T··Mobile·

T-Mobile USA
35 Griffin Road
South Bloomfield,
CT 06002

March 9, 2021

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06501

RE: EM-T-MOBILE-062-180917
Notice of Construction Completion
T-Mobile Site # CT11611B
2895 State St, Hamden, CT

Dear Attorney Bachman,

The Connecticut Siting Council ("Council") acknowledged the above referenced T- Mobile Northeast LLC ("T-Mobile") notice of exempt modification on 10/9/2018 with an extension request granted until 10/9/2020 . T-Mobile hereby notifies the Council that construction of the acknowledged modifications have been completed as of 1/29/2021.

Documentation certified by a Professional Engineer is included with this letter. The original mount analysis referenced in the Council's 10/9/2018 approval referenced a mount analysis dated 7/18/2018, which was further revised through 10/30/2020. This was updated at the request of T-Mobile to reinforce the existing antenna mounts instead of the mount replacements per the construction Drawings. The attached mount analysis dated 10/30/2020 passes structurally and meets all applicable codes in connection with this modification.
.

Sincerely,

Elizabeth Jamieson
Transcend Wireless LLC
on behalf of T-Mobile
10 Industrial Ave, Suite 3
Mahwah, NJ 07430

CENTEK engineering
Centered on Solutions℠

March 8, 2021

Mr. Robert Labulis
Hamden Building Department
275 Dixwell Avenue
Hamden, CT 06518

Re: Letter of Professional Opinion

Project: CT11611B – Nextel Monopole Hamden (L600)
2895 State Street
Hamden, CT 06517

Owner: SBA Communications Corp

Engineer: CENTEK Engineering, Inc,
63-2 North Branford Road, Branford, CT 06405

Contractor: D & A Construction Management
7 Sycamore Way #2, Branford, CT 06405

Centek Project No.: 18058.81

Building Permit No.: 4910
12732

Dear Mr. Labulis,

We are providing this "Letter of Professional Opinion" with regard to the structural components at the above referenced project.

The following are the basis for substantiating compliance with construction documents prepared by American Tower Corporation dated 07/25/2019 Rev.1 and Mount Analysis Report prepared by Centek Engineering, Inc. dated 07/18/2018:

- A subsequent Mount Analysis was performed by Centek Engineering, Inc. dated 10/30/2020 Rev.1 in lieu of the aforementioned Mount Analysis prepared by CLS Engineering. This Mount Analysis was done at the request of T-Mobile to reinforce the existing antenna mounts instead of mount replacement per the Construction Drawings.
- Field observations of completed construction on 02/12/2021 determined the antenna mount modification is per the Mount Analysis Report prepared by Centek Engineering, Inc.

The work under this Contract has been reviewed and found, to the Engineer's best knowledge, information and belief, to be completed in general compliance with the documents prepared by American Tower Corporation and Centek Engineering Inc.

Sincerely,

STATE OF CONNECTICUT
CARLO F. CENTORE
No. 16694
LICENSED
PROFESSIONAL ENGINEER

Carlo F. Centore, PE
Principal

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

Antenna Mount Analysis

T-Mobile Site #: CT11611B

2895 State Road
Hamden, CT

Centek Project No. 18058.81

~~Date: July 18, 2018~~
Rev 1: October 30, 2020

Max Stress Ratio = 60.8%

STATE OF CONNECTICUT
TIMOTHY J. LYNN
No. 29336
LICENSED
PROFESSIONAL ENGINEER

Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

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CENTEK engineering

Centered on Solutions℠

October 30, 2020

Mr. Dan Reid
Transcend Wireless
10 Industrial Ave
Mahwah, NJ 07430

Re: Structural Letter ~ Antenna Mount
T-Mobile – Site Ref: CT11611B
2895 state Road
Hamden, CT 06517

Centek Project No. 18058.81 – Rev.1

Dear Mr. Reid,

Centek Engineering, Inc. has reviewed the T-Mobile antenna installation at the above referenced site. The purpose of the review is to determine the structural adequacy of the existing mount, consisting of one (1) low profile platform to support the equipment configuration. The review considered the effects of wind load, dead load and ice load in accordance with the 2015 International Building Code as modified by the 2018 Connecticut State Building Code (CTBC) including ASCE 7-10 and ANSI/TIA-222-G *Structural Standards for Steel Antenna Towers and Supporting Structures*.

The loads considered in this analysis consist of the following:

- T-Mobile:
  Platform: Three (3) Ericsson AIR21 panel antennas, three (3) Ericsson AIR32 panel antennas, three (3) RFS APXVAARR24-43-NA20 panel antennas, three (3) KRY112 TMAs and three (3) Ericsson 4449 B71_B12 remote radio units mounted on one (1) platform with a RAD center elevation of 128-ft +/- AGL.

The antenna mount was analyzed per the requirements of the 2015 International Building Code as modified by the 2018 Connecticut State Building Code considering a nominal design wind speed of 97 mph for Hamden as required in Appendix N of the 2016 Connecticut State Building Code.

A structural analysis of tower and foundation needs to be completed prior to any work.

Based on our review of the installation, it is our opinion that the subject antenna mount with the installation of one (1) stabilizer kit (Perfect10 p/n: VSK-M) 2.5-ft above the existing collar has sufficient capacity to support the aforementioned antenna configuration. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer

STATE OF CONNECTICUT
TIMOTHY J. LYNN
No. 29336
LICENSED
PROFESSIONAL ENGINEER

Section 2 - Calculations

Development of Design Heights, Exposure Coefficients, and Velocity Pressures Per TIA-222-G

Wind Speeds

Basic Wind Speed	$V := 97$	mph	(User Input - 2016 CSBC Appendix N)
Basic Wind Speed with Ice	$V_i := 50$	mph	(User Input per Annex B of TIA-222-G)

Input

Structure Type =	Structure_Type := Pole		(User Input)
Structure Category =	SC := II		(User Input)
Exposure Category =	Exp := C		(User Input)
Structure Height =	$h := 140$	ft	(User Input)
Height to Center of Antennas =	$z_{AT\&T} := 128$	ft	(User Input)
Radial Ice Thickness =	$t_i := 0.75$	in	(User Input per Annex B of TIA-222-G)
Radial Ice Density =	$Id := 56.00$	pcf	(User Input)
Topograpic Factor =	$K_{zt} := 1.0$		(User Input)
	$K_a := 1.0$		(User Input)
Gust Response Factor =	$G_H = 1.1$		(User Input)

Output

Wind Direction Probability Factor =

$$K_d := \begin{cases} 0.95 & \text{if Structure\_Type = Pole} \\ 0.85 & \text{if Structure\_Type = Lattice} \end{cases} = 0.95$$

(Per Table 2-2 of TIA-222-G)

Importance Factors =

$$I_{Wind} := \begin{cases} 0.87 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.15 & \text{if } SC = 3 \end{cases} = 1$$

(Per Table 2-3 of TIA-222-G)

$$I_{Wind\_w\_Ice} := \begin{cases} 0 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.00 & \text{if } SC = 3 \end{cases} = 1$$

$$I_{ice} := \begin{cases} 0 & \text{if } SC = 1 \\ 1.00 & \text{if } SC = 2 \\ 1.25 & \text{if } SC = 3 \end{cases} = 1$$

$$K_{iz} := \left(\frac{z_{AT\&T}}{33}\right)^{0.1} = 1.145 \qquad t_{iz} := 2.0 \cdot t_i \cdot I_{ice} \cdot K_{iz} \cdot K_{zt}^{0.35} = 1.718$$

Velocity Pressure Coefficient Antennas =

$$Kz_{AT\&T} := 2.01\left(\left(\frac{z_{AT\&T}}{zg}\right)\right)^{\frac{2}{\alpha}} = 1.333$$

Velocity Pressure w/o Ice Antennas =

$$qz_{AT\&T} := 0.00256 \cdot K_d \cdot Kz_{AT\&T} \cdot V^2 \cdot I_{Wind} = 30.506$$

Velocity Pressure with Ice Antennas =

$$qz_{ice.AT\&T} := 0.00256 \cdot K_d \cdot Kz_{AT\&T} \cdot V_i^2 \cdot I_{Wind} = 8.105$$

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model = Ericsson AIR32

Antenna Shape = Flat (User Input)

Antenna Height = $L_{ant} := 56.6$ in (User Input)

Antenna Width = $W_{ant} := 12.9$ in (User Input)

Antenna Thickness = $T_{ant} := 8.7$ in (User Input)

Antenna Weight = $WT_{ant} := 133$ lbs (User Input)

Number of Antennas = $N_{ant} := 1$ (User Input)

Antenna Aspect Ratio = $Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.4$

Antenna Force Coefficient = $Ca_{ant} = 1.28$

Wind Load (without ice)

Surface Area for One Antenna = $SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 5.1$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 218$ lbs

Surface Area for One Antenna = $SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.4$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 147$ lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice = $SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.8$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 78$ lbs

Surface Area for One Antenna w/ Ice = $SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 5.1$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 58$ lbs

Gravity Load (without ice)

Weight of All Antennas = $WT_{ant} \cdot N_{ant} = 133$ lbs

Gravity Loads (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 6352$ cu in

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot t_{iz})(W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 5549$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 180$ lbs

Weight of Ice on All Antennas = $W_{ICEant} \cdot N_{ant} = 180$ lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson AIR21		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 56$	in	(User Input)
Antenna Width =	$W_{ant} := 12.1$	in	(User Input)
Antenna Thickness =	$T_{ant} := 7.9$	in	(User Input)
Antenna Weight =	$WT_{ant} := 90$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.6$		
Antenna Force Coefficient =	$Ca_{ant} = 1.29$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.7$	sf
Total Antenna Wind Force =	$F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 204$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.1$	sf
Total Antenna Wind Force =	$F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 133$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.4$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 74$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 4.7$	sf
Total Antenna Wind Force w/ Ice =	$Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 54$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 90$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 5353$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz})(W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 5114$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 166$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 166$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	RFSAPXVAARR24-43		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 95.9$	in	(User Input)
Antenna Width =	$W_{ant} := 24$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 153$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.0$		
Antenna Force Coefficient =	$Ca_{ant} = 1.27$		

Wind Load (without ice)

Surface Area for One Antenna = $SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 679$ lbs

Surface Area for One Antenna = $SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.8$ sf

Total Antenna Wind Force = $F_{ant} := qz_{AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 246$ lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice = $SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 18.9$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 214$ lbs

Surface Area for One Antenna w/ Ice = $SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 8.4$ sf

Total Antenna Wind Force w/ Ice = $Fi_{ant} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 95$ lbs

Gravity Load (without ice)

Weight of All Antennas = $WT_{ant} \cdot N_{ant} = 153$ lbs

Gravity Loads (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2 \times 10^4$ cu in

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot t_{iz})(W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 1 \times 10^4$ cu in

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 423$ lbs

Weight of Ice on All Antennas = $W_{ICEant} \cdot N_{ant} = 423$ lbs

Development of Wind & Ice Load on TMA's

TMA Data:

TMA Model =	Ericsson KRY112 TMA		
TMA Shape =	Flat		(User Input)
TMA Height =	$L_{TMA} := 7.7$	in	(User Input)
TMA Width =	$W_{TMA} := 7.5$	in	(User Input)
TMA Thickness =	$T_{TMA} := 3.4$	in	(User Input)
TMA Weight =	$WT_{TMA} := 11$	lbs	(User Input)
Number of TMA's =	$N_{TMA} := 1$		(User Input)
TMA Aspect Ratio =	$Ar_{TMA} := \frac{L_{TMA}}{W_{TMA}} = 1$		
TMA Force Coefficient =	$Ca_{TMA} = 1.2$		

Wind Load (without ice)

Surface Area for One TMA = $SA_{TMAF} := \frac{L_{TMA} \cdot W_{TMA}}{144} = 0.4$ sf

Total TMA Wind Force = $F_{TMA} := qz_{AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{TMAF} = 16$ lbs

Surface Area for One TMA = $SA_{TMAS} := \frac{L_{TMA} \cdot T_{TMA}}{144} = 0.2$ sf

Total TMA Wind Force = $F_{TMA} := qz_{AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{TMAS} = 7$ lbs

Wind Load (with ice)

Surface Area for One TMA w/ Ice = $SA_{ICETMAF} := \frac{(L_{TMA} + 2 \cdot t_{iz}) \cdot (W_{TMA} + 2 \cdot t_{iz})}{144} = 0.8$ sf

Total TMA Wind Force w/ Ice = $Fi_{TMA} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{ICETMAF} = 9$ lbs

Surface Area for One TMA w/ Ice = $SA_{ICETMAS} := \frac{(L_{TMA} + 2 \cdot t_{iz}) \cdot (T_{TMA} + 2 \cdot t_{iz})}{144} = 0.5$ sf

Total TMA Wind Force w/ Ice = $Fi_{TMA} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{TMA} \cdot K_a \cdot SA_{ICETMAS} = 6$ lbs

Gravity Load (without ice)

Weight of All TMAs = $WT_{TMA} \cdot N_{TMA} = 11$ lbs

Gravity Loads (ice only)

Volume of Each TMA = $V_{TMA} := L_{TMA} \cdot W_{TMA} \cdot T_{TMA} = 196$ cu in

Volume of Ice on Each TMA = $V_{ice} := (L_{TMA} + 2 \cdot t_{iz})(W_{TMA} + 2 \cdot t_{iz}) \cdot (T_{TMA} + 2 \cdot t_{iz}) - V_{TMA} = 636$ cu in

Weight of Ice on Each TMA = $W_{ICETMA} := \frac{V_{ice}}{1728} \cdot Id = 21$ lbs

Weight of Ice on All TMAs = $W_{ICETMA} \cdot N_{TMA} = 21$ lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model = Ericsson 4449 B71B12

RRUS Shape = Flat (User Input)

RRUS Height = $L_{RRUS} := 14.9$ in (User Input)

RRUS Width = $W_{RRUS} := 13.2$ in (User Input)

RRUS Thickness = $T_{RRUS} := 10.4$ in (User Input)

RRUS Weight = $WT_{RRUS} := 74$ lbs (User Input)

Number of RRUS's = $N_{RRUS} := 1$ (User Input)

RRUS Aspect Ratio = $Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.1$

RRUS Force Coefficient = $Ca_{RRUS} = 1.2$

Wind Load (without ice)

Surface Area for One RRUS = $SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 1.4$ sf

Total RRUS Wind Force = $F_{RRUS} := qz_{AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 55$ lbs

Surface Area for One RRUS = $SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.1$ sf

Total RRUS Wind Force = $F_{RRUS} := qz_{AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 43$ lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 2.1$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 23$ lbs

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 1.8$ sf

Total RRUS Wind Force w/ Ice = $Fi_{RRUS} := qz_{ice.AT\&T} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 19$ lbs

Gravity Load (without ice)

Weight of All RRUSs = $WT_{RRUS} \cdot N_{RRUS} = 74$ lbs

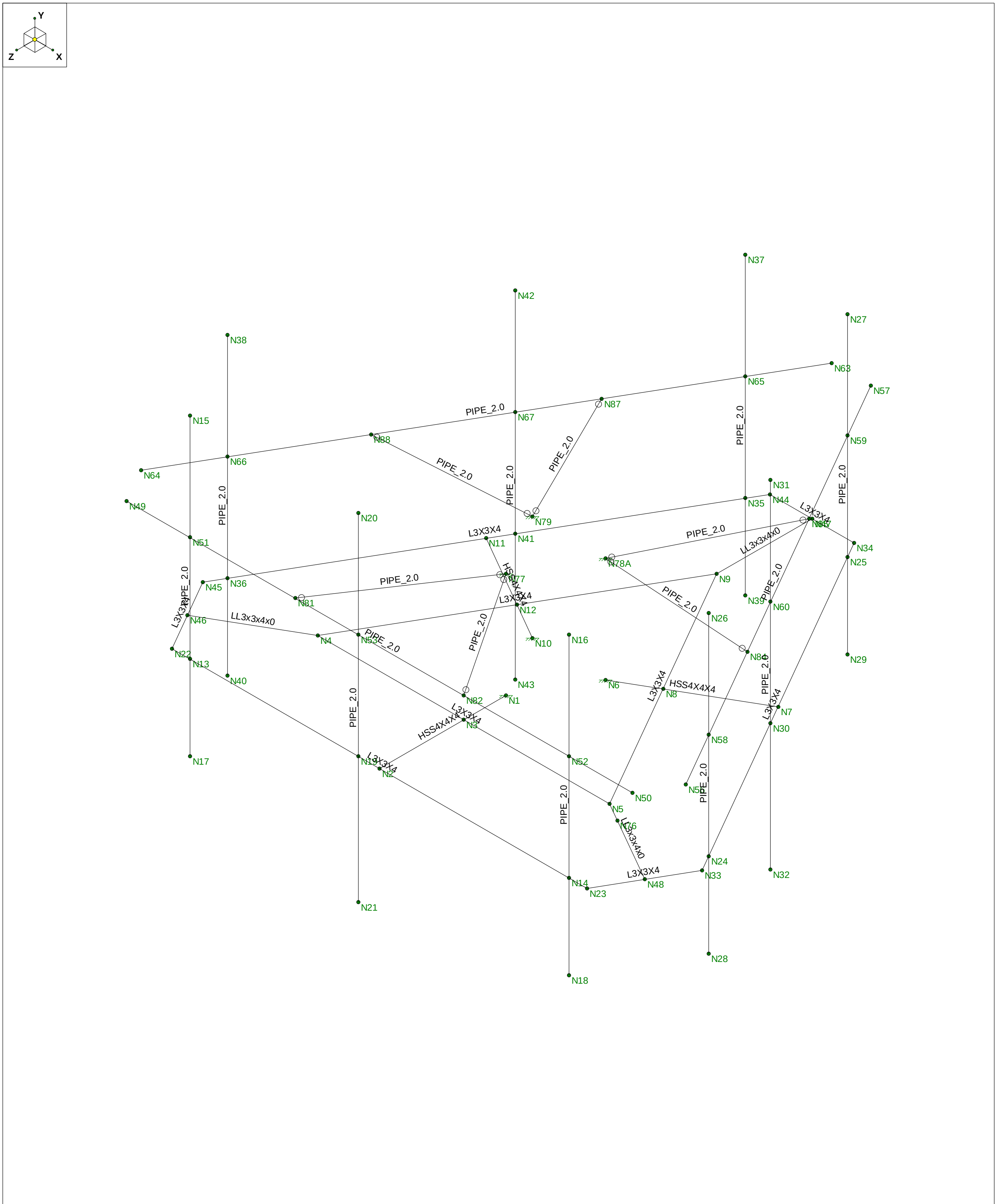
Gravity Loads (ice only)

Volume of Each RRUS = $V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 2045$ cu in

Volume of Ice on Each RRUS = $V_{ice} := (L_{RRUS} + 2 \cdot t_{iz})(W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 2176$ cu in

Weight of Ice on Each RRUS = $W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 70$ lbs

Weight of Ice on All RRUSs = $W_{ICERRUS} \cdot N_{RRUS} = 70$ lbs



Envelope Only Solution

Centek	CT11611B - Mount Member Framing	
TJL		Oct 30, 2020 at 9:26 AM
18058.81		Mount - Existing Reinforced.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)	12
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 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

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 7-10
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
Footing Overturning Safety Factor	1
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	150.001
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lambda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Grade B	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Outrigger	HSS4X4X4	Beam	Tube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
2	Horz	L3X3X4	Beam	Pipe	A36 Gr.36	Typical	1.44	1.23	1.23	.031
3	Antenna Mast	PIPE_2.0	Column	Pipe	A53 Grade B	Typical	1.02	.627	.627	1.25
4	Support	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
5	Support2	LL3x3x4x0	Beam	Single Angle	A36 Gr.36	Typical	2.88	4.5	2.46	.063
6	Plate	3"x1/4"	Beam	Single Angle	A36 Gr.36	Typical	.75	.004	.563	.015
7	Handrail	PIPE_2.0	Beam	Pipe	A53 Grade B	Typical	1.02	.627	.627	1.25
8	Kicker	LL2.5x2.5x3x3	Beam	Pipe	A36 Gr.36	Typical	1.8	2.46	1.07	.023
9	Handrail Corner	L2.5x2.5x4	Beam	Pipe	A36 Gr.36	Typical	1.19	.692	.692	.026
10	Brace	L2.5x2.5x4	Beam	Pipe	A36 Gr.36	Typical	1.19	.692	.692	.026

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M4	Outrigger	3			Lbyy						Lateral
2	M5	Horz	9.856	6	6	6	6	6				Lateral
3	M18	Support	6.928			Lbyy						Lateral
4	M6	Outrigger	3			Lbyy						Lateral
5	M7	Horz	9.856	6	6	6	6	6				Lateral
6	M8	Support	6.928			Lbyy						Lateral
7	M11	Outrigger	3			Lbyy						Lateral
8	M12	Horz	9.856	6	6	6	6	6				Lateral
9	M13	Support	6.928			Lbyy						Lateral
10	M10	Support2	2.268			Lbyy						Lateral
11	M11A	Support2	2.268			Lbyy						Lateral
12	M12A	Support2	2.268			Lbyy						Lateral
13	M14	Antenna Mast	7			Lbyy						Lateral
14	M15	Antenna Mast	7			Lbyy						Lateral
15	M16	Antenna Mast	8			Lbyy						Lateral
16	M16A	Antenna Mast	7			Lbyy						Lateral
17	M17	Antenna Mast	7			Lbyy						Lateral
18	M18A	Antenna Mast	8			Lbyy						Lateral
19	M19	Antenna Mast	7			Lbyy						Lateral
20	M20	Antenna Mast	7			Lbyy						Lateral
21	M21	Antenna Mast	8			Lbyy						Lateral
22	M25	Horz	2			Lbyy						Lateral
23	M26	Horz	2			Lbyy						Lateral
24	M27	Horz	2			Lbyy						Lateral
25	M25A	Handrail	12	6	6	6	6	6				Lateral
26	M26A	Handrail	12	6	6	6	6	6				Lateral
27	M27A	Handrail	12	6	6	6	6	6				Lateral
28	M34	Handrail	3.606			Lbyy						Lateral
29	M35	Handrail	3.606			Lbyy						Lateral
30	M36	Handrail	3.606			Lbyy						Lateral
31	M37	Handrail	3.606			Lbyy						Lateral
32	M38	Handrail	3.606			Lbyy						Lateral
33	M39	Handrail	3.606			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M4	N1	N2			Outrigger	Beam	Tube	A500 Gr....	Typical
2	M5	N22	N23		270	Horz	Beam	Pipe	A36 Gr.36	Typical
3	M18	N4	N5			Support	Beam	Single Angle	A36 Gr.36	Typical
4	M6	N6	N7			Outrigger	Beam	Tube	A500 Gr....	Typical
5	M7	N33	N34		270	Horz	Beam	Pipe	A36 Gr.36	Typical
6	M8	N5	N9			Support	Beam	Single Angle	A36 Gr.36	Typical
7	M11	N10	N11			Outrigger	Beam	Tube	A500 Gr....	Typical
8	M12	N44	N45		270	Horz	Beam	Pipe	A36 Gr.36	Typical
9	M13	N9	N4			Support	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N46	N4		180	Support2	Beam	Single Angle	A36 Gr.36	Typical
11	M11A	N47	N9		180	Support2	Beam	Single Angle	A36 Gr.36	Typical
12	M12A	N5	N48		180	Support2	Beam	Single Angle	A36 Gr.36	Typical
13	M14	N15	N17			Antenna Mast	Column	Pipe	A53 Gra...	Typical
14	M15	N16	N18			Antenna Mast	Column	Pipe	A53 Gra...	Typical
15	M16	N20	N21			Antenna Mast	Column	Pipe	A53 Gra...	Typical
16	M16A	N26	N28			Antenna Mast	Column	Pipe	A53 Gra...	Typical
17	M17	N27	N29			Antenna Mast	Column	Pipe	A53 Gra...	Typical
18	M18A	N31	N32			Antenna Mast	Column	Pipe	A53 Gra...	Typical
19	M19	N37	N39			Antenna Mast	Column	Pipe	A53 Gra...	Typical
20	M20	N38	N40			Antenna Mast	Column	Pipe	A53 Gra...	Typical
21	M21	N42	N43			Antenna Mast	Column	Pipe	A53 Gra...	Typical
22	M25	N22	N45			Horz	Beam	Pipe	A36 Gr.36	Typical
23	M26	N44	N34			Horz	Beam	Pipe	A36 Gr.36	Typical
24	M27	N23	N33			Horz	Beam	Pipe	A36 Gr.36	Typical
25	M25A	N49	N50		270	Handrail	Beam	Pipe	A53 Gra...	Typical
26	M26A	N56	N57		270	Handrail	Beam	Pipe	A53 Gra...	Typical
27	M27A	N63	N64		270	Handrail	Beam	Pipe	A53 Gra...	Typical
28	M34	N81	N77			Handrail	Beam	Pipe	A53 Gra...	Typical
29	M35	N77	N82			Handrail	Beam	Pipe	A53 Gra...	Typical
30	M36	N84	N78A			Handrail	Beam	Pipe	A53 Gra...	Typical
31	M37	N78A	N85			Handrail	Beam	Pipe	A53 Gra...	Typical
32	M38	N87	N79			Handrail	Beam	Pipe	A53 Gra...	Typical
33	M39	N79	N88			Handrail	Beam	Pipe	A53 Gra...	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
1	N1	0	0	1	0	
2	N2	0	0	4	0	
3	N3	0	0	2	0	
4	N4	-3.464102	0	2	0	
5	N5	3.464102	0	2	0	
6	N6	0.866025	0	-.5	0	
7	N7	3.464102	0	-2	0	
8	N8	1.732051	0	-1	0	
9	N9	-0.	0	-4	0	
10	N10	-0.866025	0	-.5	0	
11	N11	-3.464102	0	-2	0	
12	N12	-1.732051	0	-1	0	
13	N13	-4.5	0	4	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
14	N14	4.5	0	4	0	
15	N15	-4.5	5	4	0	
16	N16	4.5	5	4	0	
17	N17	-4.5	-2	4	0	
18	N18	4.5	-2	4	0	
19	N19	-.5	0	4	0	
20	N20	-.5	5	4	0	
21	N21	-.5	-3	4	0	
22	N22	-4.928203	0	4	0	
23	N23	4.928203	0	4	0	
24	N24	5.714102	0	1.897114	0	
25	N25	1.214102	0	-5.897114	0	
26	N26	5.714102	5	1.897114	0	
27	N27	1.214102	5	-5.897114	0	
28	N28	5.714102	-2	1.897114	0	
29	N29	1.214102	-2	-5.897114	0	
30	N30	3.714102	0	-1.566987	0	
31	N31	3.714102	5	-1.566987	0	
32	N32	3.714102	-3	-1.566987	0	
33	N33	5.928203	0	2.267949	0	
34	N34	1.	0	-6.267949	0	
35	N35	-1.214102	0	-5.897114	0	
36	N36	-5.714102	0	1.897114	0	
37	N37	-1.214102	5	-5.897114	0	
38	N38	-5.714102	5	1.897114	0	
39	N39	-1.214102	-2	-5.897114	0	
40	N40	-5.714102	-2	1.897114	0	
41	N41	-3.214102	0	-2.433013	0	
42	N42	-3.214102	5	-2.433013	0	
43	N43	-3.214102	-3	-2.433013	0	
44	N44	-1.	0	-6.267949	0	
45	N45	-5.928203	0	2.267949	0	
46	N46	-5.428203	0	3.133975	0	
47	N47	-0.	0	-6.267949	0	
48	N48	5.428203	0	3.133975	0	
49	N49	-6	2.5	4	0	
50	N50	6	2.5	4	0	
51	N51	-4.5	2.5	4	0	
52	N52	4.5	2.5	4	0	
53	N53	-.5	2.5	4	0	
54	N56	6.464102	2.5	3.196152	0	
55	N57	0.464102	2.5	-7.196152	0	
56	N58	5.714102	2.5	1.897114	0	
57	N59	1.214102	2.5	-5.897114	0	
58	N60	3.714102	2.5	-1.566987	0	
59	N63	-0.464102	2.5	-7.196152	0	
60	N64	-6.464102	2.5	3.196152	0	
61	N65	-1.214102	2.5	-5.897114	0	
62	N66	-5.714102	2.5	1.897114	0	
63	N67	-3.214102	2.5	-2.433013	0	
64	N76	3.897114	0	2.25	0	
65	N77	0	2.5	1	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Dia...
66	N78A	0.866025	2.5	-.5	0	
67	N79	-0.866025	2.5	-.5	0	
68	N81	-2	2.5	4	0	
69	N82	2	2.5	4	0	
70	N84	4.464102	2.5	-0.267949	0	
71	N85	2.464102	2.5	-3.732051	0	
72	N87	-2.464102	2.5	-3.732051	0	
73	N88	-4.464102	2.5	-0.267949	0	

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	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N10	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N77	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N78A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N79	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Point Loads (BLC 2 : Dead Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M15	Y	-.045	1
2	M15	Y	-.045	5.5
3	M17	Y	-.045	1
4	M20	Y	-.045	1
5	M17	Y	-.045	5.5
6	M20	Y	-.045	5.5
7	M14	Y	-.067	1
8	M14	Y	-.067	5.5
9	M16A	Y	-.067	1
10	M19	Y	-.067	1
11	M16A	Y	-.067	5.5
12	M19	Y	-.067	5.5
13	M16	Y	-.077	1
14	M16	Y	-.077	7
15	M18A	Y	-.077	1
16	M21	Y	-.077	1
17	M18A	Y	-.077	7
18	M21	Y	-.077	7
19	M16	Y	-.074	%50
20	M18A	Y	-.074	%50
21	M21	Y	-.074	%50

Member Point Loads (BLC 3 : Ice Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M15	Y	-.083	1
2	M15	Y	-.083	5.5
3	M17	Y	-.083	1
4	M20	Y	-.083	1

Member Point Loads (BLC 3 : Ice Load) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
5	M17	Y	-.083	5.5
6	M20	Y	-.083	5.5
7	M14	Y	-.09	1
8	M14	Y	-.09	5.5
9	M16A	Y	-.09	1
10	M19	Y	-.09	1
11	M16A	Y	-.09	5.5
12	M19	Y	-.09	5.5
13	M16	Y	-.212	1
14	M16	Y	-.212	7
15	M18A	Y	-.212	1
16	M21	Y	-.212	1
17	M18A	Y	-.212	7
18	M21	Y	-.212	7
19	M16	Y	-.07	%50
20	M18A	Y	-.07	%50
21	M21	Y	-.07	%50

Member Point Loads (BLC 4 : Wind with Ice X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M15	X	.027	1
2	M15	X	.027	5.5
3	M17	X	.037	1
4	M20	X	.037	1
5	M17	X	.037	5.5
6	M20	X	.037	5.5
7	M14	X	.029	1
8	M14	X	.029	5.5
9	M16A	X	.039	1
10	M19	X	.039	1
11	M16A	X	.039	5.5
12	M19	X	.039	5.5
13	M16	X	.048	1
14	M16	X	.048	7
15	M18A	X	.107	1
16	M21	X	.107	1
17	M18A	X	.107	7
18	M21	X	.107	7
19	M16	X	.019	%50

Member Point Loads (BLC 5 : Wind X)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M15	X	.067	1
2	M15	X	.067	5.5
3	M17	X	.102	1
4	M20	X	.102	1
5	M17	X	.102	5.5
6	M20	X	.102	5.5
7	M14	X	.074	1
8	M14	X	.074	5.5
9	M16A	X	.109	1

Member Point Loads (BLC 5 : Wind X) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	M19	X	.109	1
11	M16A	X	.109	5.5
12	M19	X	.109	5.5
13	M16	X	.123	1
14	M16	X	.123	7
15	M18A	X	.34	1
16	M21	X	.34	1
17	M18A	X	.34	7
18	M21	X	.34	7
19	M16	X	.043	%50

Member Point Loads (BLC 6 : Wind with Ice Z)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M15	Z	.037	1
2	M15	Z	.037	5.5
3	M17	Z	.027	1
4	M20	Z	.027	1
5	M17	Z	.027	5.5
6	M20	Z	.027	5.5
7	M14	Z	.039	1
8	M14	Z	.039	5.5
9	M16A	Z	.029	1
10	M19	Z	.029	1
11	M16A	Z	.029	5.5
12	M19	Z	.029	5.5
13	M16	Z	.107	1
14	M16	Z	.107	7
15	M18A	Z	.048	1
16	M21	Z	.048	1
17	M18A	Z	.048	7
18	M21	Z	.048	7
19	M18A	Z	.019	%50
20	M21	Z	.019	%50

Member Point Loads (BLC 7 : Wind Z)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M15	Z	.102	1
2	M15	Z	.102	5.5
3	M17	Z	.067	1
4	M20	Z	.067	1
5	M17	Z	.067	5.5
6	M20	Z	.067	5.5
7	M14	Z	.109	1
8	M14	Z	.109	5.5
9	M16A	Z	.074	1
10	M19	Z	.074	1
11	M16A	Z	.074	5.5
12	M19	Z	.074	5.5
13	M16	Z	.34	1
14	M16	Z	.34	7
15	M18A	Z	.123	1

Member Point Loads (BLC 7 : Wind Z) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
16	M21	Z	.123	1
17	M18A	Z	.123	7
18	M21	Z	.123	7
19	M18A	Z	.043	%50
20	M21	Z	.043	%50

Member Distributed Loads (BLC 4 : Wind with Ice X)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M27A	X	.003	.003	0	0
2	M12	X	.003	.003	0	0
3	M7	X	.003	.003	0	0
4	M26A	X	.003	.003	0	0
5	M14	X	.003	.003	0	0
6	M16	X	.003	.003	0	0
7	M15	X	.003	.003	0	0
8	M25	X	.003	.003	0	0
9	M27	X	.003	.003	0	0
10	M34	X	.003	.003	0	0
11	M35	X	.003	.003	0	0
12	M37	X	.003	.003	0	0
13	M36	X	.003	.003	0	0

Member Distributed Loads (BLC 5 : Wind X)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M27A	X	.008	.008	0	0
2	M12	X	.008	.008	0	0
3	M7	X	.008	.008	0	0
4	M26A	X	.008	.008	0	0
5	M14	X	.008	.008	0	0
6	M16	X	.008	.008	0	0
7	M15	X	.008	.008	0	0
8	M25	X	.008	.008	0	0
9	M27	X	.008	.008	0	0
10	M34	X	.008	.008	0	0
11	M35	X	.008	.008	0	0
12	M37	X	.008	.008	0	0
13	M36	X	.008	.008	0	0

Member Distributed Loads (BLC 6 : Wind with Ice Z)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M4	Y	.003	.003	0	0
2	M4	Y	.003	.003	0	0
3	M4	Y	.003	.003	0	0
4	M4	Y	.003	.003	0	0
5	M4	Y	.003	.003	0	0
6	M4	Y	.003	.003	0	0
7	M4	Y	.003	.003	0	0
8	M4	Y	.003	.003	0	0
9	M4	Y	.003	.003	0	0

Member Distributed Loads (BLC 6 : Wind with Ice Z) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
10	M4	Y	.003	.003	0	0
11	M4	Y	.003	.003	0	0
12	M4	Y	.003	.003	0	0
13	M4	Y	.003	.003	0	0
14	M4	Y	.003	.003	0	0
15	M4	Y	.003	.003	0	0
16	M4	Y	.003	.003	0	0
17	M4	Y	.003	.003	0	0

Member Distributed Loads (BLC 7 : Wind Z)

	Member Label	Direction	Start Magnitude[k/ft,...	End Magnitude[k/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M25A	Z	.008	.008	0	0
2	M5	Z	.008	.008	0	0
3	M27A	Z	.008	.008	0	0
4	M12	Z	.008	.008	0	0
5	M26A	Z	.008	.008	0	0
6	M7	Z	.008	.008	0	0
7	M17	Z	.008	.008	0	0
8	M18A	Z	.008	.008	0	0
9	M16A	Z	.008	.008	0	0
10	M19	Z	.008	.008	0	0
11	M21	Z	.008	.008	0	0
12	M20	Z	.008	.008	0	0
13	M11	Z	.008	.008	0	0
14	M6	Z	.008	.008	0	0
15	M26	Z	.008	.008	0	0
16	M38	Z	.008	.008	0	0
17	M37	Z	.008	.008	0	0

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gra...	Z Gra...	Joint	Point	Distrib..	Area(...	Surfa...
1	Self Weight	DL		-1						
2	Dead Load	None					21			
3	Ice Load	None					21			
4	Wind with Ice X	None					19	13		
5	Wind X	None					19	13		
6	Wind with Ice Z	None					20	17		
7	Wind Z	None					20	17		

Load Combinations

	Description	Solve	P...	S...	B...	Fa...	BLC	Fact...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2D + 1.6W (X-dir...	Yes	Y		1	1.2	2	1.2	5	1.6														
2	0.9D + 1.6W (X-dir...	Yes	Y		1	.9	2	.9	5	1.6														
3	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	2	1.2	3	1	4	1												
4	1.2D + 1.6W (Z-dire...	Yes	Y		1	1.2	2	1.2	7	1.6														
5	0.9D + 1.6W (Z-dire...	Yes	Y		1	.9	2	.9	7	1.6														
6	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	2	1.2	3	1	6	1												

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	N1	max	-.04	6	1.715	3	.102	3	-1.718	2	-.041	6	.631	2
2		min	-1.163	1	.644	2	-.682	5	-4.724	3	-.789	1	-.17	6
3	N6	max	.021	6	1.751	3	-.174	3	2.169	3	1.23	2	4.282	3
4		min	-1.084	2	.589	5	-1.283	4	.151	5	.129	6	1.746	5
5	N10	max	.477	5	1.701	6	.729	2	2.586	3	1.29	2	-1.026	2
6		min	-1.188	1	.521	2	-1.332	4	.339	5	-1.263	4	-4.009	6
7	N77	max	.103	4	.019	4	-.011	2	.069	3	0	6	.107	2
8		min	-.277	2	.012	2	-1.037	4	-.073	5	0	1	-.019	6
9	N78A	max	.191	5	.019	1	.223	2	-.035	2	0	6	.075	2
10		min	-1.01	1	.011	5	-.44	4	-.151	4	0	1	-.049	6
11	N79	max	-.018	6	.015	6	.006	6	.023	2	0	6	.174	1
12		min	-.818	2	.011	2	-.436	5	-.103	4	0	1	-.01	5
13	Totals:	max	0	6	5.197	3	0	3						
14		min	-5.517	1	2.008	2	-5.188	4						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotatio...	LC
1	N1	max	0	6	0	6	0	6	0	6	0	6	0	6
2		min	0	1	0	1	0	1	0	1	0	1	0	1
3	N2	max	.007	1	-.049	2	0	5	5.448e-03	3	2.808e-04	4	6.639e-04	6
4		min	.001	6	-.135	3	0	3	1.959e-03	2	9.041e-05	6	-1.166e-03	2
5	N3	max	.003	1	-.008	2	0	5	3.079e-03	3	1.65e-04	1	1.717e-04	6
6		min	0	6	-.021	3	0	3	1.112e-03	2	1.656e-05	6	-6.364e-04	2
7	N4	max	.004	1	.027	2	.006	4	2.912e-03	6	5.529e-04	5	4.584e-03	6
8		min	0	6	-.135	6	-.005	2	-9.282e-04	2	-1.436e-04	1	-1.228e-03	2
9	N5	max	.003	2	-.106	5	.005	5	3.168e-03	1	1.201e-05	3	-3.835e-03	5
10		min	0	6	-.149	3	0	3	2.285e-03	5	-4.034e-04	5	-5.316e-03	3
11	N6	max	0	6	0	6	0	6	0	6	0	6	0	6
12		min	0	1	0	1	0	1	0	1	0	1	0	1
13	N7	max	.011	2	-.045	5	.019	2	5.012e-04	5	-2.627e-05	6	-2.267e-03	2
14		min	0	6	-.137	3	0	6	-2.033e-03	3	-7.074e-04	2	-5.184e-03	3
15	N8	max	.002	2	-.007	5	.004	2	1.328e-04	5	-2.967e-05	6	-1.267e-03	5
16		min	0	6	-.021	3	0	6	-1.33e-03	3	-5.282e-04	2	-2.834e-03	3
17	N9	max	.011	2	.029	5	.006	4	1.604e-03	5	2.506e-05	4	2.513e-04	6
18		min	0	4	-.134	3	0	2	-5.336e-03	3	-9.289e-04	2	-5.214e-04	2
19	N10	max	0	6	0	6	0	6	0	6	0	6	0	6
20		min	0	1	0	1	0	1	0	1	0	1	0	1
21	N11	max	.013	2	-.043	2	.016	4	-1.172e-04	5	6.431e-04	4	4.414e-03	6
22		min	-.009	4	-.134	6	-.021	2	-3.48e-03	3	-1.057e-03	2	9.932e-04	2
23	N12	max	.003	2	-.007	2	.004	4	-6.426e-05	5	4.549e-04	4	2.593e-03	6
24		min	-.002	4	-.021	6	-.004	2	-1.777e-03	3	-5.409e-04	2	5.833e-04	2
25	N13	max	.006	1	.056	2	.025	4	4.912e-03	2	-1.492e-04	2	1.978e-03	6
26		min	.002	6	-.302	6	-.014	2	-1.48e-05	6	-5.626e-04	6	-2.91e-03	2
27	N14	max	.006	1	-.172	5	.021	4	3.37e-03	4	8.209e-04	3	-1.356e-03	6
28		min	.001	6	-.295	3	.005	3	-5.173e-03	2	1.998e-04	5	-4.18e-03	1
29	N15	max	.305	2	.056	2	.495	5	1.038e-02	5	6.063e-03	5	1.99e-03	6
30		min	-.081	6	-.302	6	.025	3	4.163e-04	3	-2.25e-05	3	-5.935e-03	2
31	N16	max	.321	2	-.172	5	.472	4	9.917e-03	4	7.779e-04	1	5.033e-05	6
32		min	-.022	6	-.295	3	-.264	2	-4.233e-03	2	-5.884e-03	5	-6.423e-03	2

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotatio...	LC
33	N17	max	.049	6	.056	2	.007	6	4.909e-03	2	-1.492e-04	2	1.974e-03	6
34		min	-.058	2	-.302	6	-.132	2	-6.295e-05	6	-5.626e-04	6	-2.593e-03	2
35	N18	max	-.031	6	-.172	5	.138	2	3.167e-03	4	8.209e-04	3	-1.354e-03	6
36		min	-.088	1	-.295	3	-.055	4	-5.17e-03	2	1.998e-04	5	-3.876e-03	1
37	N19	max	.007	1	-.043	2	.005	4	9.876e-04	2	8.683e-04	4	2.096e-03	6
38		min	.001	6	-.143	3	.002	3	-1.231e-02	4	3.275e-04	3	-1.041e-03	2
39	N20	max	.341	2	-.043	2	.4	5	1.53e-02	4	3.748e-03	2	4.692e-04	6
40		min	-.035	6	-.145	3	.01	3	2.066e-04	3	-4.645e-04	6	-7.291e-03	2
41	N21	max	.104	1	-.043	2	.751	4	9.859e-04	2	8.683e-04	4	3.695e-03	1
42		min	.038	5	-.144	3	-.034	2	-2.304e-02	5	3.275e-04	3	9.43e-04	5
43	N22	max	.006	1	.07	2	.023	4	3.066e-03	3	3.923e-04	2	2.097e-03	6
44		min	.002	6	-.312	6	-.014	2	-2.473e-03	5	-6.018e-04	4	-2.524e-03	2
45	N23	max	.006	1	-.18	5	.019	5	1.644e-03	2	7.188e-04	1	-1.383e-03	5
46		min	.001	6	-.312	1	.001	3	-4.858e-03	4	4.319e-04	6	-4.031e-03	1
47	N24	max	.018	1	-.256	2	.016	5	7.474e-03	4	-5.429e-04	2	4.05e-03	5
48		min	.002	6	-.334	3	0	3	2.684e-03	3	-6.553e-04	4	-1.248e-03	1
49	N25	max	.04	1	.082	5	.018	5	1.056e-03	5	8.019e-04	6	-6.363e-04	6
50		min	-.003	5	-.248	3	-.003	3	-2.403e-03	1	-6.224e-05	2	-6.339e-03	2
51	N26	max	.307	1	-.257	2	.586	4	1.089e-02	4	4.506e-03	2	4.076e-03	5
52		min	-.25	5	-.334	3	.116	3	1.488e-03	2	-3.44e-03	4	-7.429e-03	1
53	N27	max	.67	1	.082	5	.247	4	5.051e-03	5	1.942e-03	4	-1.103e-03	6
54		min	.083	6	-.248	3	-.116	2	-2.648e-03	1	-5.794e-03	2	-1.223e-02	1
55	N28	max	.1	5	-.256	2	-.065	3	7.152e-03	4	-5.429e-04	2	4.048e-03	5
56		min	-.007	3	-.334	3	-.157	4	2.679e-03	3	-6.553e-04	4	-1.031e-03	1
57	N29	max	-.014	6	.082	5	.06	1	7.539e-04	5	8.019e-04	6	-6.354e-04	6
58		min	-.12	5	-.248	3	0	5	-2.402e-03	1	-6.224e-05	2	-6.135e-03	2
59	N30	max	.009	1	-.058	5	.02	2	7.183e-03	1	1.713e-04	3	9.08e-03	2
60		min	0	6	-.148	3	0	6	1.295e-03	5	-6.641e-04	5	-2.996e-03	4
61	N31	max	.428	1	-.059	5	.39	4	8.302e-03	4	-1.222e-03	3	-2.156e-04	5
62		min	.025	6	-.15	3	.063	3	-1.454e-04	2	-4.946e-03	4	-1.467e-02	1
63	N32	max	.64	2	-.059	5	.094	5	7.167e-03	1	1.713e-04	3	1.982e-02	2
64		min	-.103	4	-.149	3	-.239	1	-3.167e-03	5	-6.641e-04	5	-2.989e-03	4
65	N33	max	.014	2	-.275	2	.018	5	2.309e-03	2	-3.233e-04	6	-2.708e-03	2
66		min	0	6	-.347	3	.001	3	4.388e-05	6	-1.253e-03	1	-8.463e-03	4
67	N34	max	.04	2	.097	5	.018	5	5.051e-03	2	4.641e-04	3	6.874e-03	1
68		min	-.002	4	-.252	3	0	3	8.875e-05	6	-7.036e-04	5	1.522e-03	5
69	N35	max	.038	2	.056	5	.021	5	8.866e-04	5	5.596e-05	5	3.895e-03	5
70		min	-.003	6	-.32	3	-.007	1	-1.111e-03	6	-6.337e-04	3	-8.128e-03	1
71	N36	max	.017	2	.074	2	.022	5	6.085e-03	4	8.699e-04	6	7.35e-04	3
72		min	-.003	6	-.273	6	-.018	1	-3.2e-03	2	4.601e-05	2	-3.733e-03	5
73	N37	max	.749	1	.056	5	.223	5	4.67e-03	5	-4.554e-04	6	2.6e-03	5
74		min	-.193	5	-.32	3	-.031	3	-9.249e-04	3	-6.032e-03	1	-1.39e-02	1
75	N38	max	.276	2	.074	2	.485	5	8.802e-03	5	4.594e-03	1	-2.153e-04	6
76		min	.02	6	-.273	6	-.172	1	-1.724e-03	1	6.842e-04	6	-6.486e-03	2
77	N39	max	.094	5	.056	5	.03	6	7.133e-04	2	5.596e-05	5	3.893e-03	5
78		min	-.153	1	-.32	3	-.024	2	-1.145e-03	6	-6.337e-04	3	-7.906e-03	1
79	N40	max	.019	3	.074	2	.059	2	5.78e-03	4	8.699e-04	6	7.797e-04	3
80		min	-.089	5	-.273	6	-.118	4	-3.198e-03	2	4.601e-05	2	-3.731e-03	5
81	N41	max	.02	2	-.039	5	.015	4	-1.014e-03	5	4.741e-04	4	7.961e-03	2
82		min	-.012	4	-.145	3	-.017	2	-6.208e-03	1	-1.624e-03	2	-4.244e-04	6
83	N42	max	.522	1	-.04	5	.286	5	6.758e-03	5	3.49e-03	5	1.068e-03	5
84		min	-.137	5	-.146	3	-.127	1	-4.582e-04	3	-4.677e-03	1	-1.585e-02	1

Envelope Joint Displacements (Continued)

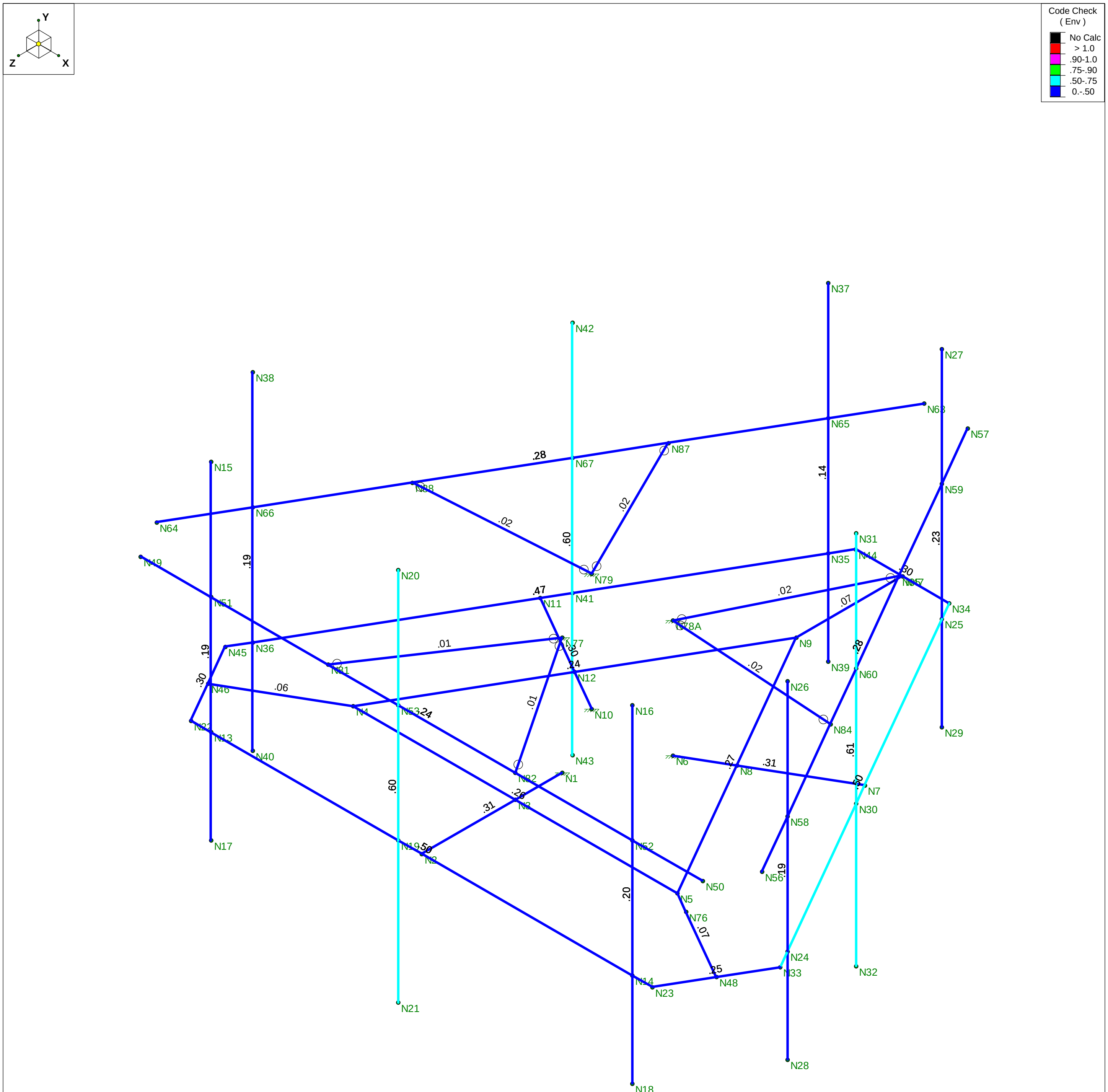
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotatio...	LC
85	N43	max	.61	2	-.039	5	.206	1	-2.823e-03	3	4.741e-04	4	1.87e-02	2
86		min	-.019	6	-.146	3	.098	6	-6.193e-03	1	-1.624e-03	2	-4.214e-04	6
87	N44	max	.04	2	.069	5	.02	4	2.058e-03	5	8.882e-04	5	7.217e-03	1
88		min	-.002	4	-.333	3	-.006	2	-8.237e-03	1	-4.023e-04	1	8.088e-04	5
89	N45	max	.014	2	.088	2	.024	4	1.53e-03	6	5.773e-04	4	6.442e-03	5
90		min	0	6	-.281	6	-.019	2	-7.884e-04	2	-1.009e-03	2	-3.478e-03	1
91	N46	max	.008	4	.073	2	.02	4	4.149e-03	6	4.007e-04	4	5.527e-03	4
92		min	0	2	-.295	6	-.011	2	-9.089e-04	5	-3.656e-04	2	-1.912e-03	2
93	N47	max	.04	2	.077	5	.007	4	1.878e-03	5	6.188e-05	4	7.73e-03	1
94		min	-.002	4	-.291	3	0	2	-5.954e-03	3	-8.511e-04	2	1.219e-03	5
95	N48	max	.001	2	-.237	5	.015	5	3.199e-03	1	2.833e-05	6	-5.106e-03	2
96		min	-.005	4	-.327	3	0	3	-1.304e-03	5	-3.121e-04	2	-7.297e-03	4
97	N49	max	.137	2	.133	2	.305	5	8.425e-03	5	6.134e-03	5	2.007e-03	6
98		min	-.021	6	-.338	6	.012	3	4.151e-04	3	-2.25e-05	3	-4.263e-03	2
99	N50	max	.138	2	-.181	5	.292	4	8.09e-03	4	7.779e-04	1	2.702e-05	6
100		min	-.02	6	-.379	1	-.151	2	-4.23e-03	2	-5.955e-03	5	-4.912e-03	2
101	N51	max	.137	2	.056	2	.195	5	8.425e-03	5	6.063e-03	5	1.984e-03	6
102		min	-.021	6	-.302	6	.012	3	4.151e-04	3	-2.25e-05	3	-4.28e-03	2
103	N52	max	.138	2	-.172	5	.185	4	8.09e-03	4	7.779e-04	1	5.021e-05	6
104		min	-.02	6	-.295	3	-.137	2	-4.23e-03	2	-5.884e-03	5	-4.895e-03	2
105	N53	max	.137	2	-.043	2	.029	2	9.222e-03	4	3.748e-03	2	4.669e-04	6
106		min	-.021	6	-.144	3	-.024	4	2.056e-04	3	-4.645e-04	6	-4.761e-03	2
107	N56	max	.168	2	-.329	2	.301	4	9.246e-03	4	4.568e-03	2	4.063e-03	5
108		min	-.182	4	-.414	4	.04	3	1.501e-03	2	-3.475e-03	4	-5.488e-03	1
109	N57	max	.405	1	.171	5	.123	4	3.509e-03	5	1.978e-03	4	-1.089e-03	6
110		min	.042	6	-.234	3	-.09	2	-2.665e-03	1	-5.856e-03	2	-1.039e-02	1
111	N58	max	.097	2	-.256	2	.27	4	9.226e-03	4	4.506e-03	2	4.072e-03	5
112		min	-.128	4	-.334	3	.047	3	1.487e-03	2	-3.44e-03	4	-5.477e-03	1
113	N59	max	.314	1	.082	5	.105	4	3.524e-03	5	1.942e-03	4	-1.101e-03	6
114		min	.05	6	-.248	3	-.037	2	-2.645e-03	1	-5.794e-03	2	-1.04e-02	1
115	N60	max	.068	4	-.059	5	.156	4	5.767e-03	4	-1.222e-03	3	-2.154e-04	5
116		min	.012	3	-.149	3	.045	6	-1.453e-04	2	-4.946e-03	4	-8.594e-03	1
117	N63	max	.438	1	.126	5	.11	5	3.002e-03	5	-4.554e-04	6	2.589e-03	5
118		min	-.084	5	-.371	3	.009	6	-9.424e-04	3	-6.093e-03	1	-1.195e-02	1
119	N64	max	.175	5	.141	2	.26	5	7.287e-03	5	4.656e-03	1	-2.032e-04	6
120		min	.024	6	-.321	4	-.078	1	-1.702e-03	1	6.842e-04	6	-4.655e-03	2
121	N65	max	.343	1	.056	5	.093	5	3.017e-03	5	-4.554e-04	6	2.598e-03	5
122		min	-.115	5	-.32	3	-.003	3	-9.223e-04	3	-6.032e-03	1	-1.194e-02	1
123	N66	max	.122	5	.074	2	.23	5	7.272e-03	5	4.594e-03	1	-2.148e-04	6
124		min	.013	6	-.273	6	-.12	1	-1.722e-03	1	6.842e-04	6	-4.664e-03	2
125	N67	max	.081	1	-.04	5	.098	5	4.229e-03	5	3.49e-03	5	1.067e-03	5
126		min	-.105	5	-.146	3	-.126	1	-4.559e-04	3	-4.677e-03	1	-9.77e-03	1
127	N76	max	.003	2	-.133	5	.008	5	3.244e-03	1	1.083e-05	3	-4.505e-03	5
128		min	0	4	-.186	3	0	3	1.545e-03	5	-4.526e-04	5	-5.75e-03	3
129	N77	max	0	6	0	6	0	6	0	6	0	6	0	6
130		min	0	1	0	1	0	1	0	1	0	1	0	1
131	N78A	max	0	6	0	6	0	6	0	6	0	6	0	6
132		min	0	1	0	1	0	1	0	1	0	1	0	1
133	N79	max	0	6	0	6	0	6	0	6	0	6	0	6
134		min	0	1	0	1	0	1	0	1	0	1	0	1
135	N81	max	.137	2	.003	2	.091	2	8.564e-03	4	3.762e-03	5	3.818e-03	6
136		min	-.021	6	-.188	6	-.014	6	6.017e-04	3	2.193e-04	3	-1.028e-03	2

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotatio...	LC
137	N82	max	.137	2	-.116	5	.014	6	8.275e-03	4	3.021e-03	2	-2.76e-03	5
138		min	-.021	6	-.218	3	-.091	2	-1.155e-03	2	-3.93e-03	4	-3.152e-03	1
139	N84	max	-.003	3	-.135	5	.203	4	5.449e-03	4	6.001e-04	2	1.636e-03	5
140		min	-.013	4	-.206	3	.058	6	4.034e-04	2	-5.156e-03	4	-7.608e-03	1
141	N85	max	.181	4	.011	5	.09	4	1.205e-03	5	-7.037e-04	6	8.315e-04	6
142		min	.051	6	-.195	3	.025	6	-6.016e-03	1	-6.186e-03	1	-6.279e-03	2
143	N87	max	.163	1	.003	5	.074	5	2.212e-03	2	1.069e-03	5	1.006e-04	5
144		min	-.147	5	-.199	3	-.08	1	-2.81e-03	6	-6.197e-03	1	-8.737e-03	1
145	N88	max	.011	5	.018	2	.165	5	3.644e-03	4	4.844e-03	5	1.443e-03	6
146		min	-.01	1	-.208	6	-.179	1	1.737e-03	2	-2.983e-04	3	-5.272e-03	2

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Lo...	LC	She...	Lo...	...	...	phi*P...	phi*P...	phi*...	phi*...	Cb	Eqn
1	M18A	PIPE_2.0	.608	5	1	.129	5		4	14.916	32.13	1.872	1.872	1.5...	H1-...
2	M16	PIPE_2.0	.602	5	4	.113	5		2	14.916	32.13	1.872	1.872	2.9...	H1-...
3	M21	PIPE_2.0	.595	5	1	.128	2.5		1	14.916	32.13	1.872	1.872	1.5...	H1-...
4	M7	L3X3X4	.502	4....	3	.368	9....	y	1	21.017	46.656	1.688	3.149	1	H2-1
5	M5	L3X3X4	.497	4....	6	.350	4....	z	4	21.017	46.656	1.688	3.149	1	H2-1
6	M12	L3X3X4	.465	4....	3	.425	0	y	1	21.017	46.656	1.688	3.149	1	H2-1
7	M6	HSS4X4X4	.309	0	3	.091	0	z	4	134....	139....	16.181	16.181	1.7...	H1-...
8	M4	HSS4X4X4	.307	0	3	.076	0	z	2	134....	139....	16.181	16.181	1.7...	H1-...
9	M11	HSS4X4X4	.305	0	6	.073	0	z	5	134....	139....	16.181	16.181	1.7...	H1-...
10	M25	L3X3X4	.304	1	1	.078	1	z	1	42.7	46.656	1.688	3.756	1.5...	H2-1
11	M26	L3X3X4	.301	1	4	.100	1	z	1	42.7	46.656	1.688	3.756	1.5...	H2-1
12	M27A	PIPE_2.0	.284	8	1	.105	8		1	20.867	32.13	1.872	1.872	1	H1-...
13	M26A	PIPE_2.0	.280	4	1	.104	4		4	20.867	32.13	1.872	1.872	1	H1-...
14	M8	L3X3X4	.273	3....	1	.011	3....	z	4	16.107	46.656	1.688	3.261	1.3...	H2-1
15	M18	L3X3X4	.263	3....	3	.011	3....	y	1	16.107	46.656	1.688	3.231	1.2...	H2-1
16	M27	L3X3X4	.252	1	2	.101	.625	z	4	42.7	46.656	1.688	3.756	1.5...	H2-1
17	M25A	PIPE_2.0	.244	4	4	.084	8		2	20.867	32.13	1.872	1.872	1	H1-...
18	M13	L3X3X4	.242	3....	6	.011	3....	z	1	16.107	46.656	1.688	3.222	1.2...	H2-1
19	M17	PIPE_2.0	.234	4....	1	.164	2....		1	17.855	32.13	1.872	1.872	2.2...	H1-...
20	M15	PIPE_2.0	.200	4....	6	.165	2....		4	17.855	32.13	1.872	1.872	4.8...	H1-...
21	M20	PIPE_2.0	.190	4....	3	.123	2....		1	17.855	32.13	1.872	1.872	3.3...	H1-...
22	M16A	PIPE_2.0	.188	2....	1	.135	2....		1	17.855	32.13	1.872	1.872	1.95	H1-...
23	M14	PIPE_2.0	.186	2....	4	.169	2....		4	17.855	32.13	1.872	1.872	4.1...	H1-...
24	M19	PIPE_2.0	.143	4....	6	.132	2....		2	17.855	32.13	1.872	1.872	3.4...	H1-...
25	M11A	LL3x3x4x0	.069	2....	1	.045	0	z	1	82.208	93.312	6.48	4.911	2.24	H1-...
26	M12A	LL3x3x4x0	.066	0	4	.027	.52	z	4	82.208	93.312	6.48	4.911	2.1...	H1-...
27	M10	LL3x3x4x0	.063	2....	4	.022	0	z	5	82.208	93.312	6.48	4.911	2.1...	H1-...
28	M39	PIPE_2.0	.024	0	1	.061	0		4	27.493	32.13	1.872	1.872	1.1...	H1-...
29	M37	PIPE_2.0	.018	0	4	.053	0		2	27.493	32.13	1.872	1.872	1.1...	H1-...
30	M38	PIPE_2.0	.018	3....	5	.115	0		1	27.493	32.13	1.872	1.872	1.1...	H1-...
31	M36	PIPE_2.0	.017	1....	1	.090	0		4	27.493	32.13	1.872	1.872	1.1...	H1-...
32	M34	PIPE_2.0	.015	1....	4	.044	3....		5	27.493	32.13	1.872	1.872	1.1...	H1-...
33	M35	PIPE_2.0	.013	1....	1	.054	3....		1	27.493	32.13	1.872	1.872	1.1...	H1-...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

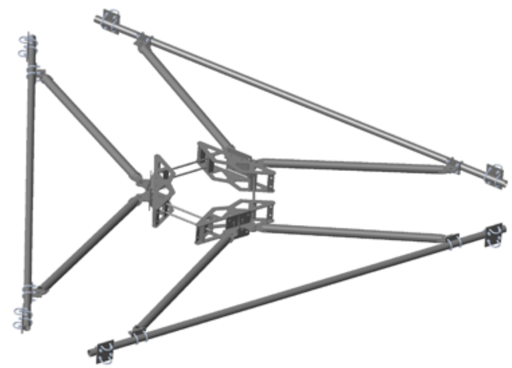
Centek	CT11611B - Mount	
TJL		Oct 30, 2020 at 9:26 AM
18058.81	Unity Check	Mount - Existing Reinforced.r3d

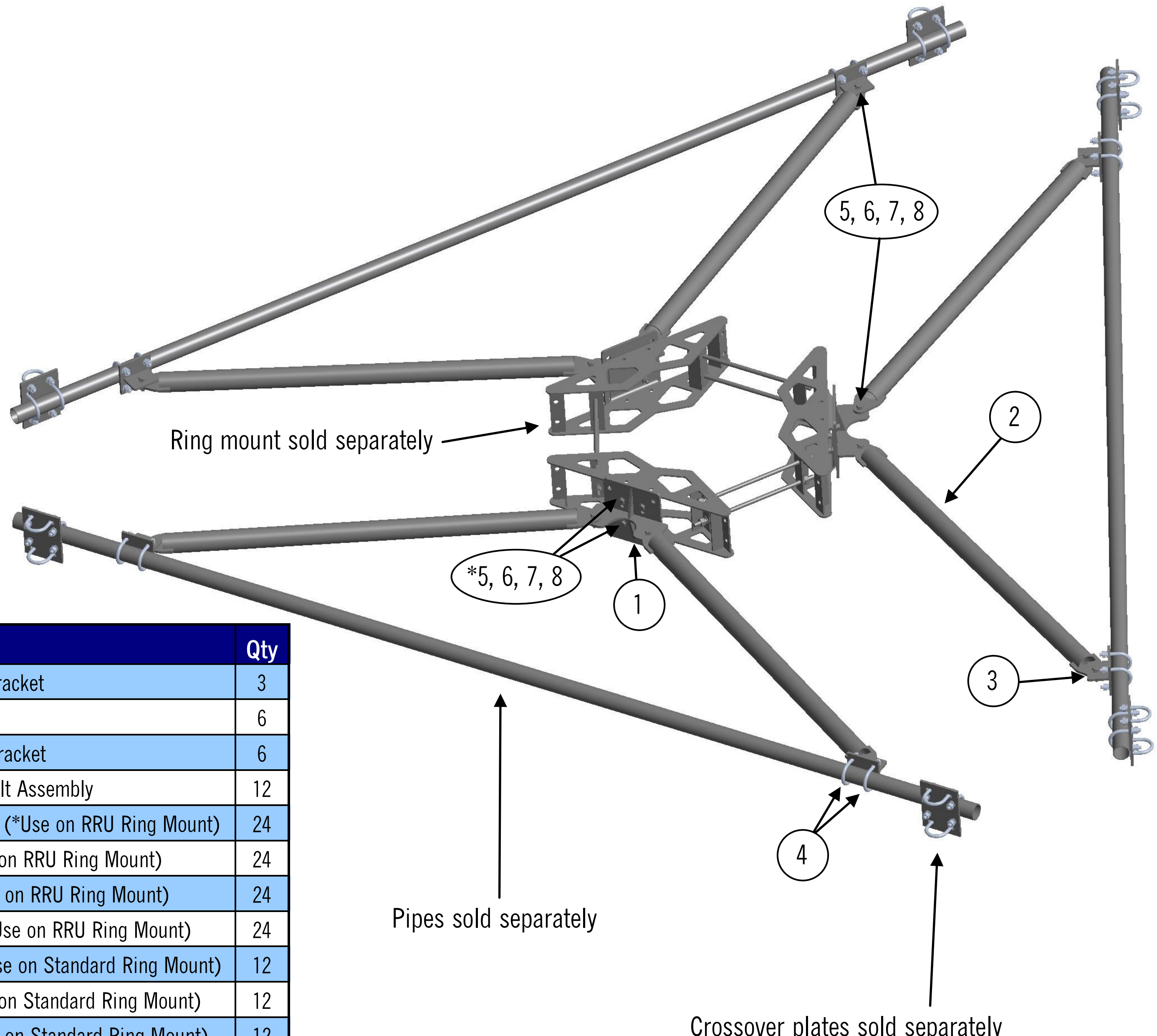
PRODUCT INSTRUCTIONS

VSK-M

V-Style Stabilizer Kit for Retrofitting Sector Frames

Sold as a kit





Item	Part #	Description	Qty
1	VSK-MAIN	Vertical Stabilizer Main Mounting Bracket	3
2	VSK-ARM	Vertical Stabilizer Pipe Arm	6
3	VSK-BRKT	Vertical Stabilizer Horizontal Pipe Bracket	6
4	UB12-25-4	1/2" x 2-1/2" x 4" Galvanized U-Bolt Assembly	12
5	12-134BA	1/2" x 1-3/4" Galvanized A325 Bolt (*Use on RRU Ring Mount)	24
6	12FW	1/2" Galvanized Flat Washer (*Use on RRU Ring Mount)	24
7	12LW	1/2" Galvanized Lock Washer (*Use on RRU Ring Mount)	24
8	12NA	1/2" Galvanized Heavy Duty Nut (*Use on RRU Ring Mount)	24
9	58-2BA	5/8" x 2" Galvanized A325 Bolt (*Use on Standard Ring Mount)	12
10	58FW	5/8" Galvanized Flat Washer (*Use on Standard Ring Mount)	12
11	58LW	5/8" Galvanized Lock Washer (*Use on Standard Ring Mount)	12
12	58NA	5/8" Galvanized Heavy Duty Nut (*Use on Standard Ring Mount)	12

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