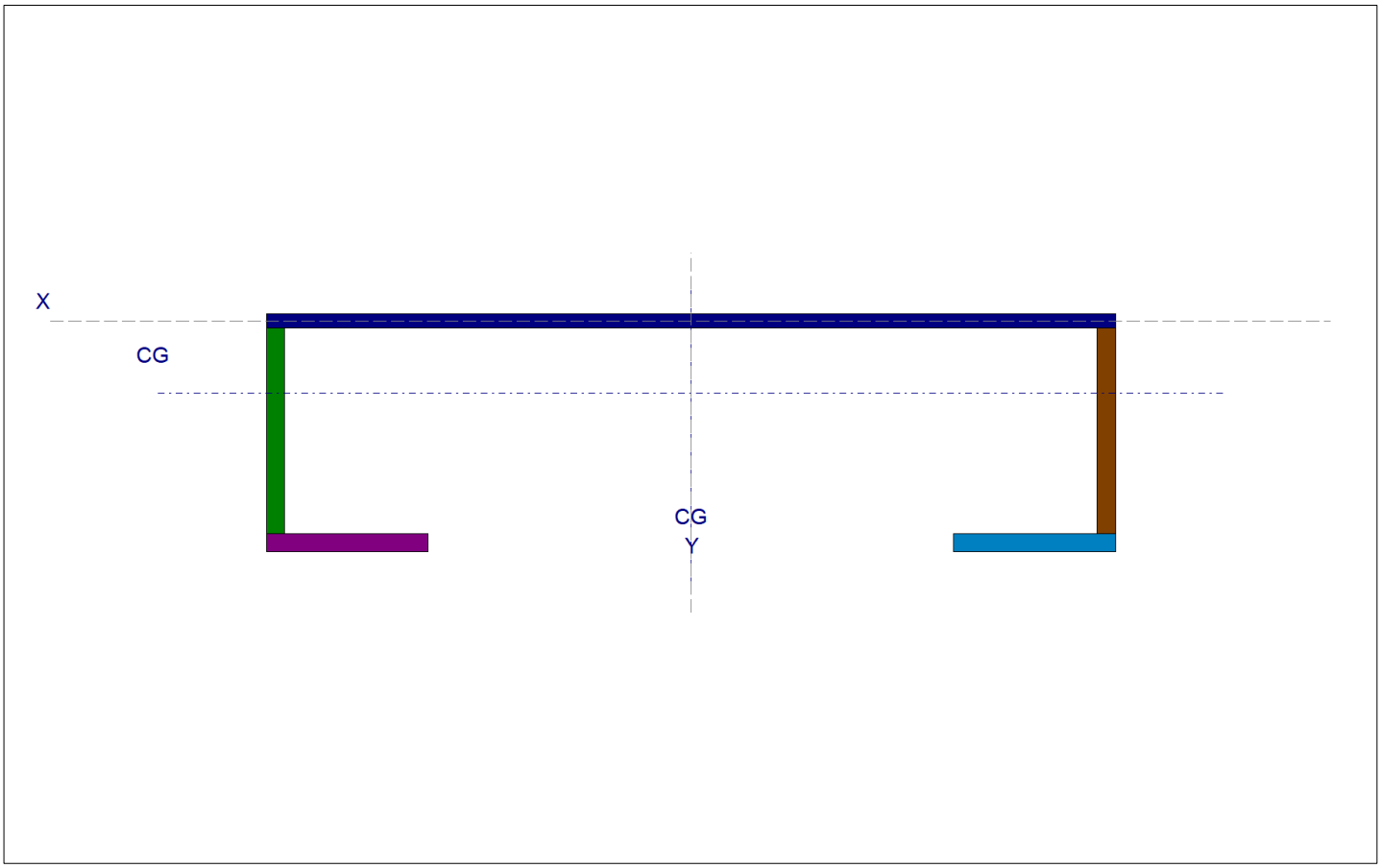
Final Section Properties

Total Area	:	1.223 in^2	Ixx	:	0.4070 in^4	Sxx : - Y	: 0.4151 in^3
			Iyy	:	4.776 in^4	Sxx : +Y	: 0.7835 in^3
Calculated final C.G. distance from Datum :						Syy : - X	: 1.809 in^3
X cg Dist.	:	0.0 in	Zxx	:	0.5642 in^3	Syy : +X	: 1.809 in^3
Y cg Dist.	:	-0.4569 in	Zyy	:	2.212 in^3		
Edge Distances from CG. :						r xx	: 0.5770 in
+X	:	2.641 in	+Y	:	0.5194 in	r yy	: 1.977 in
-X	:	-2.641 in	-Y	:	-0.9806 in		

Rotation of All Components @ A 0.00 deg CCW

Minumim Section Properties

Rotation Angle (CC	0.0	deg CCW	I: Moment of Inerti	0.4070 in^4
r: Radius of Gyratic	0.5770	in	S: Modulus	0.4151 in^3
			Z: Plastic Modulus	0.5642 in^3



Rectangular & Circular Shapes

Rectangular Shape : 1	Height =	0.125 in	Width =	5.280 in	Rotation =	0 deg CCW
	Area =	0.660 in^2	Xcg =	0.000 in		
			Ycg =	0.000 in		

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Engineer: ADM
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Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 6" Aluminum Treads

Rectangular Shape : 2	Height =	1.250 in	Width =	0.125 in	Rotation =	0 deg CCW	
	Area =	0.156 in^2	Xcg =	2.578 in			
			Ycg =	-0.688 in			
Rectangular Shape : 3	Height =	1.250 in	Width =	0.125 in	Rotation =	0 deg CCW	
	Area =	0.156 in^2	Xcg =	-2.578 in			
			Ycg =	-0.688 in			
Rectangular Shape : 4	Height =	0.125 in	Width =	1.000 in	Rotation =	0 deg CCW	
	Area =	0.125 in^2	Xcg =	-2.140 in			
			Ycg =	-1.375 in			
Rectangular Shape : 5	Height =	0.125 in	Width =	1.000 in	Rotation =	0 deg CCW	
	Area =	0.125 in^2	Xcg =	2.140 in			
			Ycg =	-1.375 in			

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Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 6" Aluminum Treads - Deflection

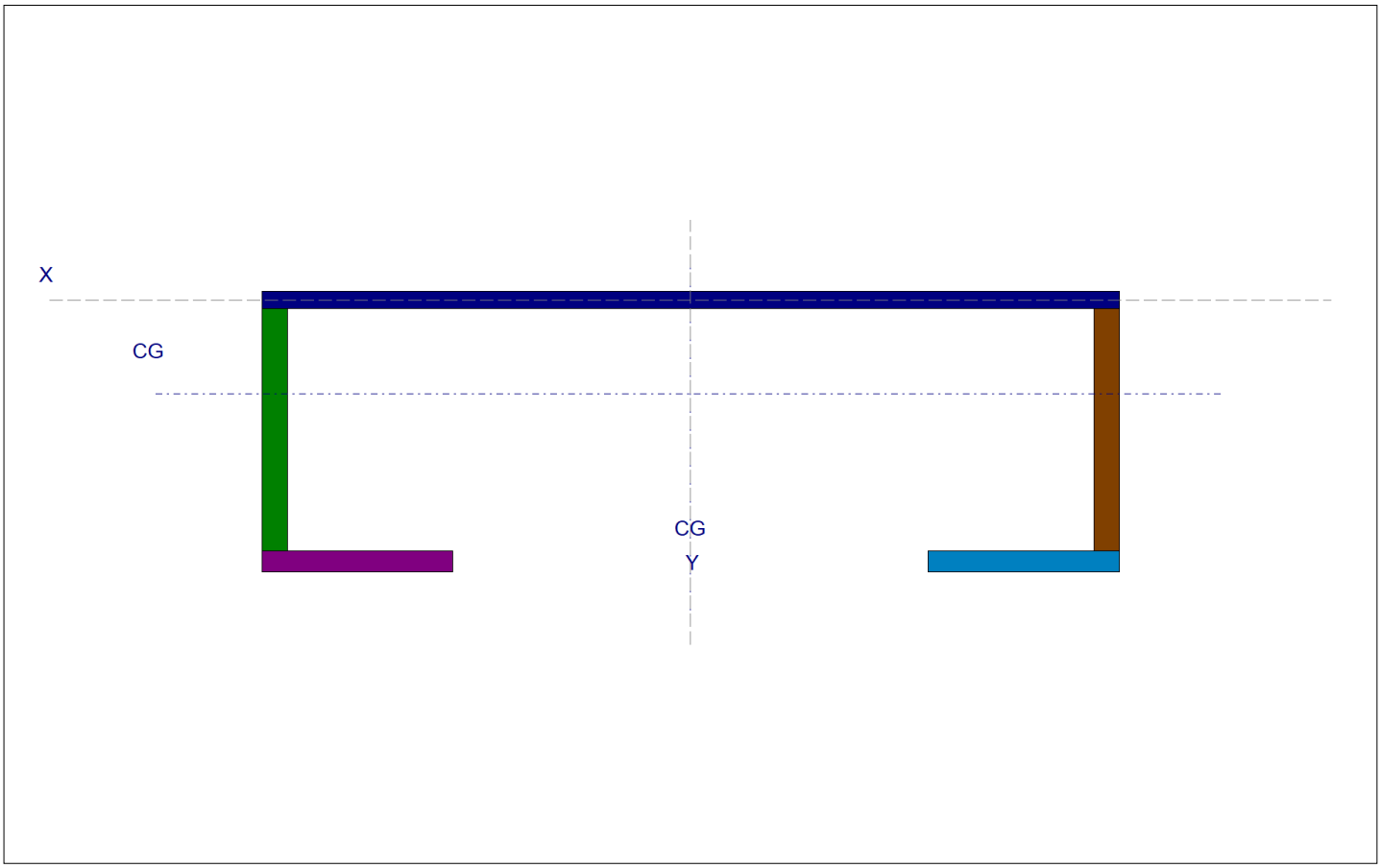
Final Section Properties

Total Area	:	1.125 in^2	Ixx	:	0.3847 in^4	Sxx : - Y	: 0.4089 in^3
			Iyy	:	3.232 in^4	Sxx : +Y	: 0.6882 in^3
Calculated final C.G. distance from Datum :						Syy : - X	: 1.436 in^3
X cg Dist.	:	0.0 in	Zxx	:	0.5586 in^3	Syy : +X	: 1.436 in^3
Y cg Dist.	:	-0.4965 in	Zyy	:	1.754 in^3		
Edge Distances from CG. :						r xx	: 0.5848 in
+X	:	2.251 in	+Y	:	0.5590 in	r yy	: 1.695 in
-X	:	-2.251 in	-Y	:	-0.9410 in		

Rotation of All Components @ A 0.00 deg CCW

Minumim Section Properties

Rotation Angle (CC	0.0 deg CCW	I: Moment of Inerti	0.3847 in^4
r: Radius of Gyratic	0.5848 in	S: Modulus	0.4089 in^3
		Z: Plastic Modulus	0.5586 in^3



Rectangular & Circular Shapes

Rectangular Shape : 1	Height =	0.125 in	Width =	4.500 in	Rotation =	0 deg CCW	
	Area =	0.563 in^2	Xcg =	0.000 in			
			Ycg =	0.000 in			

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Project Title: Welcome Ramp Aluminum Treads
Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 6" Aluminum Treads - Deflection

Rectangular Shape : 2	Height =	1.250	in	Width =	0.125	in	Rotation = 0 deg CCW
	Area =	0.156	in^2	Xcg =	2.188	in	
				Ycg =	-0.688	in	
Rectangular Shape : 3	Height =	1.250	in	Width =	0.125	in	Rotation = 0 deg CCW
	Area =	0.156	in^2	Xcg =	-2.188	in	
				Ycg =	-0.688	in	
Rectangular Shape : 4	Height =	0.125	in	Width =	1.000	in	Rotation = 0 deg CCW
	Area =	0.125	in^2	Xcg =	-1.750	in	
				Ycg =	-1.375	in	
Rectangular Shape : 5	Height =	0.125	in	Width =	1.000	in	Rotation = 0 deg CCW
	Area =	0.125	in^2	Xcg =	1.750	in	
				Ycg =	-1.375	in	

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Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 6" Aluminum Treads - Deflection (Built Up Section)

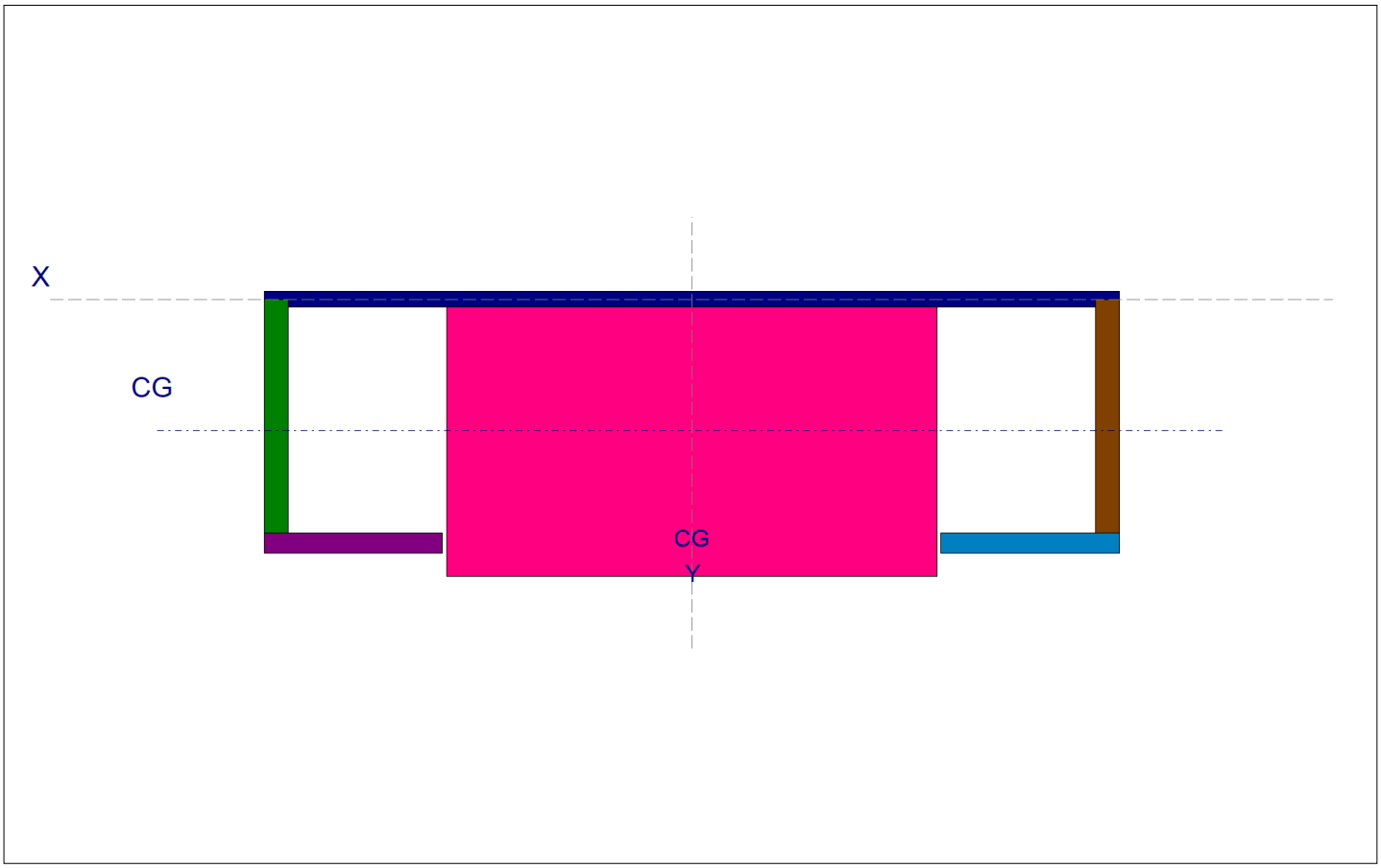
Final Section Properties

Total Area	:	5.396 in^2	Ixx	:	1.296 in^4	Sxx : - Y	: 1.576 in^3
			Iyy	:	6.739 in^4	Sxx : +Y	: 1.616 in^3
Calculated final C.G. distance from Datum :						Syy : - X	: 2.796 in^3
X cg Dist.	:	0.0 in	Zxx	:	2.313 in^3	Syy : +X	: 2.796 in^3
Y cg Dist.	:	-0.7399 in	Zyy	:	4.951 in^3		
Edge Distances from CG. :						r xx	: 0.4901 in
+X	:	2.411 in	+Y	:	0.8024 in	r yy	: 1.117 in
-X	:	-2.411 in	-Y	:	-0.8226 in		

Rotation of All Components @ A 0.00 deg CCW

Minumim Section Properties

Rotation Angle (CC	0.0 deg CCW	I: Moment of Inerti	1.296 in^4
r: Radius of Gyratic	0.4901 in	S: Modulus	1.576 in^3
		Z: Plastic Modulus	2.313 in^3



Rectangular & Circular Shapes

Rectangular Shape : 1	Height =	0.125 in	Width =	4.820 in	Rotation =	0 deg CCW
	Area =	0.603 in^2	Xcg =	0.000 in		
			Ycg =	0.000 in		

AHBL, Inc.
2215 North 30th Street, Suite 200
Tacoma, WA 98403
(253) 383-2422

Project Title: Welcome Ramp Aluminum Treads
Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 6" Aluminum Treads - Deflection (Built Up Section)

Rectangular Shape : 2	Height =	1.375 in	Width =	0.125 in	Rotation =	0 deg CCW	
	Area =	0.172 in^2	Xcg =	2.348 in			
			Ycg =	-0.688 in			
Rectangular Shape : 3	Height =	1.375 in	Width =	0.125 in	Rotation =	0 deg CCW	
	Area =	0.172 in^2	Xcg =	-2.348 in			
			Ycg =	-0.688 in			
Rectangular Shape : 4	Height =	0.125 in	Width =	1.000 in	Rotation =	0 deg CCW	
	Area =	0.125 in^2	Xcg =	-1.910 in			
			Ycg =	-1.375 in			
Rectangular Shape : 5	Height =	0.125 in	Width =	1.000 in	Rotation =	0 deg CCW	
	Area =	0.125 in^2	Xcg =	1.910 in			
			Ycg =	-1.375 in			
Rectangular Shape : 6	Height =	1.500 in	Width =	2.800 in	Rotation =	0 deg CCW	
	Area =	4.200 in^2	Xcg =	0.000 in			
			Ycg =	-0.813 in			

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Project Title: Welcome Ramp Aluminum Treads
Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 12" Aluminum Steps

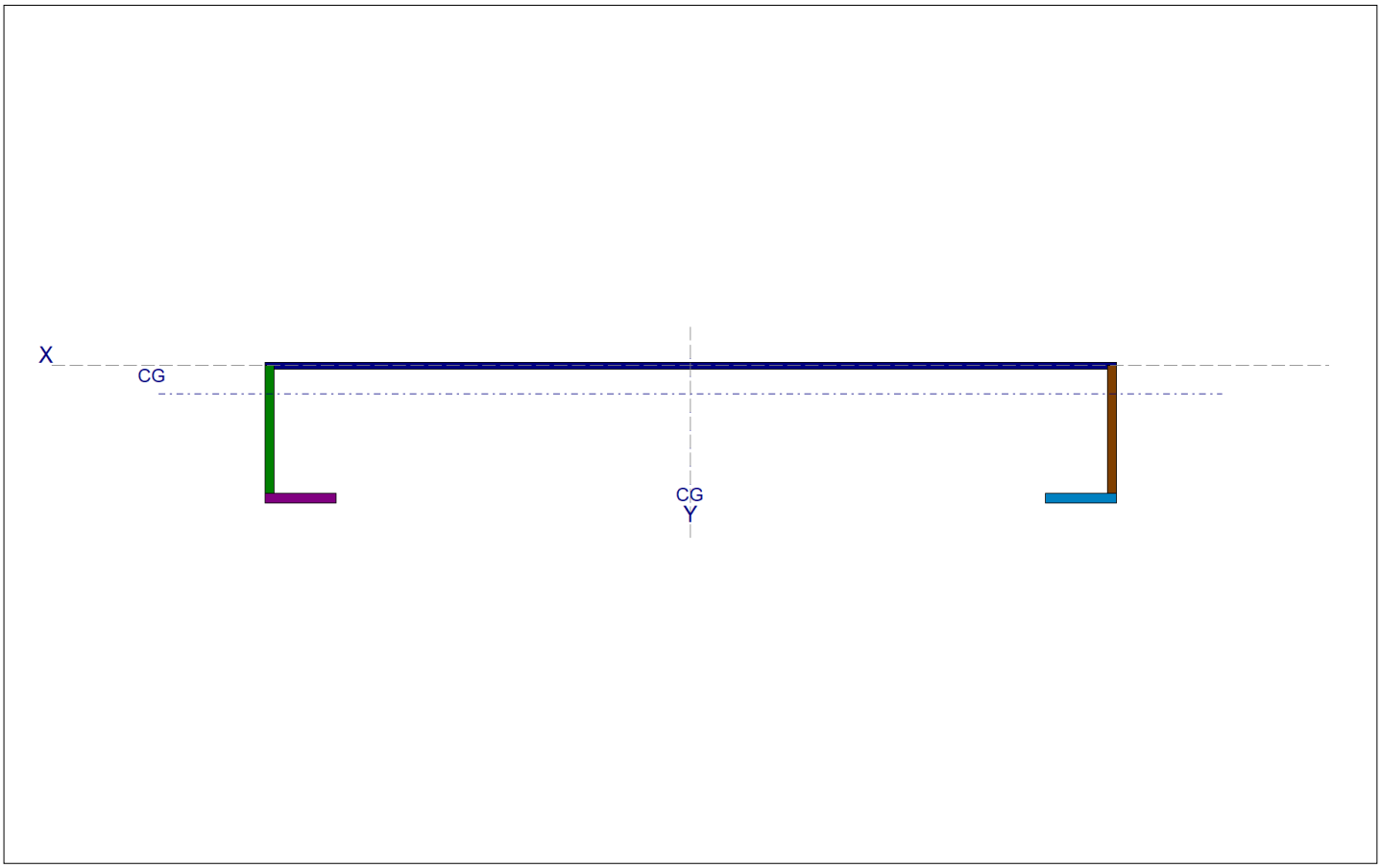
Final Section Properties

Total Area	:	2.219 in^2	Ixx	:	1.059 in^4	Sxx : - Y	: 0.6930 in^3
			Iyy	:	42.111 in^4	Sxx : +Y	: 2.244 in^3
Calculated final C.G. distance from Datum :						Syy : - X	: 7.018 in^3
X cg Dist.	:	0.0 in	Zxx	:	0.9448 in^3	Syy : +X	: 7.018 in^3
Y cg Dist.	:	-0.4094 in	Zyy	:	8.658 in^3		
Edge Distances from CG. :						r xx	: 0.6909 in
+X	:	6.001 in	+Y	:	0.4719 in	r yy	: 4.357 in
-X	:	-6.001 in	-Y	:	-1.528 in		

Rotation of All Components @ A 0.00 deg CCW

Minumim Section Properties

Rotation Angle (CC	0.0 deg CCW	I: Moment of Inerti	1.059 in^4
r: Radius of Gyratic	0.6909 in	S: Modulus	0.6930 in^3
		Z: Plastic Modulus	0.9448 in^3



Rectangular & Circular Shapes

Rectangular Shape : 1	Height =	0.125 in	Width =	12.000 in	Rotation =	0 deg CCW	
	Area =	1.500 in^2	Xcg =	0.000 in			
			Ycg =	0.000 in			

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Project Title: Welcome Ramp Aluminum Treads
Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 12" Aluminum Steps

Rectangular Shape : 2	Height =	1.875	in	Width =	0.125	in	Rotation = 0 deg CCW
	Area =	0.234	in^2	Xcg =	5.938	in	
				Ycg =	-0.938	in	
Rectangular Shape : 3	Height =	1.875	in	Width =	0.125	in	Rotation = 0 deg CCW
	Area =	0.234	in^2	Xcg =	-5.938	in	
				Ycg =	-0.938	in	
Rectangular Shape : 4	Height =	0.125	in	Width =	1.000	in	Rotation = 0 deg CCW
	Area =	0.125	in^2	Xcg =	-5.500	in	
				Ycg =	-1.875	in	
Rectangular Shape : 5	Height =	0.125	in	Width =	1.000	in	Rotation = 0 deg CCW
	Area =	0.125	in^2	Xcg =	5.500	in	
				Ycg =	-1.875	in	

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Project Title: Welcome Ramp Aluminum Treads
Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 12" Aluminum Steps - Deflection

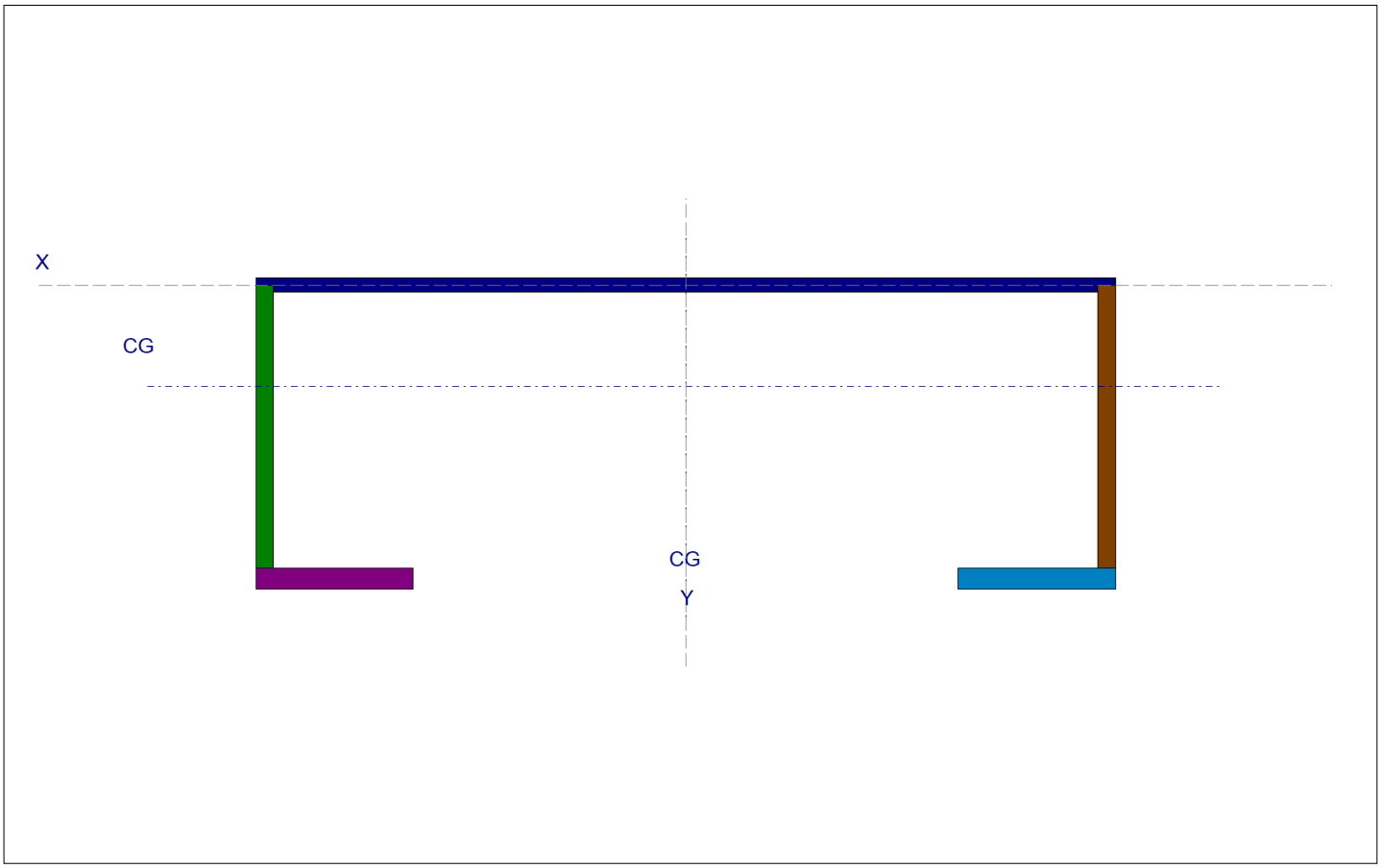
Final Section Properties

Total Area	:	1.406 in^2	Ixx	:	0.8430 in^4	Sxx : - Y	: 0.6527 in^3
			Iyy	:	6.407 in^4	Sxx : +Y	: 1.190 in^3
Calculated final C.G. distance from Datum :						Syy : - X	: 2.329 in^3
X cg Dist.	:	0.0 in	Zxx	:	0.9074 in^3	Syy : +X	: 2.329 in^3
Y cg Dist.	:	-0.6460 in	Zyy	:	2.768 in^3		
Edge Distances from CG. :						r xx	: 0.7743 in
+X	:	2.751 in	+Y	:	0.7085 in	r yy	: 2.134 in
-X	:	-2.751 in	-Y	:	-1.292 in		

Rotation of All Components @ A 0.00 deg CCW

Minumim Section Properties

Rotation Angle (CC	0.0 deg CCW	I: Moment of Inerti	0.8430 in^4
r: Radius of Gyratic	0.7743 in	S: Modulus	0.6527 in^3
		Z: Plastic Modulus	0.9074 in^3



Rectangular & Circular Shapes

Rectangular Shape : 1	Height =	0.125 in	Width =	5.500 in	Rotation =	0 deg CCW	
	Area =	0.688 in^2	Xcg =	0.000 in			
			Ycg =	0.000 in			

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Project Title: Welcome Ramp Aluminum Treads
Engineer: ADM
Project ID: 2241015.20
Project Descr: Optional Aluminum Tread System

Printed: 10 DEC 2024, 4:30PM

General Section Property Calculator

Project File: 2241015 Aluminum Treads.ec6

DESCRIPTION: 12" Aluminum Steps - Deflection

Rectangular Shape : 2	Height =	1.875	in	Width =	0.125	in	Rotation = 0 deg CCW
	Area =	0.234	in^2	Xcg =	2.688	in	
				Ycg =	-0.938	in	
Rectangular Shape : 3	Height =	1.875	in	Width =	0.125	in	Rotation = 0 deg CCW
	Area =	0.234	in^2	Xcg =	-2.688	in	
				Ycg =	-0.938	in	
Rectangular Shape : 4	Height =	0.125	in	Width =	1.000	in	Rotation = 0 deg CCW
	Area =	0.125	in^2	Xcg =	-2.250	in	
				Ycg =	-1.875	in	
Rectangular Shape : 5	Height =	0.125	in	Width =	1.000	in	Rotation = 0 deg CCW
	Area =	0.125	in^2	Xcg =	2.250	in	
				Ycg =	-1.875	in	

MEMBER PROPERTIES

AHBL, Inc.
2215 North 30th Street, Suite 200
Tacoma, WA 98403
(253) 383-2422

Project Title: Centeris Puyallup
Engineer: ADM
Project ID: 2241015.20
Project Descr: Modular Ramps and Stairs

Printed: 10 DEC 2024, 4:32PM

General Section Property Calculator

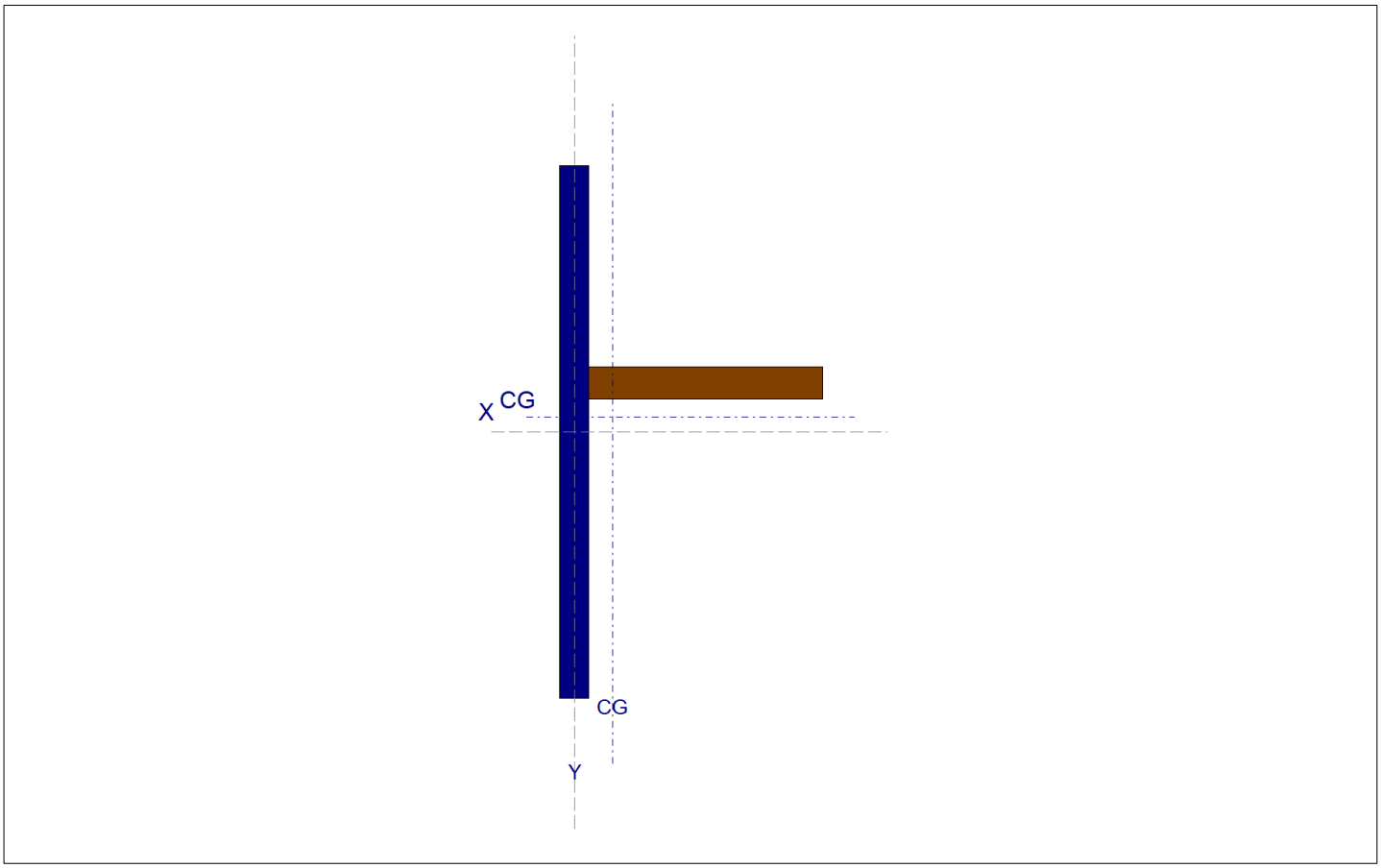
Project File: 2241015 Welcome Ramp.ec6

DESCRIPTION: Platform Support Rail / Edge Member

Final Section Properties

Total Area	:	1.438 in^2	Ixx	:	1.378 in^4	Sxx : - Y	: 0.6520 in^3
			Iyy	:	0.4212 in^4	Sxx : +Y	: 0.7309 in^3
Calculated final C.G. distance from Datum :						Syy : - X	: 0.9810 in^3
X cg Dist.	:	0.3043 in	Zxx	:	1.058 in^3	Syy : +X	: 0.2682 in^3
Y cg Dist.	:	0.1141 in	Zyy	:	0.4880 in^3		
Edge Distances from CG. :						r xx	: 0.9792 in
+X	:	1.571 in	+Y	:	1.886 in	r yy	: 0.5413 in
-X	:	-0.4293 in	-Y	:	-2.114 in		

Rotation of All Components @ / 0.00 deg CCW



Rectangular & Circular Shapes

Rectangular Shape : 1	Height =	4.000 in	Width =	0.250 in	Rotation =	0 deg CCW	
	Area =	1.000 in^2	Xcg =	0.000 in			
			Ycg =	0.000 in			

AHBL, Inc.
2215 North 30th Street, Suite 200
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(253) 383-2422

Project Title: Centeris Puyallup
Engineer: ADM
Project ID: 2241015.20
Project Descr: Modular Ramps and Stairs

Printed: 10 DEC 2024, 4:32PM

General Section Property Calculator

Project File: 2241015 Welcome Ramp.ec6

DESCRIPTION: Platform Support Rail / Edge Member

Rectangular Shape : 2

Height =	0.250 in	Width =	1.750 in	Rotation =	0 deg CCW
Area =	0.438 in^2	Xcg =	1.000 in		
		Ycg =	0.375 in		

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Project Title: Centeris Puyallup
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Project ID: 2241015.20
Project Descr: Modular Ramps and Stairs

Printed: 10 DEC 2024, 4:32PM

General Section Property Calculator

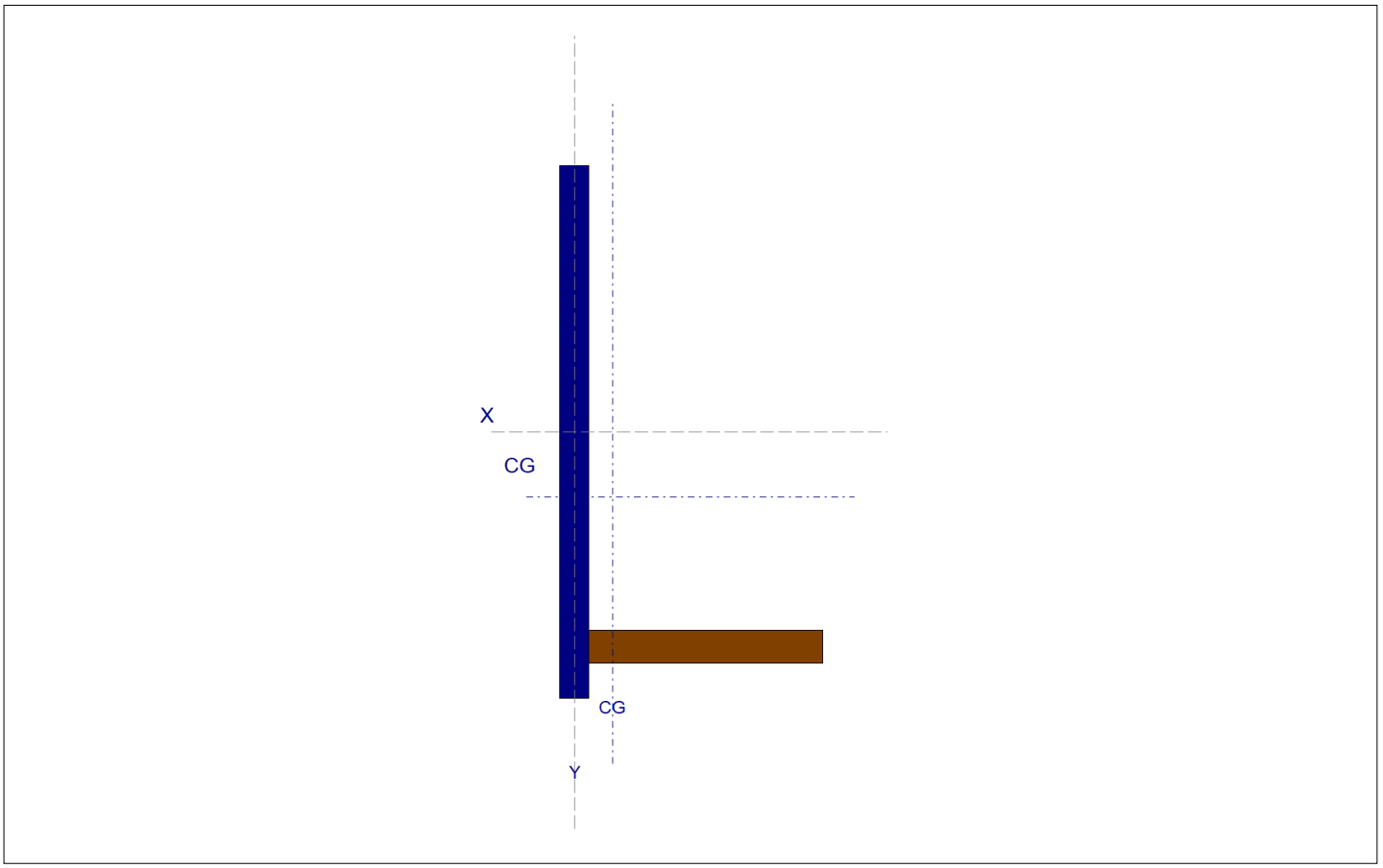
Project File: 2241015 Welcome Ramp.ec6

DESCRIPTION: Ramp Support Rail / Edge Member

Final Section Properties

Total Area	:	1.438 in^2	Ixx	:	2.139 in^4	Sxx : - Y	: 1.421 in^3
			Iyy	:	0.4212 in^4	Sxx : +Y	: 0.8576 in^3
Calculated final C.G. distance from Datum :						Syy : - X	: 0.9810 in^3
X cg Dist.	:	0.3043 in	Zxx	:	1.520 in^3	Syy : +X	: 0.2682 in^3
Y cg Dist.	:	-0.4946 in	Zyy	:	0.4880 in^3		
Edge Distances from CG. :						r xx	: 1.220 in
+X	:	1.571 in	+Y	:	2.495 in	r yy	: 0.5413 in
-X	:	-0.4293 in	-Y	:	-1.505 in		

Rotation of All Components @ / 0.00 deg CCW



Rectangular & Circular Shapes

Rectangular Shape : 1	Height =	4.000 in	Width =	0.250 in	Rotation =	0 deg CCW	
	Area =	1.000 in^2	Xcg =	0.000 in			
			Ycg =	0.000 in			

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Project Title: Centeris Puyallup
Engineer: ADM
Project ID: 2241015.20
Project Descr: Modular Ramps and Stairs

Printed: 10 DEC 2024, 4:32PM

General Section Property Calculator

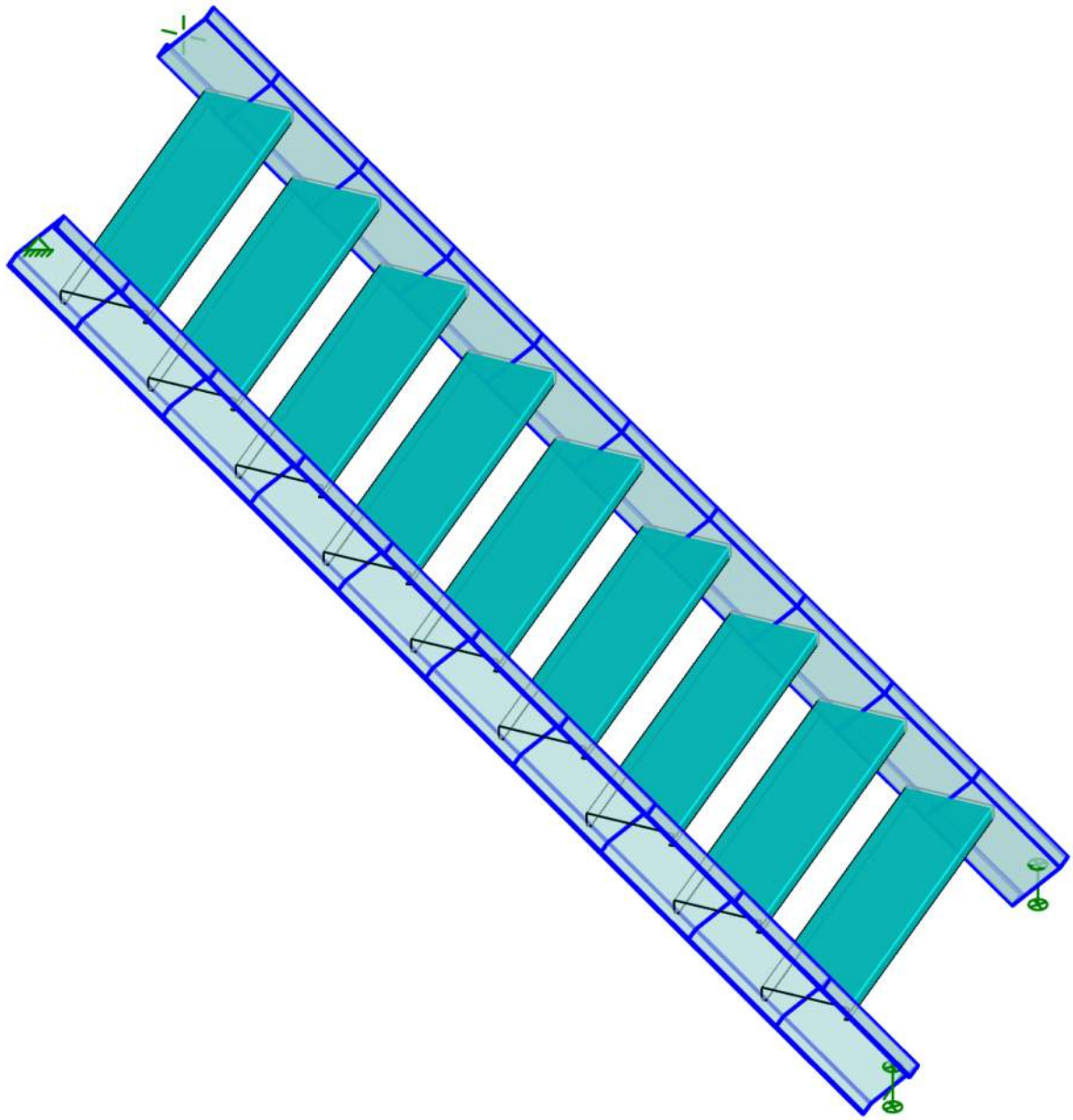
Project File: 2241015 Welcome Ramp.ec6

DESCRIPTION: Ramp Support Rail / Edge Member

Rectangular Shape : 2

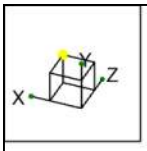
Height =	0.250 in	Width =	1.750 in	Rotation =	0 deg CCW
Area =	0.438 in^2	Xcg =	1.000 in		
		Ycg =	-1.625 in		

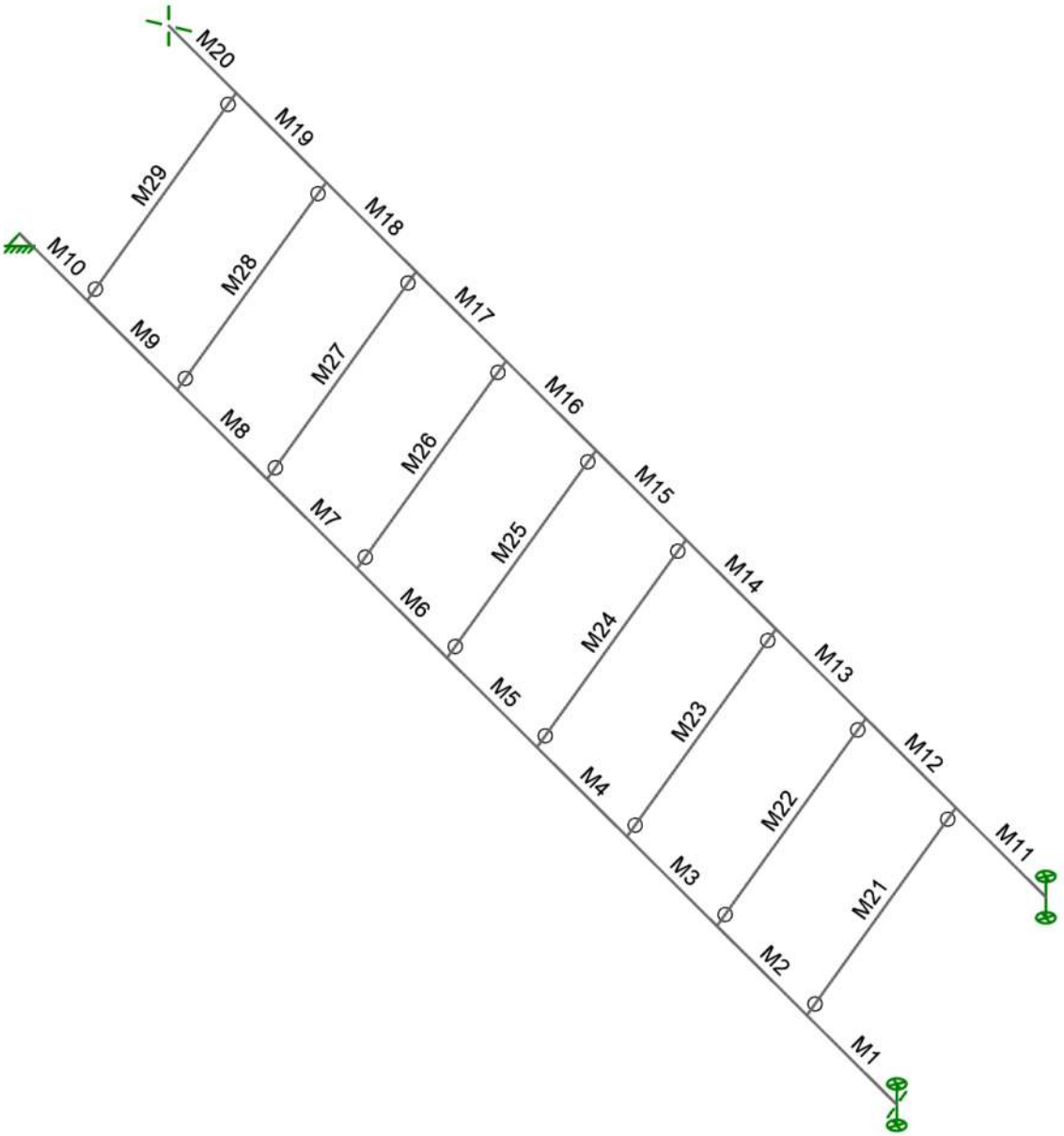
STAIR STRUCTURAL CALCULATIONS



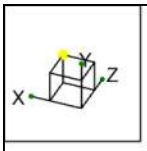
Envelope Only Solution

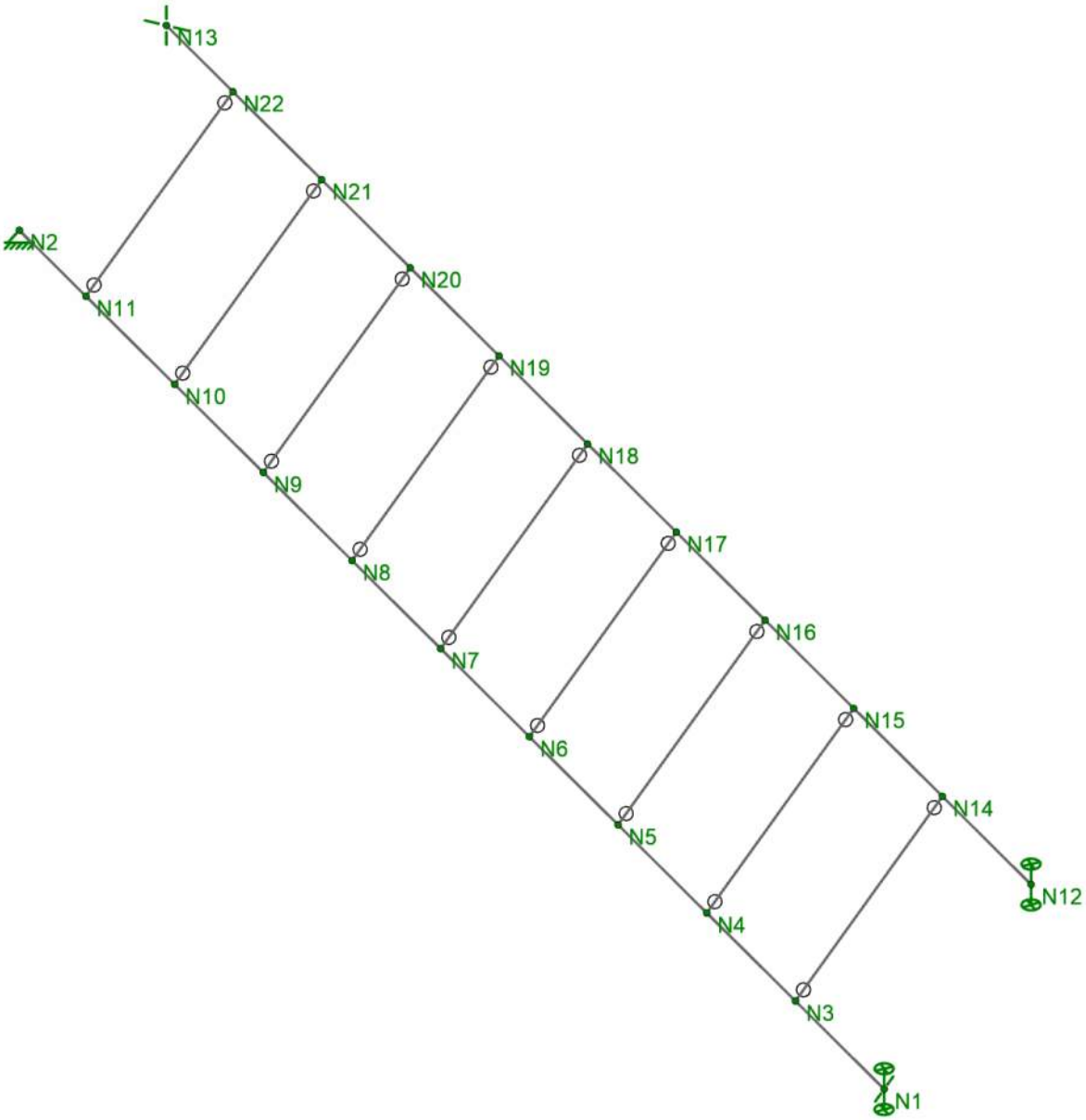
RISA	AHBL, Inc.	Exterior Stair	SK-1
	DMcEachern		Dec 10, 2024 at 05:43 PM
	2241015.20		Centeris Stair.r3d



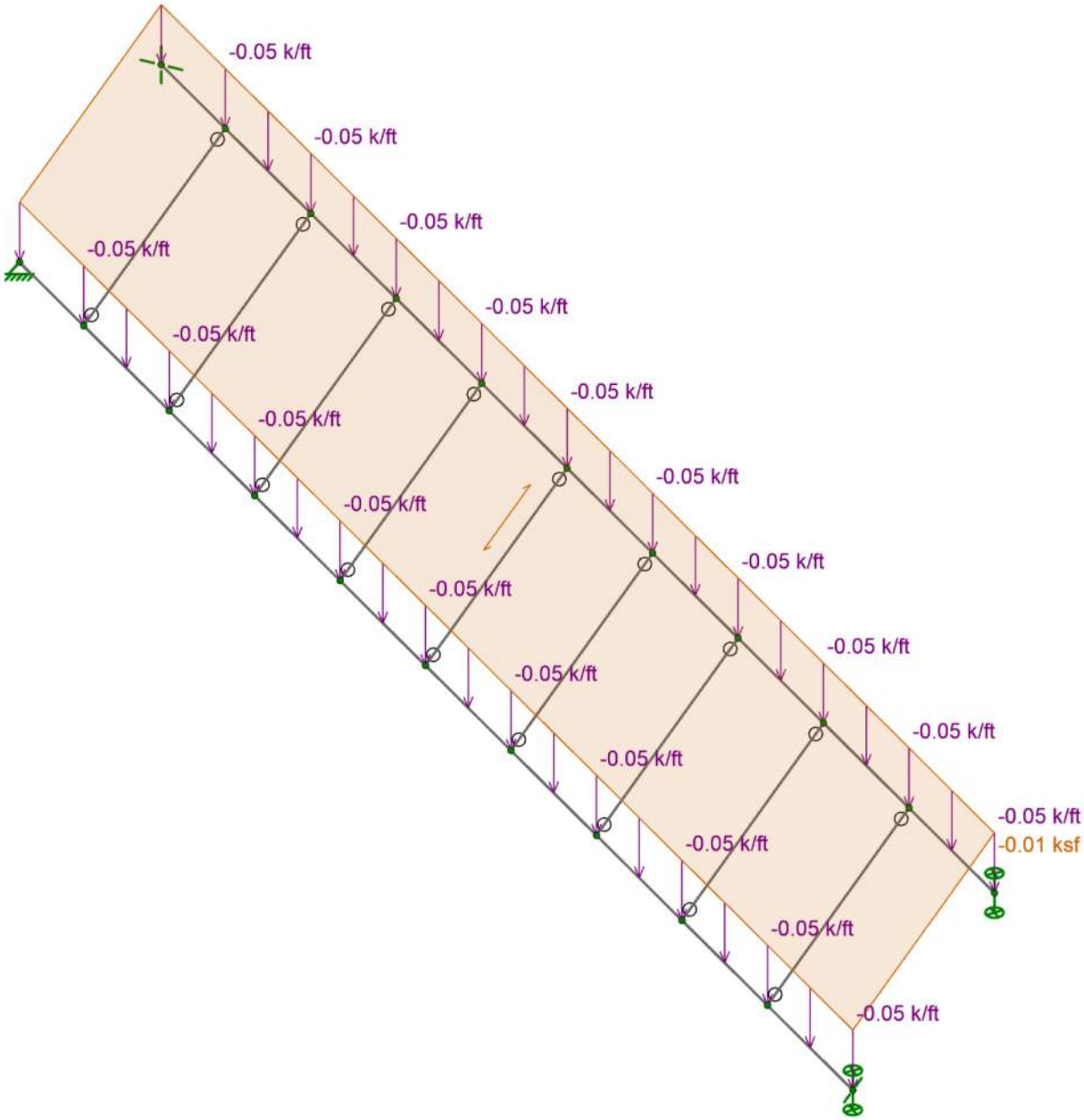


IRISA A NEMETSCHEK COMPANY	AHBL, Inc.	Exterior Stair	SK-2
	DMcEachern		Dec 10, 2024 at 05:44 PM
	2241015.20		Centeris Stair.r3d



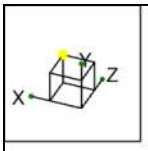


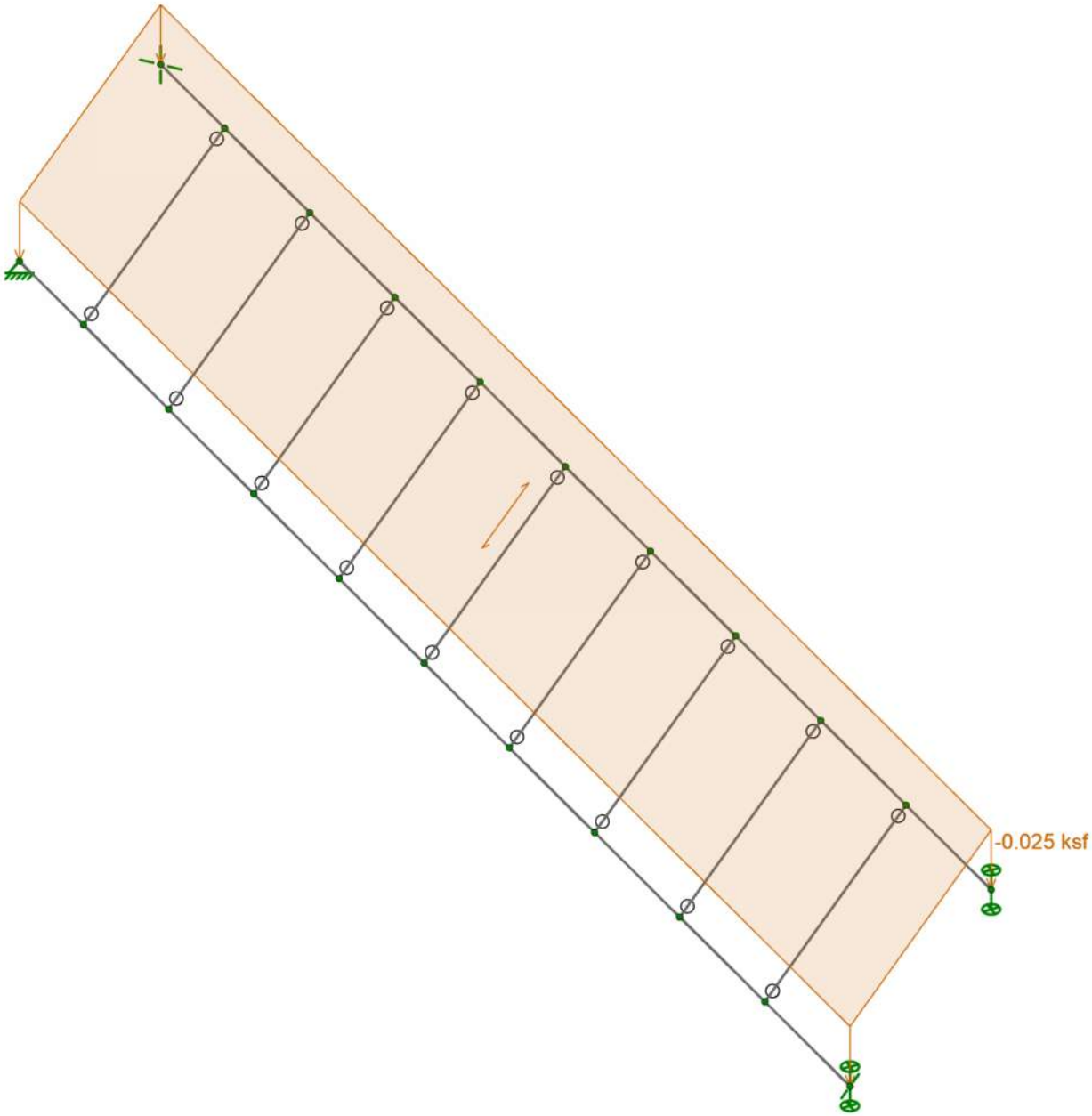
IRISA A NEMETSCHEK COMPANY	AHBL, Inc.	Exterior Stair	SK-3
	DMcEachern		Dec 10, 2024 at 05:44 PM
	2241015.20		Centeris Stair.r3d



Loads: BLC 1, Dead Load

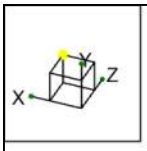
RISA	AHBL, Inc.	Exterior Stair	SK-4
	DMcEachern		Dec 10, 2024 at 05:45 PM
	2241015.20		Centeris Stair.r3d

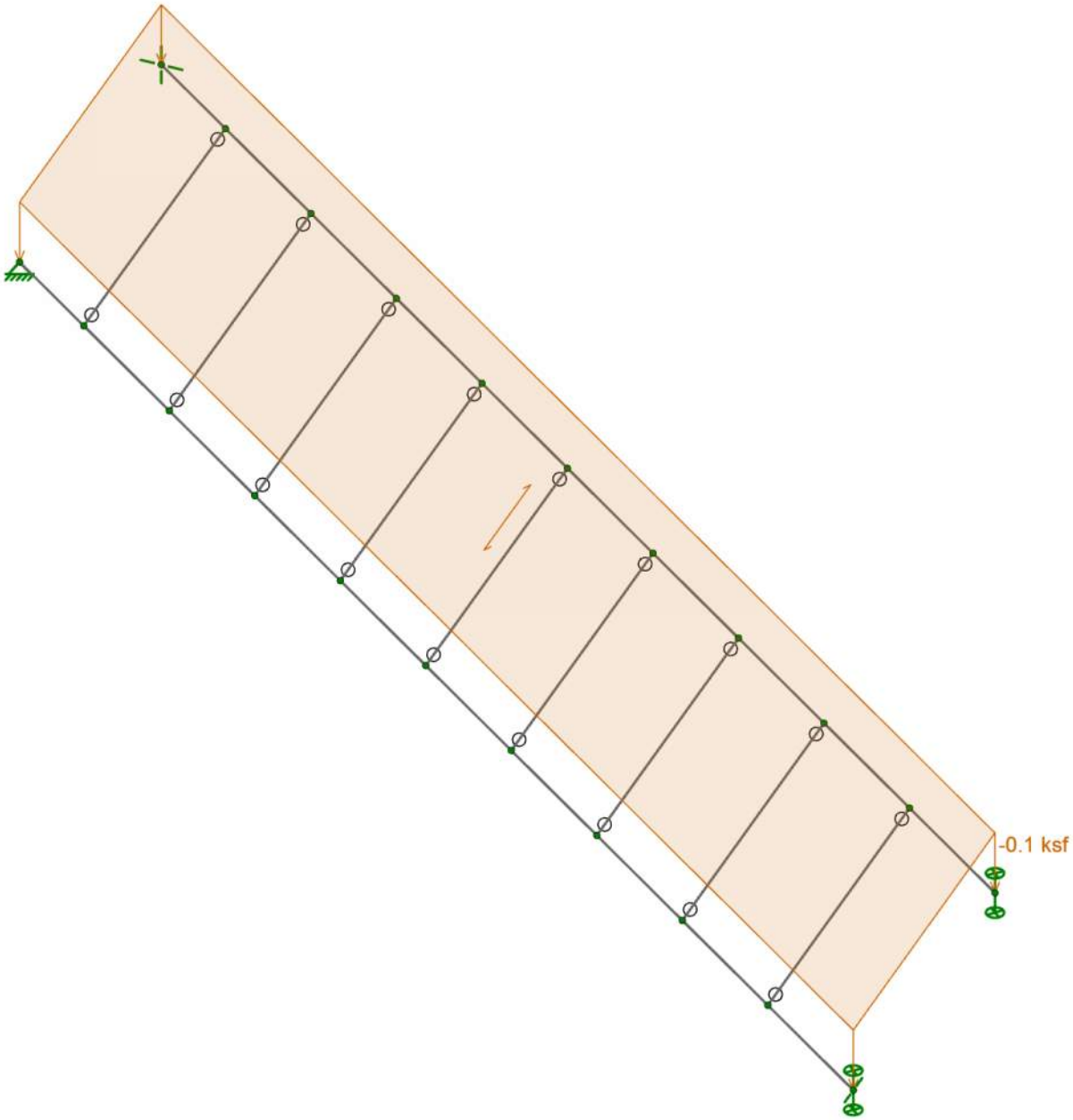




Loads: BLC 2, Snow Load

RISA A NEMETSCHEK COMPANY	AHBL, Inc.	Exterior Stair	SK-5
	DMcEachern		Dec 10, 2024 at 05:45 PM
	2241015.20		Centeris Stair.r3d





Loads: BLC 3, Live Load

RISA A NEMETSCHEK COMPANY	AHBL, Inc.	Exterior Stair	SK-6
	DMcEachern		Dec 10, 2024 at 05:45 PM
	2241015.20		Centeris Stair.r3d

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N1	0	0	0	
2	N2	9.75	8.33	0	
3	N3	1	0.854359	0	
4	N4	2	1.708718	0	
5	N5	3	2.563077	0	
6	N6	4	3.417436	0	
7	N7	5	4.271795	0	
8	N8	6	5.126154	0	
9	N9	7	5.980513	0	
10	N10	8	6.834872	0	
11	N11	9	7.689231	0	
12	N12	0	0	4	
13	N13	9.75	8.33	4	
14	N14	1	0.854359	4	
15	N15	2	1.708718	4	
16	N16	3	2.563077	4	
17	N17	4	3.417436	4	
18	N18	5	4.271795	4	
19	N19	6	5.126154	4	
20	N20	7	5.980513	4	
21	N21	8	6.834872	4	
22	N22	9	7.689231	4	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	Y Rot [k-ft/rad]
1	N1		Reaction	Reaction	Reaction
2	N2	Reaction	Reaction	Reaction	
3	N12		Reaction		Reaction
4	N13	Reaction	Reaction		

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65

Aluminum Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Table B.4	kt	Ftu [ksi]	Fty [ksi]	Fcy [ksi]	Fsu [ksi]	Ct
1	3003-H14	10100	3787.5	0.33	1.3	0.173	Table B.4-1	1	19	16	13	12	141
2	6061-T6	10100	3787.5	0.33	1.3	0.173	Table B.4-2	1	38	35	35	24	141
3	6063-T5	10100	3787.5	0.33	1.3	0.173	Table B.4-2	1	22	16	16	13	141
4	6063-T6	10100	3787.5	0.33	1.3	0.173	Table B.4-2	1	30	25	25	19	141
5	5052-H34	10200	3787.5	0.33	1.3	0.173	Table B.4-1	1	34	26	24	20	141
6	6061-T6 W	10100	3787.5	0.33	1.3	0.173	Table B.4-1	1	24	15	15	15	141

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Tread	1200S200-97	Beam	CS	A653 SS Gr50/1	Typical	1.68	0.635	30.4	0.006

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Stringer	CenterisStringer	Beam	AA Channel	6061-T6	Typical	3.533	1.838	46.982	0.066

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N3	180	Stringer	Beam	AA Channel	6061-T6	Typical
2	M2	N3	N4	180	Stringer	Beam	AA Channel	6061-T6	Typical
3	M3	N4	N5	180	Stringer	Beam	AA Channel	6061-T6	Typical
4	M4	N5	N6	180	Stringer	Beam	AA Channel	6061-T6	Typical
5	M5	N6	N7	180	Stringer	Beam	AA Channel	6061-T6	Typical
6	M6	N7	N8	180	Stringer	Beam	AA Channel	6061-T6	Typical
7	M7	N8	N9	180	Stringer	Beam	AA Channel	6061-T6	Typical
8	M8	N9	N10	180	Stringer	Beam	AA Channel	6061-T6	Typical
9	M9	N10	N11	180	Stringer	Beam	AA Channel	6061-T6	Typical
10	M10	N11	N2	180	Stringer	Beam	AA Channel	6061-T6	Typical
11	M11	N12	N14		Stringer	Beam	AA Channel	6061-T6	Typical
12	M12	N14	N15		Stringer	Beam	AA Channel	6061-T6	Typical
13	M13	N15	N16		Stringer	Beam	AA Channel	6061-T6	Typical
14	M14	N16	N17		Stringer	Beam	AA Channel	6061-T6	Typical
15	M15	N17	N18		Stringer	Beam	AA Channel	6061-T6	Typical
16	M16	N18	N19		Stringer	Beam	AA Channel	6061-T6	Typical
17	M17	N19	N20		Stringer	Beam	AA Channel	6061-T6	Typical
18	M18	N20	N21		Stringer	Beam	AA Channel	6061-T6	Typical
19	M19	N21	N22		Stringer	Beam	AA Channel	6061-T6	Typical
20	M20	N22	N13		Stringer	Beam	AA Channel	6061-T6	Typical
21	M21	N14	N3	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
22	M22	N15	N4	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
23	M23	N16	N5	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
24	M24	N17	N6	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
25	M25	N18	N7	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
26	M26	N19	N8	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
27	M27	N20	N9	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
28	M28	N21	N10	90	Tread	Beam	CS	A653 SS Gr50/1	Typical
29	M29	N22	N11	90	Tread	Beam	CS	A653 SS Gr50/1	Typical

Member Advanced Data

	Label	I Release	J Release	Col-Wall Vert Release	Physical	Deflection Ratio Options	Seismic DR
1	M1					Default	None
2	M2					Default	None
3	M3					Default	None
4	M4					Default	None
5	M5					Default	None
6	M6					Default	None
7	M7					Default	None
8	M8					Default	None
9	M9					Default	None
10	M10					Default	None
11	M11					Default	None
12	M12					Default	None
13	M13					Default	None
14	M14					Default	None
15	M15					Default	None
16	M16					Default	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Col-Wall Vert Release	Physical	Deflection Ratio Options	Seismic DR
17	M17					Default	None
18	M18					Default	None
19	M19					Default	None
20	M20					Default	None
21	M21	BenPIN	BenPIN		Yes	Default	None
22	M22	BenPIN	BenPIN		Yes	Default	None
23	M23	BenPIN	BenPIN		Yes	Default	None
24	M24	BenPIN	BenPIN		Yes	Default	None
25	M25	BenPIN	BenPIN		Yes	Default	None
26	M26	BenPIN	BenPIN		Yes	Default	None
27	M27	BenPIN	BenPIN		Yes	Default	None
28	M28	BenPIN	BenPIN		Yes	Default	None
29	M29	BenPIN	BenPIN		Yes	Default	None

Cold Formed Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	M21	Tread	4	Lbyy	Lateral
2	M22	Tread	4	Lbyy	Lateral
3	M23	Tread	4	Lbyy	Lateral
4	M24	Tread	4	Lbyy	Lateral
5	M25	Tread	4	Lbyy	Lateral
6	M26	Tread	4	Lbyy	Lateral
7	M27	Tread	4	Lbyy	Lateral
8	M28	Tread	4	Lbyy	Lateral
9	M29	Tread	4	Lbyy	Lateral

Aluminum Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	M1	Stringer	1.315	Lbyy	Lateral
2	M2	Stringer	1.315	Lbyy	Lateral
3	M3	Stringer	1.315	Lbyy	Lateral
4	M4	Stringer	1.315	Lbyy	Lateral
5	M5	Stringer	1.315	Lbyy	Lateral
6	M6	Stringer	1.315	Lbyy	Lateral
7	M7	Stringer	1.315	Lbyy	Lateral
8	M8	Stringer	1.315	Lbyy	Lateral
9	M9	Stringer	1.315	Lbyy	Lateral
10	M10	Stringer	0.986	Lbyy	Lateral
11	M11	Stringer	1.315	Lbyy	Lateral
12	M12	Stringer	1.315	Lbyy	Lateral
13	M13	Stringer	1.315	Lbyy	Lateral
14	M14	Stringer	1.315	Lbyy	Lateral
15	M15	Stringer	1.315	Lbyy	Lateral
16	M16	Stringer	1.315	Lbyy	Lateral
17	M17	Stringer	1.315	Lbyy	Lateral
18	M18	Stringer	1.315	Lbyy	Lateral
19	M19	Stringer	1.315	Lbyy	Lateral
20	M20	Stringer	0.986	Lbyy	Lateral

Member Distributed Loads (BLC 1 : Dead Load)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M5	Y	-0.05	-0.05	0	%100
2	M1	Y	-0.05	-0.05	0	%100
3	M12	Y	-0.05	-0.05	0	%100
4	M8	Y	-0.05	-0.05	0	%100
5	M9	Y	-0.05	-0.05	0	%100
6	M20	Y	-0.05	-0.05	0	%100
7	M17	Y	-0.05	-0.05	0	%100
8	M11	Y	-0.05	-0.05	0	%100
9	M13	Y	-0.05	-0.05	0	%100
10	M14	Y	-0.05	-0.05	0	%100
11	M15	Y	-0.05	-0.05	0	%100
12	M16	Y	-0.05	-0.05	0	%100
13	M18	Y	-0.05	-0.05	0	%100
14	M19	Y	-0.05	-0.05	0	%100
15	M10	Y	-0.05	-0.05	0	%100
16	M7	Y	-0.05	-0.05	0	%100
17	M2	Y	-0.05	-0.05	0	%100
18	M4	Y	-0.05	-0.05	0	%100
19	M3	Y	-0.05	-0.05	0	%100
20	M6	Y	-0.05	-0.05	0	%100

Member Distributed Loads (BLC 4 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M1	Y	-0.02	-0.02	0	1.315
2	M2	Y	-0.02	-0.02	1.665e-16	1.315
3	M3	Y	-0.02	-0.02	9.437e-16	1.315
4	M4	Y	-0.02	-0.02	6.106e-16	1.315
5	M5	Y	-0.02	-0.02	1.832e-15	1.315
6	M6	Y	-0.02	-0.02	2.387e-15	1.315
7	M7	Y	-0.02	-0.02	9.437e-16	1.315
8	M8	Y	-0.02	-0.02	9.437e-16	1.315
9	M9	Y	-0.035	-0.017	0	0.438
10	M9	Y	-0.017	-0.015	0.438	0.877
11	M9	Y	-0.015	-0.03	0.877	1.315
12	M10	Y	-0.02	-0.02	1.36e-15	0.986
13	M11	Y	-0.02	-0.02	0	1.315
14	M12	Y	-0.02	-0.02	0	1.315
15	M13	Y	-0.02	-0.02	1.499e-15	1.315
16	M14	Y	-0.02	-0.02	0	1.315
17	M15	Y	-0.02	-0.02	1.055e-15	1.315
18	M16	Y	-0.02	-0.02	1.721e-15	1.315
19	M17	Y	-0.02	-0.02	3.886e-16	1.315
20	M18	Y	-0.02	-0.02	3.886e-16	1.315
21	M19	Y	-0.02	-0.016	0	1.315
22	M20	Y	-0.02	-0.02	4.052e-15	0.986

Member Distributed Loads (BLC 5 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M1	Y	-0.05	-0.05	0	1.315
2	M2	Y	-0.05	-0.05	1.665e-16	1.315
3	M3	Y	-0.05	-0.05	9.437e-16	1.315
4	M4	Y	-0.05	-0.05	6.106e-16	1.315

Member Distributed Loads (BLC 5 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
5	M5	Y	-0.05	-0.05	1.832e-15	1.315
6	M6	Y	-0.05	-0.05	2.387e-15	1.315
7	M7	Y	-0.05	-0.05	9.437e-16	1.315
8	M8	Y	-0.05	-0.05	9.437e-16	1.315
9	M9	Y	-0.088	-0.043	0	0.438
10	M9	Y	-0.043	-0.038	0.438	0.877
11	M9	Y	-0.038	-0.076	0.877	1.315
12	M10	Y	-0.05	-0.05	1.36e-15	0.986
13	M11	Y	-0.05	-0.05	0	1.315
14	M12	Y	-0.05	-0.05	0	1.315
15	M13	Y	-0.05	-0.05	1.499e-15	1.315
16	M14	Y	-0.05	-0.05	0	1.315
17	M15	Y	-0.05	-0.05	1.055e-15	1.315
18	M16	Y	-0.05	-0.05	1.721e-15	1.315
19	M17	Y	-0.05	-0.05	3.886e-16	1.315
20	M18	Y	-0.05	-0.05	3.886e-16	1.315
21	M19	Y	-0.051	-0.04	0	1.315
22	M20	Y	-0.05	-0.05	4.052e-15	0.986

Member Distributed Loads (BLC 6 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M1	Y	-0.2	-0.2	0	1.315
2	M2	Y	-0.2	-0.2	1.665e-16	1.315
3	M3	Y	-0.2	-0.2	9.437e-16	1.315
4	M4	Y	-0.2	-0.2	6.106e-16	1.315
5	M5	Y	-0.2	-0.2	1.832e-15	1.315
6	M6	Y	-0.2	-0.2	2.387e-15	1.315
7	M7	Y	-0.2	-0.2	9.437e-16	1.315
8	M8	Y	-0.2	-0.2	9.437e-16	1.315
9	M9	Y	-0.353	-0.17	0	0.438
10	M9	Y	-0.17	-0.154	0.438	0.877
11	M9	Y	-0.154	-0.304	0.877	1.315
12	M10	Y	-0.2	-0.2	1.36e-15	0.986
13	M11	Y	-0.2	-0.2	0	1.315
14	M12	Y	-0.2	-0.2	0	1.315
15	M13	Y	-0.2	-0.2	1.499e-15	1.315
16	M14	Y	-0.2	-0.2	0	1.315
17	M15	Y	-0.2	-0.2	1.055e-15	1.315
18	M16	Y	-0.2	-0.2	1.721e-15	1.315
19	M17	Y	-0.2	-0.2	3.886e-16	1.315
20	M18	Y	-0.2	-0.2	3.886e-16	1.315
21	M19	Y	-0.204	-0.16	0	1.315
22	M20	Y	-0.2	-0.2	4.052e-15	0.986

Member Area Loads (BLC 1 : Dead Load)

	Node A	Node B	Node C	Node D	Direction	Load Direction	A Magnitude [ksf]	B Magnitude [ksf]	C Magnitude [ksf]	D Magnitude [ksf]	Exclude Braces
1	N12	N1	N2	N13	Y	A-B	-0.01	-0.01	-0.01	-0.01	Yes

Member Area Loads (BLC 2 : Snow Load)

	Node A	Node B	Node C	Node D	Direction	Load Direction	A Magnitude [ksf]	B Magnitude [ksf]	C Magnitude [ksf]	D Magnitude [ksf]	Exclude Braces
1	N12	N1	N2	N13	Y	A-B	-0.025	-0.025	-0.025	-0.025	Yes

Member Area Loads (BLC 3 : Live Load)

	Node A	Node B	Node C	Node D	Direction	Load Direction	A Magnitude [ksf]	B Magnitude [ksf]	C Magnitude [ksf]	D Magnitude [ksf]	Exclude Braces
1	N12	N1	N2	N13	Y	A-B	-0.1	-0.1	-0.1	-0.1	Yes

Plate Surface Loads

No Data to Print...

Wall Panel Surface Loads

No Data to Print...

Diaphragm Surface Loads

No Data to Print...

Basic Load Cases

	BLC Description	Category	Y Gravity	Distributed	Area(Member)
1	Dead Load	DL	-1	20	1
2	Snow Load	SL			1
3	Live Load	LL			1
4	BLC 1 Transient Area Loads	None		22	
5	BLC 2 Transient Area Loads	None		22	
6	BLC 3 Transient Area Loads	None		22	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Deflection 1	Yes	C	DL	1								
2	Deflection 2	Yes	C	LL	1								
3	Deflection 3	Yes	C	DL	1	LL	1						
4	IBC 21/ASCE ASD 1	Yes	C	DL	1								
5	IBC 21/ASCE ASD 2	Yes	C	DL	1	LL	1	LLS	1				
6	IBC 21/ASCE ASD 3 (b)	Yes	C	DL	1	SL	1	SLN	1				
7	IBC 21/ASCE ASD 4 (b)	Yes	C	DL	1	LL	0.75	LLS	0.75	SL	0.75	SLN	0.75

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	0	7	1.809	5	0	7	0	7	0	7	0	7
2		min	0	1	0.526	1	0	1	0	1	0	1	0	1
3	N2	max	0	4	1.837	5	0	7	0	7	0	7	0	7
4		min	0	3	0.531	1	0	1	0	1	0	1	0	1
5	N12	max	0	7	1.802	5	0	7	0	7	0	7	0	7
6		min	0	1	0.526	1	0	1	0	1	0	1	0	1
7	N13	max	0	5	1.792	5	0	7	0	7	0	7	0	7
8		min	0	6	0.527	1	0	1	0	1	0	1	0	1
9	Totals:	max	0	4	7.239	5	0	7						
10		min	0	7	2.11	1	0	1						

Envelope Node Reactions - Overstrength or Capacity Limit

No Data to Print...

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0	4	0	4	0	7	0	7	0	7	-2.106e-3	4
2		min	0	3	0	3	0	1	0	1	0	1	-7.234e-3	3
3	N2	max	0	5	0	4	0	7	0	7	0	7	7.242e-3	5
4		min	0	1	0	3	0	1	0	1	0	1	2.108e-3	1
5	N3	max	0.074	5	-0.025	4	0	7	0	7	0	7	-1.983e-3	4
6		min	0.022	1	-0.087	3	0	1	0	1	0	1	-6.809e-3	3
7	N4	max	0.139	5	-0.048	4	0	7	0	7	0	7	-1.648e-3	4
8		min	0.041	1	-0.165	3	0	1	0	1	0	1	-5.658e-3	3
9	N5	max	0.19	5	-0.065	4	0	7	0	7	0	7	-1.156e-3	4
10		min	0.055	1	-0.224	3	0	1	0	1	0	1	-3.968e-3	3
11	N6	max	0.221	5	-0.076	4	0	7	0	7	0	7	-5.614e-4	4
12		min	0.064	1	-0.261	3	0	1	0	1	0	1	-1.928e-3	3
13	N7	max	0.229	5	-0.079	4	0	7	0	7	0	7	2.755e-4	5
14		min	0.067	1	-0.271	3	0	1	0	1	0	1	8.055e-5	1
15	N8	max	0.215	5	-0.074	4	0	7	0	7	0	7	2.456e-3	5
16		min	0.063	1	-0.254	3	0	1	0	1	0	1	7.158e-4	1
17	N9	max	0.179	5	-0.062	4	0	7	0	7	0	7	4.427e-3	5
18		min	0.052	1	-0.211	3	0	1	0	1	0	1	1.29e-3	1
19	N10	max	0.124	5	-0.043	4	0	7	0	7	0	7	6.005e-3	5
20		min	0.036	1	-0.147	3	0	1	0	1	0	1	1.748e-3	1
21	N11	max	0.056	5	-0.019	4	0	7	0	7	0	7	6.997e-3	5
22		min	0.016	1	-0.066	3	0	1	0	1	0	1	2.036e-3	1
23	N12	max	0	4	0	4	0	7	0	7	0	7	-2.101e-3	4
24		min	0	3	0	3	0	1	0	1	0	1	-7.183e-3	3
25	N13	max	0	6	0	4	0	7	0	7	0	7	7.159e-3	5
26		min	0	3	0	3	0	1	0	1	0	1	2.1e-3	1
27	N14	max	0.073	5	-0.025	4	0	7	0	7	0	7	-1.978e-3	4
28		min	0.021	1	-0.087	3	0	1	0	1	0	1	-6.76e-3	3
29	N15	max	0.138	5	-0.048	4	0	7	0	7	0	7	-1.643e-3	4
30		min	0.04	1	-0.164	3	0	1	0	1	0	1	-5.613e-3	3
31	N16	max	0.188	5	-0.065	4	0	7	0	7	0	7	-1.152e-3	4
32		min	0.055	1	-0.222	3	0	1	0	1	0	1	-3.932e-3	3
33	N17	max	0.219	5	-0.076	4	0	7	0	7	0	7	-5.592e-4	4
34		min	0.064	1	-0.258	3	0	1	0	1	0	1	-1.903e-3	3
35	N18	max	0.227	5	-0.079	4	0	7	0	7	0	7	2.854e-4	5
36		min	0.067	1	-0.268	3	0	1	0	1	0	1	8.145e-5	1
37	N19	max	0.213	5	-0.074	4	0	7	0	7	0	7	2.448e-3	5
38		min	0.062	1	-0.252	3	0	1	0	1	0	1	7.15e-4	1
39	N20	max	0.177	5	-0.061	4	0	7	0	7	0	7	4.398e-3	5
40		min	0.052	1	-0.209	3	0	1	0	1	0	1	1.287e-3	1
41	N21	max	0.123	5	-0.043	4	0	7	0	7	0	7	5.95e-3	5
42		min	0.036	1	-0.145	3	0	1	0	1	0	1	1.743e-3	1
43	N22	max	0.055	5	-0.019	4	0	7	0	7	0	7	6.92e-3	5
44		min	0.016	1	-0.065	3	0	1	0	1	0	1	2.029e-3	1

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
1	M1	1	max	1.175	5	-0.401	4	0	7	0	7	0	7	0	7
2			min	0.342	1	-1.387	3	0	1	0	1	0	1	0	1
3		2	max	1.116	5	-0.383	4	0	7	0	7	0	7	0.445	5
4			min	0.326	1	-1.319	3	0	1	0	1	0	1	0.129	1
5		3	max	1.058	5	-0.364	4	0	7	0	7	0	7	0.867	5
6			min	0.31	1	-1.25	3	0	1	0	1	0	1	0.252	1
7		4	max	0.999	5	-0.345	4	0	7	0	7	0	7	1.267	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
8			min	0.294	1	-1.182	3	0	1	0	1	0	1	0.368	1
9		5	max	0.941	5	-0.327	4	0	7	0	7	0	7	1.645	5
10			min	0.278	1	-1.113	3	0	1	0	1	0	1	0.479	1
11	M2	1	max	0.933	5	-0.318	4	0	7	0	7	0	7	1.645	5
12			min	0.271	1	-1.101	3	0	1	0	1	0	1	0.479	1
13		2	max	0.875	5	-0.299	4	0	7	0	7	0	7	1.995	5
14			min	0.255	1	-1.032	3	0	1	0	1	0	1	0.58	1
15		3	max	0.816	5	-0.281	4	0	7	0	7	0	7	2.323	5
16			min	0.239	1	-0.964	3	0	1	0	1	0	1	0.676	1
17		4	max	0.757	5	-0.262	4	0	7	0	7	0	7	2.629	5
18			min	0.223	1	-0.895	3	0	1	0	1	0	1	0.765	1
19		5	max	0.699	5	-0.244	4	0	7	0	7	0	7	2.912	5
20			min	0.208	1	-0.826	3	0	1	0	1	0	1	0.848	1
21	M3	1	max	0.691	5	-0.235	4	0	7	0	7	0	7	2.912	5
22			min	0.2	1	-0.814	3	0	1	0	1	0	1	0.848	1
23		2	max	0.633	5	-0.216	4	0	7	0	7	0	7	3.168	5
24			min	0.184	1	-0.745	3	0	1	0	1	0	1	0.922	1
25		3	max	0.574	5	-0.197	4	0	7	0	7	0	7	3.402	5
26			min	0.168	1	-0.677	3	0	1	0	1	0	1	0.99	1
27		4	max	0.516	5	-0.179	4	0	7	0	7	0	7	3.613	5
28			min	0.153	1	-0.608	3	0	1	0	1	0	1	1.052	1
29		5	max	0.457	5	-0.16	4	0	7	0	7	0	7	3.802	5
30			min	0.137	1	-0.54	3	0	1	0	1	0	1	1.108	1
31	M4	1	max	0.45	5	-0.151	4	0	7	0	7	0	7	3.802	5
32			min	0.129	1	-0.528	3	0	1	0	1	0	1	1.108	1
33		2	max	0.391	5	-0.133	4	0	7	0	7	0	7	3.964	5
34			min	0.113	1	-0.459	3	0	1	0	1	0	1	1.154	1
35		3	max	0.333	5	-0.114	4	0	7	0	7	0	7	4.104	5
36			min	0.098	1	-0.391	3	0	1	0	1	0	1	1.195	1
37		4	max	0.274	5	-0.096	4	0	7	0	7	0	7	4.221	5
38			min	0.082	1	-0.322	3	0	1	0	1	0	1	1.23	1
39		5	max	0.215	5	-0.077	4	0	7	0	7	0	7	4.316	5
40			min	0.066	1	-0.254	3	0	1	0	1	0	1	1.258	1
41	M5	1	max	0.208	5	-0.068	4	0	7	0	7	0	7	4.316	5
42			min	0.058	1	-0.244	3	0	1	0	1	0	1	1.258	1
43		2	max	0.149	5	-0.05	4	0	7	0	7	0	7	4.385	5
44			min	0.043	1	-0.175	3	0	1	0	1	0	1	1.277	1
45		3	max	0.091	5	-0.031	4	0	7	0	7	0	7	4.431	5
46			min	0.027	1	-0.107	3	0	1	0	1	0	1	1.291	1
47		4	max	0.032	5	-0.013	4	0	7	0	7	0	7	4.455	5
48			min	0.011	1	-0.038	3	0	1	0	1	0	1	1.298	1
49		5	max	-0.005	4	0.031	5	0	7	0	7	0	7	4.456	5
50			min	-0.026	3	0.006	1	0	1	0	1	0	1	1.299	1
51	M6	1	max	-0.012	4	0.039	5	0	7	0	7	0	7	4.456	5
52			min	-0.034	3	0.015	1	0	1	0	1	0	1	1.299	1
53		2	max	-0.028	4	0.108	5	0	7	0	7	0	7	4.432	5
54			min	-0.092	3	0.033	1	0	1	0	1	0	1	1.291	1
55		3	max	-0.044	4	0.177	5	0	7	0	7	0	7	4.385	5
56			min	-0.151	3	0.052	1	0	1	0	1	0	1	1.277	1
57		4	max	-0.06	4	0.245	5	0	7	0	7	0	7	4.316	5
58			min	-0.209	3	0.07	1	0	1	0	1	0	1	1.257	1
59		5	max	-0.076	4	0.314	5	0	7	0	7	0	7	4.224	5
60			min	-0.268	3	0.089	1	0	1	0	1	0	1	1.231	1
61	M7	1	max	-0.083	4	0.322	5	0	7	0	7	0	7	4.224	5
62			min	-0.275	3	0.098	1	0	1	0	1	0	1	1.231	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
63		2	max	-0.099	4	0.391	5	0	7	0	7	0	7	4.107	5
64			min	-0.334	3	0.116	1	0	1	0	1	0	1	1.196	1
65		3	max	-0.115	4	0.459	5	0	7	0	7	0	7	3.967	5
66			min	-0.393	3	0.135	1	0	1	0	1	0	1	1.155	1
67		4	max	-0.131	4	0.528	5	0	7	0	7	0	7	3.804	5
68			min	-0.451	3	0.153	1	0	1	0	1	0	1	1.107	1
69		5	max	-0.147	4	0.597	5	0	7	0	7	0	7	3.62	5
70			min	-0.51	3	0.172	1	0	1	0	1	0	1	1.054	1
71	M8	1	max	-0.154	4	0.605	5	0	7	0	7	0	7	3.62	5
72			min	-0.517	3	0.18	1	0	1	0	1	0	1	1.054	1
73		2	max	-0.17	4	0.674	5	0	7	0	7	0	7	3.409	5
74			min	-0.576	3	0.199	1	0	1	0	1	0	1	0.992	1
75		3	max	-0.186	4	0.742	5	0	7	0	7	0	7	3.176	5
76			min	-0.634	3	0.218	1	0	1	0	1	0	1	0.923	1
77		4	max	-0.202	4	0.811	5	0	7	0	7	0	7	2.921	5
78			min	-0.693	3	0.236	1	0	1	0	1	0	1	0.848	1
79		5	max	-0.218	4	0.879	5	0	7	0	7	0	7	2.643	5
80			min	-0.751	3	0.255	1	0	1	0	1	0	1	0.768	1
81	M9	1	max	-0.225	4	0.888	5	0	7	0	7	0	7	2.643	5
82			min	-0.759	3	0.263	1	0	1	0	1	0	1	0.768	1
83		2	max	-0.243	4	0.98	5	0	7	0	7	0	7	2.335	5
84			min	-0.837	3	0.284	1	0	1	0	1	0	1	0.678	1
85		3	max	-0.258	4	1.042	5	0	7	0	7	0	7	2.002	5
86			min	-0.89	3	0.302	1	0	1	0	1	0	1	0.581	1
87		4	max	-0.273	4	1.1	5	0	7	0	7	0	7	1.65	5
88			min	-0.94	3	0.32	1	0	1	0	1	0	1	0.479	1
89		5	max	-0.29	4	1.182	5	0	7	0	7	0	7	1.276	5
90			min	-1.01	3	0.339	1	0	1	0	1	0	1	0.371	1
91	M10	1	max	-0.297	4	1.191	5	0	7	0	7	0	7	1.276	5
92			min	-1.017	3	0.348	1	0	1	0	1	0	1	0.371	1
93		2	max	-0.309	4	1.242	5	0	7	0	7	0	7	0.976	5
94			min	-1.061	3	0.362	1	0	1	0	1	0	1	0.283	1
95		3	max	-0.321	4	1.293	5	0	7	0	7	0	7	0.663	5
96			min	-1.105	3	0.376	1	0	1	0	1	0	1	0.192	1
97		4	max	-0.333	4	1.345	5	0	7	0	7	0	7	0.338	5
98			min	-1.149	3	0.39	1	0	1	0	1	0	1	0.098	1
99		5	max	-0.345	4	1.396	5	0	7	0	7	0	7	0	7
100			min	-1.193	3	0.404	1	0	1	0	1	0	1	0	1
101	M11	1	max	1.171	5	1.382	5	0	7	0	7	0	7	0	7
102			min	0.341	1	0.401	1	0	1	0	1	0	1	0	1
103		2	max	1.112	5	1.314	5	0	7	0	7	0	7	-0.129	4
104			min	0.326	1	0.382	1	0	1	0	1	0	1	-0.443	3
105		3	max	1.054	5	1.245	5	0	7	0	7	0	7	-0.251	4
106			min	0.31	1	0.364	1	0	1	0	1	0	1	-0.864	3
107		4	max	0.995	5	1.177	5	0	7	0	7	0	7	-0.368	4
108			min	0.294	1	0.345	1	0	1	0	1	0	1	-1.262	3
109		5	max	0.936	5	1.108	5	0	7	0	7	0	7	-0.478	4
110			min	0.278	1	0.326	1	0	1	0	1	0	1	-1.638	3
111	M12	1	max	0.929	5	1.096	5	0	7	0	7	0	7	-0.478	4
112			min	0.271	1	0.317	1	0	1	0	1	0	1	-1.638	3
113		2	max	0.87	5	1.027	5	0	7	0	7	0	7	-0.579	4
114			min	0.255	1	0.299	1	0	1	0	1	0	1	-1.987	3
115		3	max	0.812	5	0.958	5	0	7	0	7	0	7	-0.675	4
116			min	0.239	1	0.28	1	0	1	0	1	0	1	-2.313	3
117		4	max	0.753	5	0.89	5	0	7	0	7	0	7	-0.764	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
118			min	0.223	1	0.262	1	0	1	0	1	0	1	-2.617	3
119		5	max	0.695	5	0.821	5	0	7	0	7	0	7	-0.847	4
120			min	0.207	1	0.243	1	0	1	0	1	0	1	-2.899	3
121	M13	1	max	0.687	5	0.809	5	0	7	0	7	0	7	-0.847	4
122			min	0.2	1	0.234	1	0	1	0	1	0	1	-2.899	3
123		2	max	0.629	5	0.74	5	0	7	0	7	0	7	-0.921	4
124			min	0.184	1	0.216	1	0	1	0	1	0	1	-3.153	3
125		3	max	0.57	5	0.672	5	0	7	0	7	0	7	-0.989	4
126			min	0.168	1	0.197	1	0	1	0	1	0	1	-3.385	3
127		4	max	0.512	5	0.603	5	0	7	0	7	0	7	-1.05	4
128			min	0.152	1	0.178	1	0	1	0	1	0	1	-3.595	3
129		5	max	0.453	5	0.535	5	0	7	0	7	0	7	-1.106	4
130			min	0.136	1	0.16	1	0	1	0	1	0	1	-3.782	3
131	M14	1	max	0.446	5	0.523	5	0	7	0	7	0	7	-1.106	4
132			min	0.129	1	0.151	1	0	1	0	1	0	1	-3.782	3
133		2	max	0.387	5	0.454	5	0	7	0	7	0	7	-1.152	4
134			min	0.113	1	0.132	1	0	1	0	1	0	1	-3.943	3
135		3	max	0.328	5	0.386	5	0	7	0	7	0	7	-1.193	4
136			min	0.097	1	0.114	1	0	1	0	1	0	1	-4.081	3
137		4	max	0.27	5	0.317	5	0	7	0	7	0	7	-1.227	4
138			min	0.081	1	0.095	1	0	1	0	1	0	1	-4.197	3
139		5	max	0.211	5	0.249	5	0	7	0	7	0	7	-1.256	4
140			min	0.065	1	0.077	1	0	1	0	1	0	1	-4.29	3
141	M15	1	max	0.204	5	0.239	5	0	7	0	7	0	7	-1.256	4
142			min	0.058	1	0.068	1	0	1	0	1	0	1	-4.29	3
143		2	max	0.145	5	0.17	5	0	7	0	7	0	7	-1.275	4
144			min	0.042	1	0.049	1	0	1	0	1	0	1	-4.357	3
145		3	max	0.087	5	0.101	5	0	7	0	7	0	7	-1.288	4
146			min	0.026	1	0.031	1	0	1	0	1	0	1	-4.401	3
147		4	max	0.028	5	0.033	5	0	7	0	7	0	7	-1.295	4
148			min	0.01	1	0.012	1	0	1	0	1	0	1	-4.424	3
149		5	max	-0.005	4	-0.006	4	0	7	0	7	0	7	-1.296	4
150			min	-0.031	3	-0.036	3	0	1	0	1	0	1	-4.423	3
151	M16	1	max	-0.013	4	-0.015	4	0	7	0	7	0	7	-1.296	4
152			min	-0.038	3	-0.044	3	0	1	0	1	0	1	-4.423	3
153		2	max	-0.029	4	-0.034	4	0	7	0	7	0	7	-1.288	4
154			min	-0.097	3	-0.113	3	0	1	0	1	0	1	-4.397	3
155		3	max	-0.045	4	-0.052	4	0	7	0	7	0	7	-1.274	4
156			min	-0.155	3	-0.182	3	0	1	0	1	0	1	-4.349	3
157		4	max	-0.06	4	-0.071	4	0	7	0	7	0	7	-1.254	4
158			min	-0.214	3	-0.25	3	0	1	0	1	0	1	-4.278	3
159		5	max	-0.076	4	-0.089	4	0	7	0	7	0	7	-1.227	4
160			min	-0.272	3	-0.319	3	0	1	0	1	0	1	-4.184	3
161	M17	1	max	-0.084	4	-0.098	4	0	7	0	7	0	7	-1.227	4
162			min	-0.28	3	-0.327	3	0	1	0	1	0	1	-4.184	3
163		2	max	-0.1	4	-0.117	4	0	7	0	7	0	7	-1.192	4
164			min	-0.338	3	-0.396	3	0	1	0	1	0	1	-4.065	3
165		3	max	-0.115	4	-0.135	4	0	7	0	7	0	7	-1.151	4
166			min	-0.397	3	-0.465	3	0	1	0	1	0	1	-3.924	3
167		4	max	-0.131	4	-0.154	4	0	7	0	7	0	7	-1.103	4
168			min	-0.455	3	-0.533	3	0	1	0	1	0	1	-3.76	3
169		5	max	-0.147	4	-0.172	4	0	7	0	7	0	7	-1.05	4
170			min	-0.514	3	-0.602	3	0	1	0	1	0	1	-3.573	3
171	M18	1	max	-0.155	4	-0.181	4	0	7	0	7	0	7	-1.05	4
172			min	-0.521	3	-0.61	3	0	1	0	1	0	1	-3.573	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
173		2	max	-0.17	4	-0.199	4	0	7	0	7	0	7	-0.987	4
174			min	-0.58	3	-0.679	3	0	1	0	1	0	1	-3.361	3
175		3	max	-0.186	4	-0.218	4	0	7	0	7	0	7	-0.919	4
176			min	-0.639	3	-0.747	3	0	1	0	1	0	1	-3.127	3
177		4	max	-0.202	4	-0.237	4	0	7	0	7	0	7	-0.844	4
178			min	-0.697	3	-0.816	3	0	1	0	1	0	1	-2.87	3
179		5	max	-0.218	4	-0.255	4	0	7	0	7	0	7	-0.763	4
180			min	-0.756	3	-0.885	3	0	1	0	1	0	1	-2.59	3
181	M19	1	max	-0.225	4	-0.264	4	0	7	0	7	0	7	-0.763	4
182			min	-0.763	3	-0.893	3	0	1	0	1	0	1	-2.59	3
183		2	max	-0.241	4	-0.282	4	0	7	0	7	0	7	-0.673	4
184			min	-0.821	3	-0.961	3	0	1	0	1	0	1	-2.285	3
185		3	max	-0.257	4	-0.301	4	0	7	0	7	0	7	-0.577	4
186			min	-0.877	3	-1.027	3	0	1	0	1	0	1	-1.958	3
187		4	max	-0.272	4	-0.319	4	0	7	0	7	0	7	-0.475	4
188			min	-0.93	3	-1.089	3	0	1	0	1	0	1	-1.61	3
189		5	max	-0.287	4	-0.336	4	0	7	0	7	0	7	-0.368	4
190			min	-0.981	3	-1.148	3	0	1	0	1	0	1	-1.242	3
191	M20	1	max	-0.295	4	-0.345	4	0	7	0	7	0	7	-0.368	4
192			min	-0.988	3	-1.157	3	0	1	0	1	0	1	-1.242	3
193		2	max	-0.307	4	-0.359	4	0	7	0	7	0	7	-0.281	4
194			min	-1.032	3	-1.208	3	0	1	0	1	0	1	-0.951	3
195		3	max	-0.319	4	-0.373	4	0	7	0	7	0	7	-0.191	4
196			min	-1.076	3	-1.26	3	0	1	0	1	0	1	-0.647	3
197		4	max	-0.33	4	-0.387	4	0	7	0	7	0	7	-0.097	4
198			min	-1.12	3	-1.311	3	0	1	0	1	0	1	-0.33	3
199		5	max	-0.342	4	-0.401	4	0	7	0	7	0	7	0	7
200			min	-1.164	3	-1.362	3	0	1	0	1	0	1	0	1
201	M21	1	max	0	7	0	7	0	2	0	4	0	7	0	7
202			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
203		2	max	0	7	0	7	0	2	0	4	0	2	0	7
204			min	0	1	0	1	-0.006	1	0	3	-0.009	1	0	1
205		3	max	0	7	0	7	0	7	0	4	0	2	0	7
206			min	0	1	0	1	0	1	0	3	-0.011	1	0	1
207		4	max	0	7	0	7	0.006	7	0	4	0	2	0	7
208			min	0	1	0	1	0	2	0	3	-0.009	1	0	1
209		5	max	0	7	0	7	0.011	7	0	4	0	7	0	7
210			min	0	1	0	1	0	2	0	3	0	1	0	1
211	M22	1	max	0	7	0	7	0	2	0	4	0	7	0	7
212			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
213		2	max	0	7	0	7	0	2	0	4	0	2	0	7
214			min	0	1	0	1	-0.006	1	0	3	-0.009	1	0	1
215		3	max	0	7	0	7	0	7	0	4	0	2	0	7
216			min	0	1	0	1	0	1	0	3	-0.011	1	0	1
217		4	max	0	7	0	7	0.006	7	0	4	0	2	0	7
218			min	0	1	0	1	0	2	0	3	-0.009	1	0	1
219		5	max	0	7	0	7	0.011	7	0	4	0	7	0	7
220			min	0	1	0	1	0	2	0	3	0	1	0	1
221	M23	1	max	0	7	0	7	0	2	0	4	0	7	0	7
222			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
223		2	max	0	7	0	7	0	2	0	4	0	2	0	7
224			min	0	1	0	1	-0.006	1	0	3	-0.009	1	0	1
225		3	max	0	7	0	7	0	7	0	4	0	2	0	7
226			min	0	1	0	1	0	1	0	3	-0.011	1	0	1
227		4	max	0	7	0	7	0.006	7	0	4	0	2	0	7

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
228			min	0	1	0	1	0	2	0	3	-0.009	1	0	1
229		5	max	0	7	0	7	0.011	7	0	4	0	7	0	7
230			min	0	1	0	1	0	2	0	3	0	1	0	1
231	M24	1	max	0	7	0	7	0	2	0	4	0	7	0	7
232			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
233		2	max	0	7	0	7	0	2	0	4	0	2	0	7
234			min	0	1	0	1	-0.006	1	0	3	-0.009	1	0	1
235		3	max	0	7	0	7	0	7	0	4	0	2	0	7
236			min	0	1	0	1	0	1	0	3	-0.011	1	0	1
237		4	max	0	7	0	7	0.006	7	0	4	0	2	0	7
238			min	0	1	0	1	0	2	0	3	-0.009	1	0	1
239		5	max	0	7	0	7	0.011	7	0	4	0	7	0	7
240			min	0	1	0	1	0	2	0	3	0	1	0	1
241	M25	1	max	0	7	0	7	0	2	0	4	0	7	0	7
242			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
243		2	max	0	7	0	7	0	2	0	4	0	2	0	7
244			min	0	1	0	1	-0.006	1	0	3	-0.009	1	0	1
245		3	max	0	7	0	7	0	7	0	4	0	2	0	7
246			min	0	1	0	1	0	1	0	3	-0.011	1	0	1
247		4	max	0	7	0	7	0.006	7	0	4	0	2	0	7
248			min	0	1	0	1	0	2	0	3	-0.009	1	0	1
249		5	max	0	7	0	7	0.011	7	0	4	0	7	0	7
250			min	0	1	0	1	0	2	0	3	0	1	0	1
251	M26	1	max	0	7	0	7	0	2	0	5	0	7	0	7
252			min	0	1	0	1	-0.011	1	0	1	0	1	0	1
253		2	max	0	7	0	7	0	2	0	5	0	2	0	7
254			min	0	1	0	1	-0.006	1	0	1	-0.009	1	0	1
255		3	max	0	7	0	7	0	7	0	5	0	2	0	7
256			min	0	1	0	1	0	1	0	1	-0.011	1	0	1
257		4	max	0	7	0	7	0.006	7	0	5	0	2	0	7
258			min	0	1	0	1	0	2	0	1	-0.009	1	0	1
259		5	max	0	7	0	7	0.011	7	0	5	0	7	0	7
260			min	0	1	0	1	0	2	0	1	0	1	0	1
261	M27	1	max	0	7	0	7	0	2	0	5	0	7	0	7
262			min	0	1	0	1	-0.011	1	0	1	0	1	0	1
263		2	max	0	7	0	7	0	2	0	5	0	2	0	7
264			min	0	1	0	1	-0.006	1	0	1	-0.009	1	0	1
265		3	max	0	7	0	7	0	7	0	5	0	2	0	7
266			min	0	1	0	1	0	1	0	1	-0.011	1	0	1
267		4	max	0	7	0	7	0.006	7	0	5	0	2	0	7
268			min	0	1	0	1	0	2	0	1	-0.009	1	0	1
269		5	max	0	7	0	7	0.011	7	0	5	0	7	0	7
270			min	0	1	0	1	0	2	0	1	0	1	0	1
271	M28	1	max	0	7	0	7	0	2	0	5	0	7	0	7
272			min	0	1	0	1	-0.011	1	0	1	0	1	0	1
273		2	max	0	7	0	7	0	2	0	5	0	2	0	7
274			min	0	1	0	1	-0.006	1	0	1	-0.009	1	0	1
275		3	max	0	7	0	7	0	7	0	5	0	2	0	7
276			min	0	1	0	1	0	1	0	1	-0.011	1	0	1
277		4	max	0	7	0	7	0.006	7	0	5	0	2	0	7
278			min	0	1	0	1	0	2	0	1	-0.009	1	0	1
279		5	max	0	7	0	7	0.011	7	0	5	0	7	0	7
280			min	0	1	0	1	0	2	0	1	0	1	0	1
281	M29	1	max	0	7	0	7	0	2	0	5	0	7	0	7
282			min	0	1	0	1	-0.011	1	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
283		2	max	0	7	0	7	0	2	0	5	0	2	0	7
284			min	0	1	0	1	-0.006	1	0	1	-0.009	1	0	1
285		3	max	0	7	0	7	0	7	0	5	0	2	0	7
286			min	0	1	0	1	0	1	0	1	-0.011	1	0	1
287		4	max	0	7	0	7	0.006	7	0	5	0	2	0	7
288			min	0	1	0	1	0	2	0	1	-0.009	1	0	1
289		5	max	0	7	0	7	0.011	7	0	5	0	7	0	7
290			min	0	1	0	1	0	2	0	1	0	1	0	1

Envelope Maximum Member Section Forces

	Member		Axial[k]	Loc[ft]	LC	y Shear[k]	Loc[ft]	LC	z Shear[k]	Loc[ft]	LC	Torque[k-ft]	Loc[ft]	LC	y-y Moment[k-ft]	Loc[ft]	LC	z-z Moment[k-ft]	Loc[ft]	LC
1	M1	max	1.175	0	5	-0.327	1.315	4	0	1.315	7	0	1.315	7	0	1.315	7	1.645	1.315	5
2		min	0.278	1.315	1	-1.387	0	3	0	0	1	0	0	1	0	0	1	0	0	1
3	M2	max	0.933	0	5	-0.244	1.315	4	0	1.315	7	0	1.315	7	0	1.315	7	2.912	1.315	5
4		min	0.208	1.315	1	-1.101	0	3	0	0	1	0	0	1	0	0	1	0.479	0	1
5	M3	max	0.691	0	5	-0.16	1.315	4	0	1.315	7	0	1.315	7	0	1.315	7	3.802	1.315	5
6		min	0.137	1.315	1	-0.814	0	3	0	0	1	0	0	1	0	0	1	0.848	0	1
7	M4	max	0.45	0	5	-0.077	1.315	4	0	1.315	7	0	1.315	7	0	1.315	7	4.316	1.315	5
8		min	0.066	1.315	1	-0.528	0	3	0	0	1	0	0	1	0	0	1	1.108	0	1
9	M5	max	0.208	0	5	0.031	1.315	5	0	1.315	7	0	1.315	7	0	1.315	7	4.458	1.165	5
10		min	-0.026	1.315	3	-0.244	0	3	0	0	1	0	0	1	0	0	1	1.258	0	1
11	M6	max	-0.012	0	4	0.314	1.315	5	0	1.315	7	0	1.315	7	0	1.315	7	4.456	0	5
12		min	-0.268	1.315	3	0.015	0	1	0	0	1	0	0	1	0	0	1	1.231	1.315	1
13	M7	max	-0.083	0	4	0.597	1.315	5	0	1.315	7	0	1.315	7	0	1.315	7	4.224	0	5
14		min	-0.51	1.315	3	0.098	0	1	0	0	1	0	0	1	0	0	1	1.054	1.315	1
15	M8	max	-0.154	0	4	0.879	1.315	5	0	1.315	7	0	1.315	7	0	1.315	7	3.62	0	5
16		min	-0.751	1.315	3	0.18	0	1	0	0	1	0	0	1	0	0	1	0.768	1.315	1
17	M9	max	-0.225	0	4	1.182	1.315	5	0	1.315	7	0	1.315	7	0	1.315	7	2.643	0	5
18		min	-1.01	1.315	3	0.263	0	1	0	0	1	0	0	1	0	0	1	0.371	1.315	1
19	M10	max	-0.297	0	4	1.396	0.986	5	0	0.986	7	0	0.986	7	0	0.986	7	1.276	0	5
20		min	-1.193	0.986	3	0.348	0	1	0	0	1	0	0	1	0	0	1	0	0.986	1
21	M11	max	1.171	0	5	1.382	0	5	0	1.315	7	0	1.315	7	0	1.315	7	0	0	7
22		min	0.278	1.315	1	0.326	1.315	1	0	0	1	0	0	1	0	0	1	-1.638	1.315	3
23	M12	max	0.929	0	5	1.096	0	5	0	1.315	7	0	1.315	7	0	1.315	7	-0.478	0	4
24		min	0.207	1.315	1	0.243	1.315	1	0	0	1	0	0	1	0	0	1	-2.899	1.315	3
25	M13	max	0.687	0	5	0.809	0	5	0	1.315	7	0	1.315	7	0	1.315	7	-0.847	0	4
26		min	0.136	1.315	1	0.16	1.315	1	0	0	1	0	0	1	0	0	1	-3.782	1.315	3
27	M14	max	0.446	0	5	0.523	0	5	0	1.315	7	0	1.315	7	0	1.315	7	-1.106	0	4
28		min	0.065	1.315	1	0.077	1.315	1	0	0	1	0	0	1	0	0	1	-4.29	1.315	3
29	M15	max	0.204	0	5	0.239	0	5	0	1.315	7	0	1.315	7	0	1.315	7	-1.256	0	4
30		min	-0.031	1.315	3	-0.036	1.315	3	0	0	1	0	0	1	0	0	1	-4.426	1.151	3
31	M16	max	-0.013	0	4	-0.015	0	4	0	1.315	7	0	1.315	7	0	1.315	7	-1.227	1.315	4
32		min	-0.272	1.315	3	-0.319	1.315	3	0	0	1	0	0	1	0	0	1	-4.423	0	3
33	M17	max	-0.084	0	4	-0.098	0	4	0	1.315	7	0	1.315	7	0	1.315	7	-1.05	1.315	4
34		min	-0.514	1.315	3	-0.602	1.315	3	0	0	1	0	0	1	0	0	1	-4.184	0	3
35	M18	max	-0.155	0	4	-0.181	0	4	0	1.315	7	0	1.315	7	0	1.315	7	-0.763	1.315	4
36		min	-0.756	1.315	3	-0.885	1.315	3	0	0	1	0	0	1	0	0	1	-3.573	0	3
37	M19	max	-0.225	0	4	-0.264	0	4	0	1.315	7	0	1.315	7	0	1.315	7	-0.368	1.315	4
38		min	-0.981	1.315	3	-1.148	1.315	3	0	0	1	0	0	1	0	0	1	-2.59	0	3
39	M20	max	-0.295	0	4	-0.345	0	4	0	0.986	7	0	0.986	7	0	0.986	7	0	0.986	7
40		min	-1.164	0.986	3	-1.362	0.986	3	0	0	1	0	0	1	0	0	1	-1.242	0	3
41	M21	max	0	4	7	0	4	7	0.011	4	7	0	4	4	0	4	7	0	4	7
42		min	0	0	1	0	0	1	-0.011	0	1	0	0	3	-0.011	2	1	0	0	1
43	M22	max	0	4	7	0	4	7	0.011	4	7	0	4	4	0	4	7	0	4	7
44		min	0	0	1	0	0	1	-0.011	0	1	0	0	3	-0.011	2	1	0	0	1

Envelope Maximum Member Section Forces (Continued)

	Member		Axial[k]	Loc[ft]	LC	y Shear[k]	Loc[ft]	LC	z Shear[k]	Loc[ft]	LC	Torque[k-ft]	Loc[ft]	LC	y-y Moment[k-ft]	Loc[ft]	LC	z-z Moment[k-ft]	Loc[ft]	LC
45	M23	max	0	4	7	0	4	7	0.011	4	7	0	4	4	0	4	7	0	4	7
46		min	0	0	1	0	0	1	-0.011	0	1	0	0	3	-0.011	2	1	0	0	1
47	M24	max	0	4	7	0	4	7	0.011	4	7	0	4	4	0	4	7	0	4	7
48		min	0	0	1	0	0	1	-0.011	0	1	0	0	3	-0.011	2	1	0	0	1
49	M25	max	0	4	7	0	4	7	0.011	4	7	0	4	4	0	4	7	0	4	7
50		min	0	0	1	0	0	1	-0.011	0	1	0	0	3	-0.011	2	1	0	0	1
51	M26	max	0	4	7	0	4	7	0.011	4	7	0	4	5	0	4	7	0	4	7
52		min	0	0	1	0	0	1	-0.011	0	1	0	0	1	-0.011	2	1	0	0	1
53	M27	max	0	4	7	0	4	7	0.011	4	7	0	4	5	0	4	7	0	4	7
54		min	0	0	1	0	0	1	-0.011	0	1	0	0	1	-0.011	2	1	0	0	1
55	M28	max	0	4	7	0	4	7	0.011	4	7	0	4	5	0	4	7	0	4	7
56		min	0	0	1	0	0	1	-0.011	0	1	0	0	1	-0.011	2	1	0	0	1
57	M29	max	0	4	7	0	4	7	0.011	4	7	0	4	5	0	4	7	0	4	7
58		min	0	0	1	0	0	1	-0.011	0	1	0	0	1	-0.011	2	1	0	0	1

Envelope Member End Reactions

	Member	Member End		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
1	M1	I	max	1.175	5	-0.401	4	0	7	0	7	0	7	0	7
2			min	0.342	1	-1.387	3	0	1	0	1	0	1	0	1
3		J	max	0.941	5	-0.327	4	0	7	0	7	0	7	1.645	5
4			min	0.278	1	-1.113	3	0	1	0	1	0	1	0.479	1
5	M2	I	max	0.933	5	-0.318	4	0	7	0	7	0	7	1.645	5
6			min	0.271	1	-1.101	3	0	1	0	1	0	1	0.479	1
7		J	max	0.699	5	-0.244	4	0	7	0	7	0	7	2.912	5
8			min	0.208	1	-0.826	3	0	1	0	1	0	1	0.848	1
9	M3	I	max	0.691	5	-0.235	4	0	7	0	7	0	7	2.912	5
10			min	0.2	1	-0.814	3	0	1	0	1	0	1	0.848	1
11		J	max	0.457	5	-0.16	4	0	7	0	7	0	7	3.802	5
12			min	0.137	1	-0.54	3	0	1	0	1	0	1	1.108	1
13	M4	I	max	0.45	5	-0.151	4	0	7	0	7	0	7	3.802	5
14			min	0.129	1	-0.528	3	0	1	0	1	0	1	1.108	1
15		J	max	0.215	5	-0.077	4	0	7	0	7	0	7	4.316	5
16			min	0.066	1	-0.254	3	0	1	0	1	0	1	1.258	1
17	M5	I	max	0.208	5	-0.068	4	0	7	0	7	0	7	4.316	5
18			min	0.058	1	-0.244	3	0	1	0	1	0	1	1.258	1
19		J	max	-0.005	4	0.031	5	0	7	0	7	0	7	4.456	5
20			min	-0.026	3	0.006	1	0	1	0	1	0	1	1.299	1
21	M6	I	max	-0.012	4	0.039	5	0	7	0	7	0	7	4.456	5
22			min	-0.034	3	0.015	1	0	1	0	1	0	1	1.299	1
23		J	max	-0.076	4	0.314	5	0	7	0	7	0	7	4.224	5
24			min	-0.268	3	0.089	1	0	1	0	1	0	1	1.231	1
25	M7	I	max	-0.083	4	0.322	5	0	7	0	7	0	7	4.224	5
26			min	-0.275	3	0.098	1	0	1	0	1	0	1	1.231	1
27		J	max	-0.147	4	0.597	5	0	7	0	7	0	7	3.62	5
28			min	-0.51	3	0.172	1	0	1	0	1	0	1	1.054	1
29	M8	I	max	-0.154	4	0.605	5	0	7	0	7	0	7	3.62	5
30			min	-0.517	3	0.18	1	0	1	0	1	0	1	1.054	1
31		J	max	-0.218	4	0.879	5	0	7	0	7	0	7	2.643	5
32			min	-0.751	3	0.255	1	0	1	0	1	0	1	0.768	1
33	M9	I	max	-0.225	4	0.888	5	0	7	0	7	0	7	2.643	5
34			min	-0.759	3	0.263	1	0	1	0	1	0	1	0.768	1
35		J	max	-0.29	4	1.182	5	0	7	0	7	0	7	1.276	5
36			min	-1.01	3	0.339	1	0	1	0	1	0	1	0.371	1
37	M10	I	max	-0.297	4	1.191	5	0	7	0	7	0	7	1.276	5
38			min	-1.017	3	0.348	1	0	1	0	1	0	1	0.371	1

Envelope Member End Reactions (Continued)

	Member	Member End		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
39		J	max	-0.345	4	1.396	5	0	7	0	7	0	7	0	7
40			min	-1.193	3	0.404	1	0	1	0	1	0	1	0	1
41	M11	I	max	1.171	5	1.382	5	0	7	0	7	0	7	0	7
42			min	0.341	1	0.401	1	0	1	0	1	0	1	0	1
43		J	max	0.936	5	1.108	5	0	7	0	7	0	7	-0.478	4
44			min	0.278	1	0.326	1	0	1	0	1	0	1	-1.638	3
45	M12	I	max	0.929	5	1.096	5	0	7	0	7	0	7	-0.478	4
46			min	0.271	1	0.317	1	0	1	0	1	0	1	-1.638	3
47		J	max	0.695	5	0.821	5	0	7	0	7	0	7	-0.847	4
48			min	0.207	1	0.243	1	0	1	0	1	0	1	-2.899	3
49	M13	I	max	0.687	5	0.809	5	0	7	0	7	0	7	-0.847	4
50			min	0.2	1	0.234	1	0	1	0	1	0	1	-2.899	3
51		J	max	0.453	5	0.535	5	0	7	0	7	0	7	-1.106	4
52			min	0.136	1	0.16	1	0	1	0	1	0	1	-3.782	3
53	M14	I	max	0.446	5	0.523	5	0	7	0	7	0	7	-1.106	4
54			min	0.129	1	0.151	1	0	1	0	1	0	1	-3.782	3
55		J	max	0.211	5	0.249	5	0	7	0	7	0	7	-1.256	4
56			min	0.065	1	0.077	1	0	1	0	1	0	1	-4.29	3
57	M15	I	max	0.204	5	0.239	5	0	7	0	7	0	7	-1.256	4
58			min	0.058	1	0.068	1	0	1	0	1	0	1	-4.29	3
59		J	max	-0.005	4	-0.006	4	0	7	0	7	0	7	-1.296	4
60			min	-0.031	3	-0.036	3	0	1	0	1	0	1	-4.423	3
61	M16	I	max	-0.013	4	-0.015	4	0	7	0	7	0	7	-1.296	4
62			min	-0.038	3	-0.044	3	0	1	0	1	0	1	-4.423	3
63		J	max	-0.076	4	-0.089	4	0	7	0	7	0	7	-1.227	4
64			min	-0.272	3	-0.319	3	0	1	0	1	0	1	-4.184	3
65	M17	I	max	-0.084	4	-0.098	4	0	7	0	7	0	7	-1.227	4
66			min	-0.28	3	-0.327	3	0	1	0	1	0	1	-4.184	3
67		J	max	-0.147	4	-0.172	4	0	7	0	7	0	7	-1.05	4
68			min	-0.514	3	-0.602	3	0	1	0	1	0	1	-3.573	3
69	M18	I	max	-0.155	4	-0.181	4	0	7	0	7	0	7	-1.05	4
70			min	-0.521	3	-0.61	3	0	1	0	1	0	1	-3.573	3
71		J	max	-0.218	4	-0.255	4	0	7	0	7	0	7	-0.763	4
72			min	-0.756	3	-0.885	3	0	1	0	1	0	1	-2.59	3
73	M19	I	max	-0.225	4	-0.264	4	0	7	0	7	0	7	-0.763	4
74			min	-0.763	3	-0.893	3	0	1	0	1	0	1	-2.59	3
75		J	max	-0.287	4	-0.336	4	0	7	0	7	0	7	-0.368	4
76			min	-0.981	3	-1.148	3	0	1	0	1	0	1	-1.242	3
77	M20	I	max	-0.295	4	-0.345	4	0	7	0	7	0	7	-0.368	4
78			min	-0.988	3	-1.157	3	0	1	0	1	0	1	-1.242	3
79		J	max	-0.342	4	-0.401	4	0	7	0	7	0	7	0	7
80			min	-1.164	3	-1.362	3	0	1	0	1	0	1	0	1
81	M21	I	max	0	7	0	7	0	2	0	4	0	7	0	7
82			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
83		J	max	0	7	0	7	0.011	7	0	4	0	7	0	7
84			min	0	1	0	1	0	2	0	3	0	1	0	1
85	M22	I	max	0	7	0	7	0	2	0	4	0	7	0	7
86			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
87		J	max	0	7	0	7	0.011	7	0	4	0	7	0	7
88			min	0	1	0	1	0	2	0	3	0	1	0	1
89	M23	I	max	0	7	0	7	0	2	0	4	0	7	0	7
90			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
91		J	max	0	7	0	7	0.011	7	0	4	0	7	0	7
92			min	0	1	0	1	0	2	0	3	0	1	0	1
93	M24	I	max	0	7	0	7	0	2	0	4	0	7	0	7

Envelope Member End Reactions (Continued)

	Member	Member End		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
94			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
95		J	max	0	7	0	7	0.011	7	0	4	0	7	0	7
96			min	0	1	0	1	0	2	0	3	0	1	0	1
97	M25	I	max	0	7	0	7	0	2	0	4	0	7	0	7
98			min	0	1	0	1	-0.011	1	0	3	0	1	0	1
99		J	max	0	7	0	7	0.011	7	0	4	0	7	0	7
100			min	0	1	0	1	0	2	0	3	0	1	0	1
101	M26	I	max	0	7	0	7	0	2	0	5	0	7	0	7
102			min	0	1	0	1	-0.011	1	0	1	0	1	0	1
103		J	max	0	7	0	7	0.011	7	0	5	0	7	0	7
104			min	0	1	0	1	0	2	0	1	0	1	0	1
105	M27	I	max	0	7	0	7	0	2	0	5	0	7	0	7
106			min	0	1	0	1	-0.011	1	0	1	0	1	0	1
107		J	max	0	7	0	7	0.011	7	0	5	0	7	0	7
108			min	0	1	0	1	0	2	0	1	0	1	0	1
109	M28	I	max	0	7	0	7	0	2	0	5	0	7	0	7
110			min	0	1	0	1	-0.011	1	0	1	0	1	0	1
111		J	max	0	7	0	7	0.011	7	0	5	0	7	0	7
112			min	0	1	0	1	0	2	0	1	0	1	0	1
113	M29	I	max	0	7	0	7	0	2	0	5	0	7	0	7
114			min	0	1	0	1	-0.011	1	0	1	0	1	0	1
115		J	max	0	7	0	7	0.011	7	0	5	0	7	0	7
116			min	0	1	0	1	0	2	0	1	0	1	0	1

Envelope Member 2nd/1st Moment Ratios

	Member		y-y Moment [k-ft]	2nd/1st Ratio	Loc [ft]	LC	z-z Moment [k-ft]	2nd/1st Ratio	Loc [ft]	LC
1	M1	max	NC	NC			1.645	1.008	1.315	5
2		min	NC	NC			0.479	1.002	1.315	1
3	M2	max	NC	NC			2.912	1.007	1.315	5
4		min	NC	NC			0.848	1.002	1.315	1
5	M3	max	NC	NC			3.802	1.006	1.315	5
6		min	NC	NC			1.108	1.002	1.315	1
7	M4	max	NC	NC			4.316	1.005	1.315	5
8		min	NC	NC			1.258	1.001	1.315	1
9	M5	max	NC	NC			4.458	1.004	1.165	5
10		min	NC	NC			1.299	1.001	1.206	1
11	M6	max	NC	NC			4.456	1.004	0	5
12		min	NC	NC			1.299	1.001	0	1
13	M7	max	NC	NC			4.224	1.003	0	5
14		min	NC	NC			1.231	1.001	0	1
15	M8	max	NC	NC			3.62	1.003	0	5
16		min	NC	NC			1.054	1.001	0	1
17	M9	max	NC	NC			2.643	1.002	0	5
18		min	NC	NC			0.768	1.001	0	1
19	M10	max	NC	NC			1.276	1.002	0	5
20		min	NC	NC			0.371	1.001	0	1
21	M11	max	NC	NC			-1.638	1.008	1.315	5
22		min	NC	NC			-0.478	1.002	1.315	1
23	M12	max	NC	NC			-2.899	1.007	1.315	5
24		min	NC	NC			-0.847	1.002	1.315	1
25	M13	max	NC	NC			-3.782	1.006	1.315	5
26		min	NC	NC			-1.106	1.002	1.315	1
27	M14	max	NC	NC			-4.29	1.005	1.315	5
28		min	NC	NC			-1.256	1.001	1.315	1
29	M15	max	NC	NC			-4.426	1.004	1.151	5

Envelope Member 2nd/1st Moment Ratios (Continued)

	Member			y-y Moment [k-ft]	2nd/1st Ratio	Loc [ft]	LC	z-z Moment [k-ft]	2nd/1st Ratio	Loc [ft]	LC
30			min	NC	NC			-1.296	1.001	1.206	1
31	M16		max	NC	NC			-4.423	1.004	0	5
32			min	NC	NC			-1.296	1.001	0	1
33	M17		max	NC	NC			-4.184	1.003	0	5
34			min	NC	NC			-1.227	1.001	0	1
35	M18		max	NC	NC			-3.573	1.003	0	5
36			min	NC	NC			-1.05	1.001	0	1
37	M19		max	NC	NC			-2.59	1.002	0	5
38			min	NC	NC			-0.763	1.001	0	1
39	M20		max	NC	NC			-1.242	1.002	0	5
40			min	NC	NC			-0.368	1.001	0	1
41	M21		max	-0.011	1	2	7	NC	NC		
42			min	-0.011	1	2	1	NC	NC		
43	M22		max	-0.011	1	2	7	NC	NC		
44			min	-0.011	1	2	1	NC	NC		
45	M23		max	-0.011	1	2	7	NC	NC		
46			min	-0.011	1	2	1	NC	NC		
47	M24		max	-0.011	1	2	7	NC	NC		
48			min	-0.011	1	2	1	NC	NC		
49	M25		max	-0.011	1	2	7	NC	NC		
50			min	-0.011	1	2	1	NC	NC		
51	M26		max	-0.011	1	2	7	NC	NC		
52			min	-0.011	1	2	1	NC	NC		
53	M27		max	-0.011	1	2	7	NC	NC		
54			min	-0.011	1	2	1	NC	NC		
55	M28		max	-0.011	1	2	7	NC	NC		
56			min	-0.011	1	2	1	NC	NC		
57	M29		max	-0.011	1	2	7	NC	NC		
58			min	-0.011	1	2	1	NC	NC		

Envelope Member Torsion Stresses

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
1	M1	1	max	0	7	0	7	NC	NC	NC	NC
2			min	0	1	0	1	NC	NC	NC	NC
3		2	max	0	7	0	7	NC	NC	NC	NC
4			min	0	1	0	1	NC	NC	NC	NC
5		3	max	0	7	0	7	NC	NC	NC	NC
6			min	0	1	0	1	NC	NC	NC	NC
7		4	max	0	7	0	7	NC	NC	NC	NC
8			min	0	1	0	1	NC	NC	NC	NC
9		5	max	0	7	0	7	NC	NC	NC	NC
10			min	0	1	0	1	NC	NC	NC	NC
11	M2	1	max	0	7	0	7	NC	NC	NC	NC
12			min	0	1	0	1	NC	NC	NC	NC
13		2	max	0	7	0	7	NC	NC	NC	NC
14			min	0	1	0	1	NC	NC	NC	NC
15		3	max	0	7	0	7	NC	NC	NC	NC
16			min	0	1	0	1	NC	NC	NC	NC
17		4	max	0	7	0	7	NC	NC	NC	NC
18			min	0	1	0	1	NC	NC	NC	NC
19		5	max	0	7	0	7	NC	NC	NC	NC
20			min	0	1	0	1	NC	NC	NC	NC
21	M3	1	max	0	7	0	7	NC	NC	NC	NC
22			min	0	1	0	1	NC	NC	NC	NC
23		2	max	0	7	0	7	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
24			min	0	1	0	1	NC	NC	NC	NC
25		3	max	0	7	0	7	NC	NC	NC	NC
26			min	0	1	0	1	NC	NC	NC	NC
27		4	max	0	7	0	7	NC	NC	NC	NC
28			min	0	1	0	1	NC	NC	NC	NC
29		5	max	0	7	0	7	NC	NC	NC	NC
30			min	0	1	0	1	NC	NC	NC	NC
31	M4	1	max	0	7	0	7	NC	NC	NC	NC
32			min	0	1	0	1	NC	NC	NC	NC
33		2	max	0	7	0	7	NC	NC	NC	NC
34			min	0	1	0	1	NC	NC	NC	NC
35		3	max	0	7	0	7	NC	NC	NC	NC
36			min	0	1	0	1	NC	NC	NC	NC
37		4	max	0	7	0	7	NC	NC	NC	NC
38			min	0	1	0	1	NC	NC	NC	NC
39		5	max	0	7	0	7	NC	NC	NC	NC
40			min	0	1	0	1	NC	NC	NC	NC
41	M5	1	max	0	7	0	7	NC	NC	NC	NC
42			min	0	1	0	1	NC	NC	NC	NC
43		2	max	0	7	0	7	NC	NC	NC	NC
44			min	0	1	0	1	NC	NC	NC	NC
45		3	max	0	7	0	7	NC	NC	NC	NC
46			min	0	1	0	1	NC	NC	NC	NC
47		4	max	0	7	0	7	NC	NC	NC	NC
48			min	0	1	0	1	NC	NC	NC	NC
49		5	max	0	7	0	7	NC	NC	NC	NC
50			min	0	1	0	1	NC	NC	NC	NC
51	M6	1	max	0	7	0	7	NC	NC	NC	NC
52			min	0	1	0	1	NC	NC	NC	NC
53		2	max	0	7	0	7	NC	NC	NC	NC
54			min	0	1	0	1	NC	NC	NC	NC
55		3	max	0	7	0	7	NC	NC	NC	NC
56			min	0	1	0	1	NC	NC	NC	NC
57		4	max	0	7	0	7	NC	NC	NC	NC
58			min	0	1	0	1	NC	NC	NC	NC
59		5	max	0	7	0	7	NC	NC	NC	NC
60			min	0	1	0	1	NC	NC	NC	NC
61	M7	1	max	0	7	0	7	NC	NC	NC	NC
62			min	0	1	0	1	NC	NC	NC	NC
63		2	max	0	7	0	7	NC	NC	NC	NC
64			min	0	1	0	1	NC	NC	NC	NC
65		3	max	0	7	0	7	NC	NC	NC	NC
66			min	0	1	0	1	NC	NC	NC	NC
67		4	max	0	7	0	7	NC	NC	NC	NC
68			min	0	1	0	1	NC	NC	NC	NC
69		5	max	0	7	0	7	NC	NC	NC	NC
70			min	0	1	0	1	NC	NC	NC	NC
71	M8	1	max	0	7	0	7	NC	NC	NC	NC
72			min	0	1	0	1	NC	NC	NC	NC
73		2	max	0	7	0	7	NC	NC	NC	NC
74			min	0	1	0	1	NC	NC	NC	NC
75		3	max	0	7	0	7	NC	NC	NC	NC
76			min	0	1	0	1	NC	NC	NC	NC
77		4	max	0	7	0	7	NC	NC	NC	NC
78			min	0	1	0	1	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
79		5	max	0	7	0	7	NC	NC	NC	NC
80			min	0	1	0	1	NC	NC	NC	NC
81	M9	1	max	0	7	0	7	NC	NC	NC	NC
82			min	0	1	0	1	NC	NC	NC	NC
83		2	max	0	7	0	7	NC	NC	NC	NC
84			min	0	1	0	1	NC	NC	NC	NC
85		3	max	0	7	0	7	NC	NC	NC	NC
86			min	0	1	0	1	NC	NC	NC	NC
87		4	max	0	7	0	7	NC	NC	NC	NC
88			min	0	1	0	1	NC	NC	NC	NC
89		5	max	0	7	0	7	NC	NC	NC	NC
90			min	0	1	0	1	NC	NC	NC	NC
91	M10	1	max	0	7	0	7	NC	NC	NC	NC
92			min	0	1	0	1	NC	NC	NC	NC
93		2	max	0	7	0	7	NC	NC	NC	NC
94			min	0	1	0	1	NC	NC	NC	NC
95		3	max	0	7	0	7	NC	NC	NC	NC
96			min	0	1	0	1	NC	NC	NC	NC
97		4	max	0	7	0	7	NC	NC	NC	NC
98			min	0	1	0	1	NC	NC	NC	NC
99		5	max	0	7	0	7	NC	NC	NC	NC
100			min	0	1	0	1	NC	NC	NC	NC
101	M11	1	max	0	7	0	7	NC	NC	NC	NC
102			min	0	1	0	1	NC	NC	NC	NC
103		2	max	0	7	0	7	NC	NC	NC	NC
104			min	0	1	0	1	NC	NC	NC	NC
105		3	max	0	7	0	7	NC	NC	NC	NC
106			min	0	1	0	1	NC	NC	NC	NC
107		4	max	0	7	0	7	NC	NC	NC	NC
108			min	0	1	0	1	NC	NC	NC	NC
109		5	max	0	7	0	7	NC	NC	NC	NC
110			min	0	1	0	1	NC	NC	NC	NC
111	M12	1	max	0	7	0	7	NC	NC	NC	NC
112			min	0	1	0	1	NC	NC	NC	NC
113		2	max	0	7	0	7	NC	NC	NC	NC
114			min	0	1	0	1	NC	NC	NC	NC
115		3	max	0	7	0	7	NC	NC	NC	NC
116			min	0	1	0	1	NC	NC	NC	NC
117		4	max	0	7	0	7	NC	NC	NC	NC
118			min	0	1	0	1	NC	NC	NC	NC
119		5	max	0	7	0	7	NC	NC	NC	NC
120			min	0	1	0	1	NC	NC	NC	NC
121	M13	1	max	0	7	0	7	NC	NC	NC	NC
122			min	0	1	0	1	NC	NC	NC	NC
123		2	max	0	7	0	7	NC	NC	NC	NC
124			min	0	1	0	1	NC	NC	NC	NC
125		3	max	0	7	0	7	NC	NC	NC	NC
126			min	0	1	0	1	NC	NC	NC	NC
127		4	max	0	7	0	7	NC	NC	NC	NC
128			min	0	1	0	1	NC	NC	NC	NC
129		5	max	0	7	0	7	NC	NC	NC	NC
130			min	0	1	0	1	NC	NC	NC	NC
131	M14	1	max	0	7	0	7	NC	NC	NC	NC
132			min	0	1	0	1	NC	NC	NC	NC
133		2	max	0	7	0	7	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
134			min	0	1	0	1	NC	NC	NC	NC
135		3	max	0	7	0	7	NC	NC	NC	NC
136			min	0	1	0	1	NC	NC	NC	NC
137		4	max	0	7	0	7	NC	NC	NC	NC
138			min	0	1	0	1	NC	NC	NC	NC
139		5	max	0	7	0	7	NC	NC	NC	NC
140			min	0	1	0	1	NC	NC	NC	NC
141	M15	1	max	0	7	0	7	NC	NC	NC	NC
142			min	0	1	0	1	NC	NC	NC	NC
143		2	max	0	7	0	7	NC	NC	NC	NC
144			min	0	1	0	1	NC	NC	NC	NC
145		3	max	0	7	0	7	NC	NC	NC	NC
146			min	0	1	0	1	NC	NC	NC	NC
147		4	max	0	7	0	7	NC	NC	NC	NC
148			min	0	1	0	1	NC	NC	NC	NC
149		5	max	0	7	0	7	NC	NC	NC	NC
150			min	0	1	0	1	NC	NC	NC	NC
151	M16	1	max	0	7	0	7	NC	NC	NC	NC
152			min	0	1	0	1	NC	NC	NC	NC
153		2	max	0	7	0	7	NC	NC	NC	NC
154			min	0	1	0	1	NC	NC	NC	NC
155		3	max	0	7	0	7	NC	NC	NC	NC
156			min	0	1	0	1	NC	NC	NC	NC
157		4	max	0	7	0	7	NC	NC	NC	NC
158			min	0	1	0	1	NC	NC	NC	NC
159		5	max	0	7	0	7	NC	NC	NC	NC
160			min	0	1	0	1	NC	NC	NC	NC
161	M17	1	max	0	7	0	7	NC	NC	NC	NC
162			min	0	1	0	1	NC	NC	NC	NC
163		2	max	0	7	0	7	NC	NC	NC	NC
164			min	0	1	0	1	NC	NC	NC	NC
165		3	max	0	7	0	7	NC	NC	NC	NC
166			min	0	1	0	1	NC	NC	NC	NC
167		4	max	0	7	0	7	NC	NC	NC	NC
168			min	0	1	0	1	NC	NC	NC	NC
169		5	max	0	7	0	7	NC	NC	NC	NC
170			min	0	1	0	1	NC	NC	NC	NC
171	M18	1	max	0	7	0	7	NC	NC	NC	NC
172			min	0	1	0	1	NC	NC	NC	NC
173		2	max	0	7	0	7	NC	NC	NC	NC
174			min	0	1	0	1	NC	NC	NC	NC
175		3	max	0	7	0	7	NC	NC	NC	NC
176			min	0	1	0	1	NC	NC	NC	NC
177		4	max	0	7	0	7	NC	NC	NC	NC
178			min	0	1	0	1	NC	NC	NC	NC
179		5	max	0	7	0	7	NC	NC	NC	NC
180			min	0	1	0	1	NC	NC	NC	NC
181	M19	1	max	0	7	0	7	NC	NC	NC	NC
182			min	0	1	0	1	NC	NC	NC	NC
183		2	max	0	7	0	7	NC	NC	NC	NC
184			min	0	1	0	1	NC	NC	NC	NC
185		3	max	0	7	0	7	NC	NC	NC	NC
186			min	0	1	0	1	NC	NC	NC	NC
187		4	max	0	7	0	7	NC	NC	NC	NC
188			min	0	1	0	1	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
189		5	max	0	7	0	7	NC	NC	NC	NC
190			min	0	1	0	1	NC	NC	NC	NC
191	M20	1	max	0	7	0	7	NC	NC	NC	NC
192			min	0	1	0	1	NC	NC	NC	NC
193		2	max	0	7	0	7	NC	NC	NC	NC
194			min	0	1	0	1	NC	NC	NC	NC
195		3	max	0	7	0	7	NC	NC	NC	NC
196			min	0	1	0	1	NC	NC	NC	NC
197		4	max	0	7	0	7	NC	NC	NC	NC
198			min	0	1	0	1	NC	NC	NC	NC
199		5	max	0	7	0	7	NC	NC	NC	NC
200			min	0	1	0	1	NC	NC	NC	NC
201	M21	1	max	0	4	0	4	NC	NC	NC	NC
202			min	0	3	-0.001	3	NC	NC	NC	NC
203		2	max	0	4	0	4	NC	NC	NC	NC
204			min	0	3	-0.001	3	NC	NC	NC	NC
205		3	max	0	4	0	4	NC	NC	NC	NC
206			min	0	3	-0.001	3	NC	NC	NC	NC
207		4	max	0	4	0	4	NC	NC	NC	NC
208			min	0	3	-0.001	3	NC	NC	NC	NC
209		5	max	0	4	0	4	NC	NC	NC	NC
210			min	0	3	-0.001	3	NC	NC	NC	NC
211	M22	1	max	0	4	0	4	NC	NC	NC	NC
212			min	0	3	-0.001	3	NC	NC	NC	NC
213		2	max	0	4	0	4	NC	NC	NC	NC
214			min	0	3	-0.001	3	NC	NC	NC	NC
215		3	max	0	4	0	4	NC	NC	NC	NC
216			min	0	3	-0.001	3	NC	NC	NC	NC
217		4	max	0	4	0	4	NC	NC	NC	NC
218			min	0	3	-0.001	3	NC	NC	NC	NC
219		5	max	0	4	0	4	NC	NC	NC	NC
220			min	0	3	-0.001	3	NC	NC	NC	NC
221	M23	1	max	0	4	0	4	NC	NC	NC	NC
222			min	0	3	-0.001	3	NC	NC	NC	NC
223		2	max	0	4	0	4	NC	NC	NC	NC
224			min	0	3	-0.001	3	NC	NC	NC	NC
225		3	max	0	4	0	4	NC	NC	NC	NC
226			min	0	3	-0.001	3	NC	NC	NC	NC
227		4	max	0	4	0	4	NC	NC	NC	NC
228			min	0	3	-0.001	3	NC	NC	NC	NC
229		5	max	0	4	0	4	NC	NC	NC	NC
230			min	0	3	-0.001	3	NC	NC	NC	NC
231	M24	1	max	0	4	0	4	NC	NC	NC	NC
232			min	0	3	-0.001	3	NC	NC	NC	NC
233		2	max	0	4	0	4	NC	NC	NC	NC
234			min	0	3	-0.001	3	NC	NC	NC	NC
235		3	max	0	4	0	4	NC	NC	NC	NC
236			min	0	3	-0.001	3	NC	NC	NC	NC
237		4	max	0	4	0	4	NC	NC	NC	NC
238			min	0	3	-0.001	3	NC	NC	NC	NC
239		5	max	0	4	0	4	NC	NC	NC	NC
240			min	0	3	-0.001	3	NC	NC	NC	NC
241	M25	1	max	0	4	0	4	NC	NC	NC	NC
242			min	0	3	0	3	NC	NC	NC	NC
243		2	max	0	4	0	4	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[k-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
244			min	0	3	0	3	NC	NC	NC	NC
245		3	max	0	4	0	4	NC	NC	NC	NC
246			min	0	3	0	3	NC	NC	NC	NC
247		4	max	0	4	0	4	NC	NC	NC	NC
248			min	0	3	0	3	NC	NC	NC	NC
249		5	max	0	4	0	4	NC	NC	NC	NC
250			min	0	3	0	3	NC	NC	NC	NC
251	M26	1	max	0	5	0	5	NC	NC	NC	NC
252			min	0	1	0	1	NC	NC	NC	NC
253		2	max	0	5	0	5	NC	NC	NC	NC
254			min	0	1	0	1	NC	NC	NC	NC
255		3	max	0	5	0	5	NC	NC	NC	NC
256			min	0	1	0	1	NC	NC	NC	NC
257		4	max	0	5	0	5	NC	NC	NC	NC
258			min	0	1	0	1	NC	NC	NC	NC
259		5	max	0	5	0	5	NC	NC	NC	NC
260			min	0	1	0	1	NC	NC	NC	NC
261	M27	1	max	0	5	0.001	5	NC	NC	NC	NC
262			min	0	1	0	1	NC	NC	NC	NC
263		2	max	0	5	0.001	5	NC	NC	NC	NC
264			min	0	1	0	1	NC	NC	NC	NC
265		3	max	0	5	0.001	5	NC	NC	NC	NC
266			min	0	1	0	1	NC	NC	NC	NC
267		4	max	0	5	0.001	5	NC	NC	NC	NC
268			min	0	1	0	1	NC	NC	NC	NC
269		5	max	0	5	0.001	5	NC	NC	NC	NC
270			min	0	1	0	1	NC	NC	NC	NC
271	M28	1	max	0	5	0.001	5	NC	NC	NC	NC
272			min	0	1	0	1	NC	NC	NC	NC
273		2	max	0	5	0.001	5	NC	NC	NC	NC
274			min	0	1	0	1	NC	NC	NC	NC
275		3	max	0	5	0.001	5	NC	NC	NC	NC
276			min	0	1	0	1	NC	NC	NC	NC
277		4	max	0	5	0.001	5	NC	NC	NC	NC
278			min	0	1	0	1	NC	NC	NC	NC
279		5	max	0	5	0.001	5	NC	NC	NC	NC
280			min	0	1	0	1	NC	NC	NC	NC
281	M29	1	max	0	5	0.002	5	NC	NC	NC	NC
282			min	0	1	0	1	NC	NC	NC	NC
283		2	max	0	5	0.002	5	NC	NC	NC	NC
284			min	0	1	0	1	NC	NC	NC	NC
285		3	max	0	5	0.002	5	NC	NC	NC	NC
286			min	0	1	0	1	NC	NC	NC	NC
287		4	max	0	5	0.002	5	NC	NC	NC	NC
288			min	0	1	0	1	NC	NC	NC	NC
289		5	max	0	5	0.002	5	NC	NC	NC	NC
290			min	0	1	0	1	NC	NC	NC	NC

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	0.333	5	-0.167	4	0	7	0	7	0	7	0	7	0	7
2			min	0.097	1	-0.578	3	0	1	0	1	0	1	0	1	0	1
3		2	max	0.316	5	-0.159	4	0	7	-0.165	4	0.568	5	0	7	0	7
4			min	0.092	1	-0.55	3	0	1	-0.568	3	0.165	1	0	1	0	1
5		3	max	0.299	5	-0.152	4	0	7	-0.321	4	1.108	5	0	7	0	7

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
6			min	0.088	1	-0.521	3	0	1	-1.108	3	0.321	1	0	1	0	1
7		4	max	0.283	5	-0.144	4	0	7	-0.47	4	1.618	5	0	7	0	7
8			min	0.083	1	-0.492	3	0	1	-1.618	3	0.47	1	0	1	0	1
9		5	max	0.266	5	-0.136	4	0	7	-0.611	4	2.1	5	0	7	0	7
10			min	0.079	1	-0.464	3	0	1	-2.1	3	0.611	1	0	1	0	1
11	M2	1	max	0.264	5	-0.132	4	0	7	-0.611	4	2.1	5	0	7	0	7
12			min	0.077	1	-0.459	3	0	1	-2.1	3	0.611	1	0	1	0	1
13		2	max	0.248	5	-0.125	4	0	7	-0.741	4	2.548	5	0	7	0	7
14			min	0.072	1	-0.43	3	0	1	-2.548	3	0.741	1	0	1	0	1
15		3	max	0.231	5	-0.117	4	0	7	-0.863	4	2.967	5	0	7	0	7
16			min	0.068	1	-0.401	3	0	1	-2.967	3	0.863	1	0	1	0	1
17		4	max	0.214	5	-0.109	4	0	7	-0.977	4	3.357	5	0	7	0	7
18			min	0.063	1	-0.373	3	0	1	-3.357	3	0.977	1	0	1	0	1
19		5	max	0.198	5	-0.102	4	0	7	-1.083	4	3.719	5	0	7	0	7
20			min	0.059	1	-0.344	3	0	1	-3.719	3	1.083	1	0	1	0	1
21	M3	1	max	0.196	5	-0.098	4	0	7	-1.083	4	3.719	5	0	7	0	7
22			min	0.057	1	-0.339	3	0	1	-3.719	3	1.083	1	0	1	0	1
23		2	max	0.179	5	-0.09	4	0	7	-1.178	4	4.046	5	0	7	0	7
24			min	0.052	1	-0.311	3	0	1	-4.046	3	1.178	1	0	1	0	1
25		3	max	0.163	5	-0.082	4	0	7	-1.264	4	4.344	5	0	7	0	7
26			min	0.048	1	-0.282	3	0	1	-4.344	3	1.264	1	0	1	0	1
27		4	max	0.146	5	-0.075	4	0	7	-1.343	4	4.614	5	0	7	0	7
28			min	0.043	1	-0.253	3	0	1	-4.614	3	1.343	1	0	1	0	1
29		5	max	0.129	5	-0.067	4	0	7	-1.415	4	4.855	5	0	7	0	7
30			min	0.039	1	-0.225	3	0	1	-4.855	3	1.415	1	0	1	0	1
31	M4	1	max	0.127	5	-0.063	4	0	7	-1.415	4	4.855	5	0	7	0	7
32			min	0.037	1	-0.22	3	0	1	-4.855	3	1.415	1	0	1	0	1
33		2	max	0.111	5	-0.055	4	0	7	-1.474	4	5.063	5	0	7	0	7
34			min	0.032	1	-0.191	3	0	1	-5.063	3	1.474	1	0	1	0	1
35		3	max	0.094	5	-0.048	4	0	7	-1.526	4	5.241	5	0	7	0	7
36			min	0.028	1	-0.163	3	0	1	-5.241	3	1.526	1	0	1	0	1
37		4	max	0.078	5	-0.04	4	0	7	-1.57	4	5.391	5	0	7	0	7
38			min	0.023	1	-0.134	3	0	1	-5.391	3	1.57	1	0	1	0	1
39		5	max	0.061	5	-0.032	4	0	7	-1.607	4	5.512	5	0	7	0	7
40			min	0.019	1	-0.106	3	0	1	-5.512	3	1.607	1	0	1	0	1
41	M5	1	max	0.059	5	-0.028	4	0	7	-1.607	4	5.512	5	0	7	0	7
42			min	0.017	1	-0.102	3	0	1	-5.512	3	1.607	1	0	1	0	1
43		2	max	0.042	5	-0.021	4	0	7	-1.631	4	5.6	5	0	7	0	7
44			min	0.012	1	-0.073	3	0	1	-5.6	3	1.631	1	0	1	0	1
45		3	max	0.026	5	-0.013	4	0	7	-1.648	4	5.659	5	0	7	0	7
46			min	0.008	1	-0.044	3	0	1	-5.659	3	1.648	1	0	1	0	1
47		4	max	0.009	5	-0.005	4	0	7	-1.658	4	5.689	5	0	7	0	7
48			min	0.003	1	-0.016	3	0	1	-5.689	3	1.658	1	0	1	0	1
49		5	max	-0.001	4	0.013	5	0	7	-1.659	4	5.691	5	0	7	0	7
50			min	-0.007	3	0.002	1	0	1	-5.691	3	1.659	1	0	1	0	1
51	M6	1	max	-0.004	4	0.016	5	0	7	-1.659	4	5.691	5	0	7	0	7
52			min	-0.01	3	0.006	1	0	1	-5.691	3	1.659	1	0	1	0	1
53		2	max	-0.008	4	0.045	5	0	7	-1.649	4	5.66	5	0	7	0	7
54			min	-0.026	3	0.014	1	0	1	-5.66	3	1.649	1	0	1	0	1
55		3	max	-0.013	4	0.074	5	0	7	-1.631	4	5.6	5	0	7	0	7
56			min	-0.043	3	0.022	1	0	1	-5.6	3	1.631	1	0	1	0	1
57		4	max	-0.017	4	0.102	5	0	7	-1.606	4	5.512	5	0	7	0	7
58			min	-0.059	3	0.029	1	0	1	-5.512	3	1.606	1	0	1	0	1
59		5	max	-0.021	4	0.131	5	0	7	-1.572	4	5.394	5	0	7	0	7
60			min	-0.076	3	0.037	1	0	1	-5.394	3	1.572	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
61	M7	1	max	-0.024	4	0.134	5	0	7	-1.572	4	5.394	5	0	7	0	7
62			min	-0.078	3	0.041	1	0	1	-5.394	3	1.572	1	0	1	0	1
63		2	max	-0.028	4	0.163	5	0	7	-1.527	4	5.244	5	0	7	0	7
64			min	-0.095	3	0.048	1	0	1	-5.244	3	1.527	1	0	1	0	1
65		3	max	-0.033	4	0.191	5	0	7	-1.475	4	5.066	5	0	7	0	7
66			min	-0.111	3	0.056	1	0	1	-5.066	3	1.475	1	0	1	0	1
67		4	max	-0.037	4	0.22	5	0	7	-1.414	4	4.859	5	0	7	0	7
68			min	-0.128	3	0.064	1	0	1	-4.859	3	1.414	1	0	1	0	1
69		5	max	-0.042	4	0.249	5	0	7	-1.346	4	4.623	5	0	7	0	7
70			min	-0.144	3	0.072	1	0	1	-4.623	3	1.346	1	0	1	0	1
71	M8	1	max	-0.044	4	0.252	5	0	7	-1.346	4	4.623	5	0	7	0	7
72			min	-0.146	3	0.075	1	0	1	-4.623	3	1.346	1	0	1	0	1
73		2	max	-0.048	4	0.281	5	0	7	-1.266	4	4.354	5	0	7	0	7
74			min	-0.163	3	0.083	1	0	1	-4.354	3	1.266	1	0	1	0	1
75		3	max	-0.053	4	0.309	5	0	7	-1.179	4	4.057	5	0	7	0	7
76			min	-0.18	3	0.091	1	0	1	-4.057	3	1.179	1	0	1	0	1
77		4	max	-0.057	4	0.338	5	0	7	-1.084	4	3.73	5	0	7	0	7
78			min	-0.196	3	0.098	1	0	1	-3.73	3	1.084	1	0	1	0	1
79		5	max	-0.062	4	0.366	5	0	7	-0.981	4	3.376	5	0	7	0	7
80			min	-0.213	3	0.106	1	0	1	-3.376	3	0.981	1	0	1	0	1
81	M9	1	max	-0.064	4	0.37	5	0	7	-0.981	4	3.376	5	0	7	0	7
82			min	-0.215	3	0.11	1	0	1	-3.376	3	0.981	1	0	1	0	1
83		2	max	-0.069	4	0.408	5	0	7	-0.865	4	2.982	5	0	7	0	7
84			min	-0.237	3	0.118	1	0	1	-2.982	3	0.865	1	0	1	0	1
85		3	max	-0.073	4	0.434	5	0	7	-0.742	4	2.557	5	0	7	0	7
86			min	-0.252	3	0.126	1	0	1	-2.557	3	0.742	1	0	1	0	1
87		4	max	-0.077	4	0.458	5	0	7	-0.612	4	2.108	5	0	7	0	7
88			min	-0.266	3	0.133	1	0	1	-2.108	3	0.612	1	0	1	0	1
89		5	max	-0.082	4	0.492	5	0	7	-0.474	4	1.629	5	0	7	0	7
90			min	-0.286	3	0.141	1	0	1	-1.629	3	0.474	1	0	1	0	1
91	M10	1	max	-0.084	4	0.496	5	0	7	-0.474	4	1.629	5	0	7	0	7
92			min	-0.288	3	0.145	1	0	1	-1.629	3	0.474	1	0	1	0	1
93		2	max	-0.088	4	0.518	5	0	7	-0.362	4	1.246	5	0	7	0	7
94			min	-0.3	3	0.151	1	0	1	-1.246	3	0.362	1	0	1	0	1
95		3	max	-0.091	4	0.539	5	0	7	-0.246	4	0.847	5	0	7	0	7
96			min	-0.313	3	0.157	1	0	1	-0.847	3	0.246	1	0	1	0	1
97		4	max	-0.094	4	0.56	5	0	7	-0.125	4	0.432	5	0	7	0	7
98			min	-0.325	3	0.162	1	0	1	-0.432	3	0.125	1	0	1	0	1
99		5	max	-0.098	4	0.582	5	0	7	0	7	0	7	0	7	0	7
100			min	-0.338	3	0.168	1	0	1	0	1	0	1	0	1	0	1
101	M11	1	max	0.331	5	0.576	5	0	7	0	7	0	7	0	7	0	7
102			min	0.097	1	0.167	1	0	1	0	1	0	1	0	1	0	1
103		2	max	0.315	5	0.547	5	0	7	0.566	5	-0.164	4	0	7	0	7
104			min	0.092	1	0.159	1	0	1	0.164	1	-0.566	3	0	1	0	1
105		3	max	0.298	5	0.519	5	0	7	1.103	5	-0.321	4	0	7	0	7
106			min	0.088	1	0.151	1	0	1	0.321	1	-1.103	3	0	1	0	1
107		4	max	0.282	5	0.49	5	0	7	1.612	5	-0.47	4	0	7	0	7
108			min	0.083	1	0.144	1	0	1	0.47	1	-1.612	3	0	1	0	1
109		5	max	0.265	5	0.462	5	0	7	2.092	5	-0.611	4	0	7	0	7
110			min	0.079	1	0.136	1	0	1	0.611	1	-2.092	3	0	1	0	1
111	M12	1	max	0.263	5	0.457	5	0	7	2.092	5	-0.611	4	0	7	0	7
112			min	0.077	1	0.132	1	0	1	0.611	1	-2.092	3	0	1	0	1
113		2	max	0.246	5	0.428	5	0	7	2.537	5	-0.74	4	0	7	0	7
114			min	0.072	1	0.125	1	0	1	0.74	1	-2.537	3	0	1	0	1
115		3	max	0.23	5	0.399	5	0	7	2.954	5	-0.862	4	0	7	0	7

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
116			min	0.068	1	0.117	1	0	1	0.862	1	-2.954	3	0	1	0	1
117		4	max	0.213	5	0.371	5	0	7	3.342	5	-0.975	4	0	7	0	7
118			min	0.063	1	0.109	1	0	1	0.975	1	-3.342	3	0	1	0	1
119		5	max	0.197	5	0.342	5	0	7	3.702	5	-1.081	4	0	7	0	7
120			min	0.059	1	0.101	1	0	1	1.081	1	-3.702	3	0	1	0	1
121	M13	1	max	0.195	5	0.337	5	0	7	3.702	5	-1.081	4	0	7	0	7
122			min	0.057	1	0.098	1	0	1	1.081	1	-3.702	3	0	1	0	1
123		2	max	0.178	5	0.308	5	0	7	4.027	5	-1.176	4	0	7	0	7
124			min	0.052	1	0.09	1	0	1	1.176	1	-4.027	3	0	1	0	1
125		3	max	0.161	5	0.28	5	0	7	4.323	5	-1.262	4	0	7	0	7
126			min	0.048	1	0.082	1	0	1	1.262	1	-4.323	3	0	1	0	1
127		4	max	0.145	5	0.251	5	0	7	4.591	5	-1.341	4	0	7	0	7
128			min	0.043	1	0.074	1	0	1	1.341	1	-4.591	3	0	1	0	1
129		5	max	0.128	5	0.223	5	0	7	4.83	5	-1.412	4	0	7	0	7
130			min	0.039	1	0.067	1	0	1	1.412	1	-4.83	3	0	1	0	1
131	M14	1	max	0.126	5	0.218	5	0	7	4.83	5	-1.412	4	0	7	0	7
132			min	0.036	1	0.063	1	0	1	1.412	1	-4.83	3	0	1	0	1
133		2	max	0.11	5	0.189	5	0	7	5.035	5	-1.472	4	0	7	0	7
134			min	0.032	1	0.055	1	0	1	1.472	1	-5.035	3	0	1	0	1
135		3	max	0.093	5	0.161	5	0	7	5.212	5	-1.524	4	0	7	0	7
136			min	0.027	1	0.047	1	0	1	1.524	1	-5.212	3	0	1	0	1
137		4	max	0.076	5	0.132	5	0	7	5.359	5	-1.567	4	0	7	0	7
138			min	0.023	1	0.04	1	0	1	1.567	1	-5.359	3	0	1	0	1
139		5	max	0.06	5	0.104	5	0	7	5.478	5	-1.604	4	0	7	0	7
140			min	0.019	1	0.032	1	0	1	1.604	1	-5.478	3	0	1	0	1
141	M15	1	max	0.058	5	0.099	5	0	7	5.478	5	-1.604	4	0	7	0	7
142			min	0.016	1	0.028	1	0	1	1.604	1	-5.478	3	0	1	0	1
143		2	max	0.041	5	0.071	5	0	7	5.564	5	-1.628	4	0	7	0	7
144			min	0.012	1	0.021	1	0	1	1.628	1	-5.564	3	0	1	0	1
145		3	max	0.025	5	0.042	5	0	7	5.621	5	-1.645	4	0	7	0	7
146			min	0.007	1	0.013	1	0	1	1.645	1	-5.621	3	0	1	0	1
147		4	max	0.008	5	0.014	5	0	7	5.649	5	-1.654	4	0	7	0	7
148			min	0.003	1	0.005	1	0	1	1.654	1	-5.649	3	0	1	0	1
149		5	max	-0.002	4	-0.003	4	0	7	5.649	5	-1.655	4	0	7	0	7
150			min	-0.009	3	-0.015	3	0	1	1.655	1	-5.649	3	0	1	0	1
151	M16	1	max	-0.004	4	-0.006	4	0	7	5.649	5	-1.655	4	0	7	0	7
152			min	-0.011	3	-0.019	3	0	1	1.655	1	-5.649	3	0	1	0	1
153		2	max	-0.008	4	-0.014	4	0	7	5.616	5	-1.645	4	0	7	0	7
154			min	-0.027	3	-0.047	3	0	1	1.645	1	-5.616	3	0	1	0	1
155		3	max	-0.013	4	-0.022	4	0	7	5.554	5	-1.627	4	0	7	0	7
156			min	-0.044	3	-0.076	3	0	1	1.627	1	-5.554	3	0	1	0	1
157		4	max	-0.017	4	-0.029	4	0	7	5.463	5	-1.601	4	0	7	0	7
158			min	-0.06	3	-0.104	3	0	1	1.601	1	-5.463	3	0	1	0	1
159		5	max	-0.022	4	-0.037	4	0	7	5.344	5	-1.568	4	0	7	0	7
160			min	-0.077	3	-0.133	3	0	1	1.568	1	-5.344	3	0	1	0	1
161	M17	1	max	-0.024	4	-0.041	4	0	7	5.344	5	-1.568	4	0	7	0	7
162			min	-0.079	3	-0.136	3	0	1	1.568	1	-5.344	3	0	1	0	1
163		2	max	-0.028	4	-0.049	4	0	7	5.192	5	-1.523	4	0	7	0	7
164			min	-0.096	3	-0.165	3	0	1	1.523	1	-5.192	3	0	1	0	1
165		3	max	-0.033	4	-0.056	4	0	7	5.011	5	-1.47	4	0	7	0	7
166			min	-0.112	3	-0.194	3	0	1	1.47	1	-5.011	3	0	1	0	1
167		4	max	-0.037	4	-0.064	4	0	7	4.802	5	-1.409	4	0	7	0	7
168			min	-0.129	3	-0.222	3	0	1	1.409	1	-4.802	3	0	1	0	1
169		5	max	-0.042	4	-0.072	4	0	7	4.563	5	-1.341	4	0	7	0	7
170			min	-0.146	3	-0.251	3	0	1	1.341	1	-4.563	3	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
171	M18	1	max	-0.044	4	-0.075	4	0	7	4.563	5	-1.341	4	0	7	0	7
172			min	-0.148	3	-0.254	3	0	1	1.341	1	-4.563	3	0	1	0	1
173		2	max	-0.048	4	-0.083	4	0	7	4.293	5	-1.261	4	0	7	0	7
174			min	-0.164	3	-0.283	3	0	1	1.261	1	-4.293	3	0	1	0	1
175		3	max	-0.053	4	-0.091	4	0	7	3.993	5	-1.173	4	0	7	0	7
176			min	-0.181	3	-0.311	3	0	1	1.173	1	-3.993	3	0	1	0	1
177		4	max	-0.057	4	-0.099	4	0	7	3.665	5	-1.078	4	0	7	0	7
178			min	-0.197	3	-0.34	3	0	1	1.078	1	-3.665	3	0	1	0	1
179		5	max	-0.062	4	-0.106	4	0	7	3.308	5	-0.974	4	0	7	0	7
180			min	-0.214	3	-0.369	3	0	1	0.974	1	-3.308	3	0	1	0	1
181	M19	1	max	-0.064	4	-0.11	4	0	7	3.308	5	-0.974	4	0	7	0	7
182			min	-0.216	3	-0.372	3	0	1	0.974	1	-3.308	3	0	1	0	1
183		2	max	-0.068	4	-0.118	4	0	7	2.918	5	-0.86	4	0	7	0	7
184			min	-0.233	3	-0.401	3	0	1	0.86	1	-2.918	3	0	1	0	1
185		3	max	-0.073	4	-0.125	4	0	7	2.501	5	-0.737	4	0	7	0	7
186			min	-0.248	3	-0.428	3	0	1	0.737	1	-2.501	3	0	1	0	1
187		4	max	-0.077	4	-0.133	4	0	7	2.057	5	-0.607	4	0	7	0	7
188			min	-0.263	3	-0.454	3	0	1	0.607	1	-2.057	3	0	1	0	1
189		5	max	-0.081	4	-0.14	4	0	7	1.587	5	-0.47	4	0	7	0	7
190			min	-0.278	3	-0.478	3	0	1	0.47	1	-1.587	3	0	1	0	1
191	M20	1	max	-0.083	4	-0.144	4	0	7	1.587	5	-0.47	4	0	7	0	7
192			min	-0.28	3	-0.482	3	0	1	0.47	1	-1.587	3	0	1	0	1
193		2	max	-0.087	4	-0.15	4	0	7	1.214	5	-0.359	4	0	7	0	7
194			min	-0.292	3	-0.503	3	0	1	0.359	1	-1.214	3	0	1	0	1
195		3	max	-0.09	4	-0.155	4	0	7	0.826	5	-0.244	4	0	7	0	7
196			min	-0.305	3	-0.525	3	0	1	0.244	1	-0.826	3	0	1	0	1
197		4	max	-0.094	4	-0.161	4	0	7	0.421	5	-0.124	4	0	7	0	7
198			min	-0.317	3	-0.546	3	0	1	0.124	1	-0.421	3	0	1	0	1
199		5	max	-0.097	4	-0.167	4	0	7	0	7	0	7	0	7	0	7
200			min	-0.329	3	-0.568	3	0	1	0	1	0	1	0	1	0	1
201	M21	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
202			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
203		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
204			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
205		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
206			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
207		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
208			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
209		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
210			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1
211	M22	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
212			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
213		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
214			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
215		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
216			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
217		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
218			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
219		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
220			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1
221	M23	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
222			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
223		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
224			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
225		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
226			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
227		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
228			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
229		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
230			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1
231	M24	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
232			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
233		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
234			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
235		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
236			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
237		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
238			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
239		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
240			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1
241	M25	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
242			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
243		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
244			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
245		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
246			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
247		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
248			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
249		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
250			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1
251	M26	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
252			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
253		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
254			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
255		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
256			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
257		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
258			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
259		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
260			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1
261	M27	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
262			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
263		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
264			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
265		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
266			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
267		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
268			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
269		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
270			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1
271	M28	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
272			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
273		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
274			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
275		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
276			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
277		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
278			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
279		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
280			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
281	M29	1	max	0	7	0	7	0	2	0	7	0	7	0	7	0	7
282			min	0	1	0	1	-0.045	1	0	1	0	1	0	1	0	1
283		2	max	0	7	0	7	0	2	0	7	0	7	0	2	0.062	7
284			min	0	1	0	1	-0.023	1	0	1	0	1	-0.262	1	0	2
285		3	max	0	7	0	7	0	7	0	7	0	7	0	2	0.082	7
286			min	0	1	0	1	0	1	0	1	0	1	-0.35	1	0	2
287		4	max	0	7	0	7	0.023	7	0	7	0	7	0	2	0.062	7
288			min	0	1	0	1	0	2	0	1	0	1	-0.262	1	0	2
289		5	max	0	7	0	7	0.045	7	0	7	0	7	0	7	0	7
290			min	0	1	0	1	0	2	0	1	0	1	0	1	0	1

Envelope Member Section Deflections - Service

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
1	M1	1	max	0	4	0	4	0	7	0	7	NC	7	NC	7
2			min	0	3	0	3	0	1	0	1	NC	1	NC	1
3		2	max	0	4	0.029	5	0	7	0	7	1859.29	4	NC	7
4			min	0	3	0.008	1	0	1	0	1	541.264	3	NC	1
5		3	max	0	4	0.058	5	0	7	0	7	933.116	4	NC	7
6			min	0	3	0.017	1	0	1	0	1	271.648	3	NC	1
7		4	max	0	4	0.087	5	0	7	0	7	625.905	4	NC	7
8			min	0	3	0.025	1	0	1	0	1	182.217	3	NC	1
9		5	max	0	4	0.115	5	0	7	0	7	473.433	4	NC	7
10			min	-0.001	3	0.033	1	0	1	0	1	137.831	3	NC	1
11	M2	1	max	0	4	0.115	5	0	7	0	7	NC	7	NC	7
12			min	-0.001	3	0.033	1	0	1	0	1	NC	1	NC	1
13		2	max	0	4	0.141	5	0	7	0	7	NC	7	NC	7
14			min	-0.001	3	0.041	1	0	1	0	1	9681.792	3	NC	1
15		3	max	0	4	0.167	5	0	7	0	7	NC	6	NC	7
16			min	-0.001	3	0.049	1	0	1	0	1	6924.308	3	NC	1
17		4	max	0	4	0.192	5	0	7	0	7	NC	6	NC	7
18			min	-0.001	3	0.056	1	0	1	0	1	8836.596	3	NC	1
19		5	max	0	4	0.216	5	0	7	0	7	NC	7	NC	7
20			min	-0.001	3	0.063	1	0	1	0	1	NC	1	NC	1
21	M3	1	max	0	4	0.216	5	0	7	0	7	NC	7	NC	7
22			min	-0.001	3	0.063	1	0	1	0	1	NC	1	NC	1
23		2	max	0	4	0.238	5	0	7	0	7	NC	6	NC	7
24			min	-0.001	3	0.069	1	0	1	0	1	6442.858	3	NC	1
25		3	max	0	4	0.258	5	0	7	0	7	NC	6	NC	7
26			min	-0.001	3	0.075	1	0	1	0	1	4723.875	3	NC	1
27		4	max	0	4	0.277	5	0	7	0	7	NC	6	NC	7
28			min	-0.001	3	0.081	1	0	1	0	1	6167.146	3	NC	1
29		5	max	0	4	0.294	5	0	7	0	7	NC	7	NC	7
30			min	-0.001	3	0.086	1	0	1	0	1	NC	1	NC	1
31	M4	1	max	0	4	0.294	5	0	7	0	7	NC	7	NC	7
32			min	-0.001	3	0.086	1	0	1	0	1	NC	1	NC	1
33		2	max	0	4	0.309	5	0	7	0	7	NC	6	NC	7
34			min	-0.001	3	0.09	1	0	1	0	1	5276.573	3	NC	1
35		3	max	0	4	0.322	5	0	7	0	7	NC	4	NC	7
36			min	-0.001	3	0.094	1	0	1	0	1	3914.225	3	NC	1
37		4	max	0	4	0.332	5	0	7	0	7	NC	6	NC	7
38			min	-0.002	3	0.097	1	0	1	0	1	5167.291	3	NC	1
39		5	max	0	4	0.341	5	0	7	0	7	NC	7	NC	7
40			min	-0.002	3	0.099	1	0	1	0	1	NC	1	NC	1
41	M5	1	max	0	4	0.341	5	0	7	0	7	NC	7	NC	7
42			min	-0.002	3	0.099	1	0	1	0	1	NC	1	NC	1

Envelope Member Section Deflections - Service (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
43		2	max	0	4	0.348	5	0	7	0	7	NC	6	NC	7
44			min	-0.002	3	0.101	1	0	1	0	1	4847.894	3	NC	1
45		3	max	0	4	0.352	5	0	7	0	7	NC	4	NC	7
46			min	-0.002	3	0.103	1	0	1	0	1	3624.782	3	NC	1
47		4	max	0	4	0.355	5	0	7	0	7	NC	6	NC	7
48			min	-0.002	3	0.103	1	0	1	0	1	4822.365	3	NC	1
49		5	max	0	4	0.355	5	0	7	0	7	NC	7	NC	7
50			min	-0.002	3	0.103	1	0	1	0	1	NC	1	NC	1
51	M6	1	max	0	4	0.355	5	0	7	0	7	NC	7	NC	7
52			min	-0.002	3	0.103	1	0	1	0	1	NC	1	NC	1
53		2	max	0	4	0.352	5	0	7	0	7	NC	6	NC	7
54			min	-0.002	3	0.103	1	0	1	0	1	4864.475	3	NC	1
55		3	max	0	4	0.348	5	0	7	0	7	NC	4	NC	7
56			min	-0.002	3	0.101	1	0	1	0	1	3662.917	3	NC	1
57		4	max	0	4	0.341	5	0	7	0	7	NC	6	NC	7
58			min	-0.002	3	0.099	1	0	1	0	1	4907.687	3	NC	1
59		5	max	0	4	0.333	5	0	7	0	7	NC	7	NC	7
60			min	-0.002	3	0.097	1	0	1	0	1	NC	1	NC	1
61	M7	1	max	0	4	0.333	5	0	7	0	7	NC	7	NC	7
62			min	-0.002	3	0.097	1	0	1	0	1	NC	1	NC	1
63		2	max	0	4	0.322	5	0	7	0	7	NC	6	NC	7
64			min	-0.001	3	0.094	1	0	1	0	1	5334.481	3	NC	1
65		3	max	0	4	0.309	5	0	7	0	7	NC	4	NC	7
66			min	-0.001	3	0.09	1	0	1	0	1	4049.849	3	NC	1
67		4	max	0	4	0.294	5	0	7	0	7	NC	6	NC	7
68			min	-0.001	3	0.086	1	0	1	0	1	5471.993	3	NC	1
69		5	max	0	4	0.277	5	0	7	0	7	NC	7	NC	7
70			min	-0.001	3	0.081	1	0	1	0	1	NC	1	NC	1
71	M8	1	max	0	4	0.277	5	0	7	0	7	NC	7	NC	7
72			min	-0.001	3	0.081	1	0	1	0	1	NC	1	NC	1
73		2	max	0	4	0.258	5	0	7	0	7	NC	6	NC	7
74			min	-0.001	3	0.075	1	0	1	0	1	6581.439	3	NC	1
75		3	max	0	4	0.238	5	0	7	0	7	NC	6	NC	7
76			min	-0.001	3	0.069	1	0	1	0	1	5059.894	3	NC	1
77		4	max	0	4	0.216	5	0	7	0	7	NC	6	NC	7
78			min	-0.001	3	0.063	1	0	1	0	1	6928.531	3	NC	1
79		5	max	0	4	0.192	5	0	7	0	7	NC	7	NC	7
80			min	-0.001	3	0.056	1	0	1	0	1	NC	1	NC	1
81	M9	1	max	0	4	0.192	5	0	7	0	7	NC	7	NC	7
82			min	-0.001	3	0.056	1	0	1	0	1	NC	1	NC	1
83		2	max	0	4	0.168	5	0	7	0	7	NC	7	NC	7
84			min	-0.001	3	0.049	1	0	1	0	1	NC	1	NC	1
85		3	max	0	4	0.142	5	0	7	0	7	NC	6	NC	7
86			min	-0.001	3	0.041	1	0	1	0	1	8034.596	3	NC	1
87		4	max	0	4	0.115	5	0	7	0	7	NC	7	NC	7
88			min	-0.001	3	0.033	1	0	1	0	1	NC	1	NC	1
89		5	max	0	4	0.087	5	0	7	0	7	NC	7	NC	7
90			min	0	3	0.025	1	0	1	0	1	NC	1	NC	1
91	M10	1	max	0	4	0.087	5	0	7	0	7	468.787	4	NC	7
92			min	0	3	0.025	1	0	1	0	1	136.424	3	NC	1
93		2	max	0	4	0.065	5	0	7	0	7	622.025	4	NC	7
94			min	0	3	0.019	1	0	1	0	1	181.015	3	NC	1
95		3	max	0	4	0.044	5	0	7	0	7	929.781	4	NC	7
96			min	0	3	0.013	1	0	1	0	1	270.572	3	NC	1
97		4	max	0	4	0.022	5	0	7	0	7	1855.624	4	NC	7

Envelope Member Section Deflections - Service (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
98			min	0	3	0.006	1	0	1	0	1	539.992	3	NC	1
99		5	max	0	7	0	7	0	7	0	7	NC	7	NC	7
100			min	0	1	0	1	0	1	0	1	NC	1	NC	1
101	M11	1	max	0	4	0	5	0	7	0	7	NC	7	NC	7
102			min	0	3	0	1	0	1	0	1	NC	1	NC	1
103		2	max	0	4	-0.008	4	0	7	0	7	1863.327	4	NC	7
104			min	0	3	-0.029	3	0	1	0	1	545.068	3	NC	1
105		3	max	0	4	-0.017	4	0	7	0	7	935.146	4	NC	7
106			min	0	3	-0.058	3	0	1	0	1	273.56	3	NC	1
107		4	max	0	4	-0.025	4	0	7	0	7	627.27	4	NC	7
108			min	0	3	-0.086	3	0	1	0	1	183.504	3	NC	1
109		5	max	0	4	-0.033	4	0	7	0	7	474.47	4	NC	7
110			min	-0.001	3	-0.114	3	0	1	0	1	138.809	3	NC	1
111	M12	1	max	0	4	-0.033	4	0	7	0	7	NC	7	NC	7
112			min	-0.001	3	-0.114	3	0	1	0	1	NC	1	NC	1
113		2	max	0	4	-0.041	4	0	7	0	7	NC	7	NC	7
114			min	-0.001	3	-0.14	3	0	1	0	1	9722.877	3	NC	1
115		3	max	0	4	-0.049	4	0	7	0	7	NC	6	NC	7
116			min	-0.001	3	-0.166	3	0	1	0	1	6953.98	3	NC	1
117		4	max	0	4	-0.056	4	0	7	0	7	NC	6	NC	7
118			min	-0.001	3	-0.191	3	0	1	0	1	8874.858	3	NC	1
119		5	max	0	4	-0.063	4	0	7	0	7	NC	7	NC	7
120			min	-0.001	3	-0.214	3	0	1	0	1	NC	1	NC	1
121	M13	1	max	0	4	-0.063	4	0	7	0	7	NC	7	NC	7
122			min	-0.001	3	-0.214	3	0	1	0	1	NC	1	NC	1
123		2	max	0	4	-0.069	4	0	7	0	7	NC	6	NC	7
124			min	-0.001	3	-0.236	3	0	1	0	1	6473.919	3	NC	1
125		3	max	0	4	-0.075	4	0	7	0	7	NC	6	NC	7
126			min	-0.001	3	-0.256	3	0	1	0	1	4746.909	3	NC	1
127		4	max	0	4	-0.08	4	0	7	0	7	NC	6	NC	7
128			min	-0.001	3	-0.275	3	0	1	0	1	6197.575	3	NC	1
129		5	max	0	4	-0.085	4	0	7	0	7	NC	7	NC	7
130			min	-0.001	3	-0.291	3	0	1	0	1	NC	1	NC	1
131	M14	1	max	0	4	-0.085	4	0	7	0	7	NC	7	NC	7
132			min	-0.001	3	-0.291	3	0	1	0	1	NC	1	NC	1
133		2	max	0	4	-0.09	4	0	7	0	7	NC	6	NC	7
134			min	-0.001	3	-0.306	3	0	1	0	1	5306.053	3	NC	1
135		3	max	0	4	-0.093	4	0	7	0	7	NC	4	NC	7
136			min	-0.001	3	-0.319	3	0	1	0	1	3936.384	3	NC	1
137		4	max	0	4	-0.097	4	0	7	0	7	NC	6	NC	7
138			min	-0.001	3	-0.33	3	0	1	0	1	5196.948	3	NC	1
139		5	max	0	4	-0.099	4	0	7	0	7	NC	7	NC	7
140			min	-0.002	3	-0.339	3	0	1	0	1	NC	1	NC	1
141	M15	1	max	0	4	-0.099	4	0	7	0	7	NC	7	NC	7
142			min	-0.002	3	-0.339	3	0	1	0	1	NC	1	NC	1
143		2	max	0	4	-0.101	4	0	7	0	7	NC	6	NC	7
144			min	-0.002	3	-0.345	3	0	1	0	1	4880.102	3	NC	1
145		3	max	0	4	-0.102	4	0	7	0	7	NC	4	NC	7
146			min	-0.002	3	-0.35	3	0	1	0	1	3649.246	3	NC	1
147		4	max	0	4	-0.103	4	0	7	0	7	NC	6	NC	7
148			min	-0.002	3	-0.352	3	0	1	0	1	4855.447	3	NC	1
149		5	max	0	4	-0.103	4	0	7	0	7	NC	7	NC	7
150			min	-0.002	3	-0.352	3	0	1	0	1	NC	1	NC	1
151	M16	1	max	0	4	-0.103	4	0	7	0	7	NC	7	NC	7
152			min	-0.002	3	-0.352	3	0	1	0	1	NC	1	NC	1

Envelope Member Section Deflections - Service (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
153		2	max	0	4	-0.102	4	0	7	0	7	NC	6	NC	7
154			min	-0.002	3	-0.349	3	0	1	0	1	4904.335	3	NC	1
155		3	max	0	4	-0.101	4	0	7	0	7	NC	4	NC	7
156			min	-0.002	3	-0.345	3	0	1	0	1	3693.522	3	NC	1
157		4	max	0	4	-0.099	4	0	7	0	7	NC	6	NC	7
158			min	-0.002	3	-0.338	3	0	1	0	1	4949.528	3	NC	1
159		5	max	0	4	-0.097	4	0	7	0	7	NC	7	NC	7
160			min	-0.002	3	-0.33	3	0	1	0	1	NC	1	NC	1
161	M17	1	max	0	4	-0.097	4	0	7	0	7	NC	7	NC	7
162			min	-0.002	3	-0.33	3	0	1	0	1	NC	1	NC	1
163		2	max	0	4	-0.093	4	0	7	0	7	NC	6	NC	7
164			min	-0.001	3	-0.319	3	0	1	0	1	5391.488	3	NC	1
165		3	max	0	4	-0.09	4	0	7	0	7	NC	4	NC	7
166			min	-0.001	3	-0.306	3	0	1	0	1	4094.245	3	NC	1
167		4	max	0	4	-0.085	4	0	7	0	7	NC	6	NC	7
168			min	-0.001	3	-0.291	3	0	1	0	1	5533.587	3	NC	1
169		5	max	0	4	-0.08	4	0	7	0	7	NC	7	NC	7
170			min	-0.001	3	-0.274	3	0	1	0	1	NC	1	NC	1
171	M18	1	max	0	4	-0.08	4	0	7	0	7	NC	7	NC	7
172			min	-0.001	3	-0.274	3	0	1	0	1	NC	1	NC	1
173		2	max	0	4	-0.075	4	0	7	0	7	NC	6	NC	7
174			min	-0.001	3	-0.256	3	0	1	0	1	6682.402	3	NC	1
175		3	max	0	4	-0.069	4	0	7	0	7	NC	6	NC	7
176			min	-0.001	3	-0.235	3	0	1	0	1	5140.415	3	NC	1
177		4	max	0	4	-0.063	4	0	7	0	7	NC	6	NC	7
178			min	-0.001	3	-0.214	3	0	1	0	1	7043.112	3	NC	1
179		5	max	0	4	-0.056	4	0	7	0	7	NC	7	NC	7
180			min	-0.001	3	-0.19	3	0	1	0	1	NC	1	NC	1
181	M19	1	max	0	4	-0.056	4	0	7	0	7	NC	7	NC	7
182			min	-0.001	3	-0.19	3	0	1	0	1	NC	1	NC	1
183		2	max	0	4	-0.049	4	0	7	0	7	NC	7	NC	7
184			min	-0.001	3	-0.166	3	0	1	0	1	NC	1	NC	1
185		3	max	0	4	-0.041	4	0	7	0	7	NC	6	NC	7
186			min	-0.001	3	-0.14	3	0	1	0	1	8217.694	3	NC	1
187		4	max	0	4	-0.033	4	0	7	0	7	NC	7	NC	7
188			min	-0.001	3	-0.113	3	0	1	0	1	NC	1	NC	1
189		5	max	0	4	-0.025	4	0	7	0	7	NC	7	NC	7
190			min	0	3	-0.086	3	0	1	0	1	NC	1	NC	1
191	M20	1	max	0	4	-0.025	4	0	7	0	7	470.492	4	NC	7
192			min	0	3	-0.086	3	0	1	0	1	138.03	3	NC	1
193		2	max	0	4	-0.019	4	0	7	0	7	624.301	4	NC	7
194			min	0	3	-0.065	3	0	1	0	1	183.159	3	NC	1
195		3	max	0	4	-0.013	4	0	7	0	7	933.196	4	NC	7
196			min	0	3	-0.043	3	0	1	0	1	273.788	3	NC	1
197		4	max	0	4	-0.006	4	0	7	0	7	1862.458	4	NC	7
198			min	0	3	-0.022	3	0	1	0	1	546.427	3	NC	1
199		5	max	0	7	0	7	0	7	0	7	NC	7	NC	7
200			min	0	1	0	1	0	1	0	1	NC	1	NC	1
201	M21	1	max	0	7	0.073	5	0.087	5	0.007	5	NC	7	NC	7
202			min	0	1	0.021	1	0.025	1	0.002	1	NC	1	NC	1
203		2	max	0	7	0.074	5	0.088	5	0.007	5	NC	7	NC	7
204			min	0	1	0.021	1	0.027	1	0.002	1	NC	1	NC	1
205		3	max	0	7	0.074	5	0.089	5	0.007	5	NC	7	NC	7
206			min	0	1	0.021	1	0.027	1	0.002	1	NC	1	NC	1
207		4	max	0	7	0.074	5	0.089	5	0.007	5	NC	7	NC	7

Envelope Member Section Deflections - Service (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
208			min	0	1	0.022	1	0.027	1	0.002	1	NC	1	NC	1
209		5	max	0	7	0.074	5	0.087	5	0.007	5	NC	7	NC	7
210			min	0	1	0.022	1	0.025	1	0.002	1	NC	1	NC	1
211	M22	1	max	0	7	0.138	5	0.164	5	0.006	5	NC	7	NC	7
212			min	0	1	0.04	1	0.048	1	0.002	1	NC	1	NC	1
213		2	max	0	7	0.139	5	0.165	5	0.006	5	NC	7	NC	7
214			min	0	1	0.04	1	0.049	1	0.002	1	NC	1	NC	1
215		3	max	0	7	0.139	5	0.166	5	0.006	5	NC	7	NC	7
216			min	0	1	0.041	1	0.05	1	0.002	1	NC	1	NC	1
217		4	max	0	7	0.139	5	0.166	5	0.006	5	NC	7	NC	7
218			min	0	1	0.041	1	0.049	1	0.002	1	NC	1	NC	1
219		5	max	0	7	0.139	5	0.165	5	0.006	5	NC	7	NC	7
220			min	0	1	0.041	1	0.048	1	0.002	1	NC	1	NC	1
221	M23	1	max	0	7	0.188	5	0.222	5	0.004	5	NC	7	NC	7
222			min	0	1	0.055	1	0.065	1	0.001	1	NC	1	NC	1
223		2	max	0	7	0.189	5	0.224	5	0.004	5	NC	7	NC	7
224			min	0	1	0.055	1	0.067	1	0.001	1	NC	1	NC	1
225		3	max	0	7	0.189	5	0.225	5	0.004	5	NC	7	NC	7
226			min	0	1	0.055	1	0.067	1	0.001	1	NC	1	NC	1
227		4	max	0	7	0.189	5	0.225	5	0.004	5	NC	7	NC	7
228			min	0	1	0.055	1	0.067	1	0.001	1	NC	1	NC	1
229		5	max	0	7	0.19	5	0.224	5	0.004	5	NC	7	NC	7
230			min	0	1	0.055	1	0.065	1	0.001	1	NC	1	NC	1
231	M24	1	max	0	7	0.219	5	0.258	5	0.002	5	NC	7	NC	7
232			min	0	1	0.064	1	0.076	1	0.001	1	NC	1	NC	1
233		2	max	0	7	0.219	5	0.26	5	0.002	5	NC	7	NC	7
234			min	0	1	0.064	1	0.077	1	0.001	1	NC	1	NC	1
235		3	max	0	7	0.22	5	0.261	5	0.002	5	NC	7	NC	7
236			min	0	1	0.064	1	0.078	1	0.001	1	NC	1	NC	1
237		4	max	0	7	0.22	5	0.261	5	0.002	5	NC	7	NC	7
238			min	0	1	0.064	1	0.077	1	0.001	1	NC	1	NC	1
239		5	max	0	7	0.221	5	0.261	5	0.002	5	NC	7	NC	7
240			min	0	1	0.064	1	0.076	1	0.001	1	NC	1	NC	1
241	M25	1	max	0	7	0.227	5	0.268	5	0	4	NC	7	NC	7
242			min	0	1	0.067	1	0.079	1	0	3	NC	1	NC	1
243		2	max	0	7	0.228	5	0.27	5	0	4	NC	7	NC	7
244			min	0	1	0.067	1	0.08	1	0	3	NC	1	NC	1
245		3	max	0	7	0.228	5	0.272	5	0	4	NC	7	NC	7
246			min	0	1	0.067	1	0.081	1	0	3	NC	1	NC	1
247		4	max	0	7	0.229	5	0.272	5	0	4	NC	7	NC	7
248			min	0	1	0.067	1	0.08	1	0	3	NC	1	NC	1
249		5	max	0	7	0.229	5	0.271	5	0	4	NC	7	NC	7
250			min	0	1	0.067	1	0.079	1	0	3	NC	1	NC	1
251	M26	1	max	0	7	0.213	5	0.252	5	-0.001	4	NC	7	NC	7
252			min	0	1	0.062	1	0.074	1	-0.002	3	NC	1	NC	1
253		2	max	0	7	0.213	5	0.254	5	-0.001	4	NC	7	NC	7
254			min	0	1	0.062	1	0.075	1	-0.002	3	NC	1	NC	1
255		3	max	0	7	0.214	5	0.255	5	-0.001	4	NC	7	NC	7
256			min	0	1	0.062	1	0.076	1	-0.002	3	NC	1	NC	1
257		4	max	0	7	0.214	5	0.255	5	-0.001	4	NC	7	NC	7
258			min	0	1	0.063	1	0.075	1	-0.002	3	NC	1	NC	1
259		5	max	0	7	0.215	5	0.254	5	-0.001	4	NC	7	NC	7
260			min	0	1	0.063	1	0.074	1	-0.002	3	NC	1	NC	1
261	M27	1	max	0	7	0.177	5	0.209	5	-0.001	4	NC	7	NC	7
262			min	0	1	0.052	1	0.061	1	-0.004	3	NC	1	NC	1

Envelope Member Section Deflections - Service (Continued)

	Member	Sec		x [in]	LC	y [in]	LC	z [in]	LC	x Rotate [rad]	LC	(n) L/y' Ratio	LC	(n) L/z' Ratio	LC
263		2	max	0	7	0.178	5	0.211	5	-0.001	4	NC	7	NC	7
264			min	0	1	0.052	1	0.063	1	-0.004	3	NC	1	NC	1
265		3	max	0	7	0.178	5	0.212	5	-0.001	4	NC	7	NC	7
266			min	0	1	0.052	1	0.063	1	-0.004	3	NC	1	NC	1
267		4	max	0	7	0.178	5	0.212	5	-0.001	4	NC	7	NC	7
268			min	0	1	0.052	1	0.063	1	-0.004	3	NC	1	NC	1
269		5	max	0	7	0.179	5	0.211	5	-0.001	4	NC	7	NC	7
270			min	0	1	0.052	1	0.062	1	-0.004	3	NC	1	NC	1
271	M28	1	max	0	7	0.123	5	0.145	5	-0.002	4	NC	7	NC	7
272			min	0	1	0.036	1	0.043	1	-0.006	3	NC	1	NC	1
273		2	max	0	7	0.123	5	0.147	5	-0.002	4	NC	7	NC	7
274			min	0	1	0.036	1	0.044	1	-0.006	3	NC	1	NC	1
275		3	max	0	7	0.124	5	0.148	5	-0.002	4	NC	7	NC	7
276			min	0	1	0.036	1	0.045	1	-0.006	3	NC	1	NC	1
277		4	max	0	7	0.124	5	0.148	5	-0.002	4	NC	7	NC	7
278			min	0	1	0.036	1	0.044	1	-0.006	3	NC	1	NC	1
279		5	max	0	7	0.124	5	0.147	5	-0.002	4	NC	7	NC	7
280			min	0	1	0.036	1	0.043	1	-0.006	3	NC	1	NC	1
281	M29	1	max	0	7	0.055	5	0.065	5	-0.002	4	NC	7	NC	7
282			min	0	1	0.016	1	0.019	1	-0.007	3	NC	1	NC	1
283		2	max	0	7	0.056	5	0.067	5	-0.002	4	NC	7	NC	7
284			min	0	1	0.016	1	0.021	1	-0.007	3	NC	1	NC	1
285		3	max	0	7	0.056	5	0.068	5	-0.002	4	NC	7	NC	7
286			min	0	1	0.016	1	0.021	1	-0.007	3	NC	1	NC	1
287		4	max	0	7	0.056	5	0.067	5	-0.002	4	NC	7	NC	7
288			min	0	1	0.016	1	0.021	1	-0.007	3	NC	1	NC	1
289		5	max	0	7	0.056	5	0.066	5	-0.002	4	NC	7	NC	7
290			min	0	1	0.016	1	0.019	1	-0.007	3	NC	1	NC	1

Envelope AISI S100-20: ASD Member Cold Formed Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pn/Om[k]	Tn/Om[k]	Mnyy/Om[k-ft]	Mnzz/Om[k-ft]	Vny/Om[k]	Vnz/Om[k]	Cb	Eqn
1	M21	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
2	M22	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
3	M23	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
4	M24	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
5	M25	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
6	M26	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
7	M27	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
8	M28	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1
9	M29	1200S200-97	0.013	2	7	0.002	4	z	5	18.63	50.299	0.884	6.832	8.145	5.688	1	H1.2-1

Envelope AA ADM1-20: ASD - BUILDING Member Aluminum Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/Om[k]	Pnt/Om[k]	Mny/Om[k-ft]	Mnz/Om[k-ft]	Vny/Om[k]	Vnz/Om[k]	Cb	Eqn
1	M1	CenterisStringer	0.131	1.315	5	0.047	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.688	H.1-1
2	M2	CenterisStringer	0.215	1.315	5	0.037	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.229	H.1-1
3	M3	CenterisStringer	0.272	1.274	5	0.028	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.11	H.1-1
4	M4	CenterisStringer	0.301	1.315	5	0.018	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.049	H.1-1
5	M5	CenterisStringer	0.311	1.165	5	0.008	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.007	H.1-1
6	M6	CenterisStringer	0.311	0	5	0.011	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.016	H.1-1
7	M7	CenterisStringer	0.294	0	5	0.02	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.061	H.1-1
8	M8	CenterisStringer	0.252	0	5	0.03	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.129	H.1-1
9	M9	CenterisStringer	0.195	0	5	0.04	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.284	H.1-1
10	M10	CenterisStringer	0.104	0	5	0.047	0.986	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.704	H.1-1

Envelope AA ADM1-20: ASD - BUILDING Member Aluminum Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/Om[k]	Pnt/Om[k]	Mny/Om[k-ft]	Mnz/Om[k-ft]	Vny/Om[k]	Vnz/Om[k]	Cb	Eqn
11	M11	CenterisStringer	0.131	1.315	5	0.047	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.688	H.1-1
12	M12	CenterisStringer	0.214	1.315	5	0.037	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.229	H.1-1
13	M13	CenterisStringer	0.269	1.247	5	0.027	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.109	H.1-1
14	M14	CenterisStringer	0.299	1.315	5	0.018	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.049	H.1-1
15	M15	CenterisStringer	0.308	1.151	5	0.008	0	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.007	H.1-1
16	M16	CenterisStringer	0.308	0	5	0.011	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.017	H.1-1
17	M17	CenterisStringer	0.292	0	5	0.02	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.063	H.1-1
18	M18	CenterisStringer	0.249	0	5	0.03	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.132	H.1-1
19	M19	CenterisStringer	0.192	0	5	0.039	1.315	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.287	H.1-1
20	M20	CenterisStringer	0.101	0	5	0.046	0.986	y	5	56.257	68.844	1.999	14.347	29.42	15.36	1.702	H.1-1

ANCHORAGE CALCULATIONS

Code Compliance

1. Stair Rise = 9-1/2" Max
2. Design Loading:

2.1. Platform 100 PSF Min.
2.2. Stair Tread 300 LBS./Tread min.
2.3. Railing 50 PLF/200 LBS. CONC.
2.4. Lateral Load 600# Pedestrian Dynamic
2.5. Wind Load 135 MPH, EXP C, Kzt=2.0
2.6. Seismic Load Sds= 1.0, Seismic CAT. 'D'

3. Graspable Continuous Round Handrail At 36" Off Stair Nosing. Install Both Sides Of Stairs.

4. Platforms To Have 4" Toe Kick.

5. Footing Information
Pre Manufactured ABS Pads Under All Adjustable Legs On Asphalt Or Soils

Material Specifications

Planking

- Platform: All Planking Shall Be 13 GA. 12" W x 1-1/2" Deep
- Stairs: All Planking Shall Be 11 GA. 12" W x 2" Deep

Legs

- Leveling Feet Assumed To Be Placed On Suitable Firm Bearing Ground.
- Leg Material Shall Be 1-1/2" sq. x .125" AL. Tubing.
- Leg Pockets Shall Be 1.781" sq. x .125" AL Tubing.
- Adjustable Bolt- 3/8" x 2-1/4" Grade 5 Cap Screw W/Nylon Lock Nut, Zinc Plated

Aluminum

- The 1-1/2" AL. Round Handrail Shall Be 6063 T-5 With A Yield stress Of 16 KSI.
- All Other Aluminum Parts Shall Be 6061 Aluminum With A Yield Stress Of 35 KSI.

Hand Rails

- Stairs: Use 1-1/2" Sq. x .156" Thick Walled Tubing For Posts And Horizontal Rails Except The Top 1-1/2" Round Graspable Handrail.
- Platform: Use 1-1/2" Sq. x .156" Thick Walled Tubing For Posts And All Horizontal Rails.

Welding

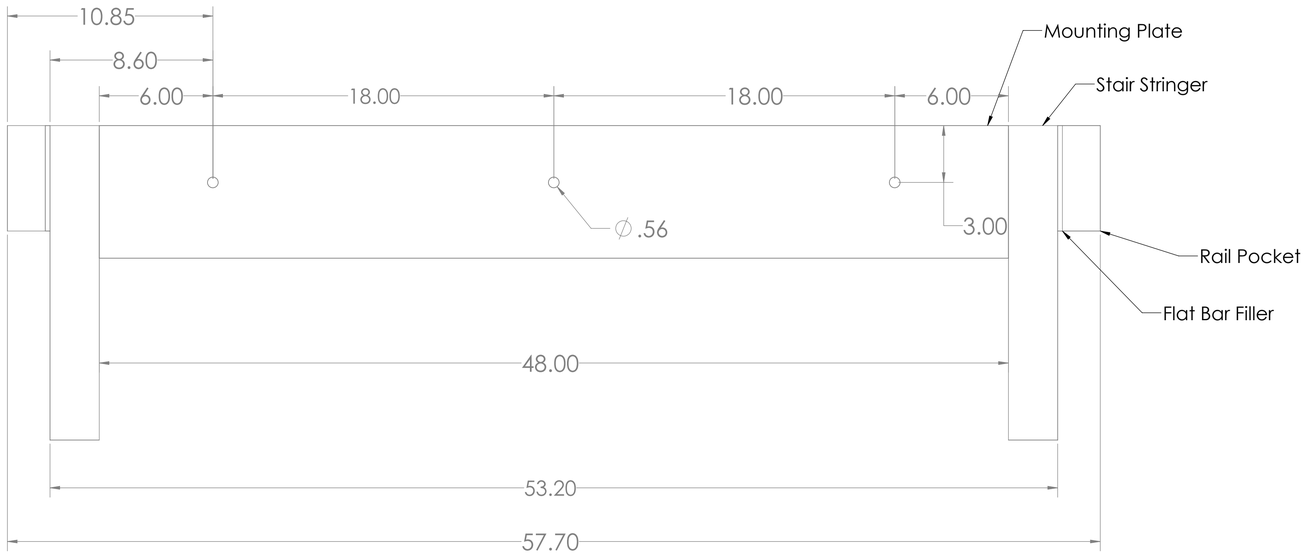
- All References To Welding On Plan Set Refer To In-Plant Fabrication. No On Site Welding Is Required.
- Fabrication Plant Welding By Welders In Accordance With ANSI/AWS D1.2 Code.
- Weld Sizes Are To Be Equal To Or Larger Than The Element Being Welded.
- Welding Is All Around Unless Otherwise Noted. Care Is Taken To Avoid Excess Warping Of Welded Elements.
- Fabricator To Certify Assembled Parts Are Per Drawings.

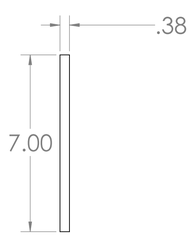
Bolts

- All Bolts Shall Be Grade 5 Zinc Plated, Unless Otherwise Specified. Provide Locking Washers Under All Nuts.
- High Strength Bolts Are Designed At less Than 50% Capacity For Additional Factor Of Safety And Do Not Require Special Inspection.

Tech Screws

- Zinc Plated # 12 x 1-1/4" Pan Head





Moutning Plate

UNLESS OTHERWISE SPECIFIED:		
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±		
INTERPRET GEOMETRIC TOLERANCING PER:		
MATERIAL 6061-T-6 Aluminum 6063 T-5 Aluminum Galvanized Steel		
FINISH		
NEXT ASSY	USED ON	
APPLICATION	DO NOT SCALE DRAWING	

	NAME	DATE
DRAWN	Kyle G	10/25/42
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		
COMMENTS:		

Client: Howard S Wright

Location

Ceneteris Puyallup

SIZE D | Title: Channel Type Access Stair System | REV

SCALE: NTS | SHEET 1 OF 1

Company:	AHBL	Date:	12/10/2024
Engineer:	ADM	Page:	1/4
Project:	Centeris Exterior Stairs		
Address:	2215 North 30th Street		
Phone:			
E-mail:	dmceachern@ahbl.com		

1.Project information

Project description: Anchorage of exterior stairs.
Location:
Fastening description:

Comment:

2. Input Data & Anchor Parameters

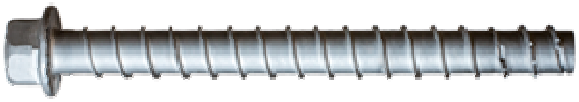
General
Design method:ACI 318-19
Units: Imperial units

Anchor Information:
Anchor type: Concrete screw
Material: Stainless Steel
Diameter (inch): 0.500
Nominal Embedment depth (inch): 3.250
Effective Embedment depth, h_{ef} (inch): 1.860
Code report: IAPMO UES ER-493
Anchor category: 1
Anchor ductility: Yes
h_{min} (inch): 5.00
c_{ac} (inch): 6.00
C_{min} (inch): 2.25
S_{min} (inch): 3.00

Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 8.00
State: Cracked
Compressive strength, f'_c (psi): 3000
$\Psi_{c,V}$: 1.0
Reinforcement condition: Supplementary reinforcement not present
Supplemental edge reinforcement: Not applicable
Reinforcement provided at corners: No
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: No
Ignore 6do requirement: Not applicable
Build-up grout pad: No

Base Plate
Length x Width x Thickness (inch): 7.00 x 48.00 x 0.38

Recommended Anchor
Anchor Name: Titen HD® Stainless Steel - 1/2"Ø THDSS, hnom:3.25" (83mm)
Code Report: IAPMO UES ER-493

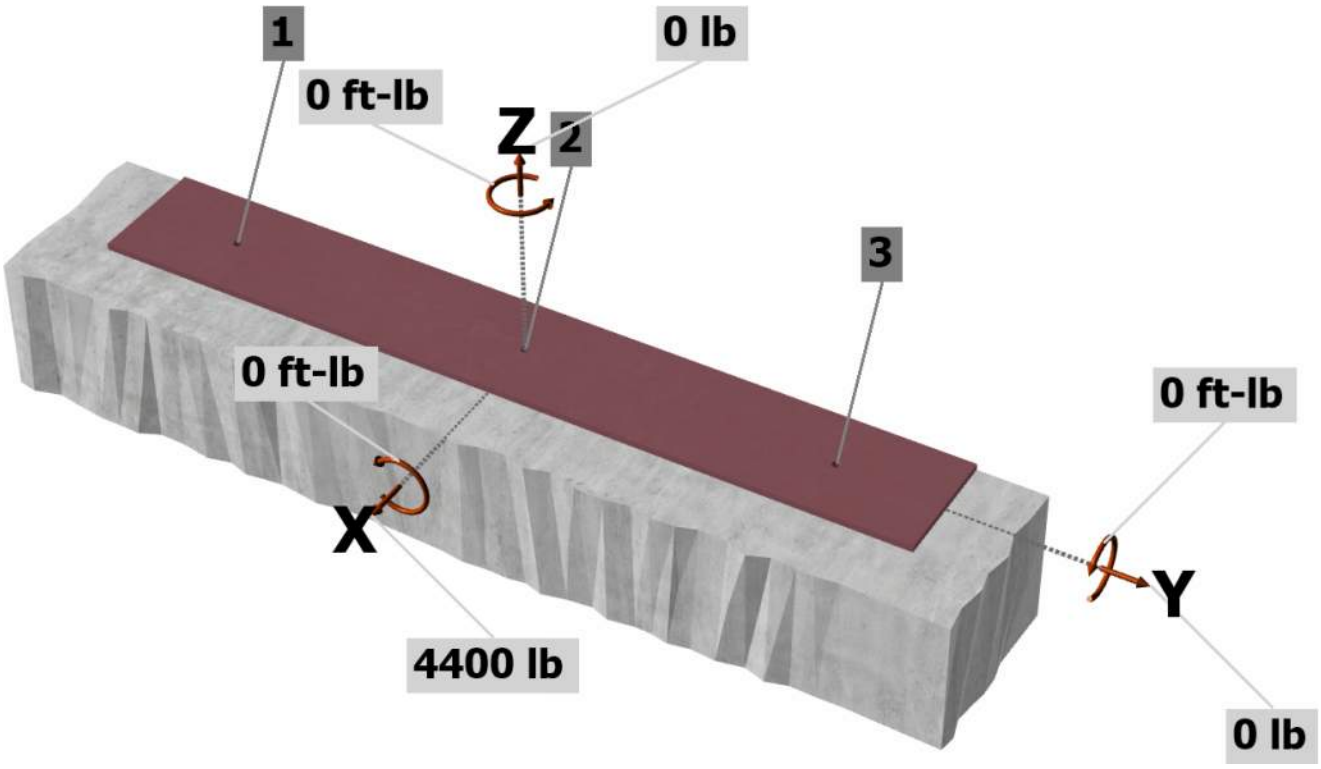


Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: U = 1.2(D + F) + 1.6(L) + 0.5(Lr or S or R)
Seismic design: Yes
Anchors subjected to sustained tension: Not applicable
Ductility section for tension: 17.10.5.3 (d) is satisfied
Ductility section for shear: 17.10.6.3 (c) is satisfied
Ω_0 factor: not set
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: No

Service level loads:

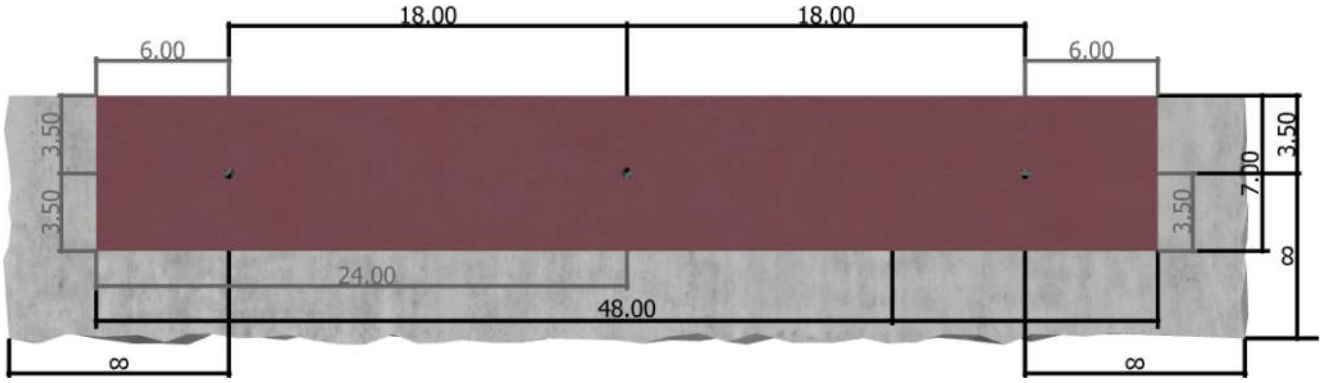
	D	F	L	Lr/S/R	*Strength level loads*
N_a [lb]:	0	0	0	0	*0*
V_{ax} [lb]:	1000	0	2000	0	*4400*
V_{ay} [lb]:	0	0	0	0	*0*
M_x [ft-lb]:	0	0	0	0	*0*
M_y [ft-lb]:	0	0	0	0	*0*
M_z [ft-lb]:	0	0	0	0	*0*

<Figure 1>



Company:	AHBL	Date:	12/10/2024
Engineer:	ADM	Page:	3/4
Project:	Centeris Exterior Stairs		
Address:	2215 North 30th Street		
Phone:			
E-mail:	dmceachern@ahbl.com		

<Figure 2>

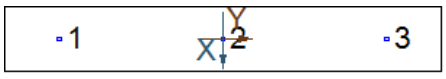


3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	0.0	1466.7	0.0	1466.7
2	0.0	1466.7	0.0	1466.7
3	0.0	1466.7	0.0	1466.7
Sum	0.0	4400.0	0.0	4400.0

Maximum concrete compression strain (‰): 0.00
Maximum concrete compression stress (psi): 0
Resultant tension force (lb): 0
Resultant compression force (lb): 0
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00
Eccentricity of resultant shear forces in x-axis, e'_{Vx} (inch): 0.00
Eccentricity of resultant shear forces in y-axis, e'_{Vy} (inch): 0.00

<Figure 3>



8. Steel Strength of Anchor in Shear (Sec. 17.7.1)

V_{sa} (lb)	ϕ_{grout}	ϕ	$\phi_{grout}\phi V_{sa}$ (lb)
5345	1.0	0.65	3474

10. Concrete Pryout Strength of Anchor in Shear (Sec. 17.7.3)

$\phi V_{cpg} = \phi k_{cp} N_{cbg} = \phi k_{cp} (A_{Nc} / A_{Nco}) \Psi_{ec,N} \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b$ (Sec. 17.5.1.2 & Eq. 17.7.3.1b)

k_{cp}	A_{Nc} (in^2)	A_{Nco} (in^2)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕV_{cpg} (lb)
1.0	93.41	31.14	1.000	1.000	1.000	1.000	2362	0.70	4960

11. Results

Interaction of Tensile and Shear Forces (Sec. 17.8)

Shear	Factored Load, V_{ua} (lb)	Design Strength, øV_n (lb)	Ratio	Status
Steel	1467	3474	0.42	Pass
Pryout	**4400**	**4960**	**0.89**	**Pass (Governs)**

1/2"Ø THDSS, hnom:3.25" (83mm) meets the selected design criteria.

12. Warnings

- Per designer input, ductility requirements for tension have been determined to be satisfied – designer to verify.

- Per designer input, ductility requirements for shear have been determined to be satisfied – designer to verify.

- Designer must exercise own judgement to determine if this design is suitable.

- Refer to manufacturer's product literature for hole cleaning and installation instructions.

Company:	AHBL	Date:	12/10/2024
Engineer:	ADM	Page:	1/5
Project:	Centeris Exterior Stairs		
Address:	2215 North 30th Street		
Phone:			
E-mail:	dmceachern@ahbl.com		

1.Project information

Project description: Anchorage of exterior stairs.
Location:
Fastening description:

Comment:

2. Input Data & Anchor Parameters

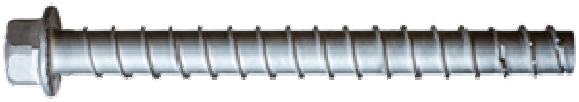
General
Design method:ACI 318-19
Units: Imperial units

Anchor Information:
Anchor type: Concrete screw
Material: Stainless Steel
Diameter (inch): 0.500
Nominal Embedment depth (inch): 3.250
Effective Embedment depth, h_{ef} (inch): 1.860
Code report: IAPMO UES ER-493
Anchor category: 1
Anchor ductility: Yes
h_{min} (inch): 5.00
c_{ac} (inch): 6.00
C_{min} (inch): 2.25
S_{min} (inch): 3.00

Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 8.00
State: Cracked
Compressive strength, f'_c (psi): 3000
$\Psi_{c,V}$: 1.0
Reinforcement condition: Supplementary reinforcement not present
Supplemental edge reinforcement: Not applicable
Reinforcement provided at corners: No
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: No
Ignore 6do requirement: Not applicable
Build-up grout pad: No

Base Plate
Length x Width x Thickness (inch): 7.00 x 48.00 x 0.38

Recommended Anchor
Anchor Name: Titen HD® Stainless Steel - 1/2"Ø THDSS, hnom:3.25" (83mm)
Code Report: IAPMO UES ER-493

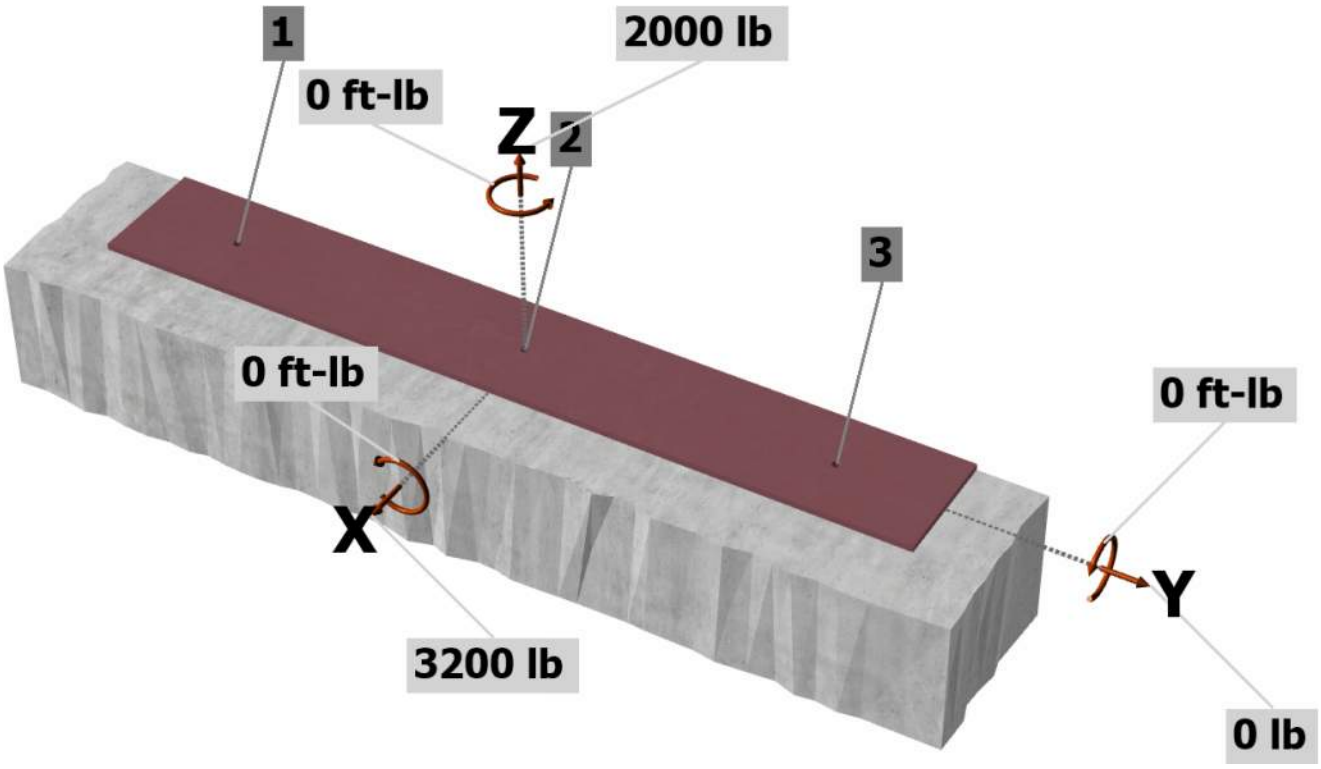


Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: U = 1.2D + 1.0E + 1.0L + 0.2S
Seismic design: Yes
Anchors subjected to sustained tension: Not applicable
Ductility section for tension: 17.10.5.3 (d) is satisfied
Ductility section for shear: 17.10.6.3 (c) is satisfied
Ω_0 factor: 2.0
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: No

Service level loads:

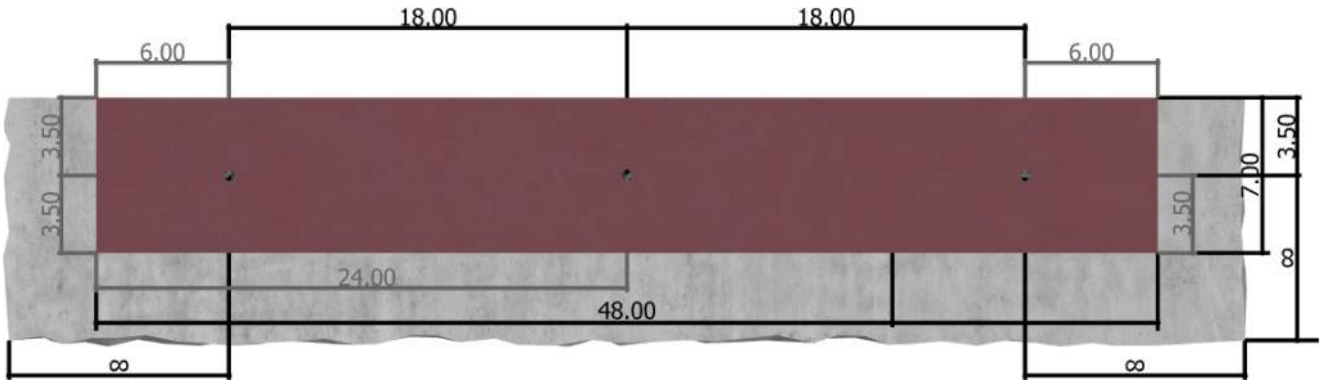
	D	E	L	S	*Strength level loads*
N_a [lb]:	0	1000	0	0	*2000*
V_{ax} [lb]:	1000	0	2000	0	*3200*
V_{ay} [lb]:	0	0	0	0	*0*
M_x [ft-lb]:	0	0	0	0	*0*
M_y [ft-lb]:	0	0	0	0	*0*
M_z [ft-lb]:	0	0	0	0	*0*

<Figure 1>



Company:	AHBL	Date:	12/10/2024
Engineer:	ADM	Page:	3/5
Project:	Centeris Exterior Stairs		
Address:	2215 North 30th Street		
Phone:			
E-mail:	dmceachern@ahbl.com		

<Figure 2>

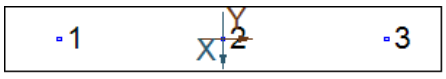


3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	666.7	1066.7	0.0	1066.7
2	666.7	1066.7	0.0	1066.7
3	666.7	1066.7	0.0	1066.7
Sum	2000.0	3200.0	0.0	3200.0

Maximum concrete compression strain (‰): 0.00
Maximum concrete compression stress (psi): 0
Resultant tension force (lb): 2000
Resultant compression force (lb): 0
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00
Eccentricity of resultant shear forces in x-axis, e'_{Vx} (inch): 0.00
Eccentricity of resultant shear forces in y-axis, e'_{Vy} (inch): 0.00

<Figure 3>



4. Steel Strength of Anchor in Tension (Sec. 17.6.1)

N_{sa} (lb)	ϕ	ϕN_{sa} (lb)
20885	0.75	15664

5. Concrete Breakout Strength of Anchor in Tension (Sec. 17.6.2)

$N_b = k_c \lambda_a \sqrt{f'_c} h_{ef}^{1.5}$ (Eq. 17.6.2.2.1)

k_c	λ_a	f'_c (psi)	h_{ef} (in)	N_b (lb)
17.0	1.00	3000	1.860	2362

$0.75\phi N_{cbg} = 0.75\phi \left(A_{Nc} / A_{Nco} \right) \Psi_{ec,N} \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b$ (Sec. 17.5.1.2 & Eq. 17.6.2.1a)

A_{Nc} (in^2)	A_{Nco} (in^2)	$c_{a,min}$ (in)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	$0.75\phi N_{cbg}$ (lb)
93.41	31.14	3.50	1.000	1.000	1.00	1.000	2362	0.65	3454

6. Pullout Strength of Anchor in Tension (Sec. 17.6.3)

$0.75\phi N_{pn} = 0.75\phi \Psi_{c,P} \lambda_a N_p (f'_c / 2{,}500)^n$ (Sec. 17.5.1.2, Eq. 17.6.3.1 & Code Report)

$\Psi_{c,P}$	λ_a	N_p (lb)	f'_c (psi)	n	ϕ	$0.75\phi N_{pn}$ (lb)
1.0	1.00	1995	3000	0.50	0.65	1065

8. Steel Strength of Anchor in Shear (Sec. 17.7.1)

V_{sa} (lb)	ϕ_{grout}	ϕ	$\phi_{grout}\phi V_{sa}$ (lb)
5345	1.0	0.65	3474

10. Concrete Pryout Strength of Anchor in Shear (Sec. 17.7.3)

$\phi V_{cpg} = \phi k_{cp} N_{cbg} = \phi k_{cp}(A_{Nc} / A_{Nco}) \Psi_{ec,N} \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b$ (Sec. 17.5.1.2 & Eq. 17.7.3.1b)

k_{cp}	A_{Nc} (in^2)	A_{Nco} (in^2)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	ϕV_{cpg} (lb)
1.0	93.41	31.14	1.000	1.000	1.000	1.000	2362	0.70	4960

11. Results

Interaction of Tensile and Shear Forces (Sec. R17.8)

Tension	Factored Load, N_{ua} (lb)	Design Strength, øN_n (lb)	Ratio	Status
Steel	667	15664	0.04	Pass
Concrete breakout	2000	3454	0.58	Pass
Pullout	**667**	**1065**	**0.63**	**Pass (Governs)**

Shear	Factored Load, V_{ua} (lb)	Design Strength, øV_n (lb)	Ratio	Status
Steel	1067	3474	0.31	Pass
Pryout	**3200**	**4960**	**0.65**	**Pass (Governs)**

Interaction check	$(N_{ua}/\phi N_{ua})^{5/3}$	$(V_{ua}/\phi V_{ua})^{5/3}$	Combined Ratio	Permissible	Status
Sec. R17.8	0.46	0.48	93.9%	1.0	Pass

1/2"Ø THDSS, hnom:3.25" (83mm) meets the selected design criteria.

12. Warnings

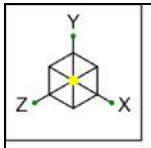
- Per designer input, ductility requirements for tension have been determined to be satisfied – designer to verify.

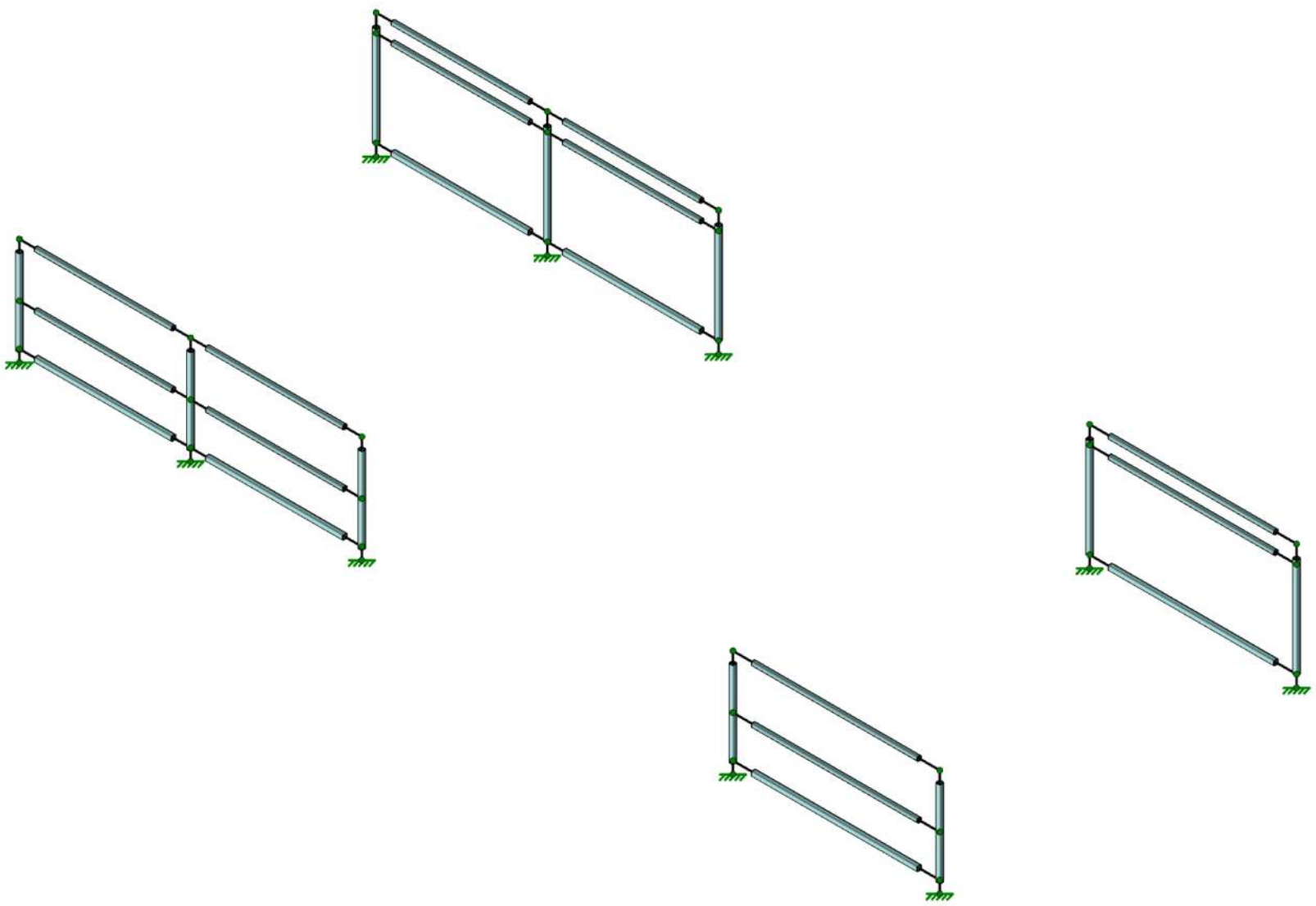
- Per designer input, ductility requirements for shear have been determined to be satisfied – designer to verify.

- Designer must exercise own judgement to determine if this design is suitable.

- Refer to manufacturer's product literature for hole cleaning and installation instructions.

RAILING DESIGN





Envelope Only Solution

RISA A NEMETSCHEK COMPANY	AHBL, Inc.	Welcome Ramp Standards	SK-1
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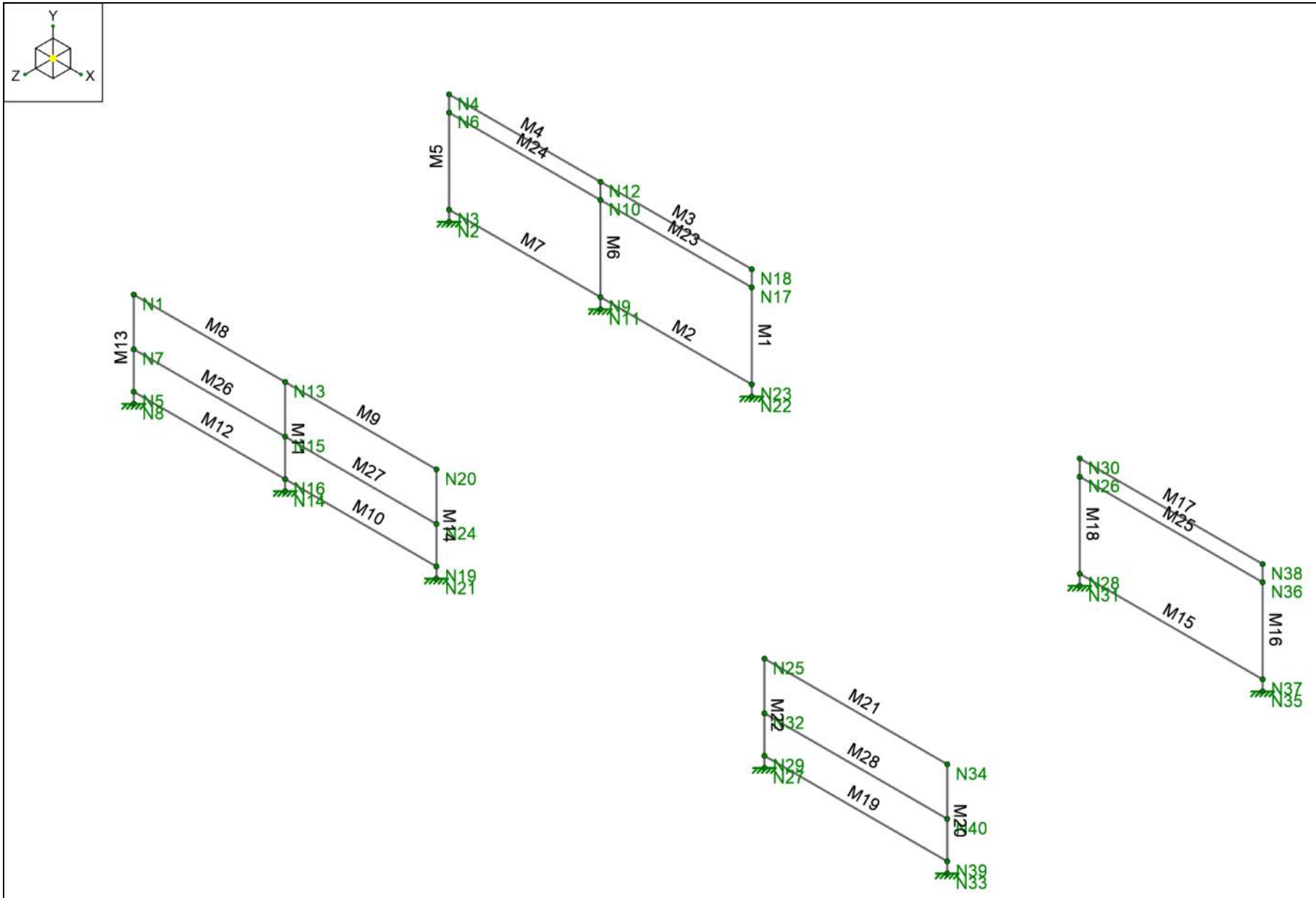
	2240887.20		Typical Railing



Envelope Only Solution

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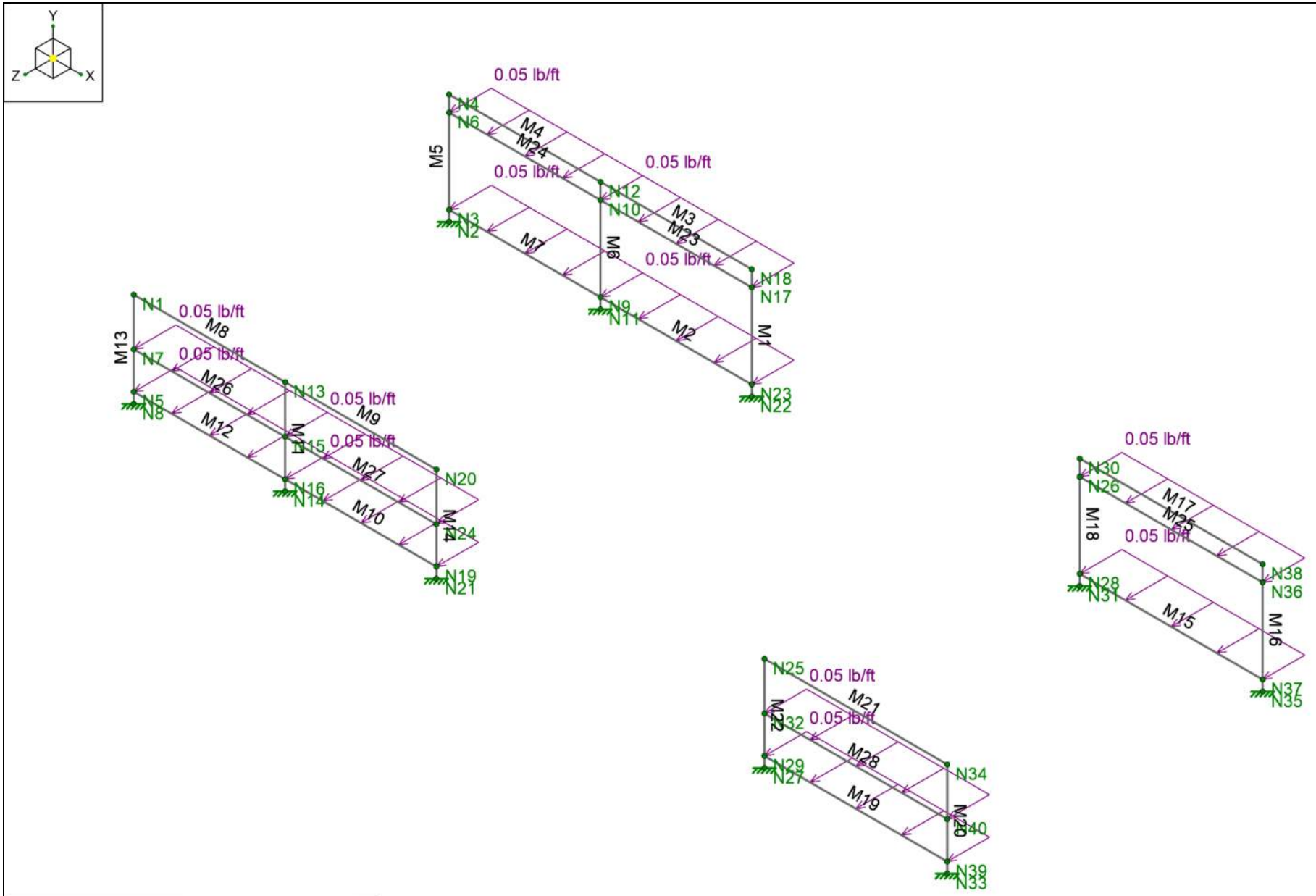

Loads: BLC 2, Uniform Live - Intermediate Rail
Envelope Only Solution

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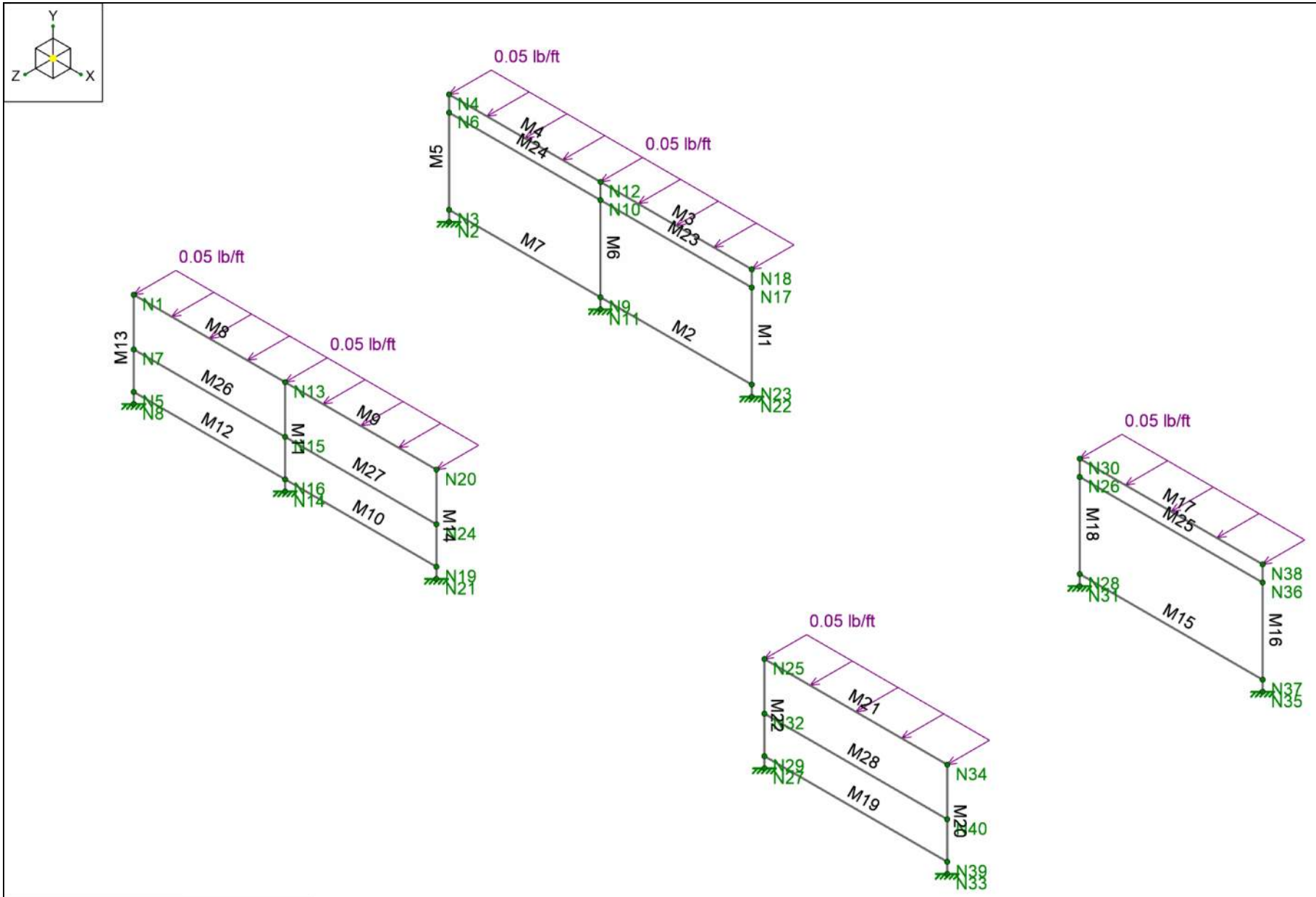

Loads: BLC 3, Uniform Live - Top Rail
Envelope Only Solution

RISA A NEMETSCHEK COMPANY	AHBL, Inc.	Welcome Ramp Standards	SK-4
	AMP		Oct 20, 2024 at 04:43 PM
	2240887.20		Typical Railing

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N1	0	3	10	
2	N2	0	0	0	
3	N3	0	0.333	0	
4	N4	0	3.5	0	
5	N5	0	0.333	10	
6	N6	0	3	0	
7	N7	0	1.5	10	
8	N8	0	0	10	
9	N9	4.8	0.333	0	
10	N10	4.8	3	0	
11	N11	4.8	0	0	
12	N12	4.8	3.5	0	
13	N13	4.8	3	10	
14	N14	4.8	0	10	
15	N15	4.8	1.5	10	
16	N16	4.8	0.333	10	
17	N17	9.6	3	0	
18	N18	9.6	3.5	0	
19	N19	9.6	0.333	10	
20	N20	9.6	3	10	
21	N21	9.6	0	10	
22	N22	9.6	0	0	
23	N23	9.6	0.333	0	
24	N24	9.6	1.5	10	
25	N25	20	3	10	
26	N26	20	3	0	
27	N27	20	0	10	
28	N28	20	0.333	0	
29	N29	20	0.333	10	
30	N30	20	3.5	0	
31	N31	20	0	0	
32	N32	20	1.5	10	
33	N33	25.8	0	10	
34	N34	25.8	3	10	
35	N35	25.8	0	0	
36	N36	25.8	3	0	
37	N37	25.8	0.333	0	
38	N38	25.8	3.5	0	
39	N39	25.8	0.333	10	
40	N40	25.8	1.5	10	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N11	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N22	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N21	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N14	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N8	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N31	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N35	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N27	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
10	N33	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65

Wood Properties

	Label	Type	Database	Species	Grade	Cm	Ci	Emod	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]
1	DF	Solid Sawn	Visually Graded	Douglas Fir-Larch	No.1			1	0.3	0.3	0.035
2	SP	Solid Sawn	Visually Graded	Southern Pine	No.1			1	0.3	0.3	0.035
3	HF	Solid Sawn	Visually Graded	Hem-Fir	No.1			1	0.3	0.3	0.035
4	SPF	Solid Sawn	Visually Graded	Spruce-Pine-fir	No.1			1	0.3	0.3	0.035
5	24F-1.8E DF Balanced	Glulam	NDS Table 5A	24F-1.8E_DF_BAL	na			1	0.3	0.3	0.035
6	24F-1.8E DF Unbalanced	Glulam	NDS Table 5A	24F-1.8E_DF_UNBAL	na			1	0.3	0.3	0.035
7	24F-1.8E SP Balanced	Glulam	NDS Table 5A	24F-1.8E_SP_BAL	na			1	0.3	0.3	0.035
8	24F-1.8E SP Unbalanced	Glulam	NDS Table 5A	24F-1.8E_SP_UNBAL	na			1	0.3	0.3	0.035
9	1.3E-1600F_VERSALAM	SCL	Boise Cascade	1.3E-1600F_VERSALAM	na			1	0.3	0.3	0.035
10	1.35E LSL_SolidStart	SCL	Louisiana Pacific	1.35E LSL_SolidStart	na			1	0.3	0.3	0.035
11	1.3E_RIGIDLAM LVL	SCL	Roseburg Forest Products_2012	1.3E_RIGIDLAM LVL	na			1	0.3	0.3	0.035
12	2.0E_DF Parallam PSL	SCL	TrusJoist	2.0E_DF Parallam PSL	na			1	0.3	0.3	0.035
13	LVL_PRL_1.5E_2250F	Custom	N/A	LVL_PRL_1.5E_2250F	na			1	0.3	0.3	0.035
14	LVL_Microlam_1.9E_2600F	Custom	N/A	LVL_Microllam_1.9E_2600F	na			1	0.3	0.3	0.035
15	PSL_Parallam_2.0E_2900F	Custom	N/A	PSL_Parallam_2.0E_2900F	na			1	0.3	0.3	0.035
16	LSL_TimberStrand_1.55E_2325F	Custom	N/A	LSL_TimberStrand_1.55E_2325F	na			1	0.3	0.3	0.035

Concrete Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	f'c [ksi]	Lambda	Flex Steel [ksi]	Shear Steel [ksi]
1	Conc3000NW	3156	1372	0.15	0.6	0.145	3	1	60	60
2	Conc3500NW	3409	1482	0.15	0.6	0.145	3.5	1	60	60
3	Conc4000NW	3644	1584	0.15	0.6	0.145	4	1	60	60
4	Conc3000LW	2085	907	0.15	0.6	0.11	3	0.75	60	60
5	Conc3500LW	2252	979	0.15	0.6	0.11	3.5	0.75	60	60
6	Conc4000LW	2408	1047	0.15	0.6	0.11	4	0.75	60	60

Masonry Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Self Weight [k/ft³]	f'm [ksi]	Flex Steel [ksi]	Shear Steel [ksi]
1	Concrete Matl	1350	540	0.25	0.6	Custom	1.5	60	60
2	Clay Matl	1050	420	0.25	0.6	Custom	1.5	60	60
3	Gen Masonry	1050	420	0.25	0.6	0.08	1.5	60	60

Aluminum Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Table B.4	kt	Ftu [ksi]	Fty [ksi]	Fcy [ksi]	Fsu [ksi]	Ct
1	3003-H14	10100	3787.5	0.33	1.3	0.173	Table B.4-1	1	19	16	13	12	141
2	6061-T6	10100	3787.5	0.33	1.3	0.173	Table B.4-2	1	38	35	35	24	141
3	6063-T5	10100	3787.5	0.33	1.3	0.173	Table B.4-2	1	22	16	16	13	141
4	6063-T6	10100	3787.5	0.33	1.3	0.173	Table B.4-2	1	30	25	25	19	141
5	5052-H34	10200	3787.5	0.33	1.3	0.173	Table B.4-1	1	34	26	24	20	141
6	6061-T6 W	10100	3787.5	0.33	1.3	0.173	Table B.4-1	1	24	15	15	15	141

Stainless Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	n	Yield [ksi]	Fu [ksi]
1	A276 S316	28000	10780	0.3	0.93	0.5	5.6	30	75
2	A276 S321	29000	11165	0.3	0.73	0.48	5.6	65	94
3	A276 S304	28000	10780	0.3	0.93	0.49	5.6	30	75

General Materials Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Plate Methodology
1	gen_Conc3NW	3155	1372	0.15	0.6	0.145	Isotropic
2	gen_Conc4NW	3644	1584	0.15	0.6	0.145	Isotropic
3	gen_Conc3LW	2085	906	0.15	0.6	0.11	Isotropic
4	gen_Conc4LW	2408	1047	0.15	0.6	0.11	Isotropic
5	gen_Alum	10100	4077	0.3	1.29	0.173	Isotropic
6	gen_Steel	29000	11154	0.3	0.65	0.49	Isotropic
7	gen_Plywood	1800	38	0	0.3	0.035	Isotropic
8	RIGID	1e+6		0.3	0	0	Isotropic
9	gen_Ortho				0.65	0.49	Orthotropic

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Horiz Guard	RT1.5X1.5X0.156	Beam	Rectangular Tubes	6061-T6	Typical	0.839	0.256	0.256	0.379
2	Post 1875 6061-T6	RT1.5X1.5X.1875	Column	Rectangular Tubes	6061-T6	Typical	0.987	0.289	0.289	0.425
3	Handrail	1.500ODX0.188	Beam	Pipe	6063-T5	Typical	0.775	0.17	0.17	0.333
4	POST 1875 6063-T5	RT1.5X1.5X.1875	Column	Rectangular Tubes	6063-T5	Typical	0.987	0.289	0.289	0.425

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N18	N22	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
2	M2	N9	N23	Horiz Guard	Beam	Rectangular Tubes	6061-T6	Typical
3	M3	N12	N18	Handrail	Beam	Pipe	6063-T5	Typical
4	M4	N4	N12	Handrail	Beam	Pipe	6063-T5	Typical
5	M5	N2	N4	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
6	M6	N12	N11	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
7	M7	N3	N9	Horiz Guard	Beam	Rectangular Tubes	6061-T6	Typical
8	M8	N1	N13	Handrail	Beam	Pipe	6063-T5	Typical
9	M9	N13	N20	Handrail	Beam	Pipe	6063-T5	Typical
10	M10	N16	N19	Horiz Guard	Beam	Rectangular Tubes	6061-T6	Typical
11	M11	N13	N14	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
12	M12	N5	N16	Horiz Guard	Beam	Rectangular Tubes	6061-T6	Typical
13	M13	N8	N1	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
14	M14	N20	N21	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
15	M15	N28	N37	Horiz Guard	Beam	Rectangular Tubes	6061-T6	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
16	M16	N38	N35	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
17	M17	N30	N38	Handrail	Beam	Pipe	6063-T5	Typical
18	M18	N30	N31	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
19	M19	N29	N39	Horiz Guard	Beam	Rectangular Tubes	6061-T6	Typical
20	M20	N34	N33	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
21	M21	N25	N34	Handrail	Beam	Pipe	6063-T5	Typical
22	M22	N25	N27	Post 1875 6061-T6	Column	Rectangular Tubes	6061-T6	Typical
23	M23	N10	N17	Handrail	Beam	Pipe	6063-T5	Typical
24	M24	N6	N10	Handrail	Beam	Pipe	6063-T5	Typical
25	M25	N26	N36	Handrail	Beam	Pipe	6063-T5	Typical
26	M26	N7	N15	Handrail	Beam	Pipe	6063-T5	Typical
27	M27	N15	N24	Handrail	Beam	Pipe	6063-T5	Typical
28	M28	N32	N40	Handrail	Beam	Pipe	6063-T5	Typical

Member Advanced Data

	Label	Col-Wall Vert Release	Physical	Deflection Ratio Options	Seismic DR
1	M1		Yes	** NA **	None
2	M2		Yes	Default	None
3	M3		Yes	Default	None
4	M4		Yes	Default	None
5	M5		Yes	** NA **	None
6	M6		Yes	** NA **	None
7	M7		Yes	Default	None
8	M8		Yes	Default	None
9	M9		Yes	Default	None
10	M10		Yes	Default	None
11	M11		Yes	** NA **	None
12	M12		Yes	Default	None
13	M13		Yes	** NA **	None
14	M14		Yes	** NA **	None
15	M15		Yes	Default	None
16	M16		Yes	** NA **	None
17	M17		Yes	Default	None
18	M18		Yes	** NA **	None
19	M19		Yes	Default	None
20	M20		Yes	** NA **	None
21	M21		Yes	Default	None
22	M22		Yes	** NA **	None
23	M23		Yes	Default	None
24	M24		Yes	Default	None
25	M25		Yes	Default	None
26	M26		Yes	Default	None
27	M27		Yes	Default	None
28	M28		Yes	Default	None

Aluminum Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	M1	Post 1875 6061-T6	3.5	Lbyy	Lateral
2	M2	Horiz Guard	4.8	Lbyy	Lateral
3	M3	Handrail	4.8	Lbyy	Lateral
4	M4	Handrail	4.8	Lbyy	Lateral
5	M5	Post 1875 6061-T6	3.5	Lbyy	Lateral
6	M6	Post 1875 6061-T6	3.5	Lbyy	Lateral

Aluminum Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
7	M7	Horiz Guard	4.8	Lbyy	Lateral
8	M8	Handrail	4.8	Lbyy	Lateral
9	M9	Handrail	4.8	Lbyy	Lateral
10	M10	Horiz Guard	4.8	Lbyy	Lateral
11	M11	Post 1875 6061-T6	3	Lbyy	Lateral
12	M12	Horiz Guard	4.8	Lbyy	Lateral
13	M13	Post 1875 6061-T6	3	Lbyy	Lateral
14	M14	Post 1875 6061-T6	3	Lbyy	Lateral
15	M15	Horiz Guard	5.8	Lbyy	Lateral
16	M16	Post 1875 6061-T6	3.5	Lbyy	Lateral
17	M17	Handrail	5.8	Lbyy	Lateral
18	M18	Post 1875 6061-T6	3.5	Lbyy	Lateral
19	M19	Horiz Guard	5.8	Lbyy	Lateral
20	M20	Post 1875 6061-T6	3	Lbyy	Lateral
21	M21	Handrail	5.8	Lbyy	Lateral
22	M22	Post 1875 6061-T6	3	Lbyy	Lateral
23	M23	Handrail	4.8	Lbyy	Lateral
24	M24	Handrail	4.8	Lbyy	Lateral
25	M25	Handrail	5.8	Lbyy	Lateral
26	M26	Handrail	4.8	Lbyy	Lateral
27	M27	Handrail	4.8	Lbyy	Lateral
28	M28	Handrail	5.8	Lbyy	Lateral

Nodal Loads and Enforced Displacements

No Data to Print...

Member Point Loads

No Data to Print...

Member Distributed Loads (BLC 2 : Uniform Live - Intermediate Rail)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/ft]	End Magnitude [lb/ft, F, psf, lb-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M26	Z	0.05	0.05	0	%100
2	M27	Z	0.05	0.05	0	%100
3	M12	Z	0.05	0.05	0	%100
4	M10	Z	0.05	0.05	0	%100
5	M7	Z	0.05	0.05	0	%100
6	M2	Z	0.05	0.05	0	%100
7	M19	Z	0.05	0.05	0	%100
8	M28	Z	0.05	0.05	0	%100
9	M15	Z	0.05	0.05	0	%100
10	M24	Z	0.05	0.05	0	%100
11	M23	Z	0.05	0.05	0	%100
12	M25	Z	0.05	0.05	0	%100

Member Distributed Loads (BLC 3 : Uniform Live - Top Rail)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/ft]	End Magnitude [lb/ft, F, psf, lb-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M8	Z	0.05	0.05	0	%100
2	M9	Z	0.05	0.05	0	%100
3	M4	Z	0.05	0.05	0	%100
4	M3	Z	0.05	0.05	0	%100
5	M21	Z	0.05	0.05	0	%100
6	M17	Z	0.05	0.05	0	%100

Wall Panel Distributed Loads

No Data to Print...

Diaphragm Distributed Loads

No Data to Print...

Basic Load Cases

	BLC Description	Category	Y Gravity	Distributed
1	Dead Load	DL	-1	
2	Uniform Live - Intermediate Rail	LL		12
3	Uniform Live - Top Rail	LL		6
4	Point Live - Intermediate Rail	LL		
5	Point Live - Hand Rail	LL		
6	Point Live - Top Rail	LL		

Moving Loads

	Tag	Pattern	Increment [ft]	Both Ways	1st Node	2nd Node	3rd Node
1	M1	200#LL	0.5	Yes	N7	N15	N24
2	M2	200#LL	0.5	Yes	N6	N10	N17
3	M3	200#LL	0.5	Yes	N32	N40	
4	M4	200#LL	0.5	Yes	N26	N36	
5	M5	200#LL	0.5	Yes	N1	N13	N20
6	M6	200#LL	0.5	Yes	N4	N12	N18
7	M7	200#LL	0.5	Yes	N25	N34	
8	M8	200#LL	0.5	Yes	N30	N38	

Moving Load Patterns

	Pattern Label	Magnitude [lb]	Direction	Distance [ft]
1	200#LL	200	Z	0

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Dead Load	Yes	C	1	1								
2	D + L Uniform - Intermediate	Yes	C	1	1	2	1						
3	D + L Uniform - Top Rail	Yes	C	1	1	3	1						
4	D + L Point - Intermediate	Yes	C	1	1	M1	1	M3	1				
5	D + L Point - Handrail	Yes	C	1	1	M2	1	M4	1				
6	D + L Point - Top Rail	Yes	C	1	1	M5	1	M6	1	M7	1	M8	1

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N2	max	2.564	6-1	10.857	6-1	8.275	6-21	0	4-1	32.588	5-7	0.272	6-1
2		min	2.564	1	10.857	1	-182.085	5-1	-506.608	6-1	-35.691	6-1	0.272	1
3	N11	max	0	6-1	18.235	6-1	0	4-1	0	4-1	26.733	5-16	0	6-1
4		min	0	1	18.235	1	-149.154	5-31	-377.312	6-31	-26.733	5-36	0	1
5	N22	max	-2.564	6-1	10.857	6-1	8.275	6-1	0	4-1	35.691	6-21	-0.272	6-1
6		min	-2.564	1	10.857	1	-182.085	5-21	-506.608	6-21	-32.588	5-27	-0.272	1
7	N21	max	-2.601	6-1	10.29	6-1	10.825	4-6	0	5-1	26.829	6-21	-0.095	6-1
8		min	-2.601	1	10.29	1	-193.892	4-21	-452.694	6-21	-51.114	4-25	-0.095	1
9	N14	max	0	6-1	17.593	6-1	0	5-1	0	5-1	36.175	4-15	0	6-1

Envelope Node Reactions (Continued)

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
10		min	0	1	17.593	1	-182.284	4-31	-352.718	6-11	-36.175	4-35	0	1
11	N8	max	2.601	6-1	10.29	6-1	10.825	4-26	0	5-1	51.114	4-5	0.095	6-1
12		min	2.601	1	10.29	1	-193.892	4-1	-452.694	6-1	-26.829	6-1	0.095	1
13	N31	max	4.872	6-1	12.456	6-1	0	6-13	0	6-13	48.32	5-26	0.231	6-1
14		min	4.872	1	12.456	1	-191.311	5-1	-552.64	6-1	-30.595	6-1	0.231	1
15	N35	max	-4.872	6-1	12.456	6-1	0	6-13	0	6-13	30.595	6-21	-0.231	6-1
16		min	-4.872	1	12.456	1	-191.311	5-21	-552.64	6-21	-48.32	5-6	-0.231	1
17	N27	max	4.461	6-1	11.864	6-1	0	6-13	0	6-13	75.425	4-6	0.041	6-1
18		min	4.461	1	11.864	1	-196.944	4-1	-483.45	6-1	-21.786	6-1	0.041	1
19	N33	max	-4.461	6-1	11.864	6-1	0	6-13	0	6-13	21.786	6-21	-0.041	6-1
20		min	-4.461	1	11.864	1	-196.944	4-21	-483.45	6-21	-75.425	4-26	-0.041	1
21	Totals:	max	0	6-1	126.763	6-1	0	1						
22		min	0	1	126.763	1	-800	6-12						

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0	6-1	0	6-1	0.966	6-1	3.852e-2	6-1	9.318e-3	6-1	-3.392e-5	6-1
2		min	0	1	0	1	0	1	0	1	-1.288e-2	6-35	-3.392e-5	1
3	N2	max	0	6-1	0	6-1	0	5-1	0	6-1	0	6-1	0	6-1
4		min	0	1	0	1	0	6-21	0	1	0	5-7	0	1
5	N3	max	0	6-1	0	6-1	0.02	6-1	9.796e-3	6-1	1.064e-3	6-1	-1.435e-5	6-1
6		min	0	1	0	1	0	1	0	1	-9.718e-4	5-7	-1.435e-5	1
7	N4	max	0	6-1	0	6-1	1.425	6-1	4.716e-2	6-1	1.388e-2	6-1	-2.845e-5	6-1
8		min	0	1	0	1	0	1	0	1	-1.207e-2	6-8	-2.845e-5	1
9	N5	max	0	6-1	0	6-1	0.018	6-1	8.667e-3	6-1	8.e-4	6-1	-1.085e-5	6-1
10		min	0	1	0	1	0	1	0	1	-1.524e-3	4-5	-1.085e-5	1
11	N6	max	0	6-1	0	6-1	1.14	6-1	4.722e-2	6-1	1.243e-2	6-1	-1.893e-5	6-1
12		min	0	1	0	1	0	1	0	1	-1.028e-2	5-7	-1.893e-5	1
13	N7	max	0	6-1	0	6-1	0.309	6-1	3.007e-2	6-1	4.435e-3	6-1	-8.011e-6	6-1
14		min	0	1	0	1	0	1	0	1	-8.191e-3	4-5	-8.011e-6	1
15	N8	max	0	6-1	0	6-1	0	4-1	0	6-1	0	6-1	0	6-1
16		min	0	1	0	1	0	4-26	0	1	0	4-5	0	1
17	N9	max	0	6-1	0	6-1	0.015	6-31	7.27e-3	6-31	7.971e-4	5-36	0	6-1
18		min	0	1	0	1	0	1	0	1	-7.971e-4	5-16	0	1
19	N10	max	0	6-1	0	6-1	0.843	6-31	3.43e-2	6-31	1.028e-2	5-36	0	6-1
20		min	0	1	0	1	0	1	0	1	-1.028e-2	5-16	0	1
21	N11	max	0	6-1	0	6-1	0	5-31	0	6-31	0	5-36	0	6-1
22		min	0	1	0	1	0	1	0	1	0	5-16	0	1
23	N12	max	0	6-1	0	6-1	1.05	6-31	3.407e-2	6-31	1.276e-2	6-5	0	6-1
24		min	0	1	0	1	0	1	0	1	-1.276e-2	6-25	0	1
25	N13	max	0	6-1	0	6-1	0.742	6-11	2.898e-2	6-11	1.227e-2	6-6	0	6-1
26		min	0	1	0	1	0	1	0	1	-1.227e-2	6-26	0	1
27	N14	max	0	6-1	0	6-1	0	4-11	0	6-11	0	4-35	0	6-1
28		min	0	1	0	1	0	1	0	1	0	4-15	0	1
29	N15	max	0	6-1	0	6-1	0.239	6-11	2.303e-2	6-11	6.548e-3	4-7	0	6-1
30		min	0	1	0	1	0	1	0	1	-6.548e-3	4-27	0	1
31	N16	max	0	6-1	0	6-1	0.014	6-11	6.705e-3	6-11	1.079e-3	4-35	0	6-1
32		min	0	1	0	1	0	1	0	1	-1.079e-3	4-15	0	1
33	N17	max	0	6-1	0	6-1	1.14	6-21	4.722e-2	6-21	1.028e-2	5-27	1.893e-5	6-1
34		min	0	1	0	1	0	1	0	1	-1.243e-2	6-21	1.893e-5	1
35	N18	max	0	6-1	0	6-1	1.425	6-21	4.716e-2	6-21	1.207e-2	6-28	2.845e-5	6-1
36		min	0	1	0	1	0	1	0	1	-1.388e-2	6-21	2.845e-5	1
37	N19	max	0	6-1	0	6-1	0.018	6-21	8.667e-3	6-21	1.524e-3	4-25	1.085e-5	6-1
38		min	0	1	0	1	0	1	0	1	-8.e-4	6-21	1.085e-5	1
39	N20	max	0	6-1	0	6-1	0.966	6-21	3.852e-2	6-21	1.288e-2	6-15	3.392e-5	6-1

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
40		min	0	1	0	1	0	1	0	1	-9.318e-3	6-21	3.392e-5	1
41	N21	max	0	6-1	0	6-1	0	4-21	0	6-21	0	4-25	0	6-1
42		min	0	1	0	1	0	4-6	0	1	0	6-21	0	1
43	N22	max	0	6-1	0	6-1	0	5-21	0	6-21	0	5-27	0	6-1
44		min	0	1	0	1	0	6-1	0	1	0	6-21	0	1
45	N23	max	0	6-1	0	6-1	0.02	6-21	9.796e-3	6-21	9.718e-4	5-27	1.435e-5	6-1
46		min	0	1	0	1	0	1	0	1	-1.064e-3	6-21	1.435e-5	1
47	N24	max	0	6-1	0	6-1	0.309	6-21	3.007e-2	6-21	8.191e-3	4-25	8.011e-6	6-1
48		min	0	1	0	1	0	1	0	1	-4.435e-3	6-21	8.011e-6	1
49	N25	max	0	6-1	0	6-1	1.037	6-1	4.164e-2	6-1	7.579e-3	6-1	-5.42e-5	6-1
50		min	0	1	0	1	0	1	0	1	-1.879e-2	6-27	-5.42e-5	1
51	N26	max	0	6-1	0	6-1	1.254	6-1	5.246e-2	6-1	1.063e-2	6-1	-2.313e-5	6-1
52		min	0	1	0	1	0	1	0	1	-1.466e-2	5-7	-2.313e-5	1
53	N27	max	0	6-1	0	6-1	0	4-1	0	6-1	0	6-1	0	6-1
54		min	0	1	0	1	0	1	0	1	0	4-6	0	1
55	N28	max	0	6-1	0	6-1	0.022	6-1	1.07e-2	6-1	9.123e-4	6-1	-2.141e-5	6-1
56		min	0	1	0	1	0	1	0	1	-1.441e-3	5-26	-2.141e-5	1
57	N29	max	0	6-1	0	6-1	0.019	6-1	9.273e-3	6-1	6.496e-4	6-1	-1.61e-5	6-1
58		min	0	1	0	1	0	1	0	1	-2.249e-3	4-6	-1.61e-5	1
59	N30	max	0	6-1	0	6-1	1.572	6-1	5.257e-2	6-1	1.184e-2	6-1	-3.609e-5	6-1
60		min	0	1	0	1	0	1	0	1	-1.714e-2	6-26	-3.609e-5	1
61	N31	max	0	6-1	0	6-1	0	5-1	0	6-1	0	6-1	0	6-1
62		min	0	1	0	1	0	1	0	1	0	5-26	0	1
63	N32	max	0	6-1	0	6-1	0.331	6-1	3.231e-2	6-1	3.608e-3	6-1	-1.104e-5	6-1
64		min	0	1	0	1	0	1	0	1	-1.149e-2	4-28	-1.104e-5	1
65	N33	max	0	6-1	0	6-1	0	4-21	0	6-21	0	4-26	0	6-1
66		min	0	1	0	1	0	1	0	1	0	6-21	0	1
67	N34	max	0	6-1	0	6-1	1.037	6-21	4.164e-2	6-21	1.879e-2	6-7	5.42e-5	6-1
68		min	0	1	0	1	0	1	0	1	-7.579e-3	6-21	5.42e-5	1
69	N35	max	0	6-1	0	6-1	0	5-21	0	6-21	0	5-6	0	6-1
70		min	0	1	0	1	0	1	0	1	0	6-21	0	1
71	N36	max	0	6-1	0	6-1	1.254	6-21	5.246e-2	6-21	1.466e-2	5-27	2.313e-5	6-1
72		min	0	1	0	1	0	1	0	1	-1.063e-2	6-21	2.313e-5	1
73	N37	max	0	6-1	0	6-1	0.022	6-21	1.07e-2	6-21	1.441e-3	5-6	2.141e-5	6-1
74		min	0	1	0	1	0	1	0	1	-9.123e-4	6-21	2.141e-5	1
75	N38	max	0	6-1	0	6-1	1.572	6-21	5.257e-2	6-21	1.714e-2	6-6	3.609e-5	6-1
76		min	0	1	0	1	0	1	0	1	-1.184e-2	6-21	3.609e-5	1
77	N39	max	0	6-1	0	6-1	0.019	6-21	9.273e-3	6-21	2.249e-3	4-26	1.61e-5	6-1
78		min	0	1	0	1	0	1	0	1	-6.496e-4	6-21	1.61e-5	1
79	N40	max	0	6-1	0	6-1	0.331	6-21	3.231e-2	6-21	1.149e-2	4-8	1.104e-5	6-1
80		min	0	1	0	1	0	1	0	1	-3.608e-3	6-21	1.104e-5	1

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
1	M1	1	max	2.164	6-40	-5.025	6-40	15.89	5-19	55.872	5-18	47.999	6-21	-1.565	6-40
2			min	2.164	1	-5.025	1	-183.9	6-21	-68.31	6-16	-29.909	6-7	-1.565	1
3		2	max	5.387	6-40	-0.499	6-40	5.935	6-1	47.593	6-21	9.37	5-21	-0.506	6-40
4			min	5.387	1	-0.499	1	-178.878	5-21	-38.995	5-27	-71.348	6-31	-0.506	1
5		3	max	6.423	6-40	-0.499	6-40	5.935	6-1	47.593	6-21	0	4-40	-0.069	6-40
6			min	6.423	1	-0.499	1	-178.878	5-21	-38.995	5-27	-212.826	6-21	-0.069	1
7		4	max	7.459	6-40	-0.499	6-40	5.935	6-1	47.593	6-21	0	4-40	0.367	6-40
8			min	7.459	1	-0.499	1	-178.878	5-21	-38.995	5-27	-365.849	6-21	0.367	1
9		5	max	10.857	6-40	-2.564	6-40	8.269	6-1	35.691	6-21	0	4-40	-0.272	6-40
10			min	10.857	1	-2.564	1	-182.162	5-21	-32.588	5-27	-506.608	6-21	-0.272	1
11	M2	1	max	2.066	6-40	2.468	6-40	4.363	6-21	9.582	6-8	9.106	5-6	2.016	6-40

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
12			min	2.066	1	2.468	1	-3.326	6-6	-13.625	6-21	-9.042	6-21	2.016	1
13		2	max	2.066	6-40	1.261	6-40	4.363	6-21	9.582	6-8	5.209	5-36	-0.221	6-40
14			min	2.066	1	1.261	1	-3.326	6-6	-13.625	6-21	-4.568	5-15	-0.221	1
15		3	max	2.066	6-40	0.053	6-40	4.363	6-21	9.582	6-8	1.43	6-21	-1.009	6-40
16			min	2.066	1	0.053	1	-3.326	6-6	-13.625	6-21	-5.182	5-15	-1.009	1
17		4	max	2.066	6-40	-1.155	6-40	4.363	6-21	9.582	6-8	6.666	6-21	-0.348	6-40
18			min	2.066	1	-1.155	1	-3.326	6-6	-13.625	6-21	-5.796	5-15	-0.348	1
19		5	max	2.066	6-40	-2.362	6-40	4.363	6-21	9.582	6-8	11.903	6-21	1.762	6-40
20			min	2.066	1	-2.362	1	-3.326	6-6	-13.625	6-21	-7.873	6-33	1.762	1
21	M3	1	max	5.025	6-40	2.3	6-40	15.707	5-30	29.909	6-7	80.112	6-26	1.893	6-40
22			min	5.025	1	2.3	1	-178.766	6-11	-47.999	6-21	-63.371	5-12	1.893	1
23		2	max	5.025	6-40	1.184	6-40	35.504	6-29	29.909	6-7	26.784	6-21	-0.198	6-40
24			min	5.025	1	1.184	1	-151.531	6-13	-47.999	6-21	-130.647	6-13	-0.198	1
25		3	max	5.025	6-40	0.068	6-40	92.821	6-26	29.909	6-7	14.232	6-38	-0.949	6-40
26			min	5.025	1	0.068	1	-89.707	6-16	-47.999	6-21	-157.117	6-26	-0.949	1
27		4	max	5.025	6-40	-1.048	6-40	135.831	6-24	29.909	6-7	13.094	6-37	-0.362	6-40
28			min	5.025	1	-1.048	1	-48.484	6-18	-47.999	6-21	-111.844	6-18	-0.362	1
29		5	max	5.025	6-40	-2.164	6-40	181.568	6-20	29.909	6-7	68.31	6-16	1.565	6-40
30			min	5.025	1	-2.164	1	-16.41	6-21	-47.999	6-21	-55.872	5-18	1.565	1
31	M4	1	max	5.025	6-40	2.164	6-40	16.41	6-1	47.999	6-1	68.31	6-36	1.565	6-40
32			min	5.025	1	2.164	1	-181.568	6-40	-29.909	6-27	-55.872	5-38	1.565	1
33		2	max	5.025	6-40	1.048	6-40	48.484	6-38	47.999	6-1	13.094	6-17	-0.362	6-40
34			min	5.025	1	1.048	1	-135.831	6-4	-29.909	6-27	-111.844	6-38	-0.362	1
35		3	max	5.025	6-40	-0.068	6-40	89.707	6-36	47.999	6-1	14.232	6-18	-0.949	6-40
36			min	5.025	1	-0.068	1	-92.821	6-6	-29.909	6-27	-157.117	6-6	-0.949	1
37		4	max	5.025	6-40	-1.184	6-40	151.531	6-33	47.999	6-1	26.784	6-1	-0.198	6-40
38			min	5.025	1	-1.184	1	-35.504	6-9	-29.909	6-27	-130.647	6-33	-0.198	1
39		5	max	5.025	6-40	-2.3	6-40	178.766	6-31	47.999	6-1	80.112	6-6	1.893	6-40
40			min	5.025	1	-2.3	1	-15.707	5-10	-29.909	6-27	-63.371	5-32	1.893	1
41	M5	1	max	10.857	6-40	-2.564	6-40	8.269	6-21	32.588	5-7	506.608	6-1	0.272	6-40
42			min	10.857	1	-2.564	1	-182.162	5-1	-35.691	6-1	0	1	0.272	1
43		2	max	7.459	6-40	-0.499	6-40	5.935	6-21	38.995	5-7	365.849	6-1	-0.367	6-40
44			min	7.459	1	-0.499	1	-178.878	5-1	-47.593	6-1	0	1	-0.367	1
45		3	max	6.423	6-40	-0.499	6-40	5.935	6-21	38.995	5-7	212.826	6-1	0.069	6-40
46			min	6.423	1	-0.499	1	-178.878	5-1	-47.593	6-1	0	1	0.069	1
47		4	max	5.387	6-40	-0.499	6-40	5.935	6-21	38.995	5-7	71.348	6-11	0.506	6-40
48			min	5.387	1	-0.499	1	-178.878	5-1	-47.593	6-1	-9.37	5-1	0.506	1
49		5	max	2.164	6-40	-5.025	6-40	15.89	5-39	68.31	6-36	29.909	6-27	1.565	6-40
50			min	2.164	1	-5.025	1	-183.9	6-1	-55.872	5-38	-47.999	6-1	1.565	1
51	M6	1	max	4.601	6-40	0	6-40	29.05	5-11	73.551	6-27	48.159	6-11	0	6-40
52			min	4.601	1	0	1	-163.494	6-11	-73.551	6-7	-24.156	6-21	0	1
53		2	max	10.19	6-40	0	6-40	0	4-40	39.705	5-16	26.37	5-11	0	6-40
54			min	10.19	1	0	1	-146.224	5-31	-39.705	5-36	-71.331	6-1	0	1
55		3	max	11.226	6-40	0	6-40	0	4-40	39.705	5-16	0	4-40	0	6-40
56			min	11.226	1	0	1	-146.224	5-31	-39.705	5-36	-152.802	6-31	0	1
57		4	max	12.262	6-40	0	6-40	0	4-40	39.705	5-16	0	4-40	0	6-40
58			min	12.262	1	0	1	-146.224	5-31	-39.705	5-36	-272.799	6-31	0	1
59		5	max	18.235	6-40	0	6-40	0	4-40	26.733	5-16	0	4-40	0	6-40
60			min	18.235	1	0	1	-149.252	5-31	-26.733	5-36	-377.312	6-31	0	1
61	M7	1	max	2.066	6-40	2.362	6-40	3.326	6-26	13.625	6-1	11.903	6-1	1.762	6-40
62			min	2.066	1	2.362	1	-4.363	6-1	-9.582	6-28	-7.873	6-13	1.762	1
63		2	max	2.066	6-40	1.155	6-40	3.326	6-26	13.625	6-1	6.666	6-1	-0.348	6-40
64			min	2.066	1	1.155	1	-4.363	6-1	-9.582	6-28	-5.796	5-35	-0.348	1
65		3	max	2.066	6-40	-0.053	6-40	3.326	6-26	13.625	6-1	1.43	6-1	-1.009	6-40
66			min	2.066	1	-0.053	1	-4.363	6-1	-9.582	6-28	-5.182	5-35	-1.009	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
67		4	max	2.066	6-40	-1.261	6-40	3.326	6-26	13.625	6-1	5.209	5-16	-0.221	6-40
68			min	2.066	1	-1.261	1	-4.363	6-1	-9.582	6-28	-4.568	5-35	-0.221	1
69		5	max	2.066	6-40	-2.468	6-40	3.326	6-26	13.625	6-1	9.106	5-26	2.016	6-40
70			min	2.066	1	-2.468	1	-4.363	6-1	-9.582	6-28	-9.042	6-1	2.016	1
71	M8	1	max	1.654	6-40	2.15	6-40	17.076	6-1	46.035	6-1	59.331	6-6	1.52	6-40
72			min	1.654	1	2.15	1	-180.317	6-40	-31.839	6-13	-36.349	6-1	1.52	1
73		2	max	1.654	6-40	1.034	6-40	52.357	6-38	46.035	6-1	15.625	6-15	-0.39	6-40
74			min	1.654	1	1.034	1	-132.18	6-4	-31.839	6-13	-120.967	6-38	-0.39	1
75		3	max	1.654	6-40	-0.082	6-40	92.188	6-36	46.035	6-1	17.936	6-16	-0.96	6-40
76			min	1.654	1	-0.082	1	-91.432	6-6	-31.839	6-13	-160.107	6-6	-0.96	1
77		4	max	1.654	6-40	-1.198	6-40	150.153	6-33	46.035	6-1	25.125	6-1	-0.192	6-40
78			min	1.654	1	-1.198	1	-37.302	6-9	-31.839	6-13	-131.919	6-33	-0.192	1
79		5	max	1.654	6-40	-2.314	6-40	177.479	6-31	46.035	6-1	81.064	6-36	1.916	6-40
80			min	1.654	1	-2.314	1	-15.782	6-11	-31.839	6-13	-47.969	6-11	1.916	1
81	M9	1	max	1.654	6-40	2.314	6-40	15.782	6-31	31.839	6-33	81.064	6-16	1.916	6-40
82			min	1.654	1	2.314	1	-177.479	6-11	-46.035	6-21	-47.969	6-31	1.916	1
83		2	max	1.654	6-40	1.198	6-40	37.302	6-29	31.839	6-33	25.125	6-21	-0.192	6-40
84			min	1.654	1	1.198	1	-150.153	6-13	-46.035	6-21	-131.919	6-13	-0.192	1
85		3	max	1.654	6-40	0.082	6-40	91.432	6-26	31.839	6-33	17.936	6-36	-0.96	6-40
86			min	1.654	1	0.082	1	-92.188	6-16	-46.035	6-21	-160.107	6-26	-0.96	1
87		4	max	1.654	6-40	-1.034	6-40	132.18	6-24	31.839	6-33	15.625	6-35	-0.39	6-40
88			min	1.654	1	-1.034	1	-52.357	6-18	-46.035	6-21	-120.967	6-18	-0.39	1
89		5	max	1.654	6-40	-2.15	6-40	180.317	6-20	31.839	6-33	59.331	6-26	1.52	6-40
90			min	1.654	1	-2.15	1	-17.076	6-21	-46.035	6-21	-36.349	6-21	1.52	1
91	M10	1	max	1.224	6-40	2.455	6-40	2.838	6-21	9.586	6-33	10.443	4-35	1.996	6-40
92			min	1.224	1	2.455	1	-2.874	4-35	-12.853	6-21	-6.728	4-28	1.996	1
93		2	max	1.224	6-40	1.248	6-40	2.838	6-21	9.586	6-33	6.994	4-35	-0.226	6-40
94			min	1.224	1	1.248	1	-2.874	4-35	-12.853	6-21	-6.551	4-14	-0.226	1
95		3	max	1.224	6-40	0.04	6-40	2.838	6-21	9.586	6-33	3.544	4-35	-0.999	6-40
96			min	1.224	1	0.04	1	-2.874	4-35	-12.853	6-21	-7.573	4-26	-0.999	1
97		4	max	1.224	6-40	-1.168	6-40	2.838	6-21	9.586	6-33	4.551	6-21	-0.322	6-40
98			min	1.224	1	-1.168	1	-2.874	4-35	-12.853	6-21	-10.082	4-25	-0.322	1
99		5	max	1.224	6-40	-2.375	6-40	2.838	6-21	9.586	6-33	7.956	6-21	1.804	6-40
100			min	1.224	1	-2.375	1	-2.874	4-35	-12.853	6-21	-13.08	4-17	1.804	1
101	M11	1	max	4.629	6-40	0	6-40	11.591	4-11	59.633	6-15	57.142	6-11	0	6-40
102			min	4.629	1	0	1	-161.984	6-11	-59.633	6-35	-28.691	6-21	0	1
103		2	max	5.517	6-40	0	6-40	11.591	4-11	59.633	6-15	18.36	4-11	0	6-40
104			min	5.517	1	0	1	-161.984	6-11	-59.633	6-35	-64.346	6-11	0	1
105		3	max	10.907	6-40	0	6-40	0	5-40	59.633	6-15	46.033	4-31	0	6-40
106			min	10.907	1	0	1	-181.689	4-31	-59.633	6-35	-185.834	6-11	0	1
107		4	max	11.794	6-40	0	6-40	0	5-40	52.376	4-27	0	5-40	0	6-40
108			min	11.794	1	0	1	-181.689	4-31	-52.376	4-7	-252.611	6-11	0	1
109		5	max	17.593	6-40	0	6-40	0	5-40	36.175	4-15	0	5-40	0	6-40
110			min	17.593	1	0	1	-182.342	4-11	-36.175	4-35	-352.718	6-11	0	1
111	M12	1	max	1.224	6-40	2.375	6-40	2.874	4-15	12.853	6-1	7.956	6-1	1.804	6-40
112			min	1.224	1	2.375	1	-2.838	6-1	-9.586	6-13	-13.08	4-37	1.804	1
113		2	max	1.224	6-40	1.168	6-40	2.874	4-15	12.853	6-1	4.551	6-1	-0.322	6-40
114			min	1.224	1	1.168	1	-2.838	6-1	-9.586	6-13	-10.082	4-5	-0.322	1
115		3	max	1.224	6-40	-0.04	6-40	2.874	4-15	12.853	6-1	3.544	4-15	-0.999	6-40
116			min	1.224	1	-0.04	1	-2.838	6-1	-9.586	6-13	-7.573	4-6	-0.999	1
117		4	max	1.224	6-40	-1.248	6-40	2.874	4-15	12.853	6-1	6.994	4-15	-0.226	6-40
118			min	1.224	1	-1.248	1	-2.838	6-1	-9.586	6-13	-6.551	4-34	-0.226	1
119		5	max	1.224	6-40	-2.455	6-40	2.874	4-15	12.853	6-1	10.443	4-15	1.996	6-40
120			min	1.224	1	-2.455	1	-2.838	6-1	-9.586	6-13	-6.728	4-8	1.996	1
121	M13	1	max	10.29	6-40	-2.601	6-40	10.823	4-26	51.114	4-5	452.694	6-1	0.095	6-40

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
122			min	10.29	1	-2.601	1	-193.931	4-1	-26.829	6-1	0	1	0.095	1
123		2	max	7.027	6-40	-1.377	6-40	7.964	4-26	63.797	4-5	327.727	6-1	-0.269	6-40
124			min	7.027	1	-1.377	1	-193.126	4-1	-34.785	6-1	0	1	-0.269	1
125		3	max	6.139	6-40	-1.377	6-34	7.964	4-26	63.797	4-5	228.662	6-1	-0.96	6-40
126			min	6.139	1	-1.654	1	-193.126	4-1	-36.349	6-1	-31.087	4-1	-0.96	1
127		4	max	3.037	6-40	-1.654	6-40	7.471	4-3	59.331	6-6	91.313	6-1	0.28	6-40
128			min	3.037	1	-1.654	1	-183.132	6-1	-36.349	6-1	-13.611	4-1	0.28	1
129		5	max	2.15	6-40	-1.654	6-40	7.471	4-3	59.331	6-6	31.839	6-13	1.52	6-40
130			min	2.15	1	-1.654	1	-183.132	6-1	-36.349	6-1	-46.035	6-1	1.52	1
131	M14	1	max	2.15	6-40	-1.654	6-40	7.471	4-23	36.349	6-21	46.035	6-21	-1.52	6-40
132			min	2.15	1	-1.654	1	-183.132	6-21	-59.331	6-26	-31.839	6-33	-1.52	1
133		2	max	3.037	6-40	-1.654	6-40	7.471	4-23	36.349	6-21	13.611	4-21	-0.28	6-40
134			min	3.037	1	-1.654	1	-183.132	6-21	-59.331	6-26	-91.313	6-21	-0.28	1
135		3	max	6.139	6-40	-1.377	6-40	7.964	4-6	36.349	6-21	31.087	4-21	0.96	6-40
136			min	6.139	1	-1.654	1	-193.126	4-21	-63.797	4-25	-228.662	6-21	0.96	1
137		4	max	7.027	6-40	-1.377	6-40	7.964	4-6	34.785	6-21	0	5-40	0.269	6-40
138			min	7.027	1	-1.377	1	-193.126	4-21	-63.797	4-25	-327.727	6-21	0.269	1
139		5	max	10.29	6-40	-2.601	6-40	10.823	4-6	26.829	6-21	0	5-40	-0.095	6-40
140			min	10.29	1	-2.601	1	-193.931	4-21	-51.114	4-25	-452.694	6-21	-0.095	1
141	M15	1	max	4.217	6-40	2.919	6-40	3.476	6-21	13.18	6-1	10.08	6-1	2.715	6-40
142			min	4.217	1	2.919	1	-3.476	6-1	-13.18	6-21	-10.08	6-21	2.715	1
143		2	max	4.217	6-40	1.459	6-40	3.476	6-21	13.18	6-1	5.04	6-1	-0.459	6-40
144			min	4.217	1	1.459	1	-3.476	6-1	-13.18	6-21	-7.089	5-7	-0.459	1
145		3	max	4.217	6-40	0	6-40	3.476	6-21	13.18	6-1	0	6-40	-1.517	6-40
146			min	4.217	1	0	1	-3.476	6-1	-13.18	6-21	-7.083	5-7	-1.517	1
147		4	max	4.217	6-40	-1.459	6-40	3.476	6-21	13.18	6-1	5.04	6-21	-0.459	6-40
148			min	4.217	1	-1.459	1	-3.476	6-1	-13.18	6-21	-7.089	5-27	-0.459	1
149		5	max	4.217	6-40	-2.919	6-40	3.476	6-21	13.18	6-1	10.08	6-21	2.715	6-40
150			min	4.217	1	-2.919	1	-3.476	6-1	-13.18	6-21	-10.08	6-1	2.715	1
151	M16	1	max	2.697	6-40	-8.273	6-40	10.935	5-23	60.723	5-24	44.316	6-21	-2.488	6-40
152			min	2.697	1	-8.273	1	-191.06	6-21	-93.184	6-8	-44.316	6-1	-2.488	1
153		2	max	6.43	6-40	-0.654	6-40	0	6-40	40.675	6-21	0	6-40	-0.638	6-40
154			min	6.43	1	-0.654	1	-188.862	5-21	-55.363	5-27	-100.54	6-1	-0.638	1
155		3	max	7.466	6-40	-0.654	6-40	0	6-40	40.675	6-21	0	6-40	-0.065	6-40
156			min	7.466	1	-0.654	1	-188.862	5-21	-55.363	5-27	-238.175	6-21	-0.065	1
157		4	max	8.502	6-40	-0.654	6-40	0	6-40	40.675	6-21	0	6-40	0.507	6-40
158			min	8.502	1	-0.654	1	-188.862	5-21	-55.363	5-27	-401.478	6-21	0.507	1
159		5	max	12.456	6-40	-4.872	6-40	0	6-40	30.595	6-21	0	6-40	-0.231	6-40
160			min	12.456	1	-4.872	1	-191.406	5-21	-48.32	5-6	-552.64	6-21	-0.231	1
161	M17	1	max	8.273	6-40	2.697	6-40	11.218	5-31	44.316	6-1	93.184	6-28	2.488	6-40
162			min	8.273	1	2.697	1	-185.149	6-32	-44.316	6-21	-60.723	5-4	2.488	1
163		2	max	8.273	6-40	1.349	6-40	41.48	6-30	44.316	6-1	13.608	6-21	-0.445	6-40
164			min	8.273	1	1.349	1	-151.97	6-4	-44.316	6-21	-140.691	6-4	-0.445	1
165		3	max	8.273	6-40	0	6-40	96.11	6-27	44.316	6-1	0	6-40	-1.422	6-40
166			min	8.273	1	0	1	-96.11	6-7	-44.316	6-21	-190.201	6-7	-1.422	1
167		4	max	8.273	6-40	-1.349	6-40	151.97	6-24	44.316	6-1	13.608	6-1	-0.445	6-40
168			min	8.273	1	-1.349	1	-41.48	6-10	-44.316	6-21	-140.691	6-24	-0.445	1
169		5	max	8.273	6-40	-2.697	6-40	185.149	6-12	44.316	6-1	93.184	6-8	2.488	6-40
170			min	8.273	1	-2.697	1	-11.218	5-11	-44.316	6-21	-60.723	5-24	2.488	1
171	M18	1	max	2.697	6-40	8.273	6-40	10.935	5-3	93.184	6-28	44.316	6-1	2.488	6-40
172			min	2.697	1	8.273	1	-191.06	6-1	-60.723	5-4	-44.316	6-21	2.488	1
173		2	max	6.43	6-40	0.654	6-40	0	6-40	55.363	5-7	0	6-40	0.638	6-40
174			min	6.43	1	0.654	1	-188.862	5-1	-40.675	6-1	-100.54	6-21	0.638	1
175		3	max	7.466	6-40	0.654	6-40	0	6-40	55.363	5-7	0	6-40	0.065	6-40
176			min	7.466	1	0.654	1	-188.862	5-1	-40.675	6-1	-238.175	6-1	0.065	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
177		4	max	8.502	6-40	0.654	6-40	0	6-40	55.363	5-7	0	6-40	-0.507	6-40
178			min	8.502	1	0.654	1	-188.862	5-1	-40.675	6-1	-401.478	6-1	-0.507	1
179		5	max	12.456	6-40	4.872	6-40	0	6-40	48.32	5-26	0	6-40	0.231	6-40
180			min	12.456	1	4.872	1	-191.406	5-1	-30.595	6-1	-552.64	6-1	0.231	1
181	M19	1	max	2.499	6-40	2.919	6-40	2.249	6-21	11.827	6-1	6.521	6-1	2.742	6-40
182			min	2.499	1	2.919	1	-2.249	6-1	-11.827	6-21	-13.69	4-29	2.742	1
183		2	max	2.499	6-40	1.459	6-40	2.249	6-21	11.827	6-1	3.26	6-1	-0.432	6-40
184			min	2.499	1	1.459	1	-2.249	6-1	-11.827	6-21	-11.719	4-28	-0.432	1
185		3	max	2.499	6-40	0	6-40	2.249	6-21	11.827	6-1	0	6-40	-1.49	6-40
186			min	2.499	1	0	1	-2.249	6-1	-11.827	6-21	-10.789	4-27	-1.49	1
187		4	max	2.499	6-40	-1.459	6-40	2.249	6-21	11.827	6-1	3.26	6-21	-0.432	6-40
188			min	2.499	1	-1.459	1	-2.249	6-1	-11.827	6-21	-11.719	4-8	-0.432	1
189		5	max	2.499	6-40	-2.919	6-40	2.249	6-21	11.827	6-1	6.521	6-21	2.742	6-40
190			min	2.499	1	-2.919	1	-2.249	6-1	-11.827	6-21	-13.69	4-9	2.742	1
191	M20	1	max	2.697	6-40	-2.617	6-40	5.451	4-23	33.622	4-9	41.771	6-21	-2.429	6-40
192			min	2.697	1	-2.617	1	-190.075	6-21	-83.815	6-26	-41.771	6-1	-2.429	1
193		2	max	3.585	6-40	-2.617	6-40	5.451	4-23	33.622	4-9	11.453	4-21	-0.466	6-40
194			min	3.585	1	-2.617	1	-190.075	6-21	-83.815	6-26	-100.785	6-21	-0.466	1
195		3	max	7.17	6-40	-1.962	6-32	0	6-40	29.564	6-21	26.116	4-21	1.496	6-40
196			min	7.17	1	-2.617	1	-196.342	4-21	-88.433	4-8	-243.341	6-21	1.496	1
197		4	max	8.058	6-40	-1.962	6-40	0	6-40	28.307	6-21	0	6-40	0.397	6-40
198			min	8.058	1	-1.962	1	-196.342	4-21	-88.433	4-8	-351.669	6-21	0.397	1
199		5	max	11.864	6-40	-4.461	6-40	0	6-40	21.786	6-21	0	6-40	-0.041	6-40
200			min	11.864	1	-4.461	1	-196.992	4-21	-75.425	4-26	-483.45	6-21	-0.041	1
201	M21	1	max	2.617	6-40	2.697	6-40	10.195	6-1	41.771	6-1	83.815	6-6	2.429	6-40
202			min	2.617	1	2.697	1	-183.314	6-32	-41.771	6-21	-33.622	4-29	2.429	1
203		2	max	2.617	6-40	1.349	6-40	44.345	6-30	41.771	6-1	14.782	6-21	-0.504	6-40
204			min	2.617	1	1.349	1	-149.246	6-4	-41.771	6-21	-149.759	6-4	-0.504	1
205		3	max	2.617	6-40	0	6-40	96.355	6-27	41.771	6-1	0	6-40	-1.482	6-40
206			min	2.617	1	0	1	-96.355	6-7	-41.771	6-21	-196.867	6-7	-1.482	1
207		4	max	2.617	6-40	-1.349	6-40	149.246	6-24	41.771	6-1	14.782	6-1	-0.504	6-40
208			min	2.617	1	-1.349	1	-44.345	6-10	-41.771	6-21	-149.759	6-24	-0.504	1
209		5	max	2.617	6-40	-2.697	6-40	183.314	6-12	41.771	6-1	83.815	6-26	2.429	6-40
210			min	2.617	1	-2.697	1	-10.195	6-21	-41.771	6-21	-33.622	4-9	2.429	1
211	M22	1	max	2.697	6-40	2.617	6-40	5.451	4-3	83.815	6-6	41.771	6-1	2.429	6-40
212			min	2.697	1	2.617	1	-190.075	6-1	-33.622	4-29	-41.771	6-21	2.429	1
213		2	max	3.585	6-40	2.617	6-40	5.451	4-3	83.815	6-6	11.453	4-1	0.466	6-40
214			min	3.585	1	2.617	1	-190.075	6-1	-33.622	4-29	-100.785	6-1	0.466	1
215		3	max	7.17	6-40	2.617	6-40	0	6-40	88.433	4-28	26.116	4-1	-1.496	6-40
216			min	7.17	1	1.962	4-1	-196.342	4-1	-29.564	6-1	-243.341	6-1	-1.496	1
217		4	max	8.058	6-40	1.962	6-40	0	6-40	88.433	4-28	0	6-40	-0.397	6-40
218			min	8.058	1	1.962	1	-196.342	4-1	-28.307	6-1	-351.669	6-1	-0.397	1
219		5	max	11.864	6-40	4.461	6-40	0	6-40	75.425	4-6	0	6-40	0.041	6-40
220			min	11.864	1	4.461	1	-196.992	4-1	-21.786	6-1	-483.45	6-1	0.041	1
221	M23	1	max	-4.527	6-40	2.277	6-40	14.52	6-30	31.697	6-34	86.447	5-15	1.856	6-40
222			min	-4.527	1	2.277	1	-184.773	5-11	-49.729	6-21	-62.426	6-29	1.856	1
223		2	max	-4.527	6-40	1.161	6-40	30.408	5-29	31.697	6-34	17.799	6-21	-0.207	6-40
224			min	-4.527	1	1.161	1	-155.481	5-13	-49.729	6-21	-118.936	5-13	-0.207	1
225		3	max	-4.527	6-40	0.045	6-40	93.313	5-26	31.697	6-34	12.042	6-40	-0.93	6-40
226			min	-4.527	1	0.045	1	-87.436	5-16	-49.729	6-21	-150.295	5-26	-0.93	1
227		4	max	-4.527	6-40	-1.071	6-40	140.596	5-24	31.697	6-34	8.595	6-5	-0.315	6-40
228			min	-4.527	1	-1.071	1	-42.322	5-18	-49.729	6-21	-100.825	5-18	-0.315	1
229		5	max	-4.527	6-40	-2.187	6-40	189.537	5-20	31.697	6-34	80.81	5-25	1.64	6-40
230			min	-4.527	1	-2.187	1	-13.073	6-19	-49.729	6-21	-50.566	6-24	1.64	1
231	M24	1	max	-4.527	6-40	2.187	6-40	13.073	6-39	49.729	6-1	80.81	5-5	1.64	6-40

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
232			min	-4.527	1	2.187	1	-189.537	5-40	-31.697	6-14	-50.566	6-4	1.64	1
233		2	max	-4.527	6-40	1.071	6-40	42.322	5-38	49.729	6-1	8.595	6-25	-0.315	6-40
234			min	-4.527	1	1.071	1	-140.596	5-4	-31.697	6-14	-100.825	5-38	-0.315	1
235		3	max	-4.527	6-40	-0.045	6-40	87.436	5-36	49.729	6-1	12.042	6-20	-0.93	6-40
236			min	-4.527	1	-0.045	1	-93.313	5-6	-31.697	6-14	-150.295	5-6	-0.93	1
237		4	max	-4.527	6-40	-1.161	6-40	155.481	5-33	49.729	6-1	17.799	6-1	-0.207	6-40
238			min	-4.527	1	-1.161	1	-30.408	5-9	-31.697	6-14	-118.936	5-33	-0.207	1
239		5	max	-4.527	6-40	-2.277	6-40	184.773	5-31	49.729	6-1	86.447	5-35	1.856	6-40
240			min	-4.527	1	-2.277	1	-14.52	6-10	-31.697	6-14	-62.426	6-9	1.856	1
241	M25	1	max	-7.618	6-40	2.697	6-40	9.399	6-3	46.328	6-1	105.022	5-28	2.531	6-40
242			min	-7.618	1	2.697	1	-190.346	5-32	-46.328	6-21	-56.949	6-29	2.531	1
243		2	max	-7.618	6-40	1.349	6-40	37.325	5-30	46.328	6-1	6.73	6-21	-0.402	6-40
244			min	-7.618	1	1.349	1	-155.726	5-4	-46.328	6-21	-129.818	5-4	-0.402	1
245		3	max	-7.618	6-40	0	6-40	95.814	5-27	46.328	6-1	0	6-40	-1.38	6-40
246			min	-7.618	1	0	1	-95.814	5-7	-46.328	6-21	-183.133	5-7	-1.38	1
247		4	max	-7.618	6-40	-1.349	6-40	155.726	5-24	46.328	6-1	6.73	6-1	-0.402	6-40
248			min	-7.618	1	-1.349	1	-37.325	5-10	-46.328	6-21	-129.818	5-24	-0.402	1
249		5	max	-7.618	6-40	-2.697	6-40	190.346	5-12	46.328	6-1	105.022	5-8	2.531	6-40
250			min	-7.618	1	-2.697	1	-9.399	6-23	-46.328	6-21	-56.949	6-9	2.531	1
251	M26	1	max	-0.276	6-40	2.213	6-40	9.185	4-27	37.861	6-1	91.587	4-37	1.725	6-40
252			min	-0.276	1	2.213	1	-195.938	4-40	-27.376	6-13	-26.047	6-37	1.725	1
253		2	max	-0.276	6-40	1.097	6-40	38.911	4-38	37.861	6-1	2.63	6-25	-0.262	6-40
254			min	-0.276	1	1.097	1	-142.504	4-4	-27.376	6-13	-92.102	4-38	-0.262	1
255		3	max	-0.276	6-40	-0.019	6-40	87.943	4-36	37.861	6-1	13.074	4-27	-0.909	6-40
256			min	-0.276	1	-0.019	1	-91.169	4-6	-27.376	6-13	-138.169	4-6	-0.909	1
257		4	max	-0.276	6-40	-1.135	6-40	161.757	4-33	37.861	6-1	24.096	4-27	-0.217	6-40
258			min	-0.276	1	-1.135	1	-22.926	4-9	-27.376	6-13	-97.039	4-33	-0.217	1
259		5	max	-0.276	6-40	-2.251	6-40	193.594	4-31	37.861	6-1	108.569	4-7	1.815	6-40
260			min	-0.276	1	-2.251	1	-4.041	6-32	-27.376	6-13	-23.367	6-9	1.815	1
261	M27	1	max	-0.276	6-40	2.251	6-40	4.041	6-12	27.376	6-33	108.569	4-27	1.815	6-40
262			min	-0.276	1	2.251	1	-193.594	4-11	-37.861	6-21	-23.367	6-29	1.815	1
263		2	max	-0.276	6-40	1.135	6-40	22.926	4-29	27.376	6-33	24.096	4-7	-0.217	6-40
264			min	-0.276	1	1.135	1	-161.757	4-13	-37.861	6-21	-97.039	4-13	-0.217	1
265		3	max	-0.276	6-40	0.019	6-40	91.169	4-26	27.376	6-33	13.074	4-7	-0.909	6-40
266			min	-0.276	1	0.019	1	-87.943	4-16	-37.861	6-21	-138.169	4-26	-0.909	1
267		4	max	-0.276	6-40	-1.097	6-40	142.504	4-24	27.376	6-33	2.63	6-5	-0.262	6-40
268			min	-0.276	1	-1.097	1	-38.911	4-18	-37.861	6-21	-92.102	4-18	-0.262	1
269		5	max	-0.276	6-40	-2.213	6-40	195.938	4-20	27.376	6-33	91.587	4-17	1.725	6-40
270			min	-0.276	1	-2.213	1	-9.185	4-7	-37.861	6-21	-26.047	6-17	1.725	1
271	M28	1	max	-0.654	6-40	2.697	6-40	3.388	6-30	34.594	6-1	120.097	4-5	2.571	6-40
272			min	-0.654	1	2.697	1	-193.793	4-32	-34.594	6-21	-29.884	6-5	2.571	1
273		2	max	-0.654	6-40	1.349	6-40	34.719	4-30	34.594	6-1	1.116	4-21	-0.362	6-40
274			min	-0.654	1	1.349	1	-158.066	4-4	-34.594	6-21	-117.236	4-4	-0.362	1
275		3	max	-0.654	6-40	0	6-40	95.633	4-27	34.594	6-1	0	6-40	-1.34	6-40
276			min	-0.654	1	0	1	-95.633	4-7	-34.594	6-21	-171.168	4-7	-1.34	1
277		4	max	-0.654	6-40	-1.349	6-40	158.066	4-24	34.594	6-1	1.116	4-1	-0.362	6-40
278			min	-0.654	1	-1.349	1	-34.719	4-10	-34.594	6-21	-117.236	4-24	-0.362	1
279		5	max	-0.654	6-40	-2.697	6-40	193.793	4-12	34.594	6-1	120.097	4-25	2.571	6-40
280			min	-0.654	1	-2.697	1	-3.388	6-10	-34.594	6-21	-29.884	6-25	2.571	1

Envelope Maximum Member Section Forces

	Member		Axial[lb]	Loc[ft]	LC	y Shear[lb]	Loc[ft]	LC	z Shear[lb]	Loc[ft]	LC	Torque[lb-ft]	Loc[ft]	LC	y-y Moment[lb-ft]	Loc[ft]	LC	z-z Moment[lb-ft]	Loc[ft]	LC
1	M1	max	10.857	3.5	6-40	-0.499	3.135	6-40	15.89	0.474	5-19	55.872	0.474	5-18	74.586	0.51	5-21	0.817	0.474	6-40
2		min	2.164	0	1	-5.025	0	1	-183.9	0	6-21	-68.31	0	6-16	-506.608	3.5	6-21	-1.565	0	1
3	M2	max	2.066	4.8	6-40	2.468	0	6-40	4.363	4.8	6-21	9.582	4.8	6-8	11.903	4.8	6-21	2.016	0	6-40

Envelope Maximum Member Section Forces (Continued)

	Member		Axial[lb]	Loc[ft]	LC	y Shear[lb]	Loc[ft]	LC	z Shear[lb]	Loc[ft]	LC	Torque[lb-ft]	Loc[ft]	LC	y-y Moment[lb-ft]	Loc[ft]	LC	z-z Moment[lb-ft]	Loc[ft]	LC
4		min	2.066	0	1	-2.362	4.8	1	-3.326	0	6-6	-13.625	0	6-21	-9.042	0	6-21	-1.01	2.45	1
5	M3	max	5.025	4.8	6-40	2.3	0	6-40	181.568	4.8	6-20	29.909	4.8	6-7	80.112	0	6-26	1.893	0	6-40
6		min	5.025	0	1	-2.164	4.8	1	-178.766	0	6-11	-47.999	0	6-21	-166.399	2.3	6-26	-0.952	2.45	1
7	M4	max	5.025	4.8	6-40	2.164	0	6-40	178.766	4.8	6-31	47.999	4.8	6-1	80.112	4.8	6-6	1.893	4.8	6-40
8		min	5.025	0	1	-2.3	4.8	1	-181.568	0	6-40	-29.909	0	6-27	-166.399	2.5	6-6	-0.952	2.35	1
9	M5	max	10.857	0	6-40	-0.499	2.99	6-40	15.89	3.5	5-39	68.31	3.5	6-36	506.608	0	6-1	1.565	3.5	6-40
10		min	2.164	3.5	1	-5.025	3.026	1	-183.9	3.026	6-1	-55.872	3.026	5-38	-74.586	2.99	5-1	-0.817	3.026	1
11	M6	max	18.235	3.5	6-40	0	3.5	6-40	29.05	0.474	5-11	73.551	0.474	6-27	79.681	0.51	5-11	0	3.5	6-40
12		min	4.601	0	1	0	0	1	-163.494	0	6-11	-73.551	0	6-7	-377.312	3.5	6-31	0	0	1
13	M7	max	2.066	4.8	6-40	2.362	0	6-40	3.326	4.8	6-26	13.625	4.8	6-1	11.903	0	6-1	2.016	4.8	6-40
14		min	2.066	0	1	-2.468	4.8	1	-4.363	0	6-1	-9.582	0	6-28	-9.042	4.8	6-1	-1.01	2.35	1
15	M8	max	1.654	4.8	6-40	2.15	0	6-40	177.479	4.8	6-31	46.035	4.8	6-1	81.064	4.8	6-36	1.916	4.8	6-40
16		min	1.654	0	1	-2.314	4.8	1	-180.317	0	6-40	-31.839	0	6-13	-169.25	2.5	6-6	-0.964	2.3	1
17	M9	max	1.654	4.8	6-40	2.314	0	6-40	180.317	4.8	6-20	31.839	4.8	6-33	81.064	0	6-16	1.916	0	6-40
18		min	1.654	0	1	-2.15	4.8	1	-177.479	0	6-11	-46.035	0	6-21	-169.25	2.3	6-26	-0.964	2.5	1
19	M10	max	1.224	4.8	6-40	2.455	0	6-40	2.838	4.8	6-21	9.586	4.8	6-33	10.443	0	4-35	1.996	0	6-40
20		min	1.224	0	1	-2.375	4.8	1	-2.874	0	4-35	-12.853	0	6-21	-13.08	4.8	4-17	-0.999	2.45	1
21	M11	max	17.593	3	6-40	0	3	6-40	11.591	1.469	4-11	59.633	1.5	6-15	57.142	0	6-11	0	3	6-40
22		min	4.629	0	1	0	0	1	-182.342	2.688	4-11	-59.633	0	6-35	-352.718	3	6-11	0	0	1
23	M12	max	1.224	4.8	6-40	2.375	0	6-40	2.874	4.8	4-15	12.853	4.8	6-1	10.443	4.8	4-15	1.996	4.8	6-40
24		min	1.224	0	1	-2.455	4.8	1	-2.838	0	6-1	-9.586	0	6-13	-13.08	0	4-37	-0.999	2.35	1
25	M13	max	10.29	0	6-40	-1.377	1.5	6-34	10.823	0.313	4-26	63.797	1.5	4-5	452.694	0	6-1	1.52	3	6-40
26		min	2.15	3	1	-2.601	0	1	-193.931	0	4-1	-36.349	1.5	6-1	-46.035	3	6-1	-0.96	1.5	1
27	M14	max	10.29	3	6-40	-1.377	2.656	6-40	10.823	3	4-6	36.349	1.5	6-21	46.035	0	6-21	0.96	1.5	6-40
28		min	2.15	0	1	-2.601	2.688	1	-193.931	2.688	4-21	-63.797	1.5	4-25	-452.694	3	6-21	-1.52	0	1
29	M15	max	4.217	5.8	6-40	2.919	0	6-40	3.476	5.8	6-21	13.18	5.8	6-1	10.08	5.8	6-21	2.715	5.8	6-40
30		min	4.217	0	1	-2.919	5.8	1	-3.476	0	6-1	-13.18	0	6-21	-10.08	0	6-21	-1.517	2.9	1
31	M16	max	12.456	3.5	6-40	-0.654	3.135	6-40	10.935	0.474	5-23	60.723	0.474	5-24	67.687	0.51	5-21	1.433	0.474	6-40
32		min	2.697	0	1	-8.273	0	1	-191.406	3.172	5-21	-93.184	0	6-8	-552.64	3.5	6-21	-2.488	0	1
33	M17	max	8.273	5.8	6-40	2.697	0	6-40	185.149	5.8	6-12	44.316	5.8	6-1	93.184	0	6-28	2.488	5.8	6-40
34		min	8.273	0	1	-2.697	5.8	1	-185.149	0	6-32	-44.316	0	6-21	-197.648	2.779	6-27	-1.422	2.9	1
35	M18	max	12.456	3.5	6-40	8.273	0.474	6-40	10.935	0.474	5-3	93.184	0.474	6-28	67.687	0.51	5-1	2.488	0	6-40
36		min	2.697	0	1	0.654	0.51	1	-191.406	3.172	5-1	-60.723	0	5-4	-552.64	3.5	6-1	-1.433	0.474	1
37	M19	max	2.499	5.8	6-40	2.919	0	6-40	2.249	5.8	6-21	11.827	5.8	6-1	6.521	0	6-1	2.742	5.8	6-40
38		min	2.499	0	1	-2.919	5.8	1	-2.249	0	6-1	-11.827	0	6-21	-13.69	5.8	4-9	-1.49	2.9	1
39	M20	max	11.864	3	6-40	-1.962	2.656	6-40	5.451	1.469	4-23	33.622	1.469	4-9	41.771	0	6-21	1.496	1.5	6-40
40		min	2.697	0	1	-4.461	2.688	1	-196.992	2.688	4-21	-88.433	1.5	4-8	-483.45	3	6-21	-2.429	0	1
41	M21	max	2.617	5.8	6-40	2.697	0	6-40	183.314	5.8	6-12	41.771	5.8	6-1	83.815	5.8	6-26	2.429	5.8	6-40
42		min	2.617	0	1	-2.697	5.8	1	-183.314	0	6-32	-41.771	0	6-21	-204.343	2.779	6-27	-1.482	2.9	1
43	M22	max	11.864	3	6-40	4.461	3	6-40	5.451	1.469	4-3	88.433	2.656	4-28	41.771	0	6-1	2.429	0	6-40
44		min	2.697	0	1	1.962	1.5	4-1	-196.992	2.688	4-1	-33.622	0	4-29	-483.45	3	6-1	-1.496	1.5	1
45	M23	max	-4.527	4.8	6-40	2.277	0	6-40	189.537	4.8	5-20	31.697	4.8	6-34	86.447	0	5-15	1.856	0	6-40
46		min	-4.527	0	1	-2.187	4.8	1	-184.773	0	5-11	-49.729	0	6-21	-159.627	2.3	5-26	-0.931	2.45	1
47	M24	max	-4.527	4.8	6-40	2.187	0	6-40	184.773	4.8	5-31	49.729	4.8	6-1	86.447	4.8	5-35	1.856	4.8	6-40
48		min	-4.527	0	1	-2.277	4.8	1	-189.537	0	5-40	-31.697	0	6-14	-159.627	2.5	5-6	-0.931	2.35	1
49	M25	max	-7.618	5.8	6-40	2.697	0	6-40	190.346	5.8	5-12	46.328	5.8	6-1	105.022	0	5-28	2.531	5.8	6-40
50		min	-7.618	0	1	-2.697	5.8	1	-190.346	0	5-32	-46.328	0	6-21	-190.544	2.779	5-27	-1.38	2.9	1
51	M26	max	-0.276	4.8	6-40	2.213	0	6-40	193.594	4.8	4-31	37.861	4.8	6-1	108.569	4.8	4-7	1.815	4.8	6-40
52		min	-0.276	0	1	-2.251	4.8	1	-195.938	0	4-40	-27.376	0	6-13	-147.286	2.5	4-6	-0.909	2.4	1
53	M27	max	-0.276	4.8	6-40	2.251	0	6-40	195.938	4.8	4-20	27.376	4.8	6-33	108.569	0	4-27	1.815	0	6-40
54		min	-0.276	0	1	-2.213	4.8	1	-193.594	0	4-11	-37.861	0	6-21	-147.286	2.3	4-26	-0.909	2.4	1
55	M28	max	-0.654	5.8	6-40	2.697	0	6-40	193.793	5.8	4-12	34.594	5.8	6-1	120.097	5.8	4-25	2.571	5.8	6-40
56		min	-0.654	0	1	-2.697	5.8	1	-193.793	0	4-32	-34.594	0	6-21	-178.557	2.779	4-27	-1.34	2.9	1

Envelope Member End Reactions

	Member	Member End		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
1	M1	I	max	2.164	6-40	-5.025	6-40	15.89	5-19	55.872	5-18	47.999	6-21	-1.565	6-40
2			min	2.164	1	-5.025	1	-183.9	6-21	-68.31	6-16	-29.909	6-7	-1.565	1
3		J	max	10.857	6-40	-2.564	6-40	8.269	6-1	35.691	6-21	0	4-40	-0.272	6-40
4			min	10.857	1	-2.564	1	-182.162	5-21	-32.588	5-27	-506.608	6-21	-0.272	1
5	M2	I	max	2.066	6-40	2.468	6-40	4.363	6-21	9.582	6-8	9.106	5-6	2.016	6-40
6			min	2.066	1	2.468	1	-3.326	6-6	-13.625	6-21	-9.042	6-21	2.016	1
7		J	max	2.066	6-40	-2.362	6-40	4.363	6-21	9.582	6-8	11.903	6-21	1.762	6-40
8			min	2.066	1	-2.362	1	-3.326	6-6	-13.625	6-21	-7.873	6-33	1.762	1
9	M3	I	max	5.025	6-40	2.3	6-40	15.707	5-30	29.909	6-7	80.112	6-26	1.893	6-40
10			min	5.025	1	2.3	1	-178.766	6-11	-47.999	6-21	-63.371	5-12	1.893	1
11		J	max	5.025	6-40	-2.164	6-40	181.568	6-20	29.909	6-7	68.31	6-16	1.565	6-40
12			min	5.025	1	-2.164	1	-16.41	6-21	-47.999	6-21	-55.872	5-18	1.565	1
13	M4	I	max	5.025	6-40	2.164	6-40	16.41	6-1	47.999	6-1	68.31	6-36	1.565	6-40
14			min	5.025	1	2.164	1	-181.568	6-40	-29.909	6-27	-55.872	5-38	1.565	1
15		J	max	5.025	6-40	-2.3	6-40	178.766	6-31	47.999	6-1	80.112	6-6	1.893	6-40
16			min	5.025	1	-2.3	1	-15.707	5-10	-29.909	6-27	-63.371	5-32	1.893	1
17	M5	I	max	10.857	6-40	-2.564	6-40	8.269	6-21	32.588	5-7	506.608	6-1	0.272	6-40
18			min	10.857	1	-2.564	1	-182.162	5-1	-35.691	6-1	0	1	0.272	1
19		J	max	2.164	6-40	-5.025	6-40	15.89	5-39	68.31	6-36	29.909	6-27	1.565	6-40
20			min	2.164	1	-5.025	1	-183.9	6-1	-55.872	5-38	-47.999	6-1	1.565	1
21	M6	I	max	4.601	6-40	0	6-40	29.05	5-11	73.551	6-27	48.159	6-11	0	6-40
22			min	4.601	1	0	1	-163.494	6-11	-73.551	6-7	-24.156	6-21	0	1
23		J	max	18.235	6-40	0	6-40	0	4-40	26.733	5-16	0	4-40	0	6-40
24			min	18.235	1	0	1	-149.252	5-31	-26.733	5-36	-377.312	6-31	0	1
25	M7	I	max	2.066	6-40	2.362	6-40	3.326	6-26	13.625	6-1	11.903	6-1	1.762	6-40
26			min	2.066	1	2.362	1	-4.363	6-1	-9.582	6-28	-7.873	6-13	1.762	1
27		J	max	2.066	6-40	-2.468	6-40	3.326	6-26	13.625	6-1	9.106	5-26	2.016	6-40
28			min	2.066	1	-2.468	1	-4.363	6-1	-9.582	6-28	-9.042	6-1	2.016	1
29	M8	I	max	1.654	6-40	2.15	6-40	17.076	6-1	46.035	6-1	59.331	6-6	1.52	6-40
30			min	1.654	1	2.15	1	-180.317	6-40	-31.839	6-13	-36.349	6-1	1.52	1
31		J	max	1.654	6-40	-2.314	6-40	177.479	6-31	46.035	6-1	81.064	6-36	1.916	6-40
32			min	1.654	1	-2.314	1	-15.782	6-11	-31.839	6-13	-47.969	6-11	1.916	1
33	M9	I	max	1.654	6-40	2.314	6-40	15.782	6-31	31.839	6-33	81.064	6-16	1.916	6-40
34			min	1.654	1	2.314	1	-177.479	6-11	-46.035	6-21	-47.969	6-31	1.916	1
35		J	max	1.654	6-40	-2.15	6-40	180.317	6-20	31.839	6-33	59.331	6-26	1.52	6-40
36			min	1.654	1	-2.15	1	-17.076	6-21	-46.035	6-21	-36.349	6-21	1.52	1
37	M10	I	max	1.224	6-40	2.455	6-40	2.838	6-21	9.586	6-33	10.443	4-35	1.996	6-40
38			min	1.224	1	2.455	1	-2.874	4-35	-12.853	6-21	-6.728	4-28	1.996	1
39		J	max	1.224	6-40	-2.375	6-40	2.838	6-21	9.586	6-33	7.956	6-21	1.804	6-40
40			min	1.224	1	-2.375	1	-2.874	4-35	-12.853	6-21	-13.08	4-17	1.804	1
41	M11	I	max	4.629	6-40	0	6-40	11.591	4-11	59.633	6-15	57.142	6-11	0	6-40
42			min	4.629	1	0	1	-161.984	6-11	-59.633	6-35	-28.691	6-21	0	1
43		J	max	17.593	6-40	0	6-40	0	5-40	36.175	4-15	0	5-40	0	6-40
44			min	17.593	1	0	1	-182.342	4-11	-36.175	4-35	-352.718	6-11	0	1
45	M12	I	max	1.224	6-40	2.375	6-40	2.874	4-15	12.853	6-1	7.956	6-1	1.804	6-40
46			min	1.224	1	2.375	1	-2.838	6-1	-9.586	6-13	-13.08	4-37	1.804	1
47		J	max	1.224	6-40	-2.455	6-40	2.874	4-15	12.853	6-1	10.443	4-15	1.996	6-40
48			min	1.224	1	-2.455	1	-2.838	6-1	-9.586	6-13	-6.728	4-8	1.996	1
49	M13	I	max	10.29	6-40	-2.601	6-40	10.823	4-26	51.114	4-5	452.694	6-1	0.095	6-40
50			min	10.29	1	-2.601	1	-193.931	4-1	-26.829	6-1	0	1	0.095	1
51		J	max	2.15	6-40	-1.654	6-40	7.471	4-3	59.331	6-6	31.839	6-13	1.52	6-40
52			min	2.15	1	-1.654	1	-183.132	6-1	-36.349	6-1	-46.035	6-1	1.52	1
53	M14	I	max	2.15	6-40	-1.654	6-40	7.471	4-23	36.349	6-21	46.035	6-21	-1.52	6-40
54			min	2.15	1	-1.654	1	-183.132	6-21	-59.331	6-26	-31.839	6-33	-1.52	1
55		J	max	10.29	6-40	-2.601	6-40	10.823	4-6	26.829	6-21	0	5-40	-0.095	6-40

Envelope Member End Reactions (Continued)

	Member	Member End		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
56			min	10.29	1	-2.601	1	-193.931	4-21	-51.114	4-25	-452.694	6-21	-0.095	1
57	M15	I	max	4.217	6-40	2.919	6-40	3.476	6-21	13.18	6-1	10.08	6-1	2.715	6-40
58			min	4.217	1	2.919	1	-3.476	6-1	-13.18	6-21	-10.08	6-21	2.715	1
59		J	max	4.217	6-40	-2.919	6-40	3.476	6-21	13.18	6-1	10.08	6-21	2.715	6-40
60			min	4.217	1	-2.919	1	-3.476	6-1	-13.18	6-21	-10.08	6-1	2.715	1
61	M16	I	max	2.697	6-40	-8.273	6-40	10.935	5-23	60.723	5-24	44.316	6-21	-2.488	6-40
62			min	2.697	1	-8.273	1	-191.06	6-21	-93.184	6-8	-44.316	6-1	-2.488	1
63		J	max	12.456	6-40	-4.872	6-40	0	6-40	30.595	6-21	0	6-40	-0.231	6-40
64			min	12.456	1	-4.872	1	-191.406	5-21	-48.32	5-6	-552.64	6-21	-0.231	1
65	M17	I	max	8.273	6-40	2.697	6-40	11.218	5-31	44.316	6-1	93.184	6-28	2.488	6-40
66			min	8.273	1	2.697	1	-185.149	6-32	-44.316	6-21	-60.723	5-4	2.488	1
67		J	max	8.273	6-40	-2.697	6-40	185.149	6-12	44.316	6-1	93.184	6-8	2.488	6-40
68			min	8.273	1	-2.697	1	-11.218	5-11	-44.316	6-21	-60.723	5-24	2.488	1
69	M18	I	max	2.697	6-40	8.273	6-40	10.935	5-3	93.184	6-28	44.316	6-1	2.488	6-40
70			min	2.697	1	8.273	1	-191.06	6-1	-60.723	5-4	-44.316	6-21	2.488	1
71		J	max	12.456	6-40	4.872	6-40	0	6-40	48.32	5-26	0	6-40	0.231	6-40
72			min	12.456	1	4.872	1	-191.406	5-1	-30.595	6-1	-552.64	6-1	0.231	1
73	M19	I	max	2.499	6-40	2.919	6-40	2.249	6-21	11.827	6-1	6.521	6-1	2.742	6-40
74			min	2.499	1	2.919	1	-2.249	6-1	-11.827	6-21	-13.69	4-29	2.742	1
75		J	max	2.499	6-40	-2.919	6-40	2.249	6-21	11.827	6-1	6.521	6-21	2.742	6-40
76			min	2.499	1	-2.919	1	-2.249	6-1	-11.827	6-21	-13.69	4-9	2.742	1
77	M20	I	max	2.697	6-40	-2.617	6-40	5.451	4-23	33.622	4-9	41.771	6-21	-2.429	6-40
78			min	2.697	1	-2.617	1	-190.075	6-21	-83.815	6-26	-41.771	6-1	-2.429	1
79		J	max	11.864	6-40	-4.461	6-40	0	6-40	21.786	6-21	0	6-40	-0.041	6-40
80			min	11.864	1	-4.461	1	-196.992	4-21	-75.425	4-26	-483.45	6-21	-0.041	1
81	M21	I	max	2.617	6-40	2.697	6-40	10.195	6-1	41.771	6-1	83.815	6-6	2.429	6-40
82			min	2.617	1	2.697	1	-183.314	6-32	-41.771	6-21	-33.622	4-29	2.429	1
83		J	max	2.617	6-40	-2.697	6-40	183.314	6-12	41.771	6-1	83.815	6-26	2.429	6-40
84			min	2.617	1	-2.697	1	-10.195	6-21	-41.771	6-21	-33.622	4-9	2.429	1
85	M22	I	max	2.697	6-40	2.617	6-40	5.451	4-3	83.815	6-6	41.771	6-1	2.429	6-40
86			min	2.697	1	2.617	1	-190.075	6-1	-33.622	4-29	-41.771	6-21	2.429	1
87		J	max	11.864	6-40	4.461	6-40	0	6-40	75.425	4-6	0	6-40	0.041	6-40
88			min	11.864	1	4.461	1	-196.992	4-1	-21.786	6-1	-483.45	6-1	0.041	1
89	M23	I	max	-4.527	6-40	2.277	6-40	14.52	6-30	31.697	6-34	86.447	5-15	1.856	6-40
90			min	-4.527	1	2.277	1	-184.773	5-11	-49.729	6-21	-62.426	6-29	1.856	1
91		J	max	-4.527	6-40	-2.187	6-40	189.537	5-20	31.697	6-34	80.81	5-25	1.64	6-40
92			min	-4.527	1	-2.187	1	-13.073	6-19	-49.729	6-21	-50.566	6-24	1.64	1
93	M24	I	max	-4.527	6-40	2.187	6-40	13.073	6-39	49.729	6-1	80.81	5-5	1.64	6-40
94			min	-4.527	1	2.187	1	-189.537	5-40	-31.697	6-14	-50.566	6-4	1.64	1
95		J	max	-4.527	6-40	-2.277	6-40	184.773	5-31	49.729	6-1	86.447	5-35	1.856	6-40
96			min	-4.527	1	-2.277	1	-14.52	6-10	-31.697	6-14	-62.426	6-9	1.856	1
97	M25	I	max	-7.618	6-40	2.697	6-40	9.399	6-3	46.328	6-1	105.022	5-28	2.531	6-40
98			min	-7.618	1	2.697	1	-190.346	5-32	-46.328	6-21	-56.949	6-29	2.531	1
99		J	max	-7.618	6-40	-2.697	6-40	190.346	5-12	46.328	6-1	105.022	5-8	2.531	6-40
100			min	-7.618	1	-2.697	1	-9.399	6-23	-46.328	6-21	-56.949	6-9	2.531	1
101	M26	I	max	-0.276	6-40	2.213	6-40	9.185	4-27	37.861	6-1	91.587	4-37	1.725	6-40
102			min	-0.276	1	2.213	1	-195.938	4-40	-27.376	6-13	-26.047	6-37	1.725	1
103		J	max	-0.276	6-40	-2.251	6-40	193.594	4-31	37.861	6-1	108.569	4-7	1.815	6-40
104			min	-0.276	1	-2.251	1	-4.041	6-32	-27.376	6-13	-23.367	6-9	1.815	1
105	M27	I	max	-0.276	6-40	2.251	6-40	4.041	6-12	27.376	6-33	108.569	4-27	1.815	6-40
106			min	-0.276	1	2.251	1	-193.594	4-11	-37.861	6-21	-23.367	6-29	1.815	1
107		J	max	-0.276	6-40	-2.213	6-40	195.938	4-20	27.376	6-33	91.587	4-17	1.725	6-40
108			min	-0.276	1	-2.213	1	-9.185	4-7	-37.861	6-21	-26.047	6-17	1.725	1
109	M28	I	max	-0.654	6-40	2.697	6-40	3.388	6-30	34.594	6-1	120.097	4-5	2.571	6-40
110			min	-0.654	1	2.697	1	-193.793	4-32	-34.594	6-21	-29.884	6-5	2.571	1

Envelope Member End Reactions (Continued)

	Member	Member End		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[lb-ft]	LC	y-y Moment[lb-ft]	LC	z-z Moment[lb-ft]	LC
111		J	max	-0.654	6-40	-2.697	6-40	193.793	4-12	34.594	6-1	120.097	4-25	2.571	6-40
112			min	-0.654	1	-2.697	1	-3.388	6-10	-34.594	6-21	-29.884	6-25	2.571	1

Envelope Member 2nd/1st Moment Ratios

	Member		y-y Moment [lb-ft]	2nd/1st Ratio	Loc [ft]	LC	z-z Moment [lb-ft]	2nd/1st Ratio	Loc [ft]	LC
1	M1	max	-44.473	1.005	3.172	5-37	-1.565	1	0	6-40
2		min	-448.779	1.002	3.5	5-21	-1.565	1	0	1
3	M2	max	-7.858	1.003	4.8	6-8	2.016	1	0	6-40
4		min	-4.054	0.999	4.8	5-24	2.016	1	0	1
5	M3	max	-27.437	1.006	0	6-9	1.893	1	0	6-40
6		min	13.22	0.992	0	6-5	1.893	1	0	1
7	M4	max	-27.437	1.006	4.8	6-29	1.893	1	4.8	6-40
8		min	13.22	0.992	4.8	6-25	1.893	1	4.8	1
9	M5	max	44.473	1.005	0.328	5-17	1.565	1	3.5	6-40
10		min	448.779	1.002	0	5-1	1.565	1	3.5	1
11	M6	max	-162.148	1.004	3.5	6-1	NC	NC		
12		min	-0.703	1.003	3.5	2	NC	NC		
13	M7	max	-7.858	1.003	0	6-28	2.016	1	4.8	6-40
14		min	-4.054	0.999	0	5-4	2.016	1	4.8	1
15	M8	max	-0.012	1.003	4.8	2	1.916	1	4.8	6-40
16		min	19.9	0.997	4.8	6-15	1.916	1	4.8	1
17	M9	max	-0.012	1.003	0	2	1.916	1	0	6-40
18		min	19.9	0.997	0	6-35	1.916	1	0	1
19	M10	max	-1.007	1.002	0	4-20	1.996	1	0	6-40
20		min	-4.25	1	4.8	6-24	1.996	1	0	1
21	M11	max	-123.825	1.002	3	6-21	NC	NC		
22		min	-0.432	1.001	3	2	NC	NC		
23	M12	max	-1.007	1.002	4.8	4-40	1.996	1	4.8	6-40
24		min	-4.25	1	0	6-4	1.996	1	4.8	1
25	M13	max	41.856	1.003	0.313	6-17	1.52	1	3	6-40
26		min	251.29	1.001	0	4-1	1.52	1	3	1
27	M14	max	-41.856	1.003	2.688	6-37	-1.52	1	0	6-40
28		min	-251.29	1.001	3	4-21	-1.52	1	0	1
29	M15	max	-7.353	1.003	5.8	5-32	2.715	1	5.8	6-40
30		min	-0.006	1	0	3	2.715	1	5.8	1
31	M16	max	-552.64	1.003	3.5	6-21	-2.488	1	0	6-40
32		min	-115.703	1.002	3.5	5-1	-2.488	1	0	1
33	M17	max	-21.476	1.003	5.8	5-21	2.488	1	5.8	6-40
34		min	-0.123	1	2.9	3	2.488	1	5.8	1
35	M18	max	-552.64	1.003	3.5	6-1	2.488	1	0	6-40
36		min	-115.703	1.002	3.5	5-21	2.488	1	0	1
37	M19	max	-2.084	1.001	5.8	4-1	2.742	1	5.8	6-40
38		min	-3.085	0.999	0	4-32	2.742	1	5.8	1
39	M20	max	-117.44	1.002	3	6-1	-2.429	1	0	6-40
40		min	-0.266	1.001	3	2	-2.429	1	0	1
41	M21	max	-8.759	1.001	5.8	4-21	2.429	1	5.8	6-40
42		min	-0.029	1	0	2	2.429	1	5.8	1
43	M22	max	-117.44	1.002	3	6-21	2.429	1	0	6-40
44		min	-0.266	1.001	3	2	2.429	1	0	1
45	M23	max	-11.219	1.01	0	5-9	1.856	1	0	6-40
46		min	10.634	0.992	0	5-34	1.856	1	0	1
47	M24	max	-11.219	1.01	4.8	5-29	1.856	1	4.8	6-40
48		min	10.634	0.992	4.8	5-14	1.856	1	4.8	1
49	M25	max	-13.46	1.003	5.8	6-21	2.531	1	5.8	6-40
50		min	-0.121	1	2.9	2	2.531	1	5.8	1

Envelope Member 2nd/1st Moment Ratios (Continued)

	Member		y-y Moment [lb-ft]	2nd/1st Ratio	Loc [ft]	LC	z-z Moment [lb-ft]	2nd/1st Ratio	Loc [ft]	LC
51	M26	max	-3.295	1.006	4.8	6-29	1.815	1	4.8	6-40
52		min	1.513	0.988	4.8	6-13	1.815	1	4.8	1
53	M27	max	-3.295	1.006	0	6-9	1.815	1	0	6-40
54		min	1.513	0.988	0	6-33	1.815	1	0	1
55	M28	max	1.257	1.001	0	6-1	2.571	1	5.8	6-40
56		min	-8.598	1	5.8	6-12	2.571	1	5.8	1

Envelope Member Torsion Stresses

	Member	Sec		Torque[lb-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
1	M1	1	max	55.872	5-18	1.036	5-18	NC	NC	NC	NC
2			min	-68.31	6-16	-1.267	6-16	NC	NC	NC	NC
3		2	max	47.593	6-21	0.882	6-21	NC	NC	NC	NC
4			min	-38.995	5-27	-0.723	5-27	NC	NC	NC	NC
5		3	max	47.593	6-21	0.882	6-21	NC	NC	NC	NC
6			min	-38.995	5-27	-0.723	5-27	NC	NC	NC	NC
7		4	max	47.593	6-21	0.882	6-21	NC	NC	NC	NC
8			min	-38.995	5-27	-0.723	5-27	NC	NC	NC	NC
9		5	max	35.691	6-21	0.662	6-21	NC	NC	NC	NC
10			min	-32.588	5-27	-0.604	5-27	NC	NC	NC	NC
11	M2	1	max	9.582	6-8	0.204	6-8	NC	NC	NC	NC
12			min	-13.625	6-21	-0.29	6-21	NC	NC	NC	NC
13		2	max	9.582	6-8	0.204	6-8	NC	NC	NC	NC
14			min	-13.625	6-21	-0.29	6-21	NC	NC	NC	NC
15		3	max	9.582	6-8	0.204	6-8	NC	NC	NC	NC
16			min	-13.625	6-21	-0.29	6-21	NC	NC	NC	NC
17		4	max	9.582	6-8	0.204	6-8	NC	NC	NC	NC
18			min	-13.625	6-21	-0.29	6-21	NC	NC	NC	NC
19		5	max	9.582	6-8	0.204	6-8	NC	NC	NC	NC
20			min	-13.625	6-21	-0.29	6-21	NC	NC	NC	NC
21	M3	1	max	29.909	6-7	0.791	6-7	NC	NC	NC	NC
22			min	-47.999	6-21	-1.269	6-21	NC	NC	NC	NC
23		2	max	29.909	6-7	0.791	6-7	NC	NC	NC	NC
24			min	-47.999	6-21	-1.269	6-21	NC	NC	NC	NC
25		3	max	29.909	6-7	0.791	6-7	NC	NC	NC	NC
26			min	-47.999	6-21	-1.269	6-21	NC	NC	NC	NC
27		4	max	29.909	6-7	0.791	6-7	NC	NC	NC	NC
28			min	-47.999	6-21	-1.269	6-21	NC	NC	NC	NC
29		5	max	29.909	6-7	0.791	6-7	NC	NC	NC	NC
30			min	-47.999	6-21	-1.269	6-21	NC	NC	NC	NC
31	M4	1	max	47.999	6-1	1.269	6-1	NC	NC	NC	NC
32			min	-29.909	6-27	-0.791	6-27	NC	NC	NC	NC
33		2	max	47.999	6-1	1.269	6-1	NC	NC	NC	NC
34			min	-29.909	6-27	-0.791	6-27	NC	NC	NC	NC
35		3	max	47.999	6-1	1.269	6-1	NC	NC	NC	NC
36			min	-29.909	6-27	-0.791	6-27	NC	NC	NC	NC
37		4	max	47.999	6-1	1.269	6-1	NC	NC	NC	NC
38			min	-29.909	6-27	-0.791	6-27	NC	NC	NC	NC
39		5	max	47.999	6-1	1.269	6-1	NC	NC	NC	NC
40			min	-29.909	6-27	-0.791	6-27	NC	NC	NC	NC
41	M5	1	max	32.588	5-7	0.604	5-7	NC	NC	NC	NC
42			min	-35.691	6-1	-0.662	6-1	NC	NC	NC	NC
43		2	max	38.995	5-7	0.723	5-7	NC	NC	NC	NC
44			min	-47.593	6-1	-0.882	6-1	NC	NC	NC	NC
45		3	max	38.995	5-7	0.723	5-7	NC	NC	NC	NC
46			min	-47.593	6-1	-0.882	6-1	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[lb-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
47		4	max	38.995	5-7	0.723	5-7	NC	NC	NC	NC
48			min	-47.593	6-1	-0.882	6-1	NC	NC	NC	NC
49		5	max	68.31	6-36	1.267	6-36	NC	NC	NC	NC
50			min	-55.872	5-38	-1.036	5-38	NC	NC	NC	NC
51	M6	1	max	73.551	6-27	1.364	6-27	NC	NC	NC	NC
52			min	-73.551	6-7	-1.364	6-7	NC	NC	NC	NC
53		2	max	39.705	5-16	0.736	5-16	NC	NC	NC	NC
54			min	-39.705	5-36	-0.736	5-36	NC	NC	NC	NC
55		3	max	39.705	5-16	0.736	5-16	NC	NC	NC	NC
56			min	-39.705	5-36	-0.736	5-36	NC	NC	NC	NC
57		4	max	39.705	5-16	0.736	5-16	NC	NC	NC	NC
58			min	-39.705	5-36	-0.736	5-36	NC	NC	NC	NC
59		5	max	26.733	5-16	0.496	5-16	NC	NC	NC	NC
60			min	-26.733	5-36	-0.496	5-36	NC	NC	NC	NC
61	M7	1	max	13.625	6-1	0.29	6-1	NC	NC	NC	NC
62			min	-9.582	6-28	-0.204	6-28	NC	NC	NC	NC
63		2	max	13.625	6-1	0.29	6-1	NC	NC	NC	NC
64			min	-9.582	6-28	-0.204	6-28	NC	NC	NC	NC
65		3	max	13.625	6-1	0.29	6-1	NC	NC	NC	NC
66			min	-9.582	6-28	-0.204	6-28	NC	NC	NC	NC
67		4	max	13.625	6-1	0.29	6-1	NC	NC	NC	NC
68			min	-9.582	6-28	-0.204	6-28	NC	NC	NC	NC
69		5	max	13.625	6-1	0.29	6-1	NC	NC	NC	NC
70			min	-9.582	6-28	-0.204	6-28	NC	NC	NC	NC
71	M8	1	max	46.035	6-1	1.217	6-1	NC	NC	NC	NC
72			min	-31.839	6-13	-0.842	6-13	NC	NC	NC	NC
73		2	max	46.035	6-1	1.217	6-1	NC	NC	NC	NC
74			min	-31.839	6-13	-0.842	6-13	NC	NC	NC	NC
75		3	max	46.035	6-1	1.217	6-1	NC	NC	NC	NC
76			min	-31.839	6-13	-0.842	6-13	NC	NC	NC	NC
77		4	max	46.035	6-1	1.217	6-1	NC	NC	NC	NC
78			min	-31.839	6-13	-0.842	6-13	NC	NC	NC	NC
79		5	max	46.035	6-1	1.217	6-1	NC	NC	NC	NC
80			min	-31.839	6-13	-0.842	6-13	NC	NC	NC	NC
81	M9	1	max	31.839	6-33	0.842	6-33	NC	NC	NC	NC
82			min	-46.035	6-21	-1.217	6-21	NC	NC	NC	NC
83		2	max	31.839	6-33	0.842	6-33	NC	NC	NC	NC
84			min	-46.035	6-21	-1.217	6-21	NC	NC	NC	NC
85		3	max	31.839	6-33	0.842	6-33	NC	NC	NC	NC
86			min	-46.035	6-21	-1.217	6-21	NC	NC	NC	NC
87		4	max	31.839	6-33	0.842	6-33	NC	NC	NC	NC
88			min	-46.035	6-21	-1.217	6-21	NC	NC	NC	NC
89		5	max	31.839	6-33	0.842	6-33	NC	NC	NC	NC
90			min	-46.035	6-21	-1.217	6-21	NC	NC	NC	NC
91	M10	1	max	9.586	6-33	0.204	6-33	NC	NC	NC	NC
92			min	-12.853	6-21	-0.274	6-21	NC	NC	NC	NC
93		2	max	9.586	6-33	0.204	6-33	NC	NC	NC	NC
94			min	-12.853	6-21	-0.274	6-21	NC	NC	NC	NC
95		3	max	9.586	6-33	0.204	6-33	NC	NC	NC	NC
96			min	-12.853	6-21	-0.274	6-21	NC	NC	NC	NC
97		4	max	9.586	6-33	0.204	6-33	NC	NC	NC	NC
98			min	-12.853	6-21	-0.274	6-21	NC	NC	NC	NC
99		5	max	9.586	6-33	0.204	6-33	NC	NC	NC	NC
100			min	-12.853	6-21	-0.274	6-21	NC	NC	NC	NC
101	M11	1	max	59.633	6-15	1.106	6-15	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[lb-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
102			min	-59.633	6-35	-1.106	6-35	NC	NC	NC	NC
103		2	max	59.633	6-15	1.106	6-15	NC	NC	NC	NC
104			min	-59.633	6-35	-1.106	6-35	NC	NC	NC	NC
105		3	max	59.633	6-15	1.106	6-15	NC	NC	NC	NC
106			min	-59.633	6-35	-1.106	6-35	NC	NC	NC	NC
107		4	max	52.376	4-27	0.971	4-27	NC	NC	NC	NC
108			min	-52.376	4-7	-0.971	4-7	NC	NC	NC	NC
109		5	max	36.175	4-15	0.671	4-15	NC	NC	NC	NC
110			min	-36.175	4-35	-0.671	4-35	NC	NC	NC	NC
111	M12	1	max	12.853	6-1	0.274	6-1	NC	NC	NC	NC
112			min	-9.586	6-13	-0.204	6-13	NC	NC	NC	NC
113		2	max	12.853	6-1	0.274	6-1	NC	NC	NC	NC
114			min	-9.586	6-13	-0.204	6-13	NC	NC	NC	NC
115		3	max	12.853	6-1	0.274	6-1	NC	NC	NC	NC
116			min	-9.586	6-13	-0.204	6-13	NC	NC	NC	NC
117		4	max	12.853	6-1	0.274	6-1	NC	NC	NC	NC
118			min	-9.586	6-13	-0.204	6-13	NC	NC	NC	NC
119		5	max	12.853	6-1	0.274	6-1	NC	NC	NC	NC
120			min	-9.586	6-13	-0.204	6-13	NC	NC	NC	NC
121	M13	1	max	51.114	4-5	0.948	4-5	NC	NC	NC	NC
122			min	-26.829	6-1	-0.497	6-1	NC	NC	NC	NC
123		2	max	63.797	4-5	1.183	4-5	NC	NC	NC	NC
124			min	-34.785	6-1	-0.645	6-1	NC	NC	NC	NC
125		3	max	63.797	4-5	1.183	4-5	NC	NC	NC	NC
126			min	-36.349	6-1	-0.674	6-1	NC	NC	NC	NC
127		4	max	59.331	6-6	1.1	6-6	NC	NC	NC	NC
128			min	-36.349	6-1	-0.674	6-1	NC	NC	NC	NC
129		5	max	59.331	6-6	1.1	6-6	NC	NC	NC	NC
130			min	-36.349	6-1	-0.674	6-1	NC	NC	NC	NC
131	M14	1	max	36.349	6-21	0.674	6-21	NC	NC	NC	NC
132			min	-59.331	6-26	-1.1	6-26	NC	NC	NC	NC
133		2	max	36.349	6-21	0.674	6-21	NC	NC	NC	NC
134			min	-59.331	6-26	-1.1	6-26	NC	NC	NC	NC
135		3	max	36.349	6-21	0.674	6-21	NC	NC	NC	NC
136			min	-63.797	4-25	-1.183	4-25	NC	NC	NC	NC
137		4	max	34.785	6-21	0.645	6-21	NC	NC	NC	NC
138			min	-63.797	4-25	-1.183	4-25	NC	NC	NC	NC
139		5	max	26.829	6-21	0.497	6-21	NC	NC	NC	NC
140			min	-51.114	4-25	-0.948	4-25	NC	NC	NC	NC
141	M15	1	max	13.18	6-1	0.281	6-1	NC	NC	NC	NC
142			min	-13.18	6-21	-0.281	6-21	NC	NC	NC	NC
143		2	max	13.18	6-1	0.281	6-1	NC	NC	NC	NC
144			min	-13.18	6-21	-0.281	6-21	NC	NC	NC	NC
145		3	max	13.18	6-1	0.281	6-1	NC	NC	NC	NC
146			min	-13.18	6-21	-0.281	6-21	NC	NC	NC	NC
147		4	max	13.18	6-1	0.281	6-1	NC	NC	NC	NC
148			min	-13.18	6-21	-0.281	6-21	NC	NC	NC	NC
149		5	max	13.18	6-1	0.281	6-1	NC	NC	NC	NC
150			min	-13.18	6-21	-0.281	6-21	NC	NC	NC	NC
151	M16	1	max	60.723	5-24	1.126	5-24	NC	NC	NC	NC
152			min	-93.184	6-8	-1.728	6-8	NC	NC	NC	NC
153		2	max	40.675	6-21	0.754	6-21	NC	NC	NC	NC
154			min	-55.363	5-27	-1.026	5-27	NC	NC	NC	NC
155		3	max	40.675	6-21	0.754	6-21	NC	NC	NC	NC
156			min	-55.363	5-27	-1.026	5-27	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[lb-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
157		4	max	40.675	6-21	0.754	6-21	NC	NC	NC	NC
158			min	-55.363	5-27	-1.026	5-27	NC	NC	NC	NC
159		5	max	30.595	6-21	0.567	6-21	NC	NC	NC	NC
160			min	-48.32	5-6	-0.896	5-6	NC	NC	NC	NC
161	M17	1	max	44.316	6-1	1.172	6-1	NC	NC	NC	NC
162			min	-44.316	6-21	-1.172	6-21	NC	NC	NC	NC
163		2	max	44.316	6-1	1.172	6-1	NC	NC	NC	NC
164			min	-44.316	6-21	-1.172	6-21	NC	NC	NC	NC
165		3	max	44.316	6-1	1.172	6-1	NC	NC	NC	NC
166			min	-44.316	6-21	-1.172	6-21	NC	NC	NC	NC
167		4	max	44.316	6-1	1.172	6-1	NC	NC	NC	NC
168			min	-44.316	6-21	-1.172	6-21	NC	NC	NC	NC
169		5	max	44.316	6-1	1.172	6-1	NC	NC	NC	NC
170			min	-44.316	6-21	-1.172	6-21	NC	NC	NC	NC
171	M18	1	max	93.184	6-28	1.728	6-28	NC	NC	NC	NC
172			min	-60.723	5-4	-1.126	5-4	NC	NC	NC	NC
173		2	max	55.363	5-7	1.026	5-7	NC	NC	NC	NC
174			min	-40.675	6-1	-0.754	6-1	NC	NC	NC	NC
175		3	max	55.363	5-7	1.026	5-7	NC	NC	NC	NC
176			min	-40.675	6-1	-0.754	6-1	NC	NC	NC	NC
177		4	max	55.363	5-7	1.026	5-7	NC	NC	NC	NC
178			min	-40.675	6-1	-0.754	6-1	NC	NC	NC	NC
179		5	max	48.32	5-26	0.896	5-26	NC	NC	NC	NC
180			min	-30.595	6-1	-0.567	6-1	NC	NC	NC	NC
181	M19	1	max	11.827	6-1	0.252	6-1	NC	NC	NC	NC
182			min	-11.827	6-21	-0.252	6-21	NC	NC	NC	NC
183		2	max	11.827	6-1	0.252	6-1	NC	NC	NC	NC
184			min	-11.827	6-21	-0.252	6-21	NC	NC	NC	NC
185		3	max	11.827	6-1	0.252	6-1	NC	NC	NC	NC
186			min	-11.827	6-21	-0.252	6-21	NC	NC	NC	NC
187		4	max	11.827	6-1	0.252	6-1	NC	NC	NC	NC
188			min	-11.827	6-21	-0.252	6-21	NC	NC	NC	NC
189		5	max	11.827	6-1	0.252	6-1	NC	NC	NC	NC
190			min	-11.827	6-21	-0.252	6-21	NC	NC	NC	NC
191	M20	1	max	33.622	4-9	0.623	4-9	NC	NC	NC	NC
192			min	-83.815	6-26	-1.554	6-26	NC	NC	NC	NC
193		2	max	33.622	4-9	0.623	4-9	NC	NC	NC	NC
194			min	-83.815	6-26	-1.554	6-26	NC	NC	NC	NC
195		3	max	29.564	6-21	0.548	6-21	NC	NC	NC	NC
196			min	-88.433	4-8	-1.64	4-8	NC	NC	NC	NC
197		4	max	28.307	6-21	0.525	6-21	NC	NC	NC	NC
198			min	-88.433	4-8	-1.64	4-8	NC	NC	NC	NC
199		5	max	21.786	6-21	0.404	6-21	NC	NC	NC	NC
200			min	-75.425	4-26	-1.398	4-26	NC	NC	NC	NC
201	M21	1	max	41.771	6-1	1.105	6-1	NC	NC	NC	NC
202			min	-41.771	6-21	-1.105	6-21	NC	NC	NC	NC
203		2	max	41.771	6-1	1.105	6-1	NC	NC	NC	NC
204			min	-41.771	6-21	-1.105	6-21	NC	NC	NC	NC
205		3	max	41.771	6-1	1.105	6-1	NC	NC	NC	NC
206			min	-41.771	6-21	-1.105	6-21	NC	NC	NC	NC
207		4	max	41.771	6-1	1.105	6-1	NC	NC	NC	NC
208			min	-41.771	6-21	-1.105	6-21	NC	NC	NC	NC
209		5	max	41.771	6-1	1.105	6-1	NC	NC	NC	NC
210			min	-41.771	6-21	-1.105	6-21	NC	NC	NC	NC
211	M22	1	max	83.815	6-6	1.554	6-6	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[lb-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
212			min	-33.622	4-29	-0.623	4-29	NC	NC	NC	NC
213		2	max	83.815	6-6	1.554	6-6	NC	NC	NC	NC
214			min	-33.622	4-29	-0.623	4-29	NC	NC	NC	NC
215		3	max	88.433	4-28	1.64	4-28	NC	NC	NC	NC
216			min	-29.564	6-1	-0.548	6-1	NC	NC	NC	NC
217		4	max	88.433	4-28	1.64	4-28	NC	NC	NC	NC
218			min	-28.307	6-1	-0.525	6-1	NC	NC	NC	NC
219		5	max	75.425	4-6	1.398	4-6	NC	NC	NC	NC
220			min	-21.786	6-1	-0.404	6-1	NC	NC	NC	NC
221	M23	1	max	31.697	6-34	0.838	6-34	NC	NC	NC	NC
222			min	-49.729	6-21	-1.315	6-21	NC	NC	NC	NC
223		2	max	31.697	6-34	0.838	6-34	NC	NC	NC	NC
224			min	-49.729	6-21	-1.315	6-21	NC	NC	NC	NC
225		3	max	31.697	6-34	0.838	6-34	NC	NC	NC	NC
226			min	-49.729	6-21	-1.315	6-21	NC	NC	NC	NC
227		4	max	31.697	6-34	0.838	6-34	NC	NC	NC	NC
228			min	-49.729	6-21	-1.315	6-21	NC	NC	NC	NC
229		5	max	31.697	6-34	0.838	6-34	NC	NC	NC	NC
230			min	-49.729	6-21	-1.315	6-21	NC	NC	NC	NC
231	M24	1	max	49.729	6-1	1.315	6-1	NC	NC	NC	NC
232			min	-31.697	6-14	-0.838	6-14	NC	NC	NC	NC
233		2	max	49.729	6-1	1.315	6-1	NC	NC	NC	NC
234			min	-31.697	6-14	-0.838	6-14	NC	NC	NC	NC
235		3	max	49.729	6-1	1.315	6-1	NC	NC	NC	NC
236			min	-31.697	6-14	-0.838	6-14	NC	NC	NC	NC
237		4	max	49.729	6-1	1.315	6-1	NC	NC	NC	NC
238			min	-31.697	6-14	-0.838	6-14	NC	NC	NC	NC
239		5	max	49.729	6-1	1.315	6-1	NC	NC	NC	NC
240			min	-31.697	6-14	-0.838	6-14	NC	NC	NC	NC
241	M25	1	max	46.328	6-1	1.225	6-1	NC	NC	NC	NC
242			min	-46.328	6-21	-1.225	6-21	NC	NC	NC	NC
243		2	max	46.328	6-1	1.225	6-1	NC	NC	NC	NC
244			min	-46.328	6-21	-1.225	6-21	NC	NC	NC	NC
245		3	max	46.328	6-1	1.225	6-1	NC	NC	NC	NC
246			min	-46.328	6-21	-1.225	6-21	NC	NC	NC	NC
247		4	max	46.328	6-1	1.225	6-1	NC	NC	NC	NC
248			min	-46.328	6-21	-1.225	6-21	NC	NC	NC	NC
249		5	max	46.328	6-1	1.225	6-1	NC	NC	NC	NC
250			min	-46.328	6-21	-1.225	6-21	NC	NC	NC	NC
251	M26	1	max	37.861	6-1	1.001	6-1	NC	NC	NC	NC
252			min	-27.376	6-13	-0.724	6-13	NC	NC	NC	NC
253		2	max	37.861	6-1	1.001	6-1	NC	NC	NC	NC
254			min	-27.376	6-13	-0.724	6-13	NC	NC	NC	NC
255		3	max	37.861	6-1	1.001	6-1	NC	NC	NC	NC
256			min	-27.376	6-13	-0.724	6-13	NC	NC	NC	NC
257		4	max	37.861	6-1	1.001	6-1	NC	NC	NC	NC
258			min	-27.376	6-13	-0.724	6-13	NC	NC	NC	NC
259		5	max	37.861	6-1	1.001	6-1	NC	NC	NC	NC
260			min	-27.376	6-13	-0.724	6-13	NC	NC	NC	NC
261	M27	1	max	27.376	6-33	0.724	6-33	NC	NC	NC	NC
262			min	-37.861	6-21	-1.001	6-21	NC	NC	NC	NC
263		2	max	27.376	6-33	0.724	6-33	NC	NC	NC	NC
264			min	-37.861	6-21	-1.001	6-21	NC	NC	NC	NC
265		3	max	27.376	6-33	0.724	6-33	NC	NC	NC	NC
266			min	-37.861	6-21	-1.001	6-21	NC	NC	NC	NC

Envelope Member Torsion Stresses (Continued)

	Member	Sec		Torque[lb-ft]	LC	Torsion Shear[ksi]	LC	y-y Warp Shear[ksi]	z-z Warp Shear[ksi]	z-Top Warp Bend[ksi]	z-Bot Warp Bend[ksi]
267		4	max	27.376	6-33	0.724	6-33	NC	NC	NC	NC
268			min	-37.861	6-21	-1.001	6-21	NC	NC	NC	NC
269		5	max	27.376	6-33	0.724	6-33	NC	NC	NC	NC
270			min	-37.861	6-21	-1.001	6-21	NC	NC	NC	NC
271	M28	1	max	34.594	6-1	0.915	6-1	NC	NC	NC	NC
272			min	-34.594	6-21	-0.915	6-21	NC	NC	NC	NC
273		2	max	34.594	6-1	0.915	6-1	NC	NC	NC	NC
274			min	-34.594	6-21	-0.915	6-21	NC	NC	NC	NC
275		3	max	34.594	6-1	0.915	6-1	NC	NC	NC	NC
276			min	-34.594	6-21	-0.915	6-21	NC	NC	NC	NC
277		4	max	34.594	6-1	0.915	6-1	NC	NC	NC	NC
278			min	-34.594	6-21	-0.915	6-21	NC	NC	NC	NC
279		5	max	34.594	6-1	0.915	6-1	NC	NC	NC	NC
280			min	-34.594	6-21	-0.915	6-21	NC	NC	NC	NC

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
1	M1	1	max	0.002	6-40	-0.009	6-40	0.028	5-19	0.049	6-40	-0.049	6-40	1.495	6-21	0.932	6-7
2			min	0.002	1	-0.009	1	-0.326	6-21	0.049	1	-0.049	1	-0.932	6-7	-1.495	6-21
3		2	max	0.005	6-40	-0.001	6-40	0.011	6-1	0.016	6-40	-0.016	6-40	0.292	5-21	2.223	6-31
4			min	0.005	1	-0.001	1	-0.317	5-21	0.016	1	-0.016	1	-2.223	6-31	-0.292	5-21
5		3	max	0.007	6-40	-0.001	6-40	0.011	6-1	0.002	6-40	-0.002	6-40	0	4-40	6.631	6-21
6			min	0.007	1	-0.001	1	-0.317	5-21	0.002	1	-0.002	1	-6.631	6-21	0	1
7		4	max	0.008	6-40	-0.001	6-40	0.011	6-1	-0.011	6-40	0.011	6-40	0	4-40	11.399	6-21
8			min	0.008	1	-0.001	1	-0.317	5-21	-0.011	1	0.011	1	-11.399	6-21	0	1
9		5	max	0.011	6-40	-0.005	6-40	0.015	6-1	0.008	6-40	-0.008	6-40	0	4-40	15.784	6-21
10			min	0.011	1	-0.005	1	-0.323	5-21	0.008	1	-0.008	1	-15.784	6-21	0	1
11	M2	1	max	0.002	6-40	0.005	6-40	0.009	6-21	-0.071	6-40	0.071	6-40	0.32	5-6	0.318	6-21
12			min	0.002	1	0.005	1	-0.007	6-6	-0.071	1	0.071	1	-0.318	6-21	-0.32	5-6
13		2	max	0.002	6-40	0.003	6-40	0.009	6-21	0.008	6-40	-0.008	6-40	0.183	5-36	0.161	5-15
14			min	0.002	1	0.003	1	-0.007	6-6	0.008	1	-0.008	1	-0.161	5-15	-0.183	5-36
15		3	max	0.002	6-40	0	6-40	0.009	6-21	0.035	6-40	-0.035	6-40	0.05	6-21	0.182	5-15
16			min	0.002	1	0	1	-0.007	6-6	0.035	1	-0.035	1	-0.182	5-15	-0.05	6-21
17		4	max	0.002	6-40	-0.002	6-40	0.009	6-21	0.012	6-40	-0.012	6-40	0.234	6-21	0.204	5-15
18			min	0.002	1	-0.002	1	-0.007	6-6	0.012	1	-0.012	1	-0.204	5-15	-0.234	6-21
19		5	max	0.002	6-40	-0.005	6-40	0.009	6-21	-0.062	6-40	0.062	6-40	0.419	6-21	0.277	6-33
20			min	0.002	1	-0.005	1	-0.007	6-6	-0.062	1	0.062	1	-0.277	6-33	-0.419	6-21
21	M3	1	max	0.006	6-40	0.006	6-40	0.041	5-30	-0.1	6-40	0.1	6-40	4.241	6-26	3.355	5-12
22			min	0.006	1	0.006	1	-0.461	6-11	-0.1	1	0.1	1	-3.355	5-12	-4.241	6-26
23		2	max	0.006	6-40	0.003	6-40	0.092	6-29	0.01	6-40	-0.01	6-40	1.418	6-21	6.917	6-13
24			min	0.006	1	0.003	1	-0.391	6-13	0.01	1	-0.01	1	-6.917	6-13	-1.418	6-21
25		3	max	0.006	6-40	0	6-40	0.24	6-26	0.05	6-40	-0.05	6-40	0.753	6-38	8.318	6-26
26			min	0.006	1	0	1	-0.232	6-16	0.05	1	-0.05	1	-8.318	6-26	-0.753	6-38
27		4	max	0.006	6-40	-0.003	6-40	0.351	6-24	0.019	6-40	-0.019	6-40	0.693	6-37	5.921	6-18
28			min	0.006	1	-0.003	1	-0.125	6-18	0.019	1	-0.019	1	-5.921	6-18	-0.693	6-37
29		5	max	0.006	6-40	-0.006	6-40	0.469	6-20	-0.083	6-40	0.083	6-40	3.616	6-16	2.958	5-18
30			min	0.006	1	-0.006	1	-0.042	6-21	-0.083	1	0.083	1	-2.958	5-18	-3.616	6-16
31	M4	1	max	0.006	6-40	0.006	6-40	0.042	6-1	-0.083	6-40	0.083	6-40	3.616	6-36	2.958	5-38
32			min	0.006	1	0.006	1	-0.469	6-40	-0.083	1	0.083	1	-2.958	5-38	-3.616	6-36
33		2	max	0.006	6-40	0.003	6-40	0.125	6-38	0.019	6-40	-0.019	6-40	0.693	6-17	5.921	6-38
34			min	0.006	1	0.003	1	-0.351	6-4	0.019	1	-0.019	1	-5.921	6-38	-0.693	6-17
35		3	max	0.006	6-40	0	6-40	0.232	6-36	0.05	6-40	-0.05	6-40	0.753	6-18	8.318	6-6
36			min	0.006	1	0	1	-0.24	6-6	0.05	1	-0.05	1	-8.318	6-6	-0.753	6-18
37		4	max	0.006	6-40	-0.003	6-40	0.391	6-33	0.01	6-40	-0.01	6-40	1.418	6-1	6.917	6-33
38			min	0.006	1	-0.003	1	-0.092	6-9	0.01	1	-0.01	1	-6.917	6-33	-1.418	6-1

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
39		5	max	0.006	6-40	-0.006	6-40	0.461	6-31	-0.1	6-40	0.1	6-40	4.241	6-6	3.355	5-32
40			min	0.006	1	-0.006	1	-0.041	5-10	-0.1	1	0.1	1	-3.355	5-32	-4.241	6-6
41	M5	1	max	0.011	6-40	-0.005	6-40	0.015	6-21	-0.008	6-40	0.008	6-40	15.784	6-1	0	4-40
42			min	0.011	1	-0.005	1	-0.323	5-1	-0.008	1	0.008	1	0	1	-15.784	6-1
43		2	max	0.008	6-40	-0.001	6-40	0.011	6-21	0.011	6-40	-0.011	6-40	11.399	6-1	0	4-40
44			min	0.008	1	-0.001	1	-0.317	5-1	0.011	1	-0.011	1	0	1	-11.399	6-1
45		3	max	0.007	6-40	-0.001	6-40	0.011	6-21	-0.002	6-40	0.002	6-40	6.631	6-1	0	4-40
46			min	0.007	1	-0.001	1	-0.317	5-1	-0.002	1	0.002	1	0	1	-6.631	6-1
47		4	max	0.005	6-40	-0.001	6-40	0.011	6-21	-0.016	6-40	0.016	6-40	2.223	6-11	0.292	5-1
48			min	0.005	1	-0.001	1	-0.317	5-1	-0.016	1	0.016	1	-0.292	5-1	-2.223	6-11
49		5	max	0.002	6-40	-0.009	6-40	0.028	5-39	-0.049	6-40	0.049	6-40	0.932	6-27	1.495	6-1
50			min	0.002	1	-0.009	1	-0.326	6-1	-0.049	1	0.049	1	-1.495	6-1	-0.932	6-27
51	M6	1	max	0.005	6-40	0	6-40	0.052	5-11	0	6-40	0	6-40	1.5	6-11	0.753	6-21
52			min	0.005	1	0	1	-0.29	6-11	0	1	0	1	-0.753	6-21	-1.5	6-11
53		2	max	0.01	6-40	0	6-40	0	4-40	0	6-40	0	6-40	0.822	5-11	2.222	6-1
54			min	0.01	1	0	1	-0.259	5-31	0	1	0	1	-2.222	6-1	-0.822	5-11
55		3	max	0.011	6-40	0	6-40	0	4-40	0	6-40	0	6-40	0	4-40	4.761	6-31
56			min	0.011	1	0	1	-0.259	5-31	0	1	0	1	-4.761	6-31	0	1
57		4	max	0.012	6-40	0	6-40	0	4-40	0	6-40	0	6-40	0	4-40	8.499	6-31
58			min	0.012	1	0	1	-0.259	5-31	0	1	0	1	-8.499	6-31	0	1
59		5	max	0.018	6-40	0	6-40	0	4-40	0	6-40	0	6-40	0	4-40	11.756	6-31
60			min	0.018	1	0	1	-0.265	5-31	0	1	0	1	-11.756	6-31	0	1
61	M7	1	max	0.002	6-40	0.005	6-40	0.007	6-26	-0.062	6-40	0.062	6-40	0.419	6-1	0.277	6-13
62			min	0.002	1	0.005	1	-0.009	6-1	-0.062	1	0.062	1	-0.277	6-13	-0.419	6-1
63		2	max	0.002	6-40	0.002	6-40	0.007	6-26	0.012	6-40	-0.012	6-40	0.234	6-1	0.204	5-35
64			min	0.002	1	0.002	1	-0.009	6-1	0.012	1	-0.012	1	-0.204	5-35	-0.234	6-1
65		3	max	0.002	6-40	0	6-40	0.007	6-26	0.035	6-40	-0.035	6-40	0.05	6-1	0.182	5-35
66			min	0.002	1	0	1	-0.009	6-1	0.035	1	-0.035	1	-0.182	5-35	-0.05	6-1
67		4	max	0.002	6-40	-0.003	6-40	0.007	6-26	0.008	6-40	-0.008	6-40	0.183	5-16	0.161	5-35
68			min	0.002	1	-0.003	1	-0.009	6-1	0.008	1	-0.008	1	-0.161	5-35	-0.183	5-16
69		5	max	0.002	6-40	-0.005	6-40	0.007	6-26	-0.071	6-40	0.071	6-40	0.32	5-26	0.318	6-1
70			min	0.002	1	-0.005	1	-0.009	6-1	-0.071	1	0.071	1	-0.318	6-1	-0.32	5-26
71	M8	1	max	0.002	6-40	0.006	6-40	0.044	6-1	-0.08	6-40	0.08	6-40	3.141	6-6	1.924	6-1
72			min	0.002	1	0.006	1	-0.465	6-40	-0.08	1	0.08	1	-1.924	6-1	-3.141	6-6
73		2	max	0.002	6-40	0.003	6-40	0.135	6-38	0.021	6-40	-0.021	6-40	0.827	6-15	6.404	6-38
74			min	0.002	1	0.003	1	-0.341	6-4	0.021	1	-0.021	1	-6.404	6-38	-0.827	6-15
75		3	max	0.002	6-40	0	6-40	0.238	6-36	0.051	6-40	-0.051	6-40	0.95	6-16	8.476	6-6
76			min	0.002	1	0	1	-0.236	6-6	0.051	1	-0.051	1	-8.476	6-6	-0.95	6-16
77		4	max	0.002	6-40	-0.003	6-40	0.387	6-33	0.01	6-40	-0.01	6-40	1.33	6-1	6.984	6-33
78			min	0.002	1	-0.003	1	-0.096	6-9	0.01	1	-0.01	1	-6.984	6-33	-1.33	6-1
79		5	max	0.002	6-40	-0.006	6-40	0.458	6-31	-0.101	6-40	0.101	6-40	4.292	6-36	2.54	6-11
80			min	0.002	1	-0.006	1	-0.041	6-11	-0.101	1	0.101	1	-2.54	6-11	-4.292	6-36
81	M9	1	max	0.002	6-40	0.006	6-40	0.041	6-31	-0.101	6-40	0.101	6-40	4.292	6-16	2.54	6-31
82			min	0.002	1	0.006	1	-0.458	6-11	-0.101	1	0.101	1	-2.54	6-31	-4.292	6-16
83		2	max	0.002	6-40	0.003	6-40	0.096	6-29	0.01	6-40	-0.01	6-40	1.33	6-21	6.984	6-13
84			min	0.002	1	0.003	1	-0.387	6-13	0.01	1	-0.01	1	-6.984	6-13	-1.33	6-21
85		3	max	0.002	6-40	0	6-40	0.236	6-26	0.051	6-40	-0.051	6-40	0.95	6-36	8.476	6-26
86			min	0.002	1	0	1	-0.238	6-16	0.051	1	-0.051	1	-8.476	6-26	-0.95	6-36
87		4	max	0.002	6-40	-0.003	6-40	0.341	6-24	0.021	6-40	-0.021	6-40	0.827	6-35	6.404	6-18
88			min	0.002	1	-0.003	1	-0.135	6-18	0.021	1	-0.021	1	-6.404	6-18	-0.827	6-35
89		5	max	0.002	6-40	-0.006	6-40	0.465	6-20	-0.08	6-40	0.08	6-40	3.141	6-26	1.924	6-21
90			min	0.002	1	-0.006	1	-0.044	6-21	-0.08	1	0.08	1	-1.924	6-21	-3.141	6-26
91	M10	1	max	0.001	6-40	0.005	6-40	0.006	6-21	-0.07	6-40	0.07	6-40	0.367	4-35	0.237	4-28
92			min	0.001	1	0.005	1	-0.006	4-35	-0.07	1	0.07	1	-0.237	4-28	-0.367	4-35
93		2	max	0.001	6-40	0.003	6-40	0.006	6-21	0.008	6-40	-0.008	6-40	0.246	4-35	0.23	4-14

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
94			min	0.001	1	0.003	1	-0.006	4-35	0.008	1	-0.008	1	-0.23	4-14	-0.246	4-35
95		3	max	0.001	6-40	0	6-40	0.006	6-21	0.035	6-40	-0.035	6-40	0.125	4-35	0.266	4-26
96			min	0.001	1	0	1	-0.006	4-35	0.035	1	-0.035	1	-0.266	4-26	-0.125	4-35
97		4	max	0.001	6-40	-0.002	6-40	0.006	6-21	0.011	6-40	-0.011	6-40	0.16	6-21	0.355	4-25
98			min	0.001	1	-0.002	1	-0.006	4-35	0.011	1	-0.011	1	-0.355	4-25	-0.16	6-21
99		5	max	0.001	6-40	-0.005	6-40	0.006	6-21	-0.063	6-40	0.063	6-40	0.28	6-21	0.46	4-17
100			min	0.001	1	-0.005	1	-0.006	4-35	-0.063	1	0.063	1	-0.46	4-17	-0.28	6-21
101	M11	1	max	0.005	6-40	0	6-40	0.021	4-11	0	6-40	0	6-40	1.78	6-11	0.894	6-21
102			min	0.005	1	0	1	-0.287	6-11	0	1	0	1	-0.894	6-21	-1.78	6-11
103		2	max	0.006	6-40	0	6-40	0.021	4-11	0	6-40	0	6-40	0.572	4-11	2.005	6-11
104			min	0.006	1	0	1	-0.287	6-11	0	1	0	1	-2.005	6-11	-0.572	4-11
105		3	max	0.011	6-40	0	6-40	0	5-40	0	6-40	0	6-40	1.434	4-31	5.79	6-11
106			min	0.011	1	0	1	-0.322	4-31	0	1	0	1	-5.79	6-11	-1.434	4-31
107		4	max	0.012	6-40	0	6-40	0	5-40	0	6-40	0	6-40	0	5-40	7.87	6-11
108			min	0.012	1	0	1	-0.322	4-31	0	1	0	1	-7.87	6-11	0	1
109		5	max	0.018	6-40	0	6-40	0	5-40	0	6-40	0	6-40	0	5-40	10.989	6-11
110			min	0.018	1	0	1	-0.323	4-11	0	1	0	1	-10.989	6-11	0	1
111	M12	1	max	0.001	6-40	0.005	6-40	0.006	4-15	-0.063	6-40	0.063	6-40	0.28	6-1	0.46	4-37
112			min	0.001	1	0.005	1	-0.006	6-1	-0.063	1	0.063	1	-0.46	4-37	-0.28	6-1
113		2	max	0.001	6-40	0.002	6-40	0.006	4-15	0.011	6-40	-0.011	6-40	0.16	6-1	0.355	4-5
114			min	0.001	1	0.002	1	-0.006	6-1	0.011	1	-0.011	1	-0.355	4-5	-0.16	6-1
115		3	max	0.001	6-40	0	6-40	0.006	4-15	0.035	6-40	-0.035	6-40	0.125	4-15	0.266	4-6
116			min	0.001	1	0	1	-0.006	6-1	0.035	1	-0.035	1	-0.266	4-6	-0.125	4-15
117		4	max	0.001	6-40	-0.003	6-40	0.006	4-15	0.008	6-40	-0.008	6-40	0.246	4-15	0.23	4-34
118			min	0.001	1	-0.003	1	-0.006	6-1	0.008	1	-0.008	1	-0.23	4-34	-0.246	4-15
119		5	max	0.001	6-40	-0.005	6-40	0.006	4-15	-0.07	6-40	0.07	6-40	0.367	4-15	0.237	4-8
120			min	0.001	1	-0.005	1	-0.006	6-1	-0.07	1	0.07	1	-0.237	4-8	-0.367	4-15
121	M13	1	max	0.01	6-40	-0.005	6-40	0.019	4-26	-0.003	6-40	0.003	6-40	14.104	6-1	0	5-40
122			min	0.01	1	-0.005	1	-0.344	4-1	-0.003	1	0.003	1	0	1	-14.104	6-1
123		2	max	0.007	6-40	-0.002	6-40	0.014	4-26	0.008	6-40	-0.008	6-40	10.211	6-1	0	5-40
124			min	0.007	1	-0.002	1	-0.342	4-1	0.008	1	-0.008	1	0	1	-10.211	6-1
125		3	max	0.006	6-40	-0.002	6-34	0.014	4-26	0.03	6-40	-0.03	6-40	7.124	6-1	0.969	4-1
126			min	0.006	1	-0.003	1	-0.342	4-1	0.03	1	-0.03	1	-0.969	4-1	-7.124	6-1
127		4	max	0.003	6-40	-0.003	6-40	0.013	4-3	-0.009	6-40	0.009	6-40	2.845	6-1	0.424	4-1
128			min	0.003	1	-0.003	1	-0.325	6-1	-0.009	1	0.009	1	-0.424	4-1	-2.845	6-1
129		5	max	0.002	6-40	-0.003	6-40	0.013	4-3	-0.047	6-40	0.047	6-40	0.992	6-13	1.434	6-1
130			min	0.002	1	-0.003	1	-0.325	6-1	-0.047	1	0.047	1	-1.434	6-1	-0.992	6-13
131	M14	1	max	0.002	6-40	-0.003	6-40	0.013	4-23	0.047	6-40	-0.047	6-40	1.434	6-21	0.992	6-33
132			min	0.002	1	-0.003	1	-0.325	6-21	0.047	1	-0.047	1	-0.992	6-33	-1.434	6-21
133		2	max	0.003	6-40	-0.003	6-40	0.013	4-23	0.009	6-40	-0.009	6-40	0.424	4-21	2.845	6-21
134			min	0.003	1	-0.003	1	-0.325	6-21	0.009	1	-0.009	1	-2.845	6-21	-0.424	4-21
135		3	max	0.006	6-40	-0.002	6-40	0.014	4-6	-0.03	6-40	0.03	6-40	0.969	4-21	7.124	6-21
136			min	0.006	1	-0.003	1	-0.342	4-21	-0.03	1	0.03	1	-7.124	6-21	-0.969	4-21
137		4	max	0.007	6-40	-0.002	6-40	0.014	4-6	-0.008	6-40	0.008	6-40	0	5-40	10.211	6-21
138			min	0.007	1	-0.002	1	-0.342	4-21	-0.008	1	0.008	1	-10.211	6-21	0	1
139		5	max	0.01	6-40	-0.005	6-40	0.019	4-6	0.003	6-40	-0.003	6-40	0	5-40	14.104	6-21
140			min	0.01	1	-0.005	1	-0.344	4-21	0.003	1	-0.003	1	-14.104	6-21	0	1
141	M15	1	max	0.005	6-40	0.006	6-40	0.007	6-21	-0.096	6-40	0.096	6-40	0.355	6-1	0.355	6-21
142			min	0.005	1	0.006	1	-0.007	6-1	-0.096	1	0.096	1	-0.355	6-21	-0.355	6-1
143		2	max	0.005	6-40	0.003	6-40	0.007	6-21	0.016	6-40	-0.016	6-40	0.177	6-1	0.249	5-7
144			min	0.005	1	0.003	1	-0.007	6-1	0.016	1	-0.016	1	-0.249	5-7	-0.177	6-1
145		3	max	0.005	6-40	0	6-40	0.007	6-21	0.053	6-40	-0.053	6-40	0	6-40	0.249	5-27
146			min	0.005	1	0	1	-0.007	6-1	0.053	1	-0.053	1	-0.249	5-7	0	1
147		4	max	0.005	6-40	-0.003	6-40	0.007	6-21	0.016	6-40	-0.016	6-40	0.177	6-21	0.249	5-27
148			min	0.005	1	-0.003	1	-0.007	6-1	0.016	1	-0.016	1	-0.249	5-27	-0.177	6-21

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
149		5	max	0.005	6-40	-0.006	6-40	0.007	6-21	-0.096	6-40	0.096	6-40	0.355	6-21	0.355	6-1
150			min	0.005	1	-0.006	1	-0.007	6-1	-0.096	1	0.096	1	-0.355	6-1	-0.355	6-21
151	M16	1	max	0.003	6-40	-0.015	6-40	0.019	5-23	0.078	6-40	-0.078	6-40	1.381	6-21	1.381	6-1
152			min	0.003	1	-0.015	1	-0.339	6-21	0.078	1	-0.078	1	-1.381	6-1	-1.381	6-21
153		2	max	0.007	6-40	-0.001	6-40	0	6-40	0.02	6-40	-0.02	6-40	0	6-40	3.132	6-1
154			min	0.007	1	-0.001	1	-0.335	5-21	0.02	1	-0.02	1	-3.132	6-1	0	1
155		3	max	0.008	6-40	-0.001	6-40	0	6-40	0.002	6-40	-0.002	6-40	0	6-40	7.421	6-21
156			min	0.008	1	-0.001	1	-0.335	5-21	0.002	1	-0.002	1	-7.421	6-21	0	1
157		4	max	0.009	6-40	-0.001	6-40	0	6-40	-0.016	6-40	0.016	6-40	0	6-40	12.509	6-21
158			min	0.009	1	-0.001	1	-0.335	5-21	-0.016	1	0.016	1	-12.509	6-21	0	1
159		5	max	0.013	6-40	-0.009	6-40	0	6-40	0.007	6-40	-0.007	6-40	0	6-40	17.218	6-21
160			min	0.013	1	-0.009	1	-0.339	5-21	0.007	1	-0.007	1	-17.218	6-21	0	1
161	M17	1	max	0.011	6-40	0.007	6-40	0.029	5-31	-0.132	6-40	0.132	6-40	4.933	6-28	3.215	5-4
162			min	0.011	1	0.007	1	-0.478	6-32	-0.132	1	0.132	1	-3.215	5-4	-4.933	6-28
163		2	max	0.011	6-40	0.003	6-40	0.107	6-30	0.024	6-40	-0.024	6-40	0.72	6-21	7.448	6-4
164			min	0.011	1	0.003	1	-0.392	6-4	0.024	1	-0.024	1	-7.448	6-4	-0.72	6-21
165		3	max	0.011	6-40	0	6-40	0.248	6-27	0.075	6-40	-0.075	6-40	0	6-40	10.069	6-7
166			min	0.011	1	0	1	-0.248	6-7	0.075	1	-0.075	1	-10.069	6-7	0	1
167		4	max	0.011	6-40	-0.003	6-40	0.392	6-24	0.024	6-40	-0.024	6-40	0.72	6-1	7.448	6-24
168			min	0.011	1	-0.003	1	-0.107	6-10	0.024	1	-0.024	1	-7.448	6-24	-0.72	6-1
169		5	max	0.011	6-40	-0.007	6-40	0.478	6-12	-0.132	6-40	0.132	6-40	4.933	6-8	3.215	5-24
170			min	0.011	1	-0.007	1	-0.029	5-11	-0.132	1	0.132	1	-3.215	5-24	-4.933	6-8
171	M18	1	max	0.003	6-40	0.015	6-40	0.019	5-3	-0.078	6-40	0.078	6-40	1.381	6-1	1.381	6-21
172			min	0.003	1	0.015	1	-0.339	6-1	-0.078	1	0.078	1	-1.381	6-21	-1.381	6-1
173		2	max	0.007	6-40	0.001	6-40	0	6-40	-0.02	6-40	0.02	6-40	0	6-40	3.132	6-21
174			min	0.007	1	0.001	1	-0.335	5-1	-0.02	1	0.02	1	-3.132	6-21	0	1
175		3	max	0.008	6-40	0.001	6-40	0	6-40	-0.002	6-40	0.002	6-40	0	6-40	7.421	6-1
176			min	0.008	1	0.001	1	-0.335	5-1	-0.002	1	0.002	1	-7.421	6-1	0	1
177		4	max	0.009	6-40	0.001	6-40	0	6-40	0.016	6-40	-0.016	6-40	0	6-40	12.509	6-1
178			min	0.009	1	0.001	1	-0.335	5-1	0.016	1	-0.016	1	-12.509	6-1	0	1
179		5	max	0.013	6-40	0.009	6-40	0	6-40	-0.007	6-40	0.007	6-40	0	6-40	17.218	6-1
180			min	0.013	1	0.009	1	-0.339	5-1	-0.007	1	0.007	1	-17.218	6-1	0	1
181	M19	1	max	0.003	6-40	0.006	6-40	0.005	6-21	-0.096	6-40	0.096	6-40	0.229	6-1	0.482	4-29
182			min	0.003	1	0.006	1	-0.005	6-1	-0.096	1	0.096	1	-0.482	4-29	-0.229	6-1
183		2	max	0.003	6-40	0.003	6-40	0.005	6-21	0.015	6-40	-0.015	6-40	0.115	6-1	0.412	4-28
184			min	0.003	1	0.003	1	-0.005	6-1	0.015	1	-0.015	1	-0.412	4-28	-0.115	6-1
185		3	max	0.003	6-40	0	6-40	0.005	6-21	0.052	6-40	-0.052	6-40	0	6-40	0.379	4-27
186			min	0.003	1	0	1	-0.005	6-1	0.052	1	-0.052	1	-0.379	4-27	0	1
187		4	max	0.003	6-40	-0.003	6-40	0.005	6-21	0.015	6-40	-0.015	6-40	0.115	6-21	0.412	4-8
188			min	0.003	1	-0.003	1	-0.005	6-1	0.015	1	-0.015	1	-0.412	4-8	-0.115	6-21
189		5	max	0.003	6-40	-0.006	6-40	0.005	6-21	-0.096	6-40	0.096	6-40	0.229	6-21	0.482	4-9
190			min	0.003	1	-0.006	1	-0.005	6-1	-0.096	1	0.096	1	-0.482	4-9	-0.229	6-21
191	M20	1	max	0.003	6-40	-0.005	6-40	0.01	4-23	0.076	6-40	-0.076	6-40	1.301	6-21	1.301	6-1
192			min	0.003	1	-0.005	1	-0.337	6-21	0.076	1	-0.076	1	-1.301	6-1	-1.301	6-21
193		2	max	0.004	6-40	-0.005	6-40	0.01	4-23	0.015	6-40	-0.015	6-40	0.357	4-21	3.14	6-21
194			min	0.004	1	-0.005	1	-0.337	6-21	0.015	1	-0.015	1	-3.14	6-21	-0.357	4-21
195		3	max	0.007	6-40	-0.003	6-32	0	6-40	-0.047	6-40	0.047	6-40	0.814	4-21	7.582	6-21
196			min	0.007	1	-0.005	1	-0.348	4-21	-0.047	1	0.047	1	-7.582	6-21	-0.814	4-21
197		4	max	0.008	6-40	-0.003	6-40	0	6-40	-0.012	6-40	0.012	6-40	0	6-40	10.957	6-21
198			min	0.008	1	-0.003	1	-0.348	4-21	-0.012	1	0.012	1	-10.957	6-21	0	1
199		5	max	0.012	6-40	-0.008	6-40	0	6-40	0.001	6-40	-0.001	6-40	0	6-40	15.063	6-21
200			min	0.012	1	-0.008	1	-0.349	4-21	0.001	1	-0.001	1	-15.063	6-21	0	1
201	M21	1	max	0.003	6-40	0.007	6-40	0.026	6-1	-0.129	6-40	0.129	6-40	4.437	6-6	1.78	4-29
202			min	0.003	1	0.007	1	-0.473	6-32	-0.129	1	0.129	1	-1.78	4-29	-4.437	6-6
203		2	max	0.003	6-40	0.003	6-40	0.114	6-30	0.027	6-40	-0.027	6-40	0.783	6-21	7.928	6-4

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
204			min	0.003	1	0.003	1	-0.385	6-4	0.027	1	-0.027	1	-7.928	6-4	-0.783	6-21
205		3	max	0.003	6-40	0	6-40	0.249	6-27	0.078	6-40	-0.078	6-40	0	6-40	10.422	6-7
206			min	0.003	1	0	1	-0.249	6-7	0.078	1	-0.078	1	-10.422	6-7	0	1
207		4	max	0.003	6-40	-0.003	6-40	0.385	6-24	0.027	6-40	-0.027	6-40	0.783	6-1	7.928	6-24
208			min	0.003	1	-0.003	1	-0.114	6-10	0.027	1	-0.027	1	-7.928	6-24	-0.783	6-1
209		5	max	0.003	6-40	-0.007	6-40	0.473	6-12	-0.129	6-40	0.129	6-40	4.437	6-26	1.78	4-9
210			min	0.003	1	-0.007	1	-0.026	6-21	-0.129	1	0.129	1	-1.78	4-9	-4.437	6-26
211	M22	1	max	0.003	6-40	0.005	6-40	0.01	4-3	-0.076	6-40	0.076	6-40	1.301	6-1	1.301	6-21
212			min	0.003	1	0.005	1	-0.337	6-1	-0.076	1	0.076	1	-1.301	6-21	-1.301	6-1
213		2	max	0.004	6-40	0.005	6-40	0.01	4-3	-0.015	6-40	0.015	6-40	0.357	4-1	3.14	6-1
214			min	0.004	1	0.005	1	-0.337	6-1	-0.015	1	0.015	1	-3.14	6-1	-0.357	4-1
215		3	max	0.007	6-40	0.005	6-40	0	6-40	0.047	6-40	-0.047	6-40	0.814	4-1	7.582	6-1
216			min	0.007	1	0.003	4-1	-0.348	4-1	0.047	1	-0.047	1	-7.582	6-1	-0.814	4-1
217		4	max	0.008	6-40	0.003	6-40	0	6-40	0.012	6-40	-0.012	6-40	0	6-40	10.957	6-1
218			min	0.008	1	0.003	1	-0.348	4-1	0.012	1	-0.012	1	-10.957	6-1	0	1
219		5	max	0.012	6-40	0.008	6-40	0	6-40	-0.001	6-40	0.001	6-40	0	6-40	15.063	6-1
220			min	0.012	1	0.008	1	-0.349	4-1	-0.001	1	0.001	1	-15.063	6-1	0	1
221	M23	1	max	-0.006	6-40	0.006	6-40	0.037	6-30	-0.098	6-40	0.098	6-40	4.577	5-15	3.305	6-29
222			min	-0.006	1	0.006	1	-0.477	5-11	-0.098	1	0.098	1	-3.305	6-29	-4.577	5-15
223		2	max	-0.006	6-40	0.003	6-40	0.078	5-29	0.011	6-40	-0.011	6-40	0.942	6-21	6.297	5-13
224			min	-0.006	1	0.003	1	-0.401	5-13	0.011	1	-0.011	1	-6.297	5-13	-0.942	6-21
225		3	max	-0.006	6-40	0	6-40	0.241	5-26	0.049	6-40	-0.049	6-40	0.638	6-40	7.957	5-26
226			min	-0.006	1	0	1	-0.226	5-16	0.049	1	-0.049	1	-7.957	5-26	-0.638	6-40
227		4	max	-0.006	6-40	-0.003	6-40	0.363	5-24	0.017	6-40	-0.017	6-40	0.455	6-5	5.338	5-18
228			min	-0.006	1	-0.003	1	-0.109	5-18	0.017	1	-0.017	1	-5.338	5-18	-0.455	6-5
229		5	max	-0.006	6-40	-0.006	6-40	0.489	5-20	-0.087	6-40	0.087	6-40	4.278	5-25	2.677	6-24
230			min	-0.006	1	-0.006	1	-0.034	6-19	-0.087	1	0.087	1	-2.677	6-24	-4.278	5-25
231	M24	1	max	-0.006	6-40	0.006	6-40	0.034	6-39	-0.087	6-40	0.087	6-40	4.278	5-5	2.677	6-4
232			min	-0.006	1	0.006	1	-0.489	5-40	-0.087	1	0.087	1	-2.677	6-4	-4.278	5-5
233		2	max	-0.006	6-40	0.003	6-40	0.109	5-38	0.017	6-40	-0.017	6-40	0.455	6-25	5.338	5-38
234			min	-0.006	1	0.003	1	-0.363	5-4	0.017	1	-0.017	1	-5.338	5-38	-0.455	6-25
235		3	max	-0.006	6-40	0	6-40	0.226	5-36	0.049	6-40	-0.049	6-40	0.638	6-20	7.957	5-6
236			min	-0.006	1	0	1	-0.241	5-6	0.049	1	-0.049	1	-7.957	5-6	-0.638	6-20
237		4	max	-0.006	6-40	-0.003	6-40	0.401	5-33	0.011	6-40	-0.011	6-40	0.942	6-1	6.297	5-33
238			min	-0.006	1	-0.003	1	-0.078	5-9	0.011	1	-0.011	1	-6.297	5-33	-0.942	6-1
239		5	max	-0.006	6-40	-0.006	6-40	0.477	5-31	-0.098	6-40	0.098	6-40	4.577	5-35	3.305	6-9
240			min	-0.006	1	-0.006	1	-0.037	6-10	-0.098	1	0.098	1	-3.305	6-9	-4.577	5-35
241	M25	1	max	-0.01	6-40	0.007	6-40	0.024	6-3	-0.134	6-40	0.134	6-40	5.56	5-28	3.015	6-29
242			min	-0.01	1	0.007	1	-0.491	5-32	-0.134	1	0.134	1	-3.015	6-29	-5.56	5-28
243		2	max	-0.01	6-40	0.003	6-40	0.096	5-30	0.021	6-40	-0.021	6-40	0.356	6-21	6.873	5-4
244			min	-0.01	1	0.003	1	-0.402	5-4	0.021	1	-0.021	1	-6.873	5-4	-0.356	6-21
245		3	max	-0.01	6-40	0	6-40	0.247	5-27	0.073	6-40	-0.073	6-40	0	6-40	9.695	5-7
246			min	-0.01	1	0	1	-0.247	5-7	0.073	1	-0.073	1	-9.695	5-7	0	1
247		4	max	-0.01	6-40	-0.003	6-40	0.402	5-24	0.021	6-40	-0.021	6-40	0.356	6-1	6.873	5-24
248			min	-0.01	1	-0.003	1	-0.096	5-10	0.021	1	-0.021	1	-6.873	5-24	-0.356	6-1
249		5	max	-0.01	6-40	-0.007	6-40	0.491	5-12	-0.134	6-40	0.134	6-40	5.56	5-8	3.015	6-9
250			min	-0.01	1	-0.007	1	-0.024	6-23	-0.134	1	0.134	1	-3.015	6-9	-5.56	5-8
251	M26	1	max	0	6-40	0.006	6-40	0.024	4-27	-0.091	6-40	0.091	6-40	4.849	4-37	1.379	6-37
252			min	0	1	0.006	1	-0.506	4-40	-0.091	1	0.091	1	-1.379	6-37	-4.849	4-37
253		2	max	0	6-40	0.003	6-40	0.1	4-38	0.014	6-40	-0.014	6-40	0.139	6-25	4.876	4-38
254			min	0	1	0.003	1	-0.368	4-4	0.014	1	-0.014	1	-4.876	4-38	-0.139	6-25
255		3	max	0	6-40	0	6-40	0.227	4-36	0.048	6-40	-0.048	6-40	0.692	4-27	7.315	4-6
256			min	0	1	0	1	-0.235	4-6	0.048	1	-0.048	1	-7.315	4-6	-0.692	4-27
257		4	max	0	6-40	-0.003	6-40	0.417	4-33	0.011	6-40	-0.011	6-40	1.276	4-27	5.137	4-33
258			min	0	1	-0.003	1	-0.059	4-9	0.011	1	-0.011	1	-5.137	4-33	-1.276	4-27

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z Shear[ksi]	LC	y-Top[ksi]	LC	y-Bot[ksi]	LC	z-Top[ksi]	LC	z-Bot[ksi]	LC
259		5	max	0	6-40	-0.006	6-40	0.5	4-31	-0.096	6-40	0.096	6-40	5.748	4-7	1.237	6-9
260			min	0	1	-0.006	1	-0.01	6-32	-0.096	1	0.096	1	-1.237	6-9	-5.748	4-7
261	M27	1	max	0	6-40	0.006	6-40	0.01	6-12	-0.096	6-40	0.096	6-40	5.748	4-27	1.237	6-29
262			min	0	1	0.006	1	-0.5	4-11	-0.096	1	0.096	1	-1.237	6-29	-5.748	4-27
263		2	max	0	6-40	0.003	6-40	0.059	4-29	0.011	6-40	-0.011	6-40	1.276	4-7	5.137	4-13
264			min	0	1	0.003	1	-0.417	4-13	0.011	1	-0.011	1	-5.137	4-13	-1.276	4-7
265		3	max	0	6-40	0	6-40	0.235	4-26	0.048	6-40	-0.048	6-40	0.692	4-7	7.315	4-26
266			min	0	1	0	1	-0.227	4-16	0.048	1	-0.048	1	-7.315	4-26	-0.692	4-7
267		4	max	0	6-40	-0.003	6-40	0.368	4-24	0.014	6-40	-0.014	6-40	0.139	6-5	4.876	4-18
268			min	0	1	-0.003	1	-0.1	4-18	0.014	1	-0.014	1	-4.876	4-18	-0.139	6-5
269		5	max	0	6-40	-0.006	6-40	0.506	4-20	-0.091	6-40	0.091	6-40	4.849	4-17	1.379	6-17
270			min	0	1	-0.006	1	-0.024	4-7	-0.091	1	0.091	1	-1.379	6-17	-4.849	4-17
271	M28	1	max	-0.001	6-40	0.007	6-40	0.009	6-30	-0.136	6-40	0.136	6-40	6.358	4-5	1.582	6-5
272			min	-0.001	1	0.007	1	-0.5	4-32	-0.136	1	0.136	1	-1.582	6-5	-6.358	4-5
273		2	max	-0.001	6-40	0.003	6-40	0.09	4-30	0.019	6-40	-0.019	6-40	0.059	4-21	6.207	4-4
274			min	-0.001	1	0.003	1	-0.408	4-4	0.019	1	-0.019	1	-6.207	4-4	-0.059	4-21
275		3	max	-0.001	6-40	0	6-40	0.247	4-27	0.071	6-40	-0.071	6-40	0	6-40	9.062	4-7
276			min	-0.001	1	0	1	-0.247	4-7	0.071	1	-0.071	1	-9.062	4-7	0	1
277		4	max	-0.001	6-40	-0.003	6-40	0.408	4-24	0.019	6-40	-0.019	6-40	0.059	4-1	6.207	4-24
278			min	-0.001	1	-0.003	1	-0.09	4-10	0.019	1	-0.019	1	-6.207	4-24	-0.059	4-1
279		5	max	-0.001	6-40	-0.007	6-40	0.5	4-12	-0.136	6-40	0.136	6-40	6.358	4-25	1.582	6-25
280			min	-0.001	1	-0.007	1	-0.009	6-10	-0.136	1	0.136	1	-1.582	6-25	-6.358	4-25

Envelope AA ADM1-20: ASD - BUILDING Member Aluminum Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	Pnc/Om[lb]	Pnt/Om[lb]	Mny/Om[lb-ft]	Mnz/Om[lb-ft]	Vny/Om[lb]	Vnz/Om[lb]	Cb	Eqn
1	M1	RT1.5X1.5X.1875	0.745	3.5	6-21	0.191	0.474	z	6-25	8409.157	19226.519	680.827	680.827	4331.52	4331.52	3	H.1-1
2	M2	RT1.5X1.5X0.156	0.023	4.8	6-21	0.035	4.8	z	6-21	3960.539	16343.04	603.094	603.094	3962.88	3962.88	2.341	H.1-1
3	M3	1.500ODX0.188	0.708	2.3	6-26	0.292	4.8		6-20	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
4	M4	1.500ODX0.188	0.709	2.5	6-6	0.292	0		6-40	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
5	M5	RT1.5X1.5X.1875	0.745	0	6-1	0.191	3.5	z	6-5	8409.157	19226.519	680.827	680.827	4331.52	4331.52	3	H.1-1
6	M6	RT1.5X1.5X.1875	0.554	3.5	6-31	0.207	0.474	z	6-7	8409.157	19226.519	680.827	680.827	4331.52	4331.52	1	H.1-1
7	M7	RT1.5X1.5X0.156	0.023	0	6-1	0.035	4.8	z	6-1	3960.539	16343.04	603.094	603.094	3962.88	3962.88	2.341	H.1-1
8	M8	1.500ODX0.188	0.719	2.5	6-6	0.283	0		6-40	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
9	M9	1.500ODX0.188	0.718	2.7	6-16	0.283	4.8		6-20	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
10	M10	RT1.5X1.5X0.156	0.025	4.8	4-17	0.033	4.8	z	6-21	3960.539	16343.04	603.094	603.094	3962.88	3962.88	2.346	H.1-1
11	M11	RT1.5X1.5X.1875	0.518	3	6-11	0.171	1.5	z	6-35	11445.797	19226.519	680.827	680.827	4331.52	4331.52	1	H.1-1
12	M12	RT1.5X1.5X0.156	0.025	0	4-37	0.033	4.8	z	6-1	3960.539	16343.04	603.094	603.094	3962.88	3962.88	2.346	H.1-1
13	M13	RT1.5X1.5X.1875	0.665	0	6-1	0.18	1.5	z	4-5	11445.797	19226.519	680.827	680.827	4331.52	4331.52	1.987	H.1-1
14	M14	RT1.5X1.5X.1875	0.665	3	6-21	0.18	2.656	z	4-25	11445.797	19226.519	680.827	680.827	4331.52	4331.52	1.987	H.1-1
15	M15	RT1.5X1.5X0.156	0.021	5.8	6-21	0.034	5.8	z	6-21	2712.569	16343.04	603.094	603.094	3962.88	3962.88	2.165	H.1-1
16	M16	RT1.5X1.5X.1875	0.812	3.5	6-21	0.253	0.474	z	6-8	8409.157	19226.519	680.827	680.827	4331.52	4331.52	3	H.1-1
17	M17	1.500ODX0.188	0.848	3.021	6-7	0.267	5.8		6-12	1802.132	7515.152	235.524	235.524	2254.545	2254.545	1	H.3-4
18	M18	RT1.5X1.5X.1875	0.812	3.5	6-1	0.253	0.474	z	6-28	8409.157	19226.519	680.827	680.827	4331.52	4331.52	3	H.1-1
19	M19	RT1.5X1.5X0.156	0.027	5.8	4-9	0.03	5.8	y	6-1	2712.569	16343.04	603.094	603.094	3962.88	3962.88	2.213	H.1-1
20	M20	RT1.5X1.5X.1875	0.71	3	6-21	0.242	2.656	z	4-8	11445.797	19226.519	680.827	680.827	4331.52	4331.52	2.023	H.1-1
21	M21	1.500ODX0.188	0.877	2.779	6-27	0.257	0		6-32	1802.132	7515.152	235.524	235.524	2254.545	2254.545	1	H.3-4
22	M22	RT1.5X1.5X.1875	0.71	3	6-1	0.242	2.656	z	4-28	11445.797	19226.519	680.827	680.827	4331.52	4331.52	2.023	H.1-1
23	M23	1.500ODX0.188	0.678	2.3	5-26	0.244	4.8		5-20	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
24	M24	1.500ODX0.188	0.679	2.5	5-6	0.244	0		5-40	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
25	M25	1.500ODX0.188	0.818	2.779	5-27	0.227	5.8		5-12	1802.132	7515.152	235.524	235.524	2254.545	2254.545	1	H.3-4
26	M26	1.500ODX0.188	0.625	2.5	4-6	0.173	4.8		6-1	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
27	M27	1.500ODX0.188	0.624	2.3	4-26	0.173	0		6-21	2631.238	7515.152	238.032	238.032	2254.545	2254.545	1	H.3-4
28	M28	1.500ODX0.188	0.766	2.779	4-27	0.158	5.8		6-1	1802.132	7515.152	235.524	235.524	2254.545	2254.545	1	H.3-4

Member Suggested Designs

	Section Set/Member	Current Shape	Suggested Shape	Controlling Member	Controlling Criteria	Use Suggested?
1	Horiz Guard	RT1.5X1.5X0.156	RT1X1X0.065	M7	Strength	Yes
2	Post 1875 6061-T6	RT1.5X1.5X.1875	RT2X2X0.095	M18	Strength	Yes
3	Handrail	1.500ODX0.188	1.500ODX0.094	M21	Strength	Yes

GUARDRAIL POST DESIGN

VERIFICATION OF POST CAPACITIES

10/16/2024

	6061-T6	6061-T6	6063-T5	6063-T5	6061-T6	6061-T6	6063-T5	6063-T5	6061-T6W	6061-T6W	6063-T5W	6063-T5W	6061-T6W	6061-T6W	6063-T5W	6063-T5W
Ftu	38000	38000	22000	22000	38000	38000	22000	22000	24000	24000	17000	17000	24000	24000	17000	17000
Fty	35000	35000	16000	16000	35000	35000	16000	16000	15000	15000	8000	8000	15000	15000	8000	8000
Height	42	42	42	42	36	36	36	36	42	42	42	42	36	36	36	36
Load	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250
Ma	8400	10500	8400	10500	7200	9000	7200	9000	8400	10500	8400	10500	7200	9000	7200	9000
Rupture																
Omega	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95
Zreq	0.431	0.539	0.745	0.931	0.369	0.462	0.638	0.798	0.683	0.853	0.964	1.204	0.585	0.731	0.826	1.032
Check	OK	NG	NG	NG	OK	OK	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Yeilding																
Omega	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65	1.65
Zreq'd	0.396	0.495	0.866	1.083	0.339	0.424	0.743	0.928	0.924	1.155	1.733	2.166	0.792	0.990	1.485	1.856
Check	OK	NG	NG	NG	OK	OK	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Sreq'd	0.264	0.330	0.578	0.722	0.226	0.283	0.495	0.619	0.616	0.770	1.155	1.444	0.528	0.660	0.990	1.238
Check	OK	OK	NG	NG	OK	OK	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Depth (d)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Width (b)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Thickness	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875	0.1875
d1	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
b1	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125	1.125
Z	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488
S	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385
Mcap	9506	9506	4730	4730	9506	9506	4730	4730	4434	4434	2365	2365	4434	4434	2365	2365
Check	OK	NG	NG	NG	OK	OK	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
Unity	0.88	1.10	1.78	2.22	0.76	0.95	1.52	1.90	1.89	2.37	3.55	4.44	1.62	2.03	3.04	3.81