# STRUCTURAL ANALYSIS REPORT

# *Dish Wireless*

## *Longview Farm Tank*
## KCMCI00312A

## *June 29, 2021*

**SSC Inc.**
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serve solve communicate

# PROJECT DESCRIPTION

Analyze the proposed mount pipes, existing catwalk and water tower structure for the addition of the proposed Dish Wireless loading configuration.

# CODES/REFERENCES

2018 IBC / ASCE 7-16 / 2021 SSC Rev 0 drawings (Carrier Add) / Dish Wireless RFDS dated 06-07-21 / SSC Site Audit dated 06-03-21 / SSC Structural Analysis Report (KC13XC327) dated 11-09-18 / Fullerton Engineering Consultants structural report dated 04-09-01

# ADDRESS

548 SW Tower Park Dr.
Lee's Summit, MO 64081

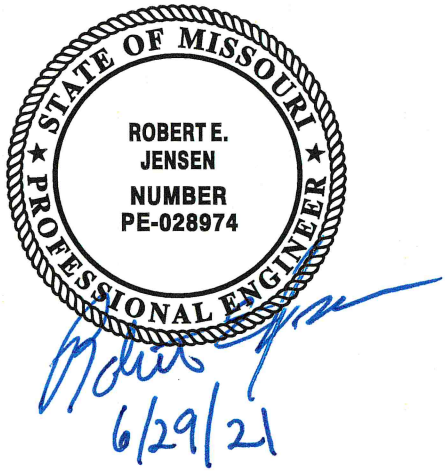
# SUMMARY

The conclusion of the following structural analysis is that the Longview Farm Tank (KCMCI00312A) proposed mount pipes, existing catwalk and water tower structure are adequate for the addition of the proposed Dish Wireless antenna installation shown by 2021 SSC Rev 0 drawings.

Appendix A will contain the following information:

**Appendix A** – RISA 3D Structural Analysis Report

- Catwalk w/ final Dish Wireless loading configuration



# GENERAL CONDITIONS

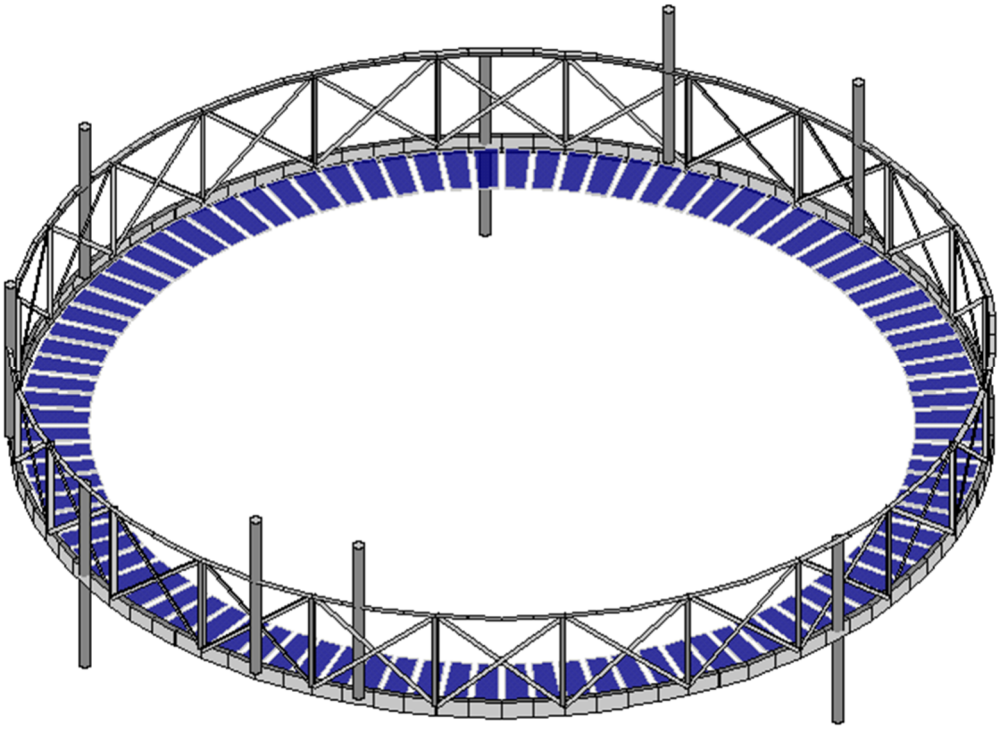
Please note that SSC makes no warranties, expressed or implied in connection with this report and disclaims any liability arising from original design, material, fabrication and erection deficiencies for this structure.

It is the responsibility of the Client to ensure that information provided by the Client to SSC and used in this analysis is correct. This information is assumed correct unless notified otherwise by the Client.

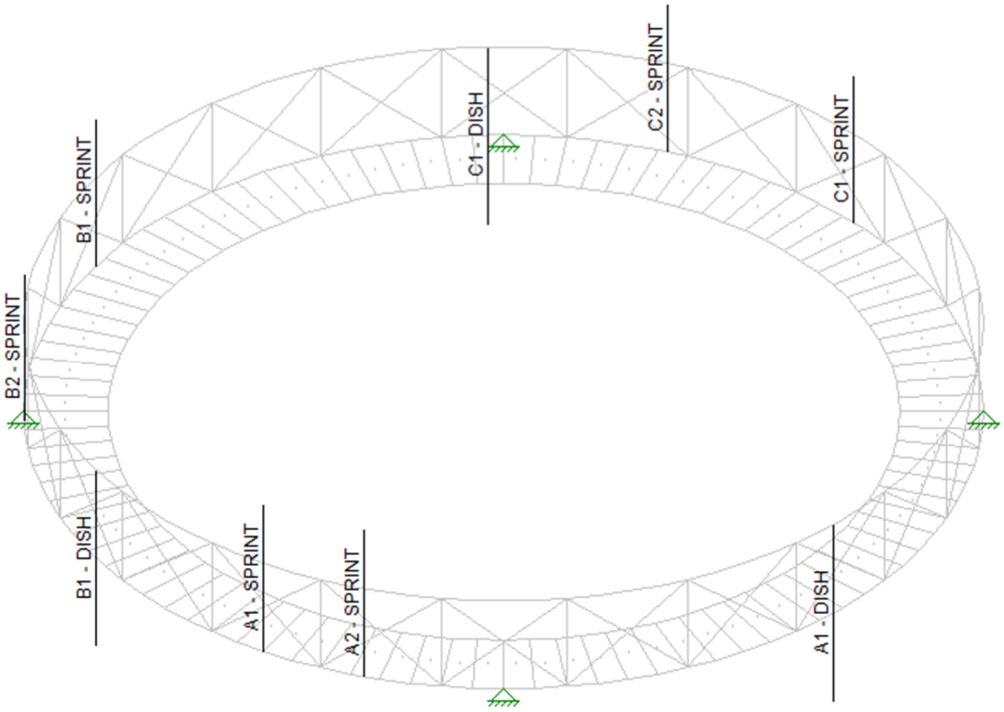
This analysis assumes the structure is in its original state with minimal deterioration. The recommendations, conclusions, and opinions contained in this report pertain only to the analysis of load carrying capacity of the members supporting the proposed installation.

This analysis assumes any suggested modifications are installed as recommended and is not intended to address temporary conditions of the structure as modifications are being performed. It is strongly recommended that the Installer of any modifications thoroughly assess installation procedures and how temporary conditions present at the site while modifications are being performed will influence the structure members. Installer is responsible for sequence of operation and any required temporary bracing or strengthening of structure during modification operations. SSC is not responsible for the conclusions, opinion, or recommendations made by others based on the information we supply.

# STRUCTURAL LAYOUT



**3D Isometric View**




**Antenna Layout**

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CALCULATIONS AND SKETCHES

DATE
CONT. NO. KCMC100312A
BY ES CHK'D
SHEET NO. 1
MISC.

KCMC100312A

Lee's Summit, MO

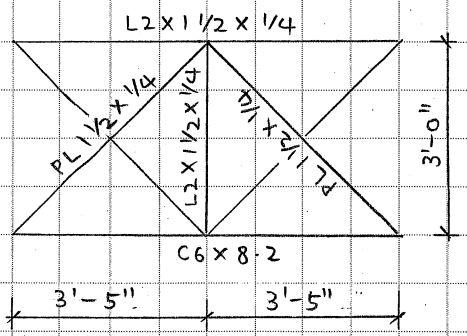
Appurtenance Loading : Dish Wireless at CL 60'-0"

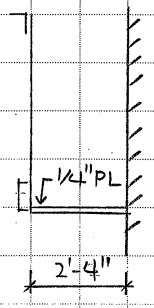
| | |
|---|---|
| (P)(3) JMA MX08FR0665-21 | (72.0" x 20.0" x 8.0", 64.5 #) |
| (P)(3) Fujitsu TA08025-B605 | (15.8" x 15.0" x 9.1", 75 #) |
| (P)(3) Fujitsu TA08025-B604 | (15.8" x 15.0" x 7.9", 63.9 #) |
| (P)(1) Raycap RDIDC-9181-PF-48 | (16.0" x 14.0" x 8.0", 21.8 #) |

Appurtenance Loading : Sprint at CL 61'-0"

| | |
|---|---|
| (E)(3) Ericsson Air 6468 | (38.3" x 20.5" x 7.2", 133.2 #) |
| (E)(3) RFS APXV-VERR18-C | (72.0" x 11.8" x 7.0", 55 #) |
| (E)(3) Ericsson RRUS 11 | (19.7" x 17.0" x 8.0", 51 #) |
| (E)(3) Ericsson RRUS 31 | (16.5" x 11.8" x 8.0", 59.5 #) |

Catwalk Layout : Per Fullerton Report dated 04-09-14




* Proposed 2.5" std pipe for Dish Wireless antenna loading.

Catwalk Loading :

| | | |
|---|---|---|
| DL = | self-weight | (RISA) |
| | Appurtenances | (Pg. 1) |
| LL = | AWWA Code | 1000 # (split between tank & rail) |
| SL = | Jackson County | 20 psf |
| WL = | ASCE 7-16 | (Pg. 2A & 2B) |

## Appurtenance Nominal Wind Loading — ASCE 7-16

$qz = 0.00256\ (Kz)(Kzt)(Kd)(Ke)V^2 =$ (Eq 26.10-1)

$q_{z\ -\ Ultimate} =$ 29.87 psf

| | | |
|---|---|---|
| Antenna Centerline: | 60 | ft above grade |
| Site Elevation: | 1011 | ft |
| Water Tank Elevation: | 98 | ft above grade |

### Wind Loading Coefficents

| | | | |
|---|---|---|---|
| Occupancy : | II | | |
| V (Ultimate): | 109 | mph | ASCE 7 Hazard Tool |
| Kzt: | 1.000 | | (Sec 26.8.2) |
| Kz: | 1.137 | C | (Tbl 26.10-1) |
| Kd: | 0.900 | | (Tbl 26.6-1) |
| Ke: | 0.960 | | (Tbl 26.9-1) |
| G: | 0.850 | | (Sec 26.11) |
| Cf - Support Members: | 1.400 | | (Fig 29.4-1) |
| GCr: | | N/A | |

**Appurtenances on Mount:** $F = q(G)(Cf)(Af)$ (Eq 29.4-1)

Cf (see tables below) (Fig 29.4-1)

| Front Wind: | Appurtenance Model | Area ($ft^2$) | Cf | Wind Force (F) (lb) |
|---|---|---|---|---|
| Dish Wireless | JMA MX08FRO665-21 | 10.00 | 1.343 | 341.0 |
| | Fujitsu TA08025-B605 | 1.65 | 1.301 | 54.4 |
| | Fujitsu TA08025-B604 | 1.65 | 1.301 | 54.4 |
| | Raycap RDIDC-9181-PF-48 | 1.56 | 1.302 | 51.4 |

| Side Wind: | Appurtenance Model | Area ($ft^2$) | Cf | Wind Force (F) (lb) |
|---|---|---|---|---|
| Dish Wireless | JMA MX08FRO665-21 | 4.00 | 1.467 | 148.9 |
| | Fujitsu TA08025-B605 | 1.00 | 1.312 | 33.3 |
| | Fujitsu TA08025-B604 | 0.87 | 1.317 | 29.0 |
| | Raycap RDIDC-9181-PF-48 | 0.89 | 1.317 | 29.7 |

## Appurtenance Nominal Wind Loading — ASCE 7-16

$qz = 0.00256\ (Kz)(Kzt)(Kd)(Ke)V^2 =$ (Eq 26.10-1)

$q_{z\ -\ Ultimate} =$ 29.97 psf

| | | |
|---|---|---|
| Antenna Centerline: | 61 | ft above grade |
| Site Elevation: | 1011 | ft |
| Water Tank Elevation: | 98 | ft above grade |

### Wind Loading Coefficents

| | | | |
|---|---|---|---|
| Occupancy : | II | | |
| V (Ultimate): | 109 | mph | ASCE 7 Hazard Tool |
| Kzt: | 1.000 | | (Sec 26.8.2) |
| Kz: | 1.141 | C | (Tbl 26.10-1) |
| Kd: | 0.900 | | (Tbl 26.6-1) |
| Ke: | 0.960 | | (Tbl 26.9-1) |
| G: | 0.850 | | (Sec 26.11) |
| Cf - Support Members: | 1.400 | | (Fig 29.4-1) |
| GCr: | | N/A | |

**Appurtenances on Mount:** $F = q(G)(Cf)(Af)$ (Eq 29.4-1)

Cf (see tables below) (Fig 29.4-1)

| Front Wind: | Appurtenance Model | Area ($ft^2$) | Cf | Wind Force (F) (lb) |
|---|---|---|---|---|
| Sprint | Ericsson Air 6468 | 5.45 | 1.314 | 182.6 |
| | RFS APXV-VERR18-C | 5.90 | 1.385 | 208.2 |
| | Ericsson RRUS11 | 2.33 | 1.303 | 77.2 |
| | Ericsson RRUS31 | 1.35 | 1.307 | 45.0 |

| Side Wind: | Appurtenance Model | Area ($ft^2$) | Cf | Wind Force (F) (lb) |
|---|---|---|---|---|
| Sprint | Ericsson Air 6468 | 1.92 | 1.372 | 66.9 |
| | RFS APXV-VERR18-C | 3.50 | 1.510 | 134.6 |
| | Ericsson RRUS11 | 1.09 | 1.324 | 36.9 |
| | Ericsson RRUS31 | 0.92 | 1.318 | 30.8 |

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DATE
CONT. NO. KCMC100312A
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SHEET NO. 3
MISC.

KCMC100312A
Lee's Summit, MO (cont.)

Catwalk Loading (cont.) : WL : Support members = $q_z G C_f A_f$

$= 29.87 (0.85)(2.0) A_f = 50.8 A_f$

C6 x 8.2 = 50.8 (6/12) = 25.4 plf

L2 x 1 1/2 x 1/4 = 50.8 (2/12) = 8.5 plf

PL 1 1/2 x 1/4 = 50.8 (1.5/12) = 6.4 plf

Input catwalk information and appurtenance loading into RISA. See Appendix A for results.

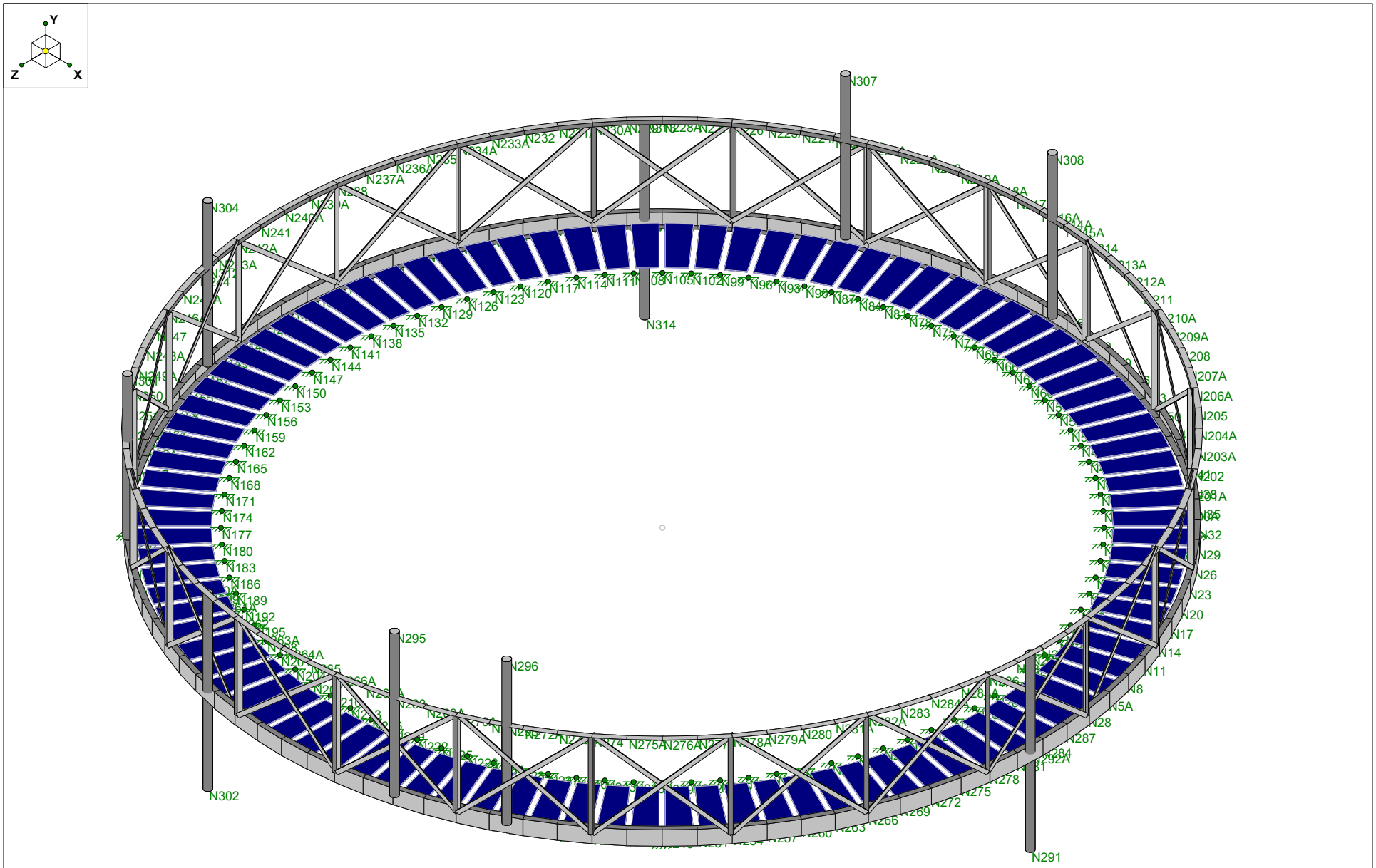
Per RISA results, the existing catwalk will be adequate to support the proposed loading configuration.

Existing water tower structure Review =

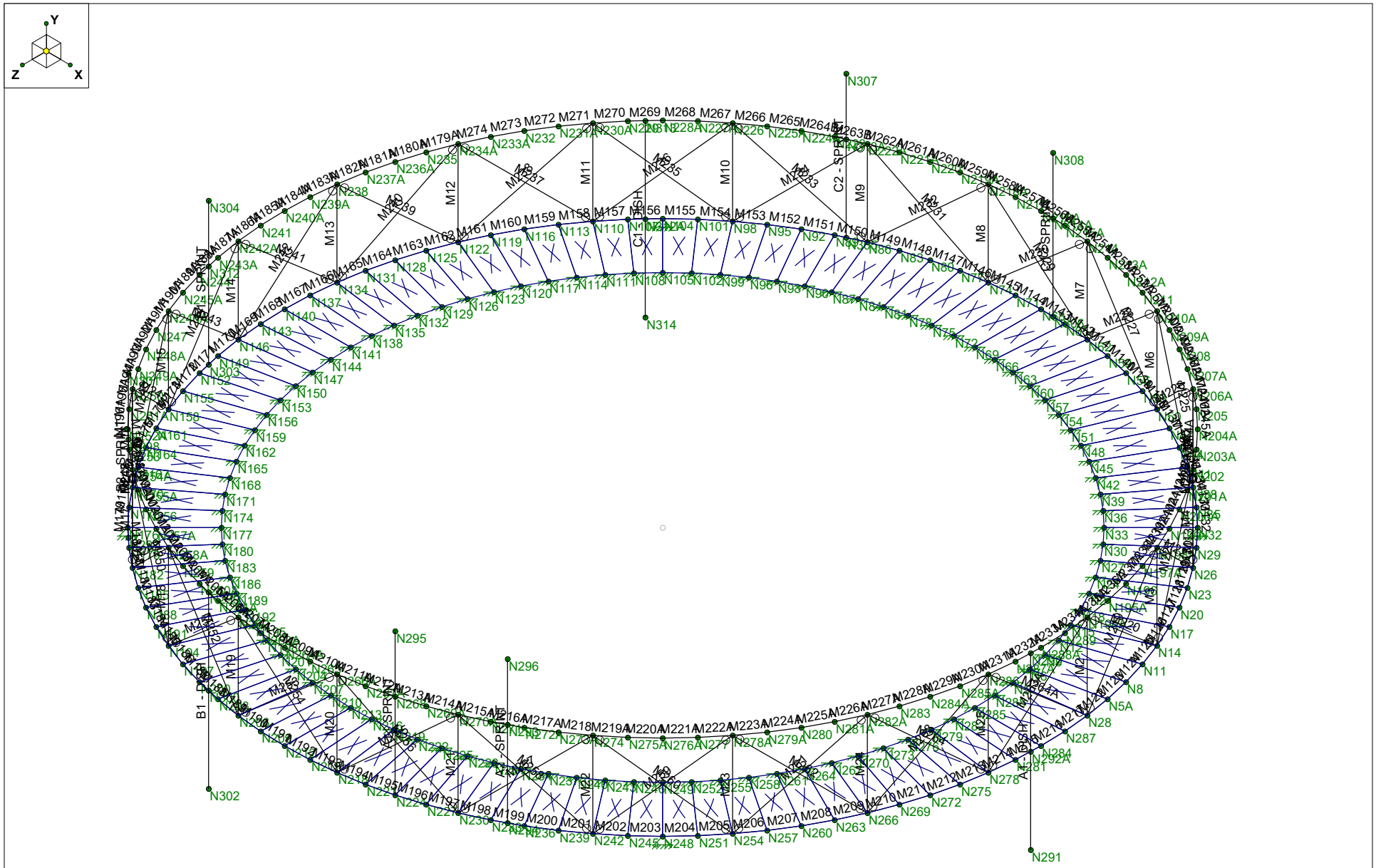
The proposed Dish Wireless and existing other carrier appurtenances will be within the projected area of the tank. Hence, they will add insignificant lateral load to the tower structure. IEBC 2018 section 806 allows a 10% increase in lateral load before modification is required. The additional gravity load due to the appurtenances will be insignificant when compared to the gravity loads already carried by the tower structure. Therefore, the water tower structure will be adequate to support the existing other carrier loading and the proposed Dish Wireless loading.

# Appendix A

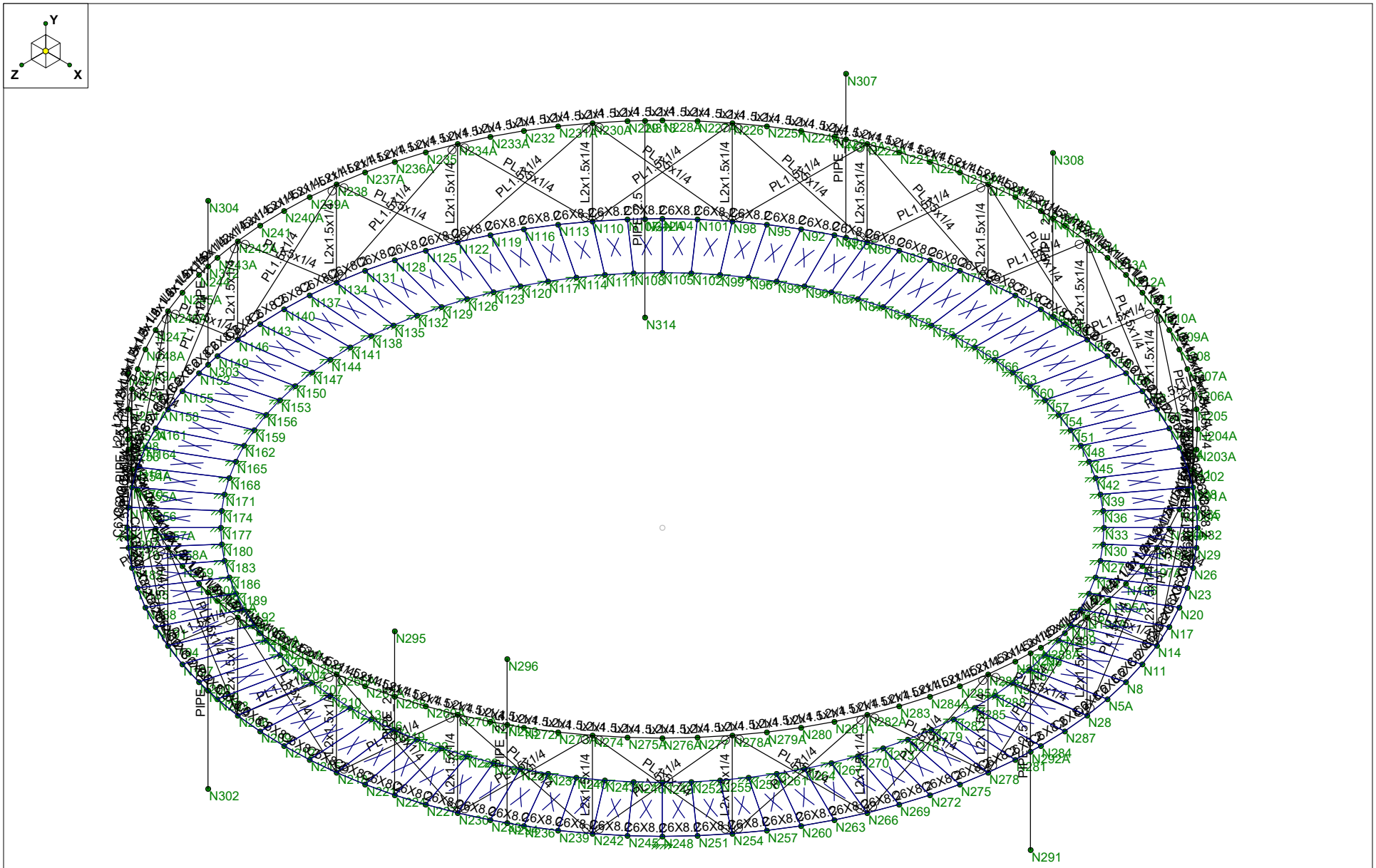
## *RISA 3D Structural Analysis Report*



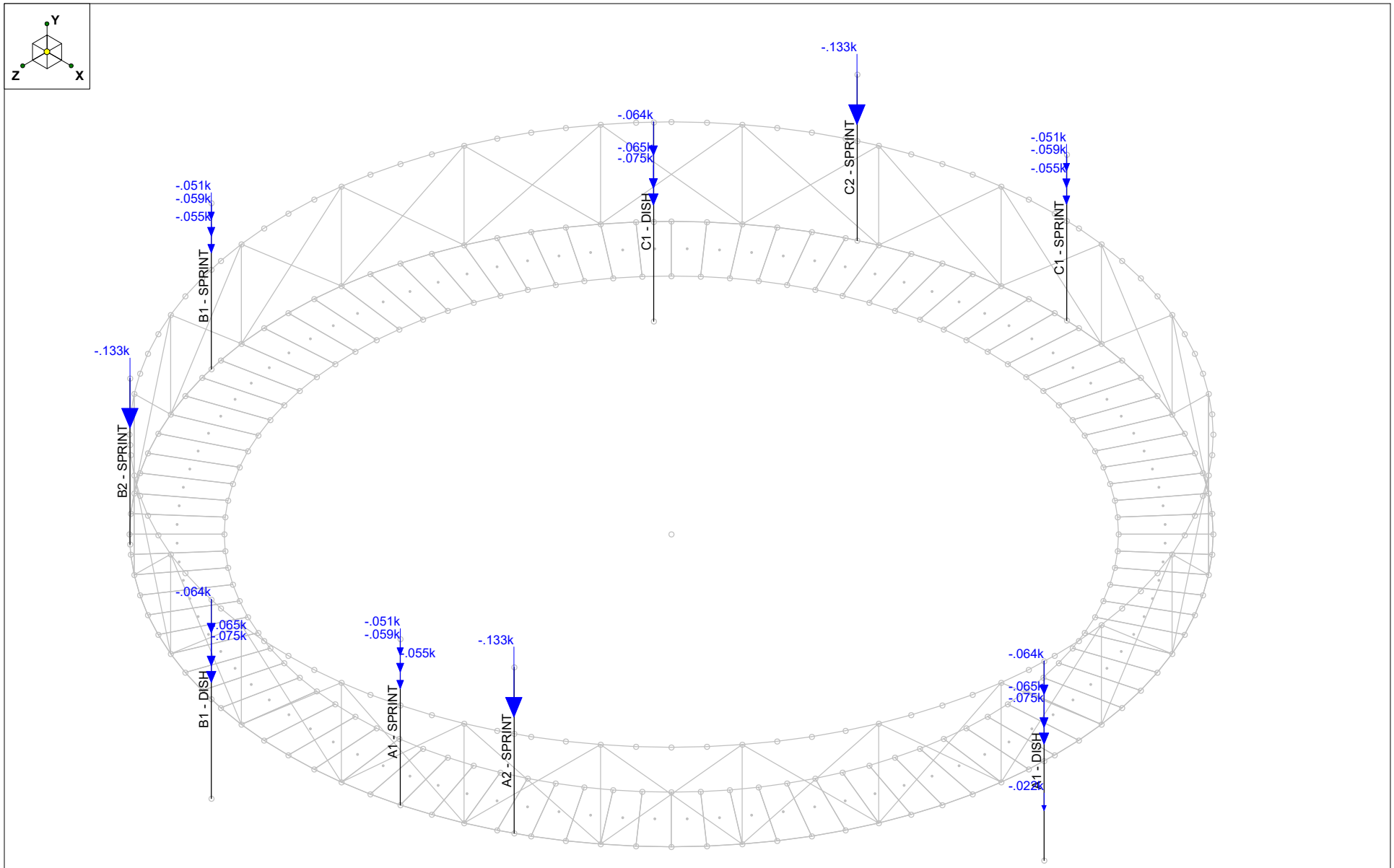

| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 1 |
| ES | | June 28, 2021 at 2:03 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |




| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 2 |
| ES | | June 28, 2021 at 2:04 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |

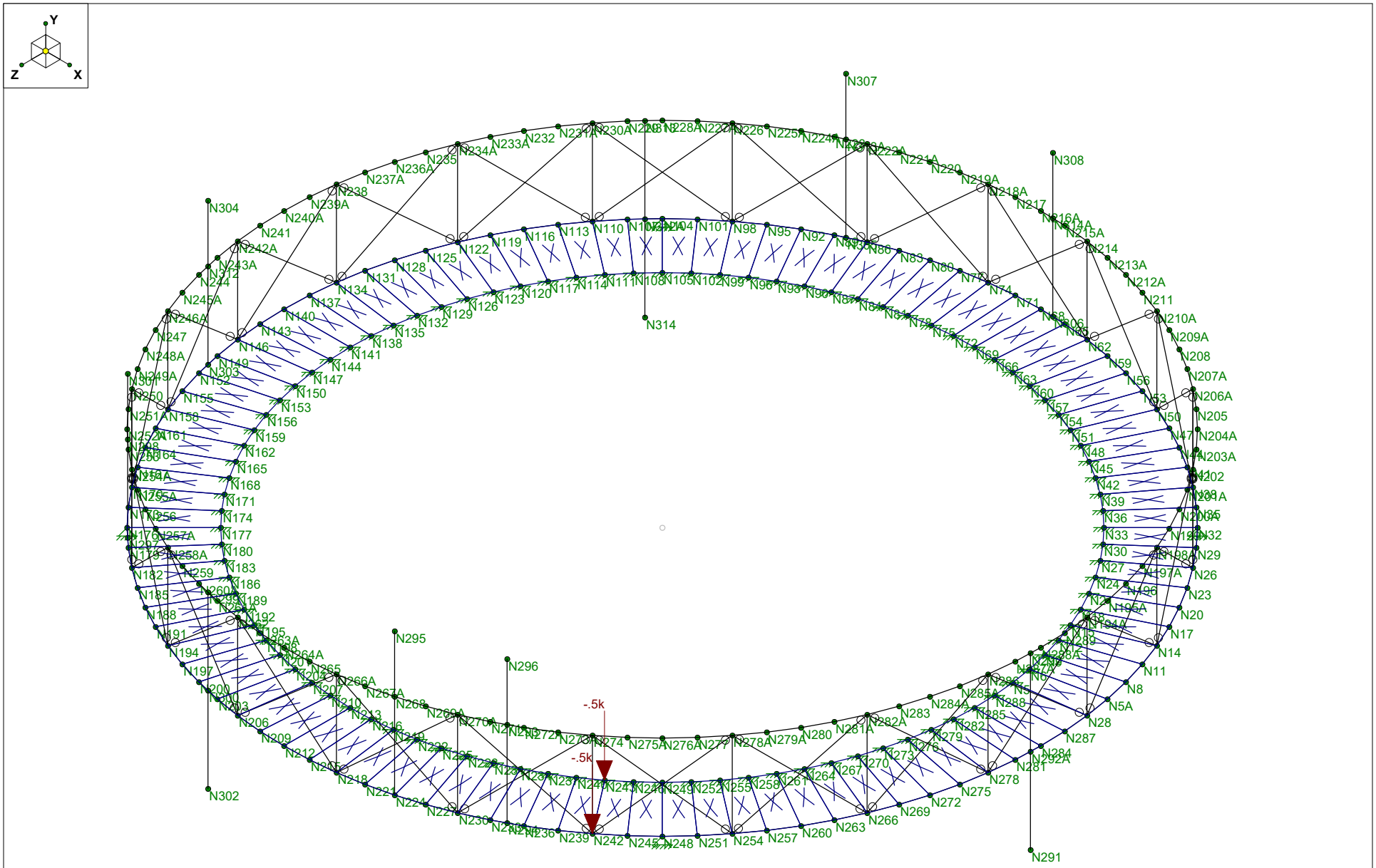



| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 3 |
| ES | | June 28, 2021 at 2:04 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |

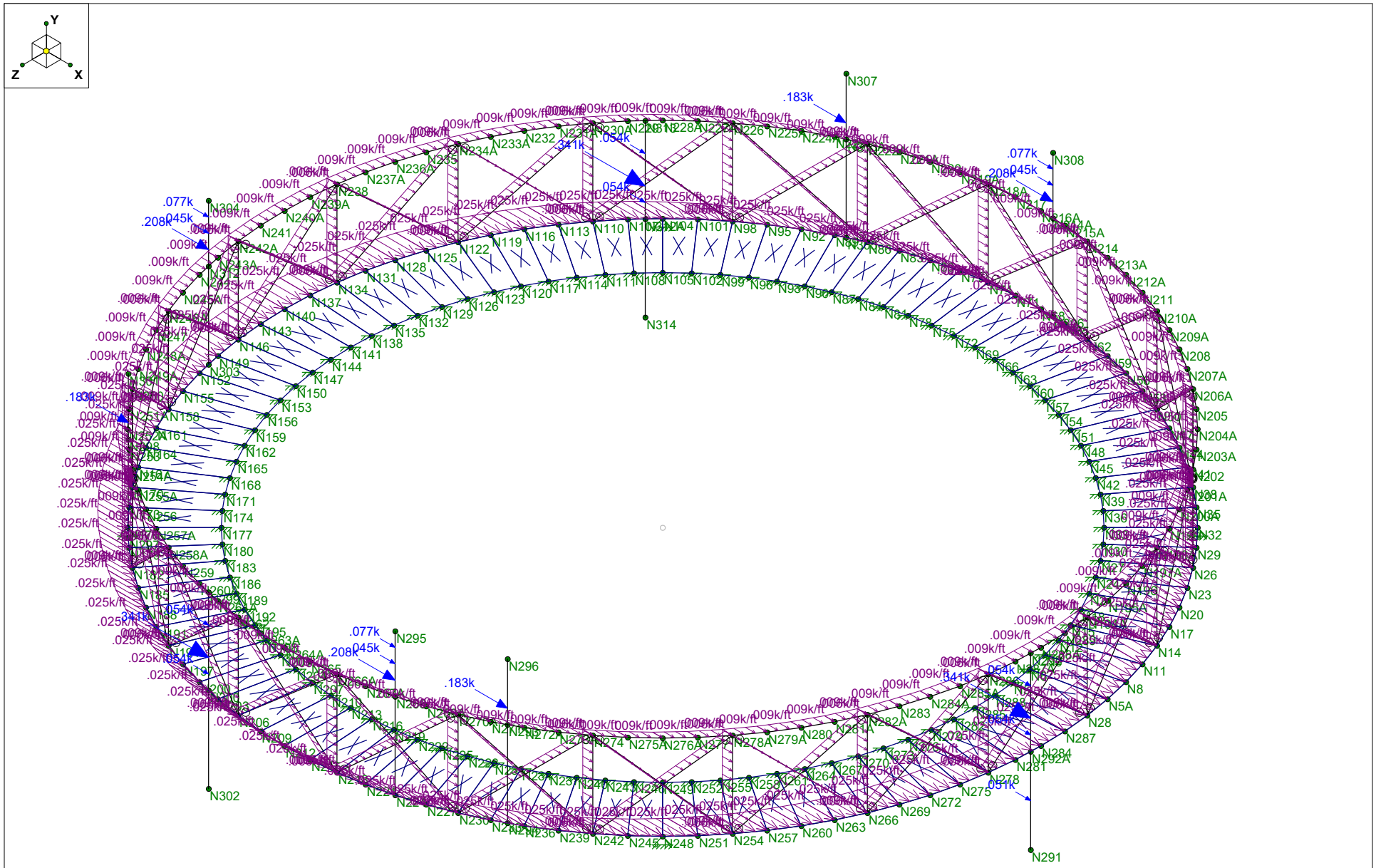



Loads: BLC 2, Appurtenances

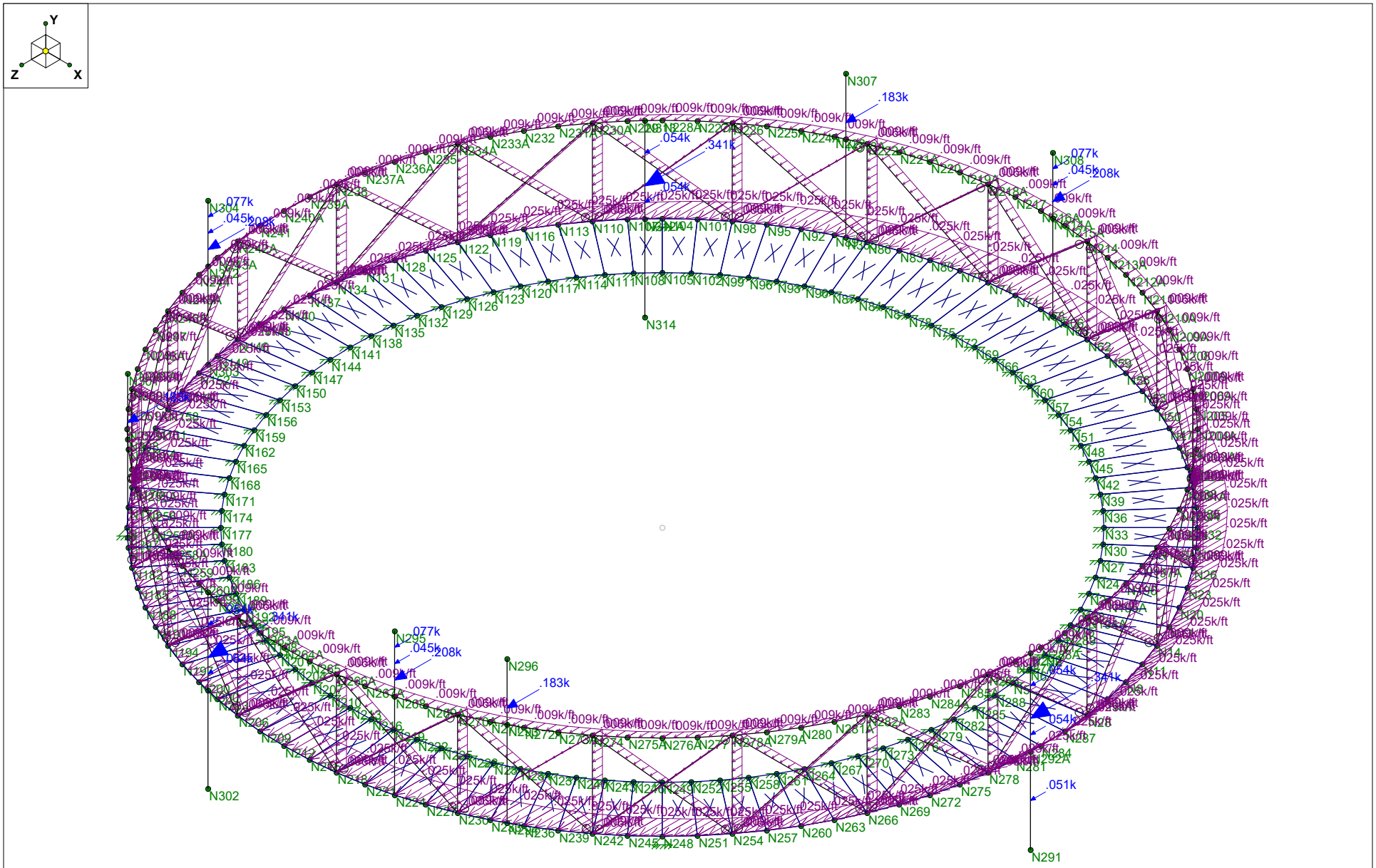
| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 4 |
| ES | | June 28, 2021 at 2:05 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |



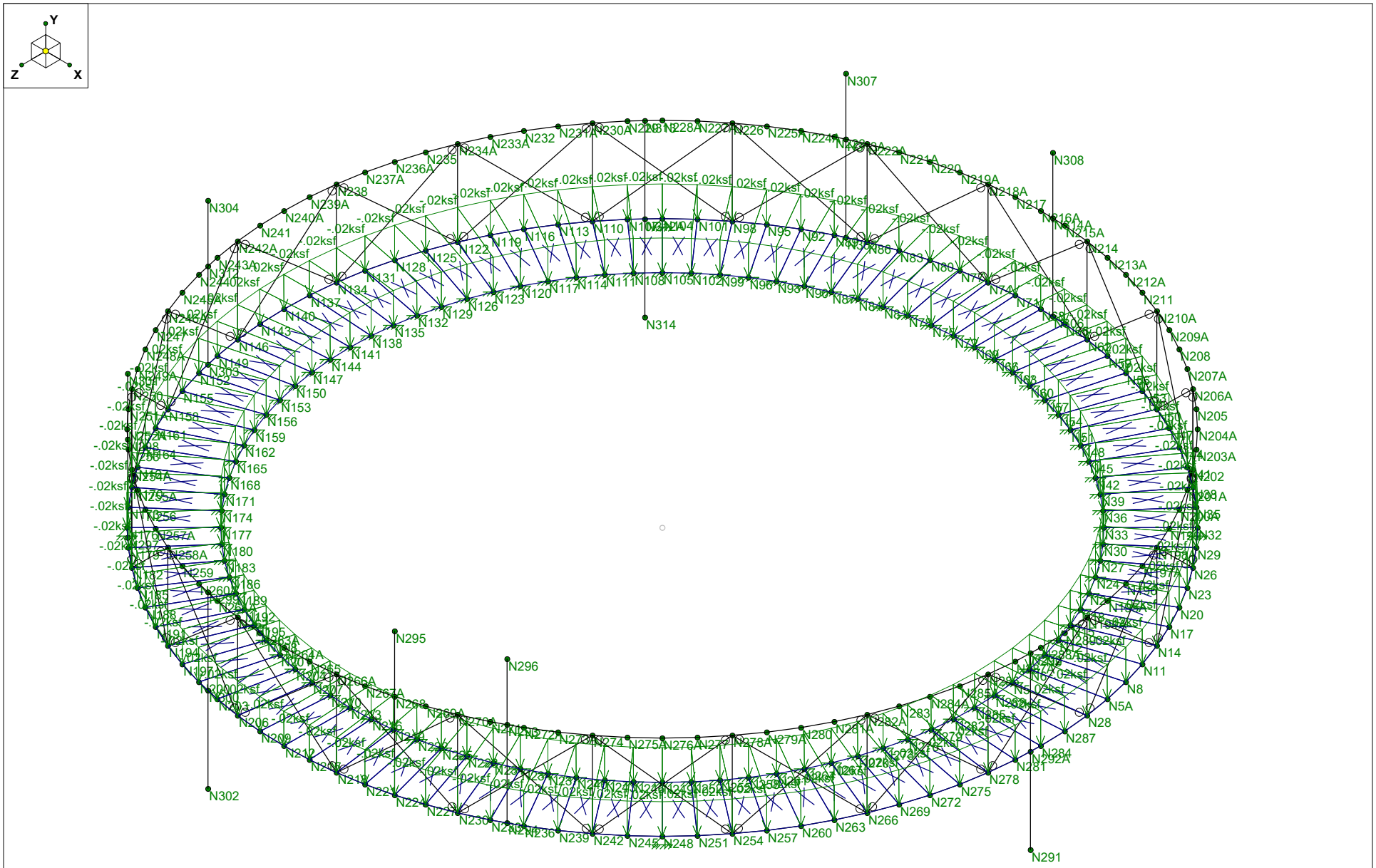

| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 5 |
| ES | | June 28, 2021 at 2:05 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |




| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 6 |
| ES | | June 28, 2021 at 2:05 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |




| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 7 |
| ES | | June 28, 2021 at 2:06 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |




Loads: BLC 6, Snow

| | | |
|---|---|---|
| SSC | DISH Wireless - Longview Farms Water Tank | SK - 8 |
| ES | | June 28, 2021 at 2:06 PM |
| KCMCI00312A | | KCMCI00312A Catwalk Rail Rev02.r3d |

## (Global) Model Settings

| | |
|---|---|
| Display Sections for Member Calcs | 5 |
| Max Internal Sections for Member Calcs | 97 |
| Include Shear Deformation? | Yes |
| Increase Nailing Capacity for Wind? | Yes |
| Include Warping? | Yes |
| Trans Load Btwn Intersecting Wood Wall? | Yes |
| Area Load Mesh (in^2) | 144 |
| Merge Tolerance (in) | .12 |
| P-Delta Analysis Tolerance | 0.50% |
| Include P-Delta for Walls? | Yes |
| Automatically Iterate Stiffness for Walls? | Yes |
| Max Iterations for Wall Stiffness | 3 |
| Gravity Acceleration (ft/sec^2) | 32.2 |
| Wall Mesh Size (in) | 24 |
| Eigensolution Convergence Tol. (1.E-) | 4 |
| Vertical Axis | Y |
| Global Member Orientation Plane | XZ |
| Static Solver | Sparse Accelerated |
| Dynamic Solver | Accelerated Solver |

| | |
|---|---|
| Hot Rolled Steel Code | AISC 15th(360-16): ASD |
| Adjust Stiffness? | Yes(Iterative) |
| RISAConnection Code | None |
| Cold Formed Steel Code | None |
| Wood Code | None |
| Wood Temperature | < 100F |
| Concrete Code | None |
| Masonry Code | None |
| Aluminum Code | None - Building |
| Stainless Steel Code | None |

| | |
|---|---|
| Number of Shear Regions | 4 |
| Region Spacing Increment (in) | 4 |
| Biaxial Column Method | Exact Integration |
| Parme Beta Factor (PCA) | .65 |
| Concrete Stress Block | Rectangular |
| Use Cracked Sections? | Yes |
| Use Cracked Sections Slab? | No |
| Bad Framing Warnings? | No |
| Unused Force Warnings? | Yes |
| Min 1 Bar Diam. Spacing? | No |
| Concrete Rebar Set | REBAR_SET_ASTMA615 |
| Min % Steel for Column | 1 |
| Max % Steel for Column | 8 |

## (Global) Model Settings, Continued

| | |
|---|---|
| Seismic Code | ASCE 7-16 |
| Seismic Base Elevation (ft) | Not Entered |
| Add Base Weight? | Yes |
| Ct X | .02 |
| Ct Z | .02 |
| T X (sec) | Not Entered |
| T Z (sec) | Not Entered |
| R X | 3 |
| R Z | 3 |
| Ct Exp. X | .75 |
| Ct Exp. Z | .75 |
| SD1 | 1 |
| SDS | 1 |
| S1 | 1 |
| TL (sec) | 5 |
| Risk Cat | I or II |
| Drift Cat | Other |
| Om Z | 1 |
| Om X | 1 |
| Cd Z | 4 |
| Cd X | 4 |
| Rho Z | 1 |
| Rho X | 1 |
| | |

## Hot Rolled Steel Properties

| | Label | E [ksi] | G [ksi] | Nu | Therm (/1... | Density[k/f... | Yield[ksi] | Ry | Fu[ksi] | Rt |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A992 | 29000 | 11154 | .3 | .65 | .49 | 50 | 1.1 | 65 | 1.1 |
| 2 | A36 Gr.36 | 29000 | 11154 | .3 | .65 | .49 | 36 | 1.5 | 58 | 1.2 |
| 3 | A572 Gr.50 | 29000 | 11154 | .3 | .65 | .49 | 50 | 1.1 | 65 | 1.1 |
| 4 | A500 Gr.B RND | 29000 | 11154 | .3 | .65 | .527 | 42 | 1.4 | 58 | 1.3 |
| 5 | A500 Gr.B Rect | 29000 | 11154 | .3 | .65 | .527 | 46 | 1.4 | 58 | 1.3 |
| 6 | A53 Gr.B | 29000 | 11154 | .3 | .65 | .49 | 35 | 1.6 | 60 | 1.2 |
| 7 | A1085 | 29000 | 11154 | .3 | .65 | .49 | 50 | 1.25 | 65 | 1.15 |
| 8 | A913 Gr.65 | 29000 | 11154 | .3 | .65 | .49 | 65 | 1.1 | 80 | 1.1 |

## Hot Rolled Steel Section Sets

| | Label | Shape | Type | Design List | Material | Design R... | A [in2] | Iyy [in4] | Izz [in4] | J [in4] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Vertical rail | L2x1.5x1/4 | Column | Single Angle | A36 Gr.36 | Typical | .813 | .151 | .316 | .015 |
| 2 | Top rail | L2x1.5x1/4 | Beam | Single Angle | A36 Gr.36 | Typical | .813 | .151 | .316 | .015 |
| 3 | Middle bracing | PL1.5x1/4 | VBrace | RECT | A36 Gr.36 | Typical | .375 | .002 | .07 | .007 |
| 4 | Bottom rail | C6X8.2 | Beam | Channel | A36 Gr.36 | Typical | 2.39 | .687 | 13.1 | .074 |
| 5 | Mount pipes | PIPE_2.5 | None | None | A53 Gr.B | Typical | 1.61 | 1.45 | 1.45 | 2.89 |

## Joint Boundary Conditions

| | Joint 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 | N248 | Reaction | Reaction | Reaction | | | |
| 2 | N32 | Reaction | Reaction | Reaction | | | |
| 3 | N104 | Reaction | Reaction | Reaction | | | |

## Joint Boundary Conditions (Continued)

| | Joint 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] |
|---|---|---|---|---|---|---|---|
| 4 | N176 | Reaction | Reaction | Reaction | | | |
| 5 | N5 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 6 | N6 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 7 | N9 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 8 | N12 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 9 | N15 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 10 | N18 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 11 | N21 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 12 | N24 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 13 | N27 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 14 | N30 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 15 | N33 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 16 | N36 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 17 | N39 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 18 | N42 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 19 | N45 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 20 | N48 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 21 | N51 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 22 | N54 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 23 | N57 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 24 | N60 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 25 | N63 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 26 | N66 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 27 | N69 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 28 | N72 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 29 | N75 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 30 | N78 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 31 | N81 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 32 | N84 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 33 | N87 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 34 | N90 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 35 | N93 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 36 | N96 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 37 | N99 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 38 | N102 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 39 | N105 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 40 | N108 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 41 | N111 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 42 | N114 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 43 | N117 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 44 | N120 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 45 | N123 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 46 | N126 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 47 | N129 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 48 | N132 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 49 | N135 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 50 | N138 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 51 | N141 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 52 | N144 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 53 | N147 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 54 | N150 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 55 | N153 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |

## Joint Boundary Conditions (Continued)

| | Joint 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] |
|---|---|---|---|---|---|---|---|
| 56 | N156 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 57 | N159 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 58 | N162 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 59 | N165 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 60 | N168 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 61 | N171 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 62 | N174 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 63 | N177 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 64 | N180 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 65 | N183 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 66 | N186 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 67 | N189 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 68 | N192 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 69 | N195 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 70 | N198 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 71 | N201 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 72 | N204 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 73 | N207 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 74 | N210 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 75 | N213 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 76 | N216 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 77 | N219 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 78 | N222 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 79 | N225 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 80 | N228 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 81 | N231 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 82 | N234 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 83 | N237 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 84 | N240 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 85 | N243 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 86 | N246 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 87 | N249 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 88 | N252 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 89 | N255 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 90 | N258 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 91 | N261 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 92 | N264 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 93 | N267 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 94 | N270 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 95 | N273 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 96 | N276 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 97 | N279 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 98 | N282 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 99 | N285 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 100 | N288 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |

## Member Primary Data

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M2 | N28 | N194A | | 7.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 2 | M3 | N14 | N198A | | 22.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | M4 | N26 | N202 | | 37.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 4 | M5 | N38 | N206A | | 52.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 5 | M6 | N50 | N210A | | 67.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 6 | M7 | N62 | N214 | | 82.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 7 | M8 | N74 | N218A | | 97.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 8 | M9 | N86 | N222A | | 112.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 9 | M10 | N98 | N226 | | 127.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 10 | M11 | N110 | N230A | | 142.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 11 | M12 | N122 | N234A | | 157.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 12 | M13 | N134 | N238 | | 172.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 13 | M14 | N146 | N242A | | 187.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 14 | M15 | N158 | N246A | | 202.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 15 | M16 | N170 | N250 | | 217.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 16 | M17 | N182 | N254A | | 232.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 17 | M18 | N194 | N258A | | 247.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 18 | M19 | N206 | N262 | | 262.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 19 | M20 | N218 | N266A | | 277.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 20 | M21 | N230 | N270A | | 292.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 21 | M22 | N242 | N274 | | 307.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 22 | M23 | N254 | N278A | | 322.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 23 | M24 | N266 | N282A | | 337.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 24 | M25 | N278 | N286 | | 352.5 | Vertical rail | Column | Single Angle | A36 Gr.36 | Typical |
| 25 | M122 | N5A | N28 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 26 | M123 | N8 | N5A | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 27 | M124 | N11 | N8 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 28 | M125 | N14 | N11 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 29 | M126 | N17 | N14 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 30 | M127 | N20 | N17 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 31 | M128 | N23 | N20 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 32 | M129 | N26 | N23 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 33 | M130 | N29 | N26 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 34 | M131 | N32 | N29 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 35 | M132 | N35 | N32 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 36 | M133 | N38 | N35 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 37 | M134 | N41 | N38 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 38 | M135 | N44 | N41 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 39 | M136 | N47 | N44 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 40 | M137 | N50 | N47 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 41 | M138 | N53 | N50 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 42 | M139 | N56 | N53 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 43 | M140 | N59 | N56 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 44 | M141 | N62 | N59 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 45 | M142 | N65 | N62 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 46 | M143 | N68 | N65 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 47 | M144 | N71 | N68 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 48 | M145 | N74 | N71 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 49 | M146 | N77 | N74 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 50 | M147 | N80 | N77 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 51 | M148 | N83 | N80 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 52 | M149 | N86 | N83 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 53 | M150 | N89 | N86 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 54 | M151 | N92 | N89 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 55 | M152 | N95 | N92 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 56 | M153 | N98 | N95 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 57 | M154 | N101 | N98 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 58 | M155 | N104 | N101 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 59 | M156 | N107 | N104 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 60 | M157 | N110 | N107 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 61 | M158 | N113 | N110 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 62 | M159 | N116 | N113 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 63 | M160 | N119 | N116 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 64 | M161 | N122 | N119 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 65 | M162 | N125 | N122 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 66 | M163 | N128 | N125 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 67 | M164 | N131 | N128 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 68 | M165 | N134 | N131 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 69 | M166 | N137 | N134 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 70 | M167 | N140 | N137 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 71 | M168 | N143 | N140 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 72 | M169 | N146 | N143 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 73 | M170 | N149 | N146 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 74 | M171 | N152 | N149 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 75 | M172 | N155 | N152 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 76 | M173 | N158 | N155 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 77 | M174 | N161 | N158 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 78 | M175 | N164 | N161 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 79 | M176 | N167 | N164 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 80 | M177 | N170 | N167 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 81 | M178 | N173 | N170 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 82 | M179 | N176 | N173 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 83 | M180 | N179 | N176 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 84 | M181 | N182 | N179 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 85 | M182 | N185 | N182 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 86 | M183 | N188 | N185 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 87 | M184 | N191 | N188 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 88 | M185 | N194 | N191 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 89 | M186 | N197 | N194 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 90 | M187 | N200 | N197 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 91 | M188 | N203 | N200 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 92 | M189 | N206 | N203 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 93 | M190 | N209 | N206 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 94 | M191 | N212 | N209 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 95 | M192 | N215 | N212 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 96 | M193 | N218 | N215 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 97 | M194 | N221 | N218 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 98 | M195 | N224 | N221 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 99 | M196 | N227 | N224 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 100 | M197 | N230 | N227 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 101 | M198 | N233 | N230 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 102 | M199 | N236 | N233 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 103 | M200 | N239 | N236 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 104 | M201 | N242 | N239 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 105 | M202 | N245 | N242 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 106 | M203 | N248 | N245 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 107 | M204 | N251 | N248 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 108 | M205 | N254 | N251 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 109 | M206 | N257 | N254 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 110 | M207 | N260 | N257 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 111 | M208 | N263 | N260 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 112 | M209 | N266 | N263 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 113 | M210 | N269 | N266 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 114 | M211 | N272 | N269 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 115 | M212 | N275 | N272 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 116 | M213 | N278 | N275 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 117 | M214 | N281 | N278 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 118 | M215 | N284 | N281 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 119 | M216 | N287 | N284 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 120 | M217 | N28 | N287 | | | Bottom rail | Beam | Channel | A36 Gr.36 | Typical |
| 121 | M219 | N28 | N198A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 122 | M220 | N194A | N14 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 123 | M221 | N14 | N202 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 124 | M222 | N198A | N26 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 125 | M223 | N26 | N206A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 126 | M224 | N202 | N38 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 127 | M225 | N38 | N210A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 128 | M226 | N206A | N50 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 129 | M227 | N50 | N214 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 130 | M228 | N210A | N62 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 131 | M229 | N62 | N218A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 132 | M230 | N214 | N74 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 133 | M231 | N74 | N222A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 134 | M232 | N218A | N86 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 135 | M233 | N86 | N226 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 136 | M234 | N222A | N98 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 137 | M235 | N98 | N230A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 138 | M236 | N226 | N110 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 139 | M237 | N110 | N234A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 140 | M238 | N230A | N122 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 141 | M239 | N122 | N238 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 142 | M240 | N234A | N134 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 143 | M241 | N134 | N242A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 144 | M242 | N238 | N146 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 145 | M243 | N146 | N246A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 146 | M244 | N242A | N158 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 147 | M245 | N158 | N250 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 148 | M246 | N246A | N170 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 149 | M247 | N170 | N254A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 150 | M248 | N250 | N182 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 151 | M249 | N182 | N258A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 152 | M250 | N254A | N194 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 153 | M251 | N194 | N262 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 154 | M252 | N258A | N206 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 155 | M253 | N206 | N266A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 156 | M254 | N262 | N218 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 157 | M255 | N218 | N270A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 158 | M256 | N266A | N230 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 159 | M257 | N230 | N274 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 160 | M258 | N270A | N242 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 161 | M259 | N242 | N278A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 162 | M260 | N274 | N254 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 163 | M261 | N254 | N282A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 164 | M262 | N278A | N266 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 165 | M263 | N266 | N286 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 166 | M264 | N282A | N278 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 167 | M263A | N278 | N194A | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 168 | M264A | N286 | N28 | | | Middle bracing | VBrace | RECT | A36 Gr.36 | Typical |
| 169 | A1 - DISH | N291 | N292 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 170 | A1 - SPRINT | N224 | N295 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 171 | A2 - SPRINT | N294 | N296 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 172 | B2 - SPRINT | N297 | N301 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 173 | B1 - DISH | N302 | N299 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 174 | B1 - SPRINT | N303 | N304 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 175 | C1 - SPRINT | N306 | N308 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 176 | C2 - SPRINT | N305 | N307 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 177 | C1 - DISH | N314 | N313 | | | Mount pipes | None | None | A53 Gr.B | Typical |
| 178 | M179A | N234A | N235 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 179 | M180A | N235 | N236A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 180 | M181A | N236A | N237A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 181 | M182A | N237A | N238 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 182 | M183A | N238 | N239A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 183 | M184A | N239A | N240A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 184 | M185A | N240A | N241 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 185 | M186A | N241 | N242A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 186 | M187A | N242A | N243A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 187 | M188A | N243A | N244 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 188 | M189A | N244 | N245A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 189 | M190A | N245A | N246A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 190 | M191A | N246A | N247 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 191 | M192A | N247 | N248A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 192 | M193A | N248A | N249A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 193 | M194A | N249A | N250 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 194 | M195A | N250 | N251A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 195 | M196A | N251A | N252A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 196 | M197A | N252A | N253 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 197 | M198A | N253 | N254A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 198 | M199A | N254A | N255A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 199 | M200A | N255A | N256 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 200 | M201A | N256 | N257A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 201 | M202A | N257A | N258A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 202 | M203A | N258A | N259 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 203 | M204A | N259 | N260A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 204 | M205A | N260A | N261A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 205 | M206A | N261A | N262 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 206 | M207A | N262 | N263A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 207 | M208A | N263A | N264A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 208 | M209A | N264A | N265 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 209 | M210A | N265 | N266A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 210 | M211A | N266A | N267A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 211 | M212A | N267A | N268 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 212 | M213A | N268 | N269A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 213 | M214A | N269A | N270A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 214 | M215A | N270A | N271 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 215 | M216A | N271 | N272A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 216 | M217A | N272A | N273A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 217 | M218 | N273A | N274 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 218 | M219A | N274 | N275A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 219 | M220A | N275A | N276A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 220 | M221A | N276A | N277 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 221 | M222A | N277 | N278A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 222 | M223A | N278A | N279A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 223 | M224A | N279A | N280 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 224 | M225A | N280 | N281A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 225 | M226A | N281A | N282A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 226 | M227A | N282A | N283 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 227 | M228A | N283 | N284A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 228 | M229A | N284A | N285A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 229 | M230A | N285A | N286 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 230 | M231A | N286 | N287A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 231 | M232A | N287A | N288A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 232 | M233A | N288A | N289 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 233 | M234A | N289 | N194A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 234 | M235A | N194A | N195A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 235 | M236A | N195A | N196 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 236 | M237A | N196 | N197A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 237 | M238A | N197A | N198A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 238 | M239A | N198A | N199 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 239 | M240A | N199 | N200A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 240 | M241A | N200A | N201A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 241 | M242A | N201A | N202 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 242 | M243A | N202 | N203A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 243 | M244A | N203A | N204A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 244 | M245A | N204A | N205 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 245 | M246A | N205 | N206A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 246 | M247A | N206A | N207A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 247 | M248A | N207A | N208 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 248 | M249A | N208 | N209A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 249 | M250A | N209A | N210A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 250 | M251A | N210A | N211 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 251 | M252A | N211 | N212A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 252 | M253A | N212A | N213A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 253 | M254A | N213A | N214 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 254 | M255A | N214 | N215A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 255 | M256A | N215A | N216A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 256 | M257A | N216A | N217 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 257 | M258A | N217 | N218A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 258 | M259A | N218A | N219A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 259 | M260A | N219A | N220 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 260 | M261A | N220 | N221A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 261 | M262A | N221A | N222A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 262 | M263B | N222A | N223 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 263 | M264B | N223 | N224A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 264 | M265 | N224A | N225A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 265 | M266 | N225A | N226 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 266 | M267 | N226 | N227A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 267 | M268 | N227A | N228A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 268 | M269 | N228A | N229 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 269 | M270 | N229 | N230A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 270 | M271 | N230A | N231A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 271 | M272 | N231A | N232 | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 272 | M273 | N232 | N233A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |
| 273 | M274 | N233A | N234A | | 90 | Top rail | Beam | Single Angle | A36 Gr.36 | Typical |

## Member Advanced Data

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M2 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 2 | M3 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 3 | M4 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 4 | M5 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 5 | M6 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 6 | M7 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 7 | M8 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 8 | M9 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 9 | M10 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 10 | M11 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 11 | M12 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 12 | M13 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 13 | M14 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 14 | M15 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 15 | M16 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 16 | M17 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 17 | M18 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 18 | M19 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 19 | M20 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 20 | M21 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 21 | M22 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 22 | M23 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 23 | M24 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 24 | M25 | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 25 | M122 | | | | | Euler Buc... | Yes | | | | None |
| 26 | M123 | | | | | Euler Buc... | Yes | | | | None |
| 27 | M124 | | | | | Euler Buc... | Yes | | | | None |
| 28 | M125 | | | | | Euler Buc... | Yes | | | | None |
| 29 | M126 | | | | | Euler Buc... | Yes | | | | None |
| 30 | M127 | | | | | Euler Buc... | Yes | | | | None |
| 31 | M128 | | | | | Euler Buc... | Yes | | | | None |
| 32 | M129 | | | | | Euler Buc... | Yes | | | | None |
| 33 | M130 | | | | | Euler Buc... | Yes | | | | None |
| 34 | M131 | | | | | Euler Buc... | Yes | | | | None |
| 35 | M132 | | | | | Euler Buc... | Yes | | | | None |
| 36 | M133 | | | | | Euler Buc... | Yes | | | | None |

## Member Advanced Data (Continued)

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 37 | M134 | | | | | Euler Buc... | Yes | | | | None |
| 38 | M135 | | | | | Euler Buc... | Yes | | | | None |
| 39 | M136 | | | | | Euler Buc... | Yes | | | | None |
| 40 | M137 | | | | | Euler Buc... | Yes | | | | None |
| 41 | M138 | | | | | Euler Buc... | Yes | | | | None |
| 42 | M139 | | | | | Euler Buc... | Yes | | | | None |
| 43 | M140 | | | | | Euler Buc... | Yes | | | | None |
| 44 | M141 | | | | | Euler Buc... | Yes | | | | None |
| 45 | M142 | | | | | Euler Buc... | Yes | | | | None |
| 46 | M143 | | | | | Euler Buc... | Yes | | | | None |
| 47 | M144 | | | | | Euler Buc... | Yes | | | | None |
| 48 | M145 | | | | | Euler Buc... | Yes | | | | None |
| 49 | M146 | | | | | Euler Buc... | Yes | | | | None |
| 50 | M147 | | | | | Euler Buc... | Yes | | | | None |
| 51 | M148 | | | | | Euler Buc... | Yes | | | | None |
| 52 | M149 | | | | | Euler Buc... | Yes | | | | None |
| 53 | M150 | | | | | Euler Buc... | Yes | | | | None |
| 54 | M151 | | | | | Euler Buc... | Yes | | | | None |
| 55 | M152 | | | | | Euler Buc... | Yes | | | | None |
| 56 | M153 | | | | | Euler Buc... | Yes | | | | None |
| 57 | M154 | | | | | Euler Buc... | Yes | | | | None |
| 58 | M155 | | | | | Euler Buc... | Yes | | | | None |
| 59 | M156 | | | | | Euler Buc... | Yes | | | | None |
| 60 | M157 | | | | | Euler Buc... | Yes | | | | None |
| 61 | M158 | | | | | Euler Buc... | Yes | | | | None |
| 62 | M159 | | | | | Euler Buc... | Yes | | | | None |
| 63 | M160 | | | | | Euler Buc... | Yes | | | | None |
| 64 | M161 | | | | | Euler Buc... | Yes | | | | None |
| 65 | M162 | | | | | Euler Buc... | Yes | | | | None |
| 66 | M163 | | | | | Euler Buc... | Yes | | | | None |
| 67 | M164 | | | | | Euler Buc... | Yes | | | | None |
| 68 | M165 | | | | | Euler Buc... | Yes | | | | None |
| 69 | M166 | | | | | Euler Buc... | Yes | | | | None |
| 70 | M167 | | | | | Euler Buc... | Yes | | | | None |
| 71 | M168 | | | | | Euler Buc... | Yes | | | | None |
| 72 | M169 | | | | | Euler Buc... | Yes | | | | None |
| 73 | M170 | | | | | Euler Buc... | Yes | | | | None |
| 74 | M171 | | | | | Euler Buc... | Yes | | | | None |
| 75 | M172 | | | | | Euler Buc... | Yes | | | | None |
| 76 | M173 | | | | | Euler Buc... | Yes | | | | None |
| 77 | M174 | | | | | Euler Buc... | Yes | | | | None |
| 78 | M175 | | | | | Euler Buc... | Yes | | | | None |
| 79 | M176 | | | | | Euler Buc... | Yes | | | | None |
| 80 | M177 | | | | | Euler Buc... | Yes | | | | None |
| 81 | M178 | | | | | Euler Buc... | Yes | | | | None |
| 82 | M179 | | | | | Euler Buc... | Yes | | | | None |
| 83 | M180 | | | | | Euler Buc... | Yes | | | | None |
| 84 | M181 | | | | | Euler Buc... | Yes | | | | None |
| 85 | M182 | | | | | Euler Buc... | Yes | | | | None |
| 86 | M183 | | | | | Euler Buc... | Yes | | | | None |
| 87 | M184 | | | | | Euler Buc... | Yes | | | | None |
| 88 | M185 | | | | | Euler Buc... | Yes | | | | None |

## Member Advanced Data (Continued)

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 89 | M186 | | | | | Euler Buc... | Yes | | | | None |
| 90 | M187 | | | | | Euler Buc... | Yes | | | | None |
| 91 | M188 | | | | | Euler Buc... | Yes | | | | None |
| 92 | M189 | | | | | Euler Buc... | Yes | | | | None |
| 93 | M190 | | | | | Euler Buc... | Yes | | | | None |
| 94 | M191 | | | | | Euler Buc... | Yes | | | | None |
| 95 | M192 | | | | | Euler Buc... | Yes | | | | None |
| 96 | M193 | | | | | Euler Buc... | Yes | | | | None |
| 97 | M194 | | | | | Euler Buc... | Yes | | | | None |
| 98 | M195 | | | | | Euler Buc... | Yes | | | | None |
| 99 | M196 | | | | | Euler Buc... | Yes | | | | None |
| 100 | M197 | | | | | Euler Buc... | Yes | | | | None |
| 101 | M198 | | | | | Euler Buc... | Yes | | | | None |
| 102 | M199 | | | | | Euler Buc... | Yes | | | | None |
| 103 | M200 | | | | | Euler Buc... | Yes | | | | None |
| 104 | M201 | | | | | Euler Buc... | Yes | | | | None |
| 105 | M202 | | | | | Euler Buc... | Yes | | | | None |
| 106 | M203 | | | | | Euler Buc... | Yes | | | | None |
| 107 | M204 | | | | | Euler Buc... | Yes | | | | None |
| 108 | M205 | | | | | Euler Buc... | Yes | | | | None |
| 109 | M206 | | | | | Euler Buc... | Yes | | | | None |
| 110 | M207 | | | | | Euler Buc... | Yes | | | | None |
| 111 | M208 | | | | | Euler Buc... | Yes | | | | None |
| 112 | M209 | | | | | Euler Buc... | Yes | | | | None |
| 113 | M210 | | | | | Euler Buc... | Yes | | | | None |
| 114 | M211 | | | | | Euler Buc... | Yes | | | | None |
| 115 | M212 | | | | | Euler Buc... | Yes | | | | None |
| 116 | M213 | | | | | Euler Buc... | Yes | | | | None |
| 117 | M214 | | | | | Euler Buc... | Yes | | | | None |
| 118 | M215 | | | | | Euler Buc... | Yes | | | | None |
| 119 | M216 | | | | | Euler Buc... | Yes | | | | None |
| 120 | M217 | | | | | Euler Buc... | Yes | | | | None |
| 121 | M219 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 122 | M220 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 123 | M221 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 124 | M222 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 125 | M223 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 126 | M224 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 127 | M225 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 128 | M226 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 129 | M227 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 130 | M228 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 131 | M229 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 132 | M230 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 133 | M231 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 134 | M232 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 135 | M233 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 136 | M234 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 137 | M235 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 138 | M236 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 139 | M237 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 140 | M238 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |

## Member Advanced Data (Continued)

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 141 | M239 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 142 | M240 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 143 | M241 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 144 | M242 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 145 | M243 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 146 | M244 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 147 | M245 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 148 | M246 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 149 | M247 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 150 | M248 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 151 | M249 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 152 | M250 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 153 | M251 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 154 | M252 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 155 | M253 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 156 | M254 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 157 | M255 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 158 | M256 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 159 | M257 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 160 | M258 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 161 | M259 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 162 | M260 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 163 | M261 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 164 | M262 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 165 | M263 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 166 | M264 | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 167 | M263A | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 168 | M264A | BenPIN | BenPIN | | | Euler Buc... | Yes | ** NA ** | | | None |
| 169 | A1 - DISH | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 170 | A1 - SPRINT | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 171 | A2 - SPRINT | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 172 | B2 - SPRINT | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 173 | B1 - DISH | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 174 | B1 - SPRINT | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 175 | C1 - SPRINT | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 176 | C2 - SPRINT | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 177 | C1 - DISH | | | | | Euler Buc... | Yes | ** NA ** | | | None |
| 178 | M179A | | | | | Euler Buc... | Yes | | | | None |
| 179 | M180A | | | | | Euler Buc... | Yes | | | | None |
| 180 | M181A | | | | | Euler Buc... | Yes | | | | None |
| 181 | M182A | | | | | Euler Buc... | Yes | | | | None |
| 182 | M183A | | | | | Euler Buc... | Yes | | | | None |
| 183 | M184A | | | | | Euler Buc... | Yes | | | | None |
| 184 | M185A | | | | | Euler Buc... | Yes | | | | None |
| 185 | M186A | | | | | Euler Buc... | Yes | | | | None |
| 186 | M187A | | | | | Euler Buc... | Yes | | | | None |
| 187 | M188A | | | | | Euler Buc... | Yes | | | | None |
| 188 | M189A | | | | | Euler Buc... | Yes | | | | None |
| 189 | M190A | | | | | Euler Buc... | Yes | | | | None |
| 190 | M191A | | | | | Euler Buc... | Yes | | | | None |
| 191 | M192A | | | | | Euler Buc... | Yes | | | | None |
| 192 | M193A | | | | | Euler Buc... | Yes | | | | None |

## Member Advanced Data (Continued)

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 193 | M194A | | | | | Euler Buc... | Yes | | | | None |
| 194 | M195A | | | | | Euler Buc... | Yes | | | | None |
| 195 | M196A | | | | | Euler Buc... | Yes | | | | None |
| 196 | M197A | | | | | Euler Buc... | Yes | | | | None |
| 197 | M198A | | | | | Euler Buc... | Yes | | | | None |
| 198 | M199A | | | | | Euler Buc... | Yes | | | | None |
| 199 | M200A | | | | | Euler Buc... | Yes | | | | None |
| 200 | M201A | | | | | Euler Buc... | Yes | | | | None |
| 201 | M202A | | | | | Euler Buc... | Yes | | | | None |
| 202 | M203A | | | | | Euler Buc... | Yes | | | | None |
| 203 | M204A | | | | | Euler Buc... | Yes | | | | None |
| 204 | M205A | | | | | Euler Buc... | Yes | | | | None |
| 205 | M206A | | | | | Euler Buc... | Yes | | | | None |
| 206 | M207A | | | | | Euler Buc... | Yes | | | | None |
| 207 | M208A | | | | | Euler Buc... | Yes | | | | None |
| 208 | M209A | | | | | Euler Buc... | Yes | | | | None |
| 209 | M210A | | | | | Euler Buc... | Yes | | | | None |
| 210 | M211A | | | | | Euler Buc... | Yes | | | | None |
| 211 | M212A | | | | | Euler Buc... | Yes | | | | None |
| 212 | M213A | | | | | Euler Buc... | Yes | | | | None |
| 213 | M214A | | | | | Euler Buc... | Yes | | | | None |
| 214 | M215A | | | | | Euler Buc... | Yes | | | | None |
| 215 | M216A | | | | | Euler Buc... | Yes | | | | None |
| 216 | M217A | | | | | Euler Buc... | Yes | | | | None |
| 217 | M218 | | | | | Euler Buc... | Yes | | | | None |
| 218 | M219A | | | | | Euler Buc... | Yes | | | | None |
| 219 | M220A | | | | | Euler Buc... | Yes | | | | None |
| 220 | M221A | | | | | Euler Buc... | Yes | | | | None |
| 221 | M222A | | | | | Euler Buc... | Yes | | | | None |
| 222 | M223A | | | | | Euler Buc... | Yes | | | | None |
| 223 | M224A | | | | | Euler Buc... | Yes | | | | None |
| 224 | M225A | | | | | Euler Buc... | Yes | | | | None |
| 225 | M226A | | | | | Euler Buc... | Yes | | | | None |
| 226 | M227A | | | | | Euler Buc... | Yes | | | | None |
| 227 | M228A | | | | | Euler Buc... | Yes | | | | None |
| 228 | M229A | | | | | Euler Buc... | Yes | | | | None |
| 229 | M230A | | | | | Euler Buc... | Yes | | | | None |
| 230 | M231A | | | | | Euler Buc... | Yes | | | | None |
| 231 | M232A | | | | | Euler Buc... | Yes | | | | None |
| 232 | M233A | | | | | Euler Buc... | Yes | | | | None |
| 233 | M234A | | | | | Euler Buc... | Yes | | | | None |
| 234 | M235A | | | | | Euler Buc... | Yes | | | | None |
| 235 | M236A | | | | | Euler Buc... | Yes | | | | None |
| 236 | M237A | | | | | Euler Buc... | Yes | | | | None |
| 237 | M238A | | | | | Euler Buc... | Yes | | | | None |
| 238 | M239A | | | | | Euler Buc... | Yes | | | | None |
| 239 | M240A | | | | | Euler Buc... | Yes | | | | None |
| 240 | M241A | | | | | Euler Buc... | Yes | | | | None |
| 241 | M242A | | | | | Euler Buc... | Yes | | | | None |
| 242 | M243A | | | | | Euler Buc... | Yes | | | | None |
| 243 | M244A | | | | | Euler Buc... | Yes | | | | None |
| 244 | M245A | | | | | Euler Buc... | Yes | | | | None |

## Member Advanced Data (Continued)

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 245 | M246A | | | | | Euler Buc... | Yes | | | | None |
| 246 | M247A | | | | | Euler Buc... | Yes | | | | None |
| 247 | M248A | | | | | Euler Buc... | Yes | | | | None |
| 248 | M249A | | | | | Euler Buc... | Yes | | | | None |
| 249 | M250A | | | | | Euler Buc... | Yes | | | | None |
| 250 | M251A | | | | | Euler Buc... | Yes | | | | None |
| 251 | M252A | | | | | Euler Buc... | Yes | | | | None |
| 252 | M253A | | | | | Euler Buc... | Yes | | | | None |
| 253 | M254A | | | | | Euler Buc... | Yes | | | | None |
| 254 | M255A | | | | | Euler Buc... | Yes | | | | None |
| 255 | M256A | | | | | Euler Buc... | Yes | | | | None |
| 256 | M257A | | | | | Euler Buc... | Yes | | | | None |
| 257 | M258A | | | | | Euler Buc... | Yes | | | | None |
| 258 | M259A | | | | | Euler Buc... | Yes | | | | None |
| 259 | M260A | | | | | Euler Buc... | Yes | | | | None |
| 260 | M261A | | | | | Euler Buc... | Yes | | | | None |
| 261 | M262A | | | | | Euler Buc... | Yes | | | | None |
| 262 | M263B | | | | | Euler Buc... | Yes | | | | None |
| 263 | M264B | | | | | Euler Buc... | Yes | | | | None |
| 264 | M265 | | | | | Euler Buc... | Yes | | | | None |
| 265 | M266 | | | | | Euler Buc... | Yes | | | | None |
| 266 | M267 | | | | | Euler Buc... | Yes | | | | None |
| 267 | M268 | | | | | Euler Buc... | Yes | | | | None |
| 268 | M269 | | | | | Euler Buc... | Yes | | | | None |
| 269 | M270 | | | | | Euler Buc... | Yes | | | | None |
| 270 | M271 | | | | | Euler Buc... | Yes | | | | None |
| 271 | M272 | | | | | Euler Buc... | Yes | | | | None |
| 272 | M273 | | | | | Euler Buc... | Yes | | | | None |
| 273 | M274 | | | | | Euler Buc... | Yes | | | | None |

## Basic Load Cases

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area(Me... | Surface(... |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Self-weight | DL | | -1 | | | | | | |
| 2 | Appurtenances | DL | | | | | 22 | | | |
| 3 | Live | LL | | | | 2 | | | | |
| 4 | Wind X-dir | WLX | | | | | 22 | 264 | | |
| 5 | Wind Z-dir | WLZ | | | | | 22 | 264 | | |
| 6 | Snow | SL | | | | | | | | 96 |

## Load Combinations

| | Description | So... | P... | S... | BLC | Fac... | BLC | Fac... | BLC | Fa... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | IBC 16-8 | Yes | Y | | DL | 1 | | | | | | | | | | | | | | | | | | |
| 2 | IBC 16-9 | Yes | Y | | DL | 1 | LL | 1 | | | | | | | | | | | | | | | | |
| 3 | IBC 16-10 (b) | Yes | Y | | DL | 1 | SL | 1 | | | | | | | | | | | | | | | | |
| 4 | IBC 16-11 (a) | Yes | Y | | DL | 1 | LL | .75 | | | | | | | | | | | | | | | | |
| 5 | IBC 16-11 (b) | Yes | Y | | DL | 1 | SL | .75 | | | | | | | | | | | | | | | | |
| 6 | IBC 16-12 (a) (a) | Yes | Y | | DL | 1 | WLX | .6 | | | | | | | | | | | | | | | | |
| 7 | IBC 16-12 (a) (b) | Yes | Y | | DL | 1 | WLZ | .6 | | | | | | | | | | | | | | | | |
| 8 | IBC 16-12 (a) (c) | Yes | Y | | DL | 1 | WLX | -.6 | | | | | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | So... | P... | S... | BLC | Fac... | BLC | Fac... | BLC | Fa... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... | BLC | Fac... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9 | IBC 16-12 (a) (d) | Yes | Y | | DL | 1 | WLZ | -.6 | | | | | | | | | | | | | | | | |
| 10 | IBC 16-13 (a) (a) | Yes | Y | | DL | 1 | WLX | .45 | LL | .75 | | | | | | | | | | | | | | |
| 11 | IBC 16-13 (a) (b) | Yes | Y | | DL | 1 | WLZ | .45 | LL | .75 | | | | | | | | | | | | | | |
| 12 | IBC 16-13 (a) (c) | Yes | Y | | DL | 1 | WLX | -.45 | LL | .75 | | | | | | | | | | | | | | |
| 13 | IBC 16-13 (a) (d) | Yes | Y | | DL | 1 | WLZ | -.45 | LL | .75 | | | | | | | | | | | | | | |
| 14 | IBC 16-13 (b) (a) | Yes | Y | | DL | 1 | WLX | .45 | SL | .75 | | | | | | | | | | | | | | |
| 15 | IBC 16-13 (b) (b) | Yes | Y | | DL | 1 | WLZ | .45 | SL | .75 | | | | | | | | | | | | | | |
| 16 | IBC 16-13 (b) (c) | Yes | Y | | DL | 1 | WLX | -.45 | SL | .75 | | | | | | | | | | | | | | |
| 17 | IBC 16-13 (b) (d) | Yes | Y | | DL | 1 | WLZ | -.45 | SL | .75 | | | | | | | | | | | | | | |
| 18 | IBC 16-15 (a) | Yes | Y | | DL | .6 | WLX | .6 | | | | | | | | | | | | | | | | |
| 19 | IBC 16-15 (b) | Yes | Y | | DL | .6 | WLZ | .6 | | | | | | | | | | | | | | | | |
| 20 | IBC 16-15 (c) | Yes | Y | | DL | .6 | WLX | -.6 | | | | | | | | | | | | | | | | |
| 21 | IBC 16-15 (d) | Yes | Y | | DL | .6 | WLZ | -.6 | | | | | | | | | | | | | | | | |

## Envelope Joint Reactions

| | Joint | | X [k] | LC | Y [k] | LC | Z [k] | LC | MX [k-ft] | LC | MY [k-ft] | LC | MZ [k-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | N248 | max | .399 | 7 | .515 | 2 | .355 | 21 | 0 | 21 | 0 | 21 | 0 | 21 |
| 2 | | min | -.313 | 21 | -.043 | 20 | -.418 | 7 | 0 | 1 | 0 | 1 | 0 | 1 |
| 3 | N32 | max | .278 | 9 | .312 | 15 | .282 | 9 | 0 | 21 | 0 | 21 | 0 | 21 |
| 4 | | min | -.21 | 18 | -.312 | 21 | -.219 | 7 | 0 | 1 | 0 | 1 | 0 | 1 |
| 5 | N104 | max | .432 | 20 | .432 | 16 | .529 | 21 | 0 | 21 | 0 | 21 | 0 | 21 |
| 6 | | min | -.502 | 6 | .016 | 18 | -.51 | 19 | 0 | 1 | 0 | 1 | 0 | 1 |
| 7 | N176 | max | .256 | 20 | .355 | 16 | .306 | 21 | 0 | 21 | 0 | 21 | 0 | 21 |
| 8 | | min | -.411 | 6 | -.035 | 18 | -.344 | 19 | 0 | 1 | 0 | 1 | 0 | 1 |
| 9 | N5 | max | .026 | 20 | .148 | 17 | .048 | 21 | .008 | 20 | 0 | 21 | .13 | 17 |
| 10 | | min | -.027 | 6 | .032 | 19 | -.047 | 7 | -.016 | 6 | 0 | 1 | .02 | 19 |
| 11 | N6 | max | .036 | 9 | .056 | 14 | .063 | 9 | .008 | 20 | 0 | 21 | .047 | 14 |
| 12 | | min | -.033 | 19 | .011 | 20 | -.072 | 19 | -.018 | 6 | 0 | 1 | .008 | 20 |
| 13 | N9 | max | .026 | 9 | .05 | 14 | .048 | 9 | .007 | 20 | 0 | 21 | .043 | 14 |
| 14 | | min | -.027 | 19 | .009 | 20 | -.058 | 7 | -.015 | 14 | 0 | 1 | .006 | 20 |
| 15 | N12 | max | .023 | 9 | .053 | 14 | .037 | 21 | .006 | 20 | 0 | 21 | .046 | 14 |
| 16 | | min | -.021 | 19 | .01 | 20 | -.052 | 7 | -.012 | 14 | 0 | 1 | .006 | 20 |
| 17 | N15 | max | .015 | 21 | .183 | 14 | .027 | 21 | .046 | 17 | 0 | 21 | .144 | 14 |
| 18 | | min | -.021 | 7 | .023 | 20 | -.041 | 7 | .012 | 19 | 0 | 1 | .022 | 20 |
| 19 | N18 | max | .033 | 16 | .045 | 14 | .031 | 9 | .013 | 3 | 0 | 21 | .029 | 14 |
| 20 | | min | -.009 | 19 | .008 | 20 | -.029 | 19 | .003 | 20 | 0 | 1 | .005 | 20 |
| 21 | N21 | max | .023 | 8 | .034 | 3 | .023 | 21 | .007 | 14 | 0 | 21 | .021 | 14 |
| 22 | | min | -.011 | 18 | .006 | 20 | -.028 | 7 | .001 | 12 | 0 | 1 | .004 | 20 |
| 23 | N24 | max | .022 | 8 | .037 | 14 | .016 | 21 | .007 | 6 | 0 | 21 | .024 | 14 |
| 24 | | min | -.01 | 18 | .006 | 20 | -.034 | 7 | 0 | 20 | 0 | 1 | .005 | 20 |
| 25 | N27 | max | .005 | 8 | .164 | 17 | .016 | 18 | .078 | 14 | 0 | 21 | .117 | 14 |
| 26 | | min | -.002 | 18 | .005 | 19 | -.019 | 8 | .011 | 20 | 0 | 1 | .014 | 20 |
| 27 | N30 | max | .035 | 16 | .032 | 3 | .009 | 19 | .03 | 9 | 0 | 21 | .034 | 15 |
| 28 | | min | -.011 | 18 | .004 | 20 | -.009 | 9 | -.019 | 19 | 0 | 1 | -.017 | 21 |
| 29 | N33 | max | .076 | 9 | .146 | 15 | .091 | 21 | .014 | 7 | 0 | 21 | .013 | 17 |
| 30 | | min | -.056 | 18 | -.119 | 21 | -.073 | 7 | -.01 | 21 | 0 | 1 | 0 | 19 |
| 31 | N36 | max | .013 | 6 | .031 | 3 | .041 | 21 | .038 | 15 | 0 | 21 | .052 | 9 |
| 32 | | min | -.015 | 9 | .003 | 20 | -.048 | 7 | -.032 | 21 | 0 | 1 | -.035 | 19 |
| 33 | N39 | max | .024 | 6 | .184 | 17 | .005 | 18 | .102 | 14 | 0 | 21 | .105 | 9 |
| 34 | | min | -.045 | 21 | -.029 | 19 | -.014 | 19 | .015 | 20 | 0 | 1 | -.031 | 19 |

## Envelope Joint Reactions (Continued)

| | Joint | | X [k] | LC | Y [k] | LC | Z [k] | LC | MX [k-ft] | LC | MY [k-ft] | LC | MZ [k-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | N42 | max | .054 | 9 | .035 | 17 | .032 | 21 | .021 | 14 | 0 | 21 | .026 | 9 |
| 36 | | min | -.029 | 18 | -.002 | 19 | -.038 | 7 | -.003 | 20 | 0 | 1 | -.022 | 19 |
| 37 | N45 | max | .048 | 8 | .033 | 17 | .036 | 21 | .017 | 14 | 0 | 21 | .025 | 9 |
| 38 | | min | -.035 | 18 | -.004 | 19 | -.044 | 7 | -.005 | 20 | 0 | 1 | -.02 | 19 |
| 39 | N48 | max | .052 | 20 | .045 | 17 | .036 | 21 | .021 | 17 | 0 | 21 | .028 | 9 |
| 40 | | min | -.042 | 6 | -.008 | 19 | -.062 | 7 | -.002 | 20 | 0 | 1 | -.018 | 19 |
| 41 | N51 | max | .017 | 7 | .237 | 17 | .005 | 20 | .158 | 17 | 0 | 21 | .055 | 17 |
| 42 | | min | -.019 | 21 | -.078 | 19 | -.01 | 7 | -.044 | 19 | 0 | 1 | -.016 | 19 |
| 43 | N54 | max | .09 | 8 | .052 | 17 | .007 | 20 | .048 | 17 | 0 | 21 | .016 | 19 |
| 44 | | min | -.051 | 18 | -.01 | 19 | -.029 | 7 | -.016 | 19 | 0 | 1 | -.024 | 9 |
| 45 | N57 | max | .077 | 8 | .048 | 17 | .011 | 20 | .044 | 9 | 0 | 21 | .022 | 19 |
| 46 | | min | -.055 | 18 | -.007 | 19 | -.03 | 7 | -.015 | 19 | 0 | 1 | -.03 | 9 |
| 47 | N60 | max | .074 | 20 | .053 | 17 | .012 | 21 | .047 | 17 | 0 | 21 | .028 | 19 |
| 48 | | min | -.063 | 6 | -.006 | 19 | -.048 | 7 | -.013 | 19 | 0 | 1 | -.035 | 9 |
| 49 | N63 | max | .008 | 21 | .127 | 15 | .003 | 18 | .11 | 17 | 0 | 21 | .016 | 15 |
| 50 | | min | -.018 | 14 | -.013 | 21 | -.034 | 8 | .02 | 19 | 0 | 1 | -.006 | 21 |
| 51 | N66 | max | .11 | 8 | .125 | 17 | .002 | 21 | .143 | 17 | 0 | 21 | .025 | 17 |
| 52 | | min | -.084 | 18 | .04 | 18 | -.026 | 6 | .043 | 19 | 0 | 1 | -.009 | 19 |
| 53 | N69 | max | .114 | 8 | .125 | 16 | .001 | 18 | .144 | 17 | 0 | 21 | .031 | 9 |
| 54 | | min | -.083 | 18 | .023 | 18 | -.037 | 8 | .041 | 19 | 0 | 1 | -.013 | 19 |
| 55 | N72 | max | .076 | 8 | .068 | 17 | .002 | 20 | .057 | 17 | 0 | 21 | .033 | 9 |
| 56 | | min | -.071 | 18 | -.008 | 19 | -.041 | 6 | -.01 | 19 | 0 | 1 | -.011 | 19 |
| 57 | N75 | max | .018 | 20 | .184 | 17 | .001 | 2 | .153 | 17 | 0 | 21 | .007 | 18 |
| 58 | | min | -.021 | 13 | 0 | 19 | -.008 | 6 | -.008 | 19 | 0 | 1 | -.011 | 8 |
| 59 | N78 | max | .088 | 8 | .065 | 17 | .011 | 18 | .052 | 9 | 0 | 21 | .01 | 18 |
| 60 | | min | -.068 | 18 | -.01 | 19 | -.043 | 8 | -.012 | 19 | 0 | 1 | -.015 | 16 |
| 61 | N81 | max | .075 | 8 | .056 | 17 | .011 | 18 | .044 | 9 | 0 | 21 | .01 | 18 |
| 62 | | min | -.07 | 18 | -.009 | 19 | -.03 | 8 | -.01 | 19 | 0 | 1 | -.017 | 8 |
| 63 | N84 | max | .07 | 8 | .06 | 17 | .004 | 18 | .045 | 17 | 0 | 21 | .009 | 18 |
| 64 | | min | -.082 | 18 | -.008 | 19 | -.025 | 8 | -.008 | 19 | 0 | 1 | -.019 | 8 |
| 65 | N87 | max | -.002 | 20 | .246 | 17 | .009 | 19 | .235 | 17 | 0 | 21 | .006 | 19 |
| 66 | | min | -.043 | 14 | .013 | 19 | -.041 | 17 | -.031 | 19 | 0 | 1 | -.097 | 17 |
| 67 | N90 | max | .051 | 8 | .222 | 17 | .027 | 13 | .213 | 17 | 0 | 21 | .01 | 19 |
| 68 | | min | -.049 | 18 | -.058 | 19 | -.063 | 7 | -.034 | 19 | 0 | 1 | -.107 | 17 |
| 69 | N93 | max | .041 | 8 | .043 | 17 | 0 | 18 | .026 | 17 | 0 | 21 | .01 | 19 |
| 70 | | min | -.039 | 18 | -.006 | 19 | -.065 | 16 | -.002 | 19 | 0 | 1 | -.017 | 9 |
| 71 | N96 | max | .029 | 20 | .036 | 17 | .01 | 18 | .025 | 16 | 0 | 21 | .012 | 19 |
| 72 | | min | -.046 | 18 | -.004 | 19 | -.04 | 7 | .001 | 18 | 0 | 1 | -.016 | 9 |
| 73 | N99 | max | .036 | 21 | .112 | 17 | .002 | 19 | .092 | 17 | 0 | 21 | .022 | 19 |
| 74 | | min | -.036 | 19 | -.029 | 19 | -.014 | 9 | .012 | 19 | 0 | 1 | -.064 | 9 |
| 75 | N102 | max | .012 | 21 | .032 | 3 | .027 | 21 | .042 | 16 | 0 | 21 | .03 | 7 |
| 76 | | min | -.013 | 7 | .004 | 19 | -.063 | 7 | -.004 | 18 | 0 | 1 | -.017 | 21 |
| 77 | N105 | max | .083 | 20 | .253 | 15 | .109 | 21 | .099 | 14 | 0 | 21 | -.01 | 20 |
| 78 | | min | -.132 | 9 | .036 | 21 | -.115 | 19 | .003 | 20 | 0 | 1 | -.1 | 14 |
| 79 | N108 | max | .019 | 20 | .146 | 14 | .041 | 19 | .08 | 14 | 0 | 21 | -.016 | 20 |
| 80 | | min | -.061 | 9 | -.043 | 20 | -.04 | 21 | -.015 | 20 | 0 | 1 | -.122 | 14 |
| 81 | N111 | max | .004 | 21 | .087 | 14 | .021 | 20 | .042 | 16 | 0 | 21 | -.015 | 19 |
| 82 | | min | -.017 | 14 | -.009 | 20 | -.053 | 6 | .006 | 18 | 0 | 1 | -.073 | 3 |
| 83 | N114 | max | .019 | 19 | .023 | 3 | .047 | 21 | .022 | 8 | 0 | 21 | .014 | 20 |
| 84 | | min | -.047 | 9 | .002 | 20 | -.06 | 19 | -.014 | 18 | 0 | 1 | -.018 | 14 |
| 85 | N117 | max | .023 | 19 | .022 | 3 | .062 | 9 | .026 | 8 | 0 | 21 | .014 | 20 |
| 86 | | min | -.056 | 9 | .002 | 20 | -.053 | 19 | -.014 | 18 | 0 | 1 | -.014 | 6 |

## Envelope Joint Reactions (Continued)

| | Joint | | X [k] | LC | Y [k] | LC | Z [k] | LC | MX [k-ft] | LC | MY [k-ft] | LC | MZ [k-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 87 | N120 | max | .023 | 19 | .029 | 3 | .079 | 9 | .034 | 16 | 0 | 21 | .008 | 20 |
| 88 | | min | -.079 | 9 | .003 | 21 | -.054 | 19 | -.014 | 18 | 0 | 1 | -.013 | 14 |
| 89 | N123 | max | .011 | 7 | .184 | 16 | .006 | 21 | .06 | 16 | 0 | 21 | .01 | 18 |
| 90 | | min | -.011 | 18 | -.014 | 18 | -.025 | 7 | -.02 | 18 | 0 | 1 | -.108 | 16 |
| 91 | N126 | max | .011 | 7 | .034 | 3 | .09 | 9 | .014 | 19 | 0 | 21 | -.006 | 18 |
| 92 | | min | -.029 | 9 | .003 | 18 | -.088 | 19 | -.018 | 9 | 0 | 1 | -.022 | 3 |
| 93 | N129 | max | .017 | 7 | .032 | 15 | .093 | 9 | .014 | 19 | 0 | 21 | -.003 | 18 |
| 94 | | min | -.028 | 9 | .002 | 18 | -.077 | 19 | -.015 | 9 | 0 | 1 | -.019 | 16 |
| 95 | N132 | max | .016 | 7 | .043 | 16 | .101 | 9 | .014 | 19 | 0 | 21 | .001 | 18 |
| 96 | | min | -.036 | 9 | -.002 | 18 | -.078 | 7 | -.013 | 21 | 0 | 1 | -.028 | 16 |
| 97 | N135 | max | .011 | 8 | .19 | 16 | .03 | 21 | .011 | 14 | 0 | 21 | .031 | 18 |
| 98 | | min | -.008 | 18 | -.067 | 18 | -.02 | 11 | -.007 | 21 | 0 | 1 | -.13 | 16 |
| 99 | N138 | max | .003 | 8 | .049 | 16 | .091 | 9 | .031 | 18 | 0 | 21 | .007 | 18 |
| 100 | | min | -.024 | 19 | -.004 | 18 | -.105 | 7 | -.039 | 8 | 0 | 1 | -.038 | 16 |
| 101 | N141 | max | .011 | 8 | .046 | 16 | .088 | 9 | .035 | 18 | 0 | 21 | .004 | 18 |
| 102 | | min | -.014 | 18 | -.003 | 18 | -.088 | 7 | -.043 | 8 | 0 | 1 | -.034 | 16 |
| 103 | N144 | max | .019 | 8 | .048 | 16 | .094 | 9 | .039 | 18 | 0 | 21 | 0 | 18 |
| 104 | | min | -.027 | 18 | -.001 | 18 | -.079 | 7 | -.046 | 8 | 0 | 1 | -.034 | 16 |
| 105 | N147 | max | .015 | 9 | .154 | 14 | .014 | 18 | .008 | 18 | 0 | 21 | -.011 | 20 |
| 106 | | min | -.02 | 7 | -.027 | 20 | -.02 | 7 | -.034 | 8 | 0 | 1 | -.086 | 14 |
| 107 | N150 | max | .009 | 20 | .117 | 14 | .092 | 9 | -.001 | 20 | 0 | 21 | -.01 | 20 |
| 108 | | min | -.044 | 6 | -.024 | 20 | -.087 | 7 | -.035 | 6 | 0 | 1 | -.114 | 14 |
| 109 | N153 | max | .033 | 9 | .115 | 14 | .082 | 21 | .026 | 8 | 0 | 21 | -.018 | 20 |
| 110 | | min | -.037 | 7 | -.028 | 20 | -.088 | 7 | -.039 | 6 | 0 | 1 | -.108 | 14 |
| 111 | N156 | max | -.007 | 21 | .052 | 16 | .073 | 21 | .038 | 8 | 0 | 21 | .014 | 18 |
| 112 | | min | -.036 | 15 | -.006 | 18 | -.076 | 7 | -.018 | 18 | 0 | 1 | -.053 | 16 |
| 113 | N159 | max | .012 | 8 | .154 | 16 | .027 | 8 | .004 | 20 | 0 | 21 | 0 | 18 |
| 114 | | min | -.014 | 18 | .005 | 18 | -.011 | 19 | -.027 | 14 | 0 | 1 | -.112 | 16 |
| 115 | N162 | max | .024 | 21 | .048 | 16 | .045 | 21 | .012 | 20 | 0 | 21 | .015 | 18 |
| 116 | | min | -.064 | 7 | -.009 | 18 | -.063 | 7 | -.012 | 15 | 0 | 1 | -.043 | 8 |
| 117 | N165 | max | .023 | 21 | .04 | 16 | .039 | 21 | .01 | 20 | 0 | 21 | .013 | 18 |
| 118 | | min | -.045 | 7 | -.009 | 18 | -.048 | 7 | -.007 | 19 | 0 | 1 | -.038 | 8 |
| 119 | N168 | max | .018 | 21 | .043 | 16 | .038 | 21 | .005 | 14 | 0 | 21 | .009 | 18 |
| 120 | | min | -.037 | 7 | -.009 | 18 | -.041 | 19 | -.007 | 19 | 0 | 1 | -.039 | 8 |
| 121 | N171 | max | .009 | 19 | .133 | 16 | .039 | 6 | .014 | 18 | 0 | 21 | .022 | 18 |
| 122 | | min | -.021 | 20 | -.012 | 18 | -.046 | 20 | -.067 | 16 | 0 | 1 | -.14 | 16 |
| 123 | N174 | max | .017 | 20 | .042 | 16 | .017 | 7 | .021 | 17 | 0 | 21 | .005 | 18 |
| 124 | | min | -.053 | 6 | -.005 | 18 | -.011 | 21 | -.001 | 19 | 0 | 1 | -.047 | 16 |
| 125 | N177 | max | .081 | 20 | .308 | 16 | .107 | 8 | .003 | 18 | 0 | 21 | -.012 | 18 |
| 126 | | min | -.118 | 6 | -.016 | 18 | -.107 | 18 | -.129 | 16 | 0 | 1 | -.117 | 16 |
| 127 | N180 | max | .023 | 6 | .172 | 16 | .059 | 9 | .01 | 18 | 0 | 21 | -.026 | 18 |
| 128 | | min | -.011 | 21 | -.002 | 18 | -.037 | 19 | -.168 | 16 | 0 | 1 | -.071 | 3 |
| 129 | N183 | max | .05 | 18 | .109 | 14 | .035 | 8 | -.01 | 18 | 0 | 21 | -.005 | 21 |
| 130 | | min | -.038 | 12 | -.014 | 20 | .005 | 14 | -.102 | 16 | 0 | 1 | -.052 | 15 |
| 131 | N186 | max | .037 | 20 | .027 | 3 | .059 | 8 | .004 | 19 | 0 | 21 | .016 | 21 |
| 132 | | min | -.087 | 6 | .007 | 20 | -.03 | 18 | -.022 | 9 | 0 | 1 | -.016 | 7 |
| 133 | N189 | max | .06 | 8 | .025 | 3 | .077 | 8 | .003 | 19 | 0 | 21 | .016 | 21 |
| 134 | | min | -.075 | 18 | .006 | 20 | -.038 | 18 | -.019 | 9 | 0 | 1 | -.018 | 7 |
| 135 | N192 | max | .092 | 8 | .032 | 3 | .113 | 8 | -.002 | 19 | 0 | 21 | .016 | 21 |
| 136 | | min | -.078 | 18 | .007 | 21 | -.038 | 18 | -.018 | 9 | 0 | 1 | -.024 | 15 |
| 137 | N195 | max | .005 | 12 | .168 | 16 | .021 | 9 | 0 | 21 | 0 | 21 | .025 | 21 |
| 138 | | min | -.035 | 6 | .006 | 21 | -.024 | 7 | -.11 | 15 | 0 | 1 | -.058 | 7 |

## Envelope Joint Reactions (Continued)

| | Joint | | X [k] | LC | Y [k] | LC | Z [k] | LC | MX [k-ft] | LC | MY [k-ft] | LC | MZ [k-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 139 | N198 | max | .126 | 8 | .042 | 15 | .085 | 9 | -.006 | 18 | 0 | 21 | .044 | 8 |
| 140 | | min | -.121 | 18 | .003 | 21 | -.036 | 19 | -.032 | 16 | 0 | 1 | -.034 | 18 |
| 141 | N201 | max | .093 | 8 | .167 | 14 | .06 | 9 | -.007 | 21 | 0 | 21 | .021 | 20 |
| 142 | | min | -.082 | 6 | -.052 | 20 | -.062 | 7 | -.153 | 15 | 0 | 1 | -.061 | 14 |
| 143 | N204 | max | .106 | 20 | .154 | 15 | .053 | 9 | -.001 | 21 | 0 | 21 | -.002 | 20 |
| 144 | | min | -.114 | 6 | -.012 | 21 | -.017 | 19 | -.165 | 15 | 0 | 1 | -.058 | 14 |
| 145 | N207 | max | .081 | 20 | .212 | 15 | .04 | 9 | .037 | 21 | 0 | 21 | -.002 | 20 |
| 146 | | min | -.078 | 18 | -.019 | 21 | -.03 | 19 | -.165 | 7 | 0 | 1 | -.033 | 6 |
| 147 | N210 | max | .125 | 20 | .06 | 15 | .04 | 6 | .006 | 21 | 0 | 21 | .009 | 15 |
| 148 | | min | -.143 | 6 | -.005 | 21 | -.01 | 20 | -.047 | 15 | 0 | 1 | -.012 | 9 |
| 149 | N213 | max | .115 | 20 | .058 | 15 | .025 | 10 | .007 | 21 | 0 | 21 | .014 | 7 |
| 150 | | min | -.113 | 6 | -.006 | 21 | -.006 | 20 | -.045 | 7 | 0 | 1 | -.016 | 9 |
| 151 | N216 | max | .118 | 8 | .066 | 15 | .025 | 10 | .008 | 21 | 0 | 21 | .023 | 7 |
| 152 | | min | -.098 | 18 | -.008 | 21 | .005 | 20 | -.051 | 7 | 0 | 1 | -.02 | 9 |
| 153 | N219 | max | .032 | 20 | .143 | 15 | .032 | 10 | -.006 | 21 | 0 | 21 | .043 | 7 |
| 154 | | min | -.018 | 19 | .012 | 21 | -.018 | 20 | -.135 | 15 | 0 | 1 | -.02 | 21 |
| 155 | N222 | max | .097 | 8 | .073 | 15 | .076 | 6 | .004 | 21 | 0 | 21 | .044 | 7 |
| 156 | | min | -.075 | 18 | -.006 | 21 | -.012 | 20 | -.053 | 15 | 0 | 1 | -.023 | 21 |
| 157 | N225 | max | .116 | 20 | .267 | 17 | .047 | 6 | -.12 | 20 | 0 | 21 | .091 | 11 |
| 158 | | min | -.1 | 18 | .1 | 20 | -.025 | 20 | -.283 | 14 | 0 | 1 | .017 | 21 |
| 159 | N228 | max | .093 | 20 | .066 | 15 | .06 | 6 | .003 | 21 | 0 | 21 | .035 | 11 |
| 160 | | min | -.074 | 6 | -.006 | 21 | -.003 | 20 | -.047 | 15 | 0 | 1 | -.016 | 21 |
| 161 | N231 | max | .033 | 21 | .12 | 9 | .037 | 9 | -.022 | 21 | 0 | 21 | .041 | 2 |
| 162 | | min | -.034 | 6 | -.012 | 19 | -.028 | 19 | -.088 | 15 | 0 | 1 | .009 | 20 |
| 163 | N234 | max | .1 | 7 | .137 | 15 | .064 | 9 | -.008 | 21 | 0 | 21 | .059 | 13 |
| 164 | | min | -.065 | 21 | .014 | 21 | -.026 | 20 | -.138 | 15 | 0 | 1 | .014 | 18 |
| 165 | N237 | max | .051 | 8 | .127 | 15 | .08 | 21 | -.008 | 21 | 0 | 21 | .056 | 12 |
| 166 | | min | -.034 | 18 | .012 | 21 | -.073 | 7 | -.131 | 15 | 0 | 1 | .008 | 18 |
| 167 | N240 | max | .056 | 8 | .048 | 15 | .073 | 15 | .017 | 21 | 0 | 21 | .013 | 2 |
| 168 | | min | -.027 | 18 | -.01 | 21 | -.008 | 20 | -.048 | 7 | 0 | 1 | -.013 | 6 |
| 169 | N243 | max | .046 | 21 | .424 | 2 | .035 | 7 | .003 | 21 | 0 | 21 | .057 | 15 |
| 170 | | min | -.052 | 19 | -.019 | 21 | -.009 | 13 | -.131 | 15 | 0 | 1 | -.003 | 13 |
| 171 | N246 | max | .013 | 6 | .037 | 15 | .065 | 9 | .007 | 20 | 0 | 21 | .013 | 20 |
| 172 | | min | -.015 | 8 | -.004 | 21 | -.022 | 19 | -.082 | 2 | 0 | 1 | -.069 | 2 |
| 173 | N249 | max | .138 | 7 | .221 | 2 | .112 | 21 | .003 | 20 | 0 | 21 | .005 | 20 |
| 174 | | min | -.089 | 21 | -.014 | 20 | -.112 | 19 | -.043 | 11 | 0 | 1 | -.015 | 11 |
| 175 | N252 | max | .094 | 7 | .035 | 14 | .023 | 7 | .014 | 2 | 0 | 21 | .035 | 2 |
| 176 | | min | -.022 | 21 | .004 | 20 | -.016 | 21 | -.031 | 7 | 0 | 1 | -.006 | 19 |
| 177 | N255 | max | .012 | 2 | .237 | 15 | .059 | 7 | -.014 | 20 | 0 | 21 | .135 | 15 |
| 178 | | min | -.012 | 19 | -.012 | 21 | -.026 | 21 | -.1 | 15 | 0 | 1 | .006 | 21 |
| 179 | N258 | max | .051 | 7 | .034 | 3 | .057 | 9 | .02 | 19 | 0 | 21 | .026 | 15 |
| 180 | | min | -.02 | 21 | .005 | 20 | -.041 | 19 | -.025 | 9 | 0 | 1 | -.002 | 21 |
| 181 | N261 | max | .057 | 7 | .033 | 17 | .05 | 21 | .023 | 19 | 0 | 21 | .016 | 14 |
| 182 | | min | -.024 | 21 | 0 | 19 | -.06 | 7 | -.026 | 9 | 0 | 1 | .003 | 20 |
| 183 | N264 | max | .076 | 7 | .045 | 17 | .053 | 21 | .02 | 19 | 0 | 21 | .023 | 14 |
| 184 | | min | -.022 | 21 | 0 | 19 | -.078 | 7 | -.03 | 17 | 0 | 1 | .003 | 20 |
| 185 | N267 | max | .015 | 7 | .188 | 14 | .023 | 2 | .011 | 19 | 0 | 21 | .141 | 14 |
| 186 | | min | -.014 | 6 | .024 | 20 | -.022 | 19 | -.057 | 17 | 0 | 1 | .022 | 20 |
| 187 | N270 | max | .037 | 7 | .052 | 17 | .093 | 9 | .03 | 11 | 0 | 21 | .041 | 17 |
| 188 | | min | -.009 | 18 | 0 | 19 | -.091 | 7 | -.013 | 21 | 0 | 1 | .004 | 20 |
| 189 | N273 | max | .039 | 7 | .049 | 17 | .077 | 21 | .028 | 11 | 0 | 21 | .039 | 17 |
| 190 | | min | -.016 | 18 | -.001 | 19 | -.101 | 7 | -.009 | 21 | 0 | 1 | .004 | 20 |

## Envelope Joint Reactions (Continued)

| | Joint | | X [k] | LC | Y [k] | LC | Z [k] | LC | MX [k-ft] | LC | MY [k-ft] | LC | MZ [k-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 191 | N276 | max | .05 | 7 | .055 | 17 | .073 | 21 | .025 | 11 | 0 | 21 | .044 | 17 |
| 192 | | min | -.024 | 18 | 0 | 19 | -.115 | 7 | -.009 | 20 | 0 | 1 | .003 | 19 |
| 193 | N279 | max | .08 | 8 | .122 | 3 | .052 | 21 | .033 | 11 | 0 | 21 | .133 | 17 |
| 194 | | min | -.058 | 18 | .017 | 19 | -.056 | 7 | -.017 | 21 | 0 | 1 | -.01 | 19 |
| 195 | N282 | max | .075 | 20 | .15 | 17 | .059 | 21 | .023 | 11 | 0 | 21 | .147 | 17 |
| 196 | | min | -.068 | 18 | -.049 | 19 | -.085 | 7 | -.013 | 17 | 0 | 1 | -.007 | 19 |
| 197 | N285 | max | .053 | 8 | .151 | 17 | .055 | 9 | 0 | 20 | 0 | 21 | .19 | 17 |
| 198 | | min | -.037 | 18 | -.027 | 19 | -.063 | 19 | -.013 | 17 | 0 | 1 | -.007 | 19 |
| 199 | N288 | max | .093 | 20 | .061 | 17 | .088 | 9 | -.001 | 20 | 0 | 21 | .049 | 17 |
| 200 | | min | -.08 | 18 | .01 | 19 | -.115 | 7 | -.026 | 6 | 0 | 1 | .01 | 19 |
| 201 | Totals: | max | 4.68 | 20 | 8.56 | 3 | 4.68 | 21 | | | | | | |
| 202 | | min | -4.68 | 6 | 3.001 | 18 | -4.68 | 7 | | | | | | |

## Envelope AISC 15th(360-16): ASD Steel Code Checks

| | Member | Shape | Code Check | Loc[ft] | LC | Shear ... | Loc[ft] | Dir | LC | Pnc/om ... | Pnt/om [k] | Mnyy/o... | Mnzz/o... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M2 | L2x1.5x1/4 | .004 | 3 | 12 | .015 | 3 | y | 14 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 2 | M3 | L2x1.5x1/4 | .002 | 3 | 20 | .019 | 3 | y | 14 | 9.001 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 3 | M4 | L2x1.5x1/4 | .003 | 3 | 20 | .012 | 3 | y | 14 | 9.001 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 4 | M5 | L2x1.5x1/4 | .000 | 3 | 20 | .012 | 3 | y | 14 | 9.001 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 5 | M6 | L2x1.5x1/4 | .000 | 0 | 21 | .020 | 3 | y | 17 | 9.001 | 17.526 | .296 | .754 | 1.... | H1-1a |
| 6 | M7 | L2x1.5x1/4 | .002 | 3 | 3 | .023 | 3 | y | 9 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 7 | M8 | L2x1.5x1/4 | .002 | 3 | 3 | .020 | 3 | y | 9 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 8 | M9 | L2x1.5x1/4 | .000 | 0 | 21 | .009 | 0 | y | 14 | 9.001 | 17.526 | .296 | .754 | 1.... | H1-1a |
| 9 | M10 | L2x1.5x1/4 | .000 | 0 | 21 | .013 | 3 | y | 16 | 9.001 | 17.526 | .296 | .754 | 1.... | H1-1a |
| 10 | M11 | L2x1.5x1/4 | .000 | 0 | 21 | .012 | 3 | y | 8 | 9.001 | 17.526 | .296 | .753 | 1.... | H1-1a |
| 11 | M12 | L2x1.5x1/4 | .000 | 0 | 21 | .012 | 3 | y | 17 | 9.001 | 17.526 | .296 | .746 | 1.... | H1-1a |
| 12 | M13 | L2x1.5x1/4 | .001 | 3 | 3 | .022 | 3 | y | 8 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 13 | M14 | L2x1.5x1/4 | .001 | 3 | 1 | .017 | 0 | y | 18 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 14 | M15 | L2x1.5x1/4 | .000 | 0 | 21 | .027 | 3 | y | 8 | 9.001 | 17.526 | .296 | .754 | 1.... | H1-1a |
| 15 | M16 | L2x1.5x1/4 | .000 | 0 | 21 | .013 | 3 | y | 16 | 9.001 | 17.526 | .296 | .754 | 1.... | H1-1a |
| 16 | M17 | L2x1.5x1/4 | .000 | 0 | 21 | .013 | 0 | y | 9 | 9.001 | 17.526 | .296 | .754 | 1.... | H1-1a |
| 17 | M18 | L2x1.5x1/4 | .000 | 0 | 21 | .016 | 3 | y | 16 | 9.001 | 17.526 | .296 | .754 | 1.... | H1-1a |
| 18 | M19 | L2x1.5x1/4 | .002 | 3 | 3 | .013 | 3 | y | 7 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 19 | M20 | L2x1.5x1/4 | .001 | 3 | 5 | .026 | 3 | y | 7 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 20 | M21 | L2x1.5x1/4 | .003 | 3 | 5 | .015 | 3 | y | 15 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 21 | M22 | L2x1.5x1/4 | .000 | 3 | 20 | .033 | 3 | y | 7 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 22 | M23 | L2x1.5x1/4 | .002 | 3 | 20 | .013 | 3 | y | 11 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 23 | M24 | L2x1.5x1/4 | .002 | 3 | 20 | .023 | 3 | y | 14 | 9.001 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 24 | M25 | L2x1.5x1/4 | .003 | 3 | 12 | .017 | 3 | y | 14 | 9.001 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 25 | M122 | C6X8.2 | .002 | 0 | 7 | .029 | .445 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 26 | M123 | C6X8.2 | .001 | 0 | 7 | .040 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 27 | M124 | C6X8.2 | .001 | 0 | 7 | .046 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 28 | M125 | C6X8.2 | .001 | 0 | 7 | .050 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 29 | M126 | C6X8.2 | .001 | 0 | 19 | .045 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 30 | M127 | C6X8.2 | .001 | 0 | 19 | .044 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 31 | M128 | C6X8.2 | .001 | 0 | 19 | .037 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 32 | M129 | C6X8.2 | .000 | 0 | 19 | .032 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 33 | M130 | C6X8.2 | .001 | 0 | 19 | .023 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 34 | M131 | C6X8.2 | .001 | 0 | 19 | .017 | .427 | z | 12 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 35 | M132 | C6X8.2 | .002 | .872 | 21 | .013 | .445 | z | 12 | 50.497 | 51.521 | 1.402 | 9.269 | 1.2 | H1-1b* |

## *Envelope AISC 15th(360-16): ASD Steel Code Checks (Continued)*

| | Member | Shape | Code Check | Loc[ft] | LC | Shear ... | Loc[ft] | Dir | LC | Pnc/om ... | Pnt/om [k] | Mnyy/o... | Mnzz/o... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 36 | M133 | C6X8.2 | .002 | .872 | 21 | .013 | .427 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 37 | M134 | C6X8.2 | .001 | .872 | 20 | .024 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 38 | M135 | C6X8.2 | .001 | .872 | 20 | .029 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 39 | M136 | C6X8.2 | .001 | .872 | 20 | .040 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 40 | M137 | C6X8.2 | .001 | .872 | 20 | .047 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 41 | M138 | C6X8.2 | .001 | 0 | 7 | .057 | .436 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 42 | M139 | C6X8.2 | .000 | 0 | 15 | .057 | .436 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 43 | M140 | C6X8.2 | .001 | .872 | 8 | .055 | .436 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 44 | M141 | C6X8.2 | .001 | .872 | 8 | .045 | .436 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 45 | M142 | C6X8.2 | .001 | 0 | 7 | .031 | .445 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 46 | M143 | C6X8.2 | .001 | 0 | 7 | .093 | .436 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 47 | M144 | C6X8.2 | .001 | .872 | 7 | .020 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 48 | M145 | C6X8.2 | .001 | .872 | 8 | .023 | .436 | z | 6 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 49 | M146 | C6X8.2 | .001 | .872 | 19 | .026 | .436 | z | 6 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 50 | M147 | C6X8.2 | .001 | .872 | 19 | .033 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 51 | M148 | C6X8.2 | .001 | .872 | 19 | .038 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 52 | M149 | C6X8.2 | .001 | .872 | 19 | .045 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 53 | M150 | C6X8.2 | .001 | .309 | 18 | .121 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 54 | M151 | C6X8.2 | .001 | 0 | 18 | .043 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 55 | M152 | C6X8.2 | .001 | 0 | 18 | .044 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 56 | M153 | C6X8.2 | .001 | 0 | 18 | .041 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 57 | M154 | C6X8.2 | .002 | 0 | 18 | .038 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 58 | M155 | C6X8.2 | .002 | 0 | 21 | .035 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 59 | M156 | C6X8.2 | .004 | .872 | 19 | .099 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 60 | M157 | C6X8.2 | .002 | .872 | 19 | .020 | .445 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 2... | H1-1b* |
| 61 | M158 | C6X8.2 | .000 | .872 | 7 | .017 | .427 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 62 | M159 | C6X8.2 | .001 | .872 | 19 | .019 | .445 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 63 | M160 | C6X8.2 | .001 | .872 | 19 | .020 | .427 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 64 | M161 | C6X8.2 | .001 | .872 | 19 | .022 | .436 | z | 3 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 65 | M162 | C6X8.2 | .001 | 0 | 17 | .035 | .436 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 66 | M163 | C6X8.2 | .001 | .872 | 7 | .042 | .436 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 67 | M164 | C6X8.2 | .001 | .872 | 7 | .050 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 68 | M165 | C6X8.2 | .001 | .872 | 7 | .056 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 69 | M166 | C6X8.2 | .001 | 0 | 9 | .062 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 70 | M167 | C6X8.2 | .001 | 0 | 17 | .058 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 71 | M168 | C6X8.2 | .001 | .872 | 6 | .050 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 72 | M169 | C6X8.2 | .001 | .872 | 11 | .036 | .427 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 73 | M170 | C6X8.2 | .001 | 0 | 9 | .017 | .445 | z | 20 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 74 | M171 | C6X8.2 | .001 | .436 | 9 | .084 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 75 | M172 | C6X8.2 | .001 | .872 | 14 | .029 | .427 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 76 | M173 | C6X8.2 | .001 | .872 | 7 | .044 | .436 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 77 | M174 | C6X8.2 | .001 | 0 | 21 | .049 | .436 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 78 | M175 | C6X8.2 | .001 | 0 | 21 | .055 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 79 | M176 | C6X8.2 | .001 | 0 | 21 | .054 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 80 | M177 | C6X8.2 | .001 | 0 | 21 | .052 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 81 | M178 | C6X8.2 | .001 | 0 | 21 | .040 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 82 | M179 | C6X8.2 | .001 | 0 | 21 | .033 | .436 | z | 8 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 83 | M180 | C6X8.2 | .003 | .872 | 18 | .117 | .436 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 84 | M181 | C6X8.2 | .003 | .872 | 18 | .017 | .445 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 2... | H1-1b* |
| 85 | M182 | C6X8.2 | .001 | .872 | 14 | .023 | .427 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 86 | M183 | C6X8.2 | .001 | .872 | 6 | .025 | .445 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |
| 87 | M184 | C6X8.2 | .001 | .872 | 18 | .026 | .427 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1... | H1-1b* |

## Envelope AISC 15th(360-16): ASD Steel Code Checks (Continued)

| | Member | Shape | Code Check | Loc[ft] | LC | Shear ... | Loc[ft] | Dir | LC | Pnc/om ... | Pnt/om [k] | Mnyy/o... | Mnzz/o... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 88 | M185 | C6X8.2 | .002 | .872 | 18 | .028 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 89 | M186 | C6X8.2 | .001 | 0 | 3 | .039 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 90 | M187 | C6X8.2 | .001 | .872 | 6 | .040 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 91 | M188 | C6X8.2 | .003 | .872 | 6 | .141 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 92 | M189 | C6X8.2 | .001 | .872 | 15 | .051 | .436 | z | 7 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 93 | M190 | C6X8.2 | .002 | 0 | 8 | .055 | .436 | z | 7 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 94 | M191 | C6X8.2 | .001 | 0 | 9 | .052 | .436 | z | 7 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 95 | M192 | C6X8.2 | .001 | .872 | 21 | .049 | .436 | z | 7 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 96 | M193 | C6X8.2 | .001 | .872 | 21 | .039 | .427 | z | 7 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 97 | M194 | C6X8.2 | .001 | 0 | 8 | .032 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 98 | M195 | C6X8.2 | .001 | 0 | 8 | .032 | .427 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 99 | M196 | C6X8.2 | .001 | .872 | 9 | .018 | .427 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 100 | M197 | C6X8.2 | .001 | .872 | 9 | .032 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 101 | M198 | C6X8.2 | .002 | 0 | 20 | .047 | .436 | z | 7 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 102 | M199 | C6X8.2 | .001 | .436 | 20 | .142 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 103 | M200 | C6X8.2 | .001 | 0 | 20 | .073 | .436 | z | 7 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 104 | M201 | C6X8.2 | .001 | 0 | 20 | .080 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 105 | M202 | C6X8.2 | .002 | 0 | 20 | .080 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 106 | M203 | C6X8.2 | .002 | 0 | 20 | .076 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 107 | M204 | C6X8.2 | .002 | .872 | 21 | .059 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 108 | M205 | C6X8.2 | .002 | .872 | 21 | .042 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 109 | M206 | C6X8.2 | .001 | .872 | 21 | .034 | .436 | z | 9 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 110 | M207 | C6X8.2 | .001 | .872 | 21 | .035 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 111 | M208 | C6X8.2 | .001 | .872 | 21 | .039 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 112 | M209 | C6X8.2 | .001 | .872 | 21 | .047 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 113 | M210 | C6X8.2 | .001 | 0 | 2 | .056 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 114 | M211 | C6X8.2 | .000 | 0 | 2 | .055 | .436 | z | 14 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 115 | M212 | C6X8.2 | .001 | .872 | 13 | .053 | .436 | z | 15 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 116 | M213 | C6X8.2 | .001 | .872 | 13 | .049 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 117 | M214 | C6X8.2 | .001 | 0 | 11 | .042 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 118 | M215 | C6X8.2 | .004 | 0 | 7 | .112 | .345 | z | 16 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 119 | M216 | C6X8.2 | .001 | 0 | 7 | .018 | .436 | z | 11 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 120 | M217 | C6X8.2 | .001 | 0 | 7 | .024 | .436 | z | 17 | 50.497 | 51.521 | 1.402 | 9.269 | 1.... | H1-1b* |
| 121 | M219 | PL1.5x1/4 | .008 | 0 | 9 | .013 | 0 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 122 | M220 | PL1.5x1/4 | .008 | 0 | 14 | .008 | 0 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 123 | M221 | PL1.5x1/4 | .010 | 4.594 | 14 | .015 | 4.594 | y | 14 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 124 | M222 | PL1.5x1/4 | .016 | 4.594 | 6 | .012 | 0 | y | 14 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 125 | M223 | PL1.5x1/4 | .015 | 0 | 9 | .014 | 4.594 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 126 | M224 | PL1.5x1/4 | .021 | 4.594 | 14 | .014 | 0 | y | 14 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 127 | M225 | PL1.5x1/4 | .037 | 0 | 9 | .015 | 4.594 | y | 9 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 128 | M226 | PL1.5x1/4 | .035 | 4.594 | 7 | .016 | 0 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 129 | M227 | PL1.5x1/4 | .044 | 4.594 | 9 | .009 | 4.594 | y | 9 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 130 | M228 | PL1.5x1/4 | .041 | 4.594 | 19 | .015 | 0 | y | 9 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 131 | M229 | PL1.5x1/4 | .028 | 0 | 20 | .007 | 4.594 | y | 7 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 132 | M230 | PL1.5x1/4 | .026 | 4.594 | 18 | .009 | 4.594 | y | 7 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 133 | M231 | PL1.5x1/4 | .036 | 0 | 8 | .013 | 4.594 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 134 | M232 | PL1.5x1/4 | .031 | 0 | 9 | .013 | 0 | y | 9 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 135 | M233 | PL1.5x1/4 | .045 | 0 | 7 | .011 | 4.594 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 136 | M234 | PL1.5x1/4 | .037 | 4.594 | 21 | .008 | 4.594 | y | 6 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 137 | M235 | PL1.5x1/4 | .036 | 0 | 19 | .008 | 0 | y | 3 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 138 | M236 | PL1.5x1/4 | .048 | 4.594 | 9 | .010 | 0 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 139 | M237 | PL1.5x1/4 | .027 | 0 | 19 | .012 | 0 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |

## Envelope AISC 15th(360-16): ASD Steel Code Checks (Continued)

| | Member | Shape | Code Check | Loc[ft] | LC | Shear ... | Loc[ft] | Dir | LC | Pnc/om ... | Pnt/om [k] | Mnyy/o... | Mnzz/o... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 140 | M238 | PL1.5x1/4 | .055 | 4.594 | 9 | .011 | 4.594 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 141 | M239 | PL1.5x1/4 | .027 | 0 | 19 | .012 | 4.594 | y | 8 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 142 | M240 | PL1.5x1/4 | .036 | 4.594 | 9 | .014 | 4.594 | y | 8 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 143 | M241 | PL1.5x1/4 | .036 | 0 | 19 | .007 | 0 | y | 15 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 144 | M242 | PL1.5x1/4 | .035 | 4.594 | 9 | .009 | 4.594 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 145 | M243 | PL1.5x1/4 | .029 | 0 | 18 | .009 | 0 | y | 6 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 146 | M244 | PL1.5x1/4 | .023 | 4.594 | 21 | .010 | 0 | y | 6 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 147 | M245 | PL1.5x1/4 | .043 | 0 | 7 | .016 | 4.594 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 148 | M246 | PL1.5x1/4 | .029 | 4.594 | 20 | .012 | 0 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 149 | M247 | PL1.5x1/4 | .033 | 0 | 6 | .011 | 4.594 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 150 | M248 | PL1.5x1/4 | .025 | 4.594 | 9 | .013 | 0 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 151 | M249 | PL1.5x1/4 | .055 | 0 | 18 | .013 | 0 | y | 15 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 152 | M250 | PL1.5x1/4 | .075 | 4.594 | 8 | .013 | 4.594 | y | 15 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 153 | M251 | PL1.5x1/4 | .036 | 0 | 18 | .009 | 4.594 | y | 7 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 154 | M252 | PL1.5x1/4 | .039 | 4.594 | 8 | .012 | 0 | y | 7 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 155 | M253 | PL1.5x1/4 | .040 | 0 | 6 | .012 | 0 | y | 6 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 156 | M254 | PL1.5x1/4 | .034 | 4.594 | 20 | .017 | 4.594 | y | 7 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 157 | M255 | PL1.5x1/4 | .033 | 0 | 6 | .010 | 0 | y | 9 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 158 | M256 | PL1.5x1/4 | .033 | 4.594 | 20 | .009 | 0 | y | 9 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 159 | M257 | PL1.5x1/4 | .044 | 0 | 21 | .008 | 4.594 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 160 | M258 | PL1.5x1/4 | .045 | 4.594 | 19 | .007 | 0 | y | 16 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 161 | M259 | PL1.5x1/4 | .041 | 0 | 21 | .020 | 0 | y | 7 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 162 | M260 | PL1.5x1/4 | .065 | 4.594 | 7 | .017 | 0 | y | 15 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 163 | M261 | PL1.5x1/4 | .031 | 0 | 21 | .016 | 4.594 | y | 14 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 164 | M262 | PL1.5x1/4 | .045 | 4.594 | 11 | .018 | 0 | y | 15 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 165 | M263 | PL1.5x1/4 | .032 | 0 | 21 | .009 | 4.594 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 166 | M264 | PL1.5x1/4 | .037 | 4.594 | 7 | .011 | 0 | y | 17 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 167 | M263A | PL1.5x1/4 | .011 | 0 | 21 | .007 | 0 | y | 9 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 168 | M264A | PL1.5x1/4 | .015 | 4.594 | 19 | .004 | 4.594 | y | 19 | .097 | 8.084 | .042 | .205 | 1.... | H1-1b* |
| 169 | A1 - DISH | PIPE_2.5 | .001 | 2.938 | 17 | .041 | 3 | | 7 | 25.132 | 33.743 | 2.393 | 2.393 | 1.... | H1-1b* |
| 170 | A1 - SPRINT | PIPE_2.5 | .000 | 0 | 21 | .032 | 0 | | 10 | 27.5 | 33.743 | 2.393 | 2.393 | 2.... | H1-1a |
| 171 | A2 - SPRINT | PIPE_2.5 | .000 | 0 | 21 | .090 | 0 | | 7 | 27.5 | 33.743 | 2.393 | 2.393 | 1.... | H1-1a |
| 172 | B2 - SPRINT | PIPE_2.5 | .000 | 0 | 21 | .023 | 0 | | 11 | 27.5 | 33.743 | 2.393 | 2.393 | 2.... | H1-1a |
| 173 | B1 - DISH | PIPE_2.5 | .001 | 6 | 21 | .048 | 3 | | 8 | 25.132 | 33.743 | 2.393 | 2.393 | 1.... | H1-1b* |
| 174 | B1 - SPRINT | PIPE_2.5 | .000 | 0 | 21 | .030 | 0 | | 17 | 27.5 | 33.743 | 2.393 | 2.393 | 2.... | H1-1a |
| 175 | C1 - SPRINT | PIPE_2.5 | .000 | 0 | 21 | .037 | 0 | | 8 | 27.5 | 33.743 | 2.393 | 2.393 | 2.... | H1-1a |
| 176 | C2 - SPRINT | PIPE_2.5 | .000 | 0 | 21 | .042 | 0 | | 17 | 27.5 | 33.743 | 2.393 | 2.393 | 2.... | H1-1a |
| 177 | C1 - DISH | PIPE_2.5 | .000 | 2.938 | 17 | .049 | 3 | | 8 | 25.132 | 33.743 | 2.393 | 2.393 | 1.... | H1-1b* |
| 178 | M179A | L2x1.5x1/4 | .014 | 0 | 8 | .033 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 179 | M180A | L2x1.5x1/4 | .014 | 0 | 8 | .017 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 180 | M181A | L2x1.5x1/4 | .014 | 0 | 8 | .009 | 0 | y | 17 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 181 | M182A | L2x1.5x1/4 | .014 | 0 | 8 | .018 | 0 | y | 6 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 182 | M183A | L2x1.5x1/4 | .024 | 0 | 8 | .026 | .872 | z | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 183 | M184A | L2x1.5x1/4 | .024 | 0 | 8 | .021 | 0 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 184 | M185A | L2x1.5x1/4 | .023 | .872 | 8 | .025 | 0 | y | 8 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 185 | M186A | L2x1.5x1/4 | .023 | .872 | 8 | .036 | 0 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 186 | M187A | L2x1.5x1/4 | .029 | .872 | 8 | .014 | 0 | y | 20 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 187 | M188A | L2x1.5x1/4 | .032 | .872 | 8 | .097 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 188 | M189A | L2x1.5x1/4 | .033 | .872 | 8 | .041 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 189 | M190A | L2x1.5x1/4 | .033 | .872 | 8 | .011 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 190 | M191A | L2x1.5x1/4 | .025 | .872 | 8 | .013 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 191 | M192A | L2x1.5x1/4 | .026 | .872 | 8 | .013 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |

## Envelope AISC 15th(360-16): ASD Steel Code Checks (Continued)

| | Member | Shape | Code Check | Loc[ft] | LC | Shear ... | Loc[ft] | Dir | LC | Pnc/om ... | Pnt/om [k] | Mnyy/o... | Mnzz/o... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 192 | M193A | L2x1.5x1/4 | .026 | .872 | 8 | .026 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 193 | M194A | L2x1.5x1/4 | .026 | .872 | 8 | .048 | 0 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 194 | M195A | L2x1.5x1/4 | .033 | .872 | 8 | .016 | .872 | z | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 195 | M196A | L2x1.5x1/4 | .033 | .872 | 8 | .010 | 0 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 196 | M197A | L2x1.5x1/4 | .038 | .872 | 8 | .033 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 197 | M198A | L2x1.5x1/4 | .039 | .872 | 8 | .018 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 198 | M199A | L2x1.5x1/4 | .025 | 0 | 7 | .029 | .872 | y | 16 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 199 | M200A | L2x1.5x1/4 | .025 | 0 | 7 | .013 | .872 | z | 16 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 200 | M201A | L2x1.5x1/4 | .025 | 0 | 7 | .009 | .872 | z | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 201 | M202A | L2x1.5x1/4 | .024 | 0 | 7 | .029 | 0 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 202 | M203A | L2x1.5x1/4 | .040 | 0 | 7 | .011 | .872 | z | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 203 | M204A | L2x1.5x1/4 | .040 | 0 | 7 | .017 | 0 | y | 16 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 204 | M205A | L2x1.5x1/4 | .040 | 0 | 7 | .036 | 0 | y | 15 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 205 | M206A | L2x1.5x1/4 | .039 | 0 | 7 | .009 | 0 | z | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 206 | M207A | L2x1.5x1/4 | .035 | 0 | 7 | .045 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 207 | M208A | L2x1.5x1/4 | .035 | 0 | 7 | .023 | .872 | z | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 208 | M209A | L2x1.5x1/4 | .035 | .872 | 7 | .012 | 0 | y | 21 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 209 | M210A | L2x1.5x1/4 | .035 | .872 | 7 | .017 | 0 | y | 6 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 210 | M211A | L2x1.5x1/4 | .048 | .872 | 7 | .022 | 0 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 211 | M212A | L2x1.5x1/4 | .048 | .872 | 7 | .060 | 0 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 212 | M213A | L2x1.5x1/4 | .051 | .872 | 7 | .045 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 213 | M214A | L2x1.5x1/4 | .051 | .872 | 7 | .012 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 214 | M215A | L2x1.5x1/4 | .037 | .872 | 7 | .013 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 215 | M216A | L2x1.5x1/4 | .040 | .872 | 7 | .087 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 216 | M217A | L2x1.5x1/4 | .040 | .872 | 7 | .043 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 217 | M218 | L2x1.5x1/4 | .041 | .872 | 7 | .025 | .872 | y | 7 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 218 | M219A | L2x1.5x1/4 | .021 | .872 | 7 | .022 | .872 | y | 15 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 219 | M220A | L2x1.5x1/4 | .021 | .872 | 7 | .010 | .872 | y | 11 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 220 | M221A | L2x1.5x1/4 | .021 | .872 | 7 | .027 | .872 | y | 11 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 221 | M222A | L2x1.5x1/4 | .022 | .872 | 7 | .052 | 0 | y | 7 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 222 | M223A | L2x1.5x1/4 | .014 | 0 | 6 | .041 | .872 | z | 11 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 223 | M224A | L2x1.5x1/4 | .014 | 0 | 6 | .019 | 0 | y | 15 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 224 | M225A | L2x1.5x1/4 | .014 | 0 | 6 | .006 | 0 | y | 10 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 225 | M226A | L2x1.5x1/4 | .014 | 0 | 6 | .022 | 0 | y | 10 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 226 | M227A | L2x1.5x1/4 | .018 | 0 | 6 | .022 | .872 | z | 10 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 227 | M228A | L2x1.5x1/4 | .018 | 0 | 6 | .019 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 228 | M229A | L2x1.5x1/4 | .018 | 0 | 6 | .021 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 229 | M230A | L2x1.5x1/4 | .018 | 0 | 6 | .030 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 230 | M231A | L2x1.5x1/4 | .018 | 0 | 6 | .007 | .872 | y | 17 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 231 | M232A | L2x1.5x1/4 | .018 | 0 | 6 | .042 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 232 | M233A | L2x1.5x1/4 | .018 | .872 | 6 | .015 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 233 | M234A | L2x1.5x1/4 | .018 | .872 | 6 | .008 | 0 | z | 6 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 234 | M235A | L2x1.5x1/4 | .016 | .872 | 6 | .019 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 235 | M236A | L2x1.5x1/4 | .016 | .872 | 6 | .015 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 236 | M237A | L2x1.5x1/4 | .017 | .872 | 6 | .014 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 237 | M238A | L2x1.5x1/4 | .017 | .872 | 6 | .017 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 238 | M239A | L2x1.5x1/4 | .013 | .872 | 6 | .008 | .872 | y | 6 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 239 | M240A | L2x1.5x1/4 | .013 | .872 | 6 | .006 | 0 | y | 15 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 240 | M241A | L2x1.5x1/4 | .013 | .872 | 6 | .013 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 241 | M242A | L2x1.5x1/4 | .014 | .872 | 6 | .024 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 242 | M243A | L2x1.5x1/4 | .011 | .872 | 6 | .020 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 243 | M244A | L2x1.5x1/4 | .011 | .872 | 6 | .008 | .872 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |

## *Envelope AISC 15th(360-16): ASD Steel Code Checks (Continued)*

| | Member | Shape | Code Check | Loc[ft] | LC | Shear ... | Loc[ft] | Dir | LC | Pnc/om ... | Pnt/om [k] | Mnyy/o... | Mnzz/o... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 244 | M245A | L2x1.5x1/4 | .011 | .872 | 6 | .007 | 0 | y | 12 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 245 | M246A | L2x1.5x1/4 | .011 | .872 | 6 | .016 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 246 | M247A | L2x1.5x1/4 | .015 | 0 | 9 | .026 | .872 | y | 17 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 247 | M248A | L2x1.5x1/4 | .015 | 0 | 9 | .014 | .872 | y | 17 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 248 | M249A | L2x1.5x1/4 | .015 | 0 | 9 | .008 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 249 | M250A | L2x1.5x1/4 | .015 | 0 | 9 | .021 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 250 | M251A | L2x1.5x1/4 | .031 | 0 | 9 | .038 | .872 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 251 | M252A | L2x1.5x1/4 | .030 | 0 | 9 | .024 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 252 | M253A | L2x1.5x1/4 | .030 | 0 | 9 | .020 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 253 | M254A | L2x1.5x1/4 | .030 | 0 | 9 | .025 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 254 | M255A | L2x1.5x1/4 | .045 | 0 | 9 | .022 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 255 | M256A | L2x1.5x1/4 | .045 | .436 | 9 | .082 | .872 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 256 | M257A | L2x1.5x1/4 | .045 | .872 | 9 | .033 | .872 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 257 | M258A | L2x1.5x1/4 | .045 | .872 | 9 | .011 | .872 | y | 9 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 258 | M259A | L2x1.5x1/4 | .036 | .872 | 9 | .020 | .872 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 259 | M260A | L2x1.5x1/4 | .036 | .872 | 9 | .006 | 0 | y | 14 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 260 | M261A | L2x1.5x1/4 | .036 | .872 | 9 | .018 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 261 | M262A | L2x1.5x1/4 | .036 | .872 | 9 | .033 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 262 | M263B | L2x1.5x1/4 | .038 | .872 | 17 | .055 | .872 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 263 | M264B | L2x1.5x1/4 | .039 | .872 | 17 | .025 | .872 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 264 | M265 | L2x1.5x1/4 | .039 | .872 | 17 | .012 | .872 | y | 16 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 265 | M266 | L2x1.5x1/4 | .039 | .872 | 17 | .016 | 0 | z | 17 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 266 | M267 | L2x1.5x1/4 | .024 | .872 | 17 | .009 | .872 | y | 6 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 267 | M268 | L2x1.5x1/4 | .024 | .872 | 17 | .012 | 0 | y | 9 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 268 | M269 | L2x1.5x1/4 | .025 | .872 | 17 | .026 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 269 | M270 | L2x1.5x1/4 | .026 | .872 | 17 | .010 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 2.... | H2-1* |
| 270 | M271 | L2x1.5x1/4 | .016 | 0 | 8 | .020 | .872 | y | 17 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 271 | M272 | L2x1.5x1/4 | .016 | 0 | 8 | .010 | .872 | y | 6 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 272 | M273 | L2x1.5x1/4 | .016 | 0 | 8 | .011 | .872 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |
| 273 | M274 | L2x1.5x1/4 | .016 | 0 | 8 | .025 | 0 | y | 8 | 16.566 | 17.526 | .296 | .754 | 1.... | H2-1* |