Robinson+Cole

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Also admitted in Massachusetts
and New York

April 17, 2023

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **EM-VER-069-230110 – Cellco Partnership d/b/a Verizon Wireless – 172 Main Street, Killingly, Connecticut**

Dear Attorney Bachman:

On January 30, 2023 the Siting Council approved the above referenced Exempt Modification filing permitting the modification of an existing telecommunications facility located at 172 Main Street in Killingly. Cellco recently learned that the remote radio head ("RRH") it intended to install at this site was no longer available. The new RRH, model number RF4439d-25A will be installed in its place.

Enclosed is a revised Structural Analysis and updated set of project plans showing the new RRH that Cellco intends to install.

Please contact me if you have any questions regarding this proposal.

Sincerely,

Kenneth C. Baldwin

Attachments

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

Antenna Frame

Proposed Verizon
Antenna Upgrade

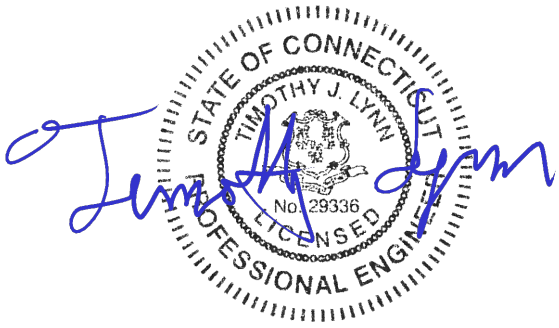
Site Ref: Danielson SC2

172 Main Street
Killingly, CT

CENTEK Project No. 22105.07

~~Date: August 15, 2022~~

Rev 3: April 10, 2023



Prepared for:

Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

Table of Contents

Introduction

The purpose of this structural analysis report (SAR) is to summarize the results, of the impacted structural components, by the equipment upgrade proposed by Verizon Wireless on the existing host building located in Killingly, CT.

The antenna is mounted on a structural steel pipe mast attached to the façade of the hosting structure chimney. The antenna is concealed within an existing RF transparent faux smoke stack. The mounts member sizes information were obtained from the original design documents prepared by Centek Engineering, dated March 2, 2015, structural steel shop drawings prepared by Jakeweld Corp dated April 28, 2015 and FRP shop drawings prepared by Stealth dated May 8, 2015. Proposed/existing antenna and appurtenance information was taken from a RF data sheet dated 3/30/2023 provided by Verizon Wireless.

Primary Assumptions Used in the Analysis

- The host structure's theoretical capacity not including any assessment of the condition of the host structure.
- The existing steel antenna frames carry the horizontal and vertical loads due to the weight of equipment, and wind and transfers into host structure.
- Structure is in plumb condition.
- Loading for equipment and enclosure as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as observed during roof framing mapping.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.

Antenna and Equipment Summary

Location	Appurtenance / Equipment	Rad Center Elevation (AGL)	Mount Type
Alpha Sector	~~(1) Commscope NH65PS-DG-F0M Antenna~~ **(1) Amphenol CUUD120X06Fxyz0 Antenna**	±64-ft	Pipe mast attached to chimney façade within concealment enclosure
Alpha Sector	~~(1) Nokia B4 RRH 2x60-4R RRH~~ **(1) Samsung RF4439d-25A (B2/B66A) RRH** **(1) Commscope SDX1926Q-43 Diplexer** (1) OVP Box	±45-ft	Pipe masts attached to building façade

~~Equipment~~ – Indicates equipment to be removed.
Equipment – Indicates equipment to be installed.

Analysis

The existing antenna frame was analyzed using a comprehensive computer program titled Risa3D. The program analyzes the antenna mounts considering the worst case code prescribed loading condition. The structures were considered to be loaded by concentric forces, and the model assumes that the members are subjected to bending, axial, and shear forces.

Design Loading

Loading was determined per the requirements of the 2021 International Building Code amended by the 2022 CSBC and ASCE 7-16 “Minimum Design Loads for Buildings and Other Structures”.

Wind Speed:	V_{ult} = 125 mph	Appendix P of the 2022 CT State Building Code
Risk Category:	II	2021 IBC; Table 1604.05
Exposure Category:	Surface Roughness C	ASCE 7-16; Section 26.7.2
Dead Load	Equipment and framing self-weight	Identified within SAR design calculations

Reference Standards

2021 International Building Code:

1. ACI 318-19, *Building Code Requirements for Structural Concrete.*
2. ACI 402/602-16, *Building Code Requirements for Masonry Structures*.
3. AISC 360-16, *Specification for Structural Steel Buildings*
4. AWS D1.4-18, *Structural Welding Code – Steel*.

Results

Structure stresses were calculated utilizing the structural analysis software RISA 3D. The stresses were determined based on the AISC standard.

- Calculated stresses for the antenna mount and host building were found to **be within allowable** limits.

Sector	Component	Stress Ratio (percentage of capacity)	Result
All Sectors	Antenna Mast	14%	**PASS**
	Connection	55%	**PASS**
	RRH Mast	2%	**PASS**
	Connection	10%	**PASS**

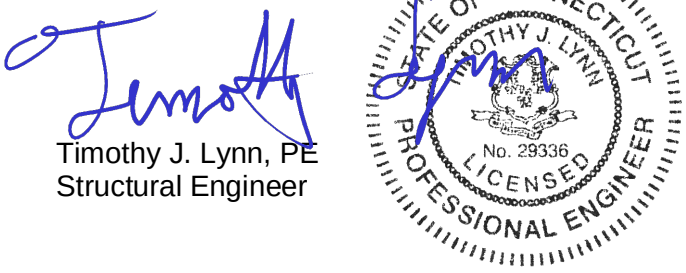
Conclusion

This analysis shows that the subject antenna mounts and host building **HAVE SUFFICIENT CAPACITY** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by Verizon. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: Wind Load on Equipment per ASCE 7-16

Location: Killingly, CT

Rev. 2: 12/7/22

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 22105.07

Design Wind Load on Other Structures: (Based on IBC 2021, CSBC 2022 and ASCE 7-16)

Wind Speed =	$V := 125$ mph	(User Input)	(CSBC Appendix P)
Risk Category =	$BC := II$	(User Input)	(IBC Table 1604.5)
Exposure Category =	$Exp := C$	(User Input)	
Height Above Grade =	$Z := 65$ ft	(User Input)	
Structure Type =	$Structuretype := Round\_Chimney$	(User Input)	
Structure Height =	$Height := 5.5$ ft	(User Input)	
Horizontal Dimension of Structure =	$Width := 2.33$ ft	(User Input)	

Terrain Exposure Constants:

Nominal Height of the Atmospheric Boundary Layer =

$$zg := \begin{cases} 1200 & \text{if } Exp = B = 900 \\ 900 & \text{if } Exp = C \\ 700 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

3-Sec Gust Speed Power Law Exponent =

$$\alpha := \begin{cases} 7 & \text{if } Exp = B = 9.5 \\ 9.5 & \text{if } Exp = C \\ 11.5 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Integral Length Scale Factor =

$$l := \begin{cases} 320 & \text{if } Exp = B = 500 \\ 500 & \text{if } Exp = C \\ 650 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Integral Length Scale Power Law Exponent =

$$E := \begin{cases} \frac{1}{3} & \text{if } Exp = B = 0.2 \\ \frac{1}{5} & \text{if } Exp = C \\ \frac{1}{8} & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Turbulence Intensity Factor =

$$c := \begin{cases} 0.3 & \text{if } Exp = B = 0.2 \\ 0.2 & \text{if } Exp = C \\ 0.15 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Exposure Constant =

$$Z_{min} := \begin{cases} 30 & \text{if } Exp = B = 15 \\ 15 & \text{if } Exp = C \\ 7 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Exposure Coefficient =

$$K_z := \begin{cases} 2.01\left(\frac{Z}{zg}\right)^{\left(\frac{2}{\alpha}\right)} & \text{if } 15 \le Z \le zg = 1.16 \\ 2.01\left(\frac{15}{zg}\right)^{\left(\frac{2}{\alpha}\right)} & \text{if } Z < 15 \end{cases}$$ (Table 26.10-1)

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Subject: Wind Load on Equipment per ASCE 7-16

Location: Killingly, CT

Rev. 2: 12/7/22

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 22105.07

Topographic Factor =	$K_{zt} := 1$	(Eq. 26.8-2)
Wind Directionality Factor =	$K_d = 0.95$	(Table 26.6-1)
Velocity Pressure =	$q_z := 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 = 43.92$	(Eq. 26.10-2)
Peak Factor for Background Response =	$g_Q := 3.4$	(Sec 26.11.4)
Peak Factor for Wind Response =	$g_v := 3.4$	(Sec 26.11.4)
Equivalent Height of Structure =	$z := \begin{cases} Z_{min} & \text{if } Z_{min} > 0.6 \cdot Height \\ 0.6 \cdot Height & \text{otherwise} \end{cases} = 15$	(Sec 26.11.4)
Intensity of Turbulence =	$I_z := c \cdot \left(\frac{33}{z}\right)^{\left(\frac{1}{6}\right)} = 0.228$	(Eq. 26.11-7)
Integral Length Scale of Turbulence =	$L_Z := l \cdot \left(\frac{z}{33}\right)^{E} = 427.057$	(Eq. 26.11-9)
Background Response Factor =	$Q := \sqrt{\frac{1}{1 + 0.63\left(\frac{Width + Height}{L_Z}\right)^{0.63}}} = 0.976$	(Eq. 26.11-8)
Gust Response Factor =	$G := 0.925 \cdot \left[\frac{\left(1 + 1.7 \cdot g_Q \cdot I_z \cdot Q\right)}{1 + 1.7 \cdot g_v \cdot I_z}\right] = 0.912$	(Eq. 26.11-6)
Force Coefficient =	$C_f = 0.523$	(Fig 29.4-1 - 29.4-4)
Wind Force =	$F := q_z \cdot G \cdot C_f = 21$	psf

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63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject:	Wind Load on Equipment per ASCE 7-16
Location:	Killingly, CT
Rev. 2: 12/7/22	Prepared by: T.J.L; Checked by: C.F.C. Job No. 22105.07

Development of Wind & Ice Load on Enclosure

Enclosure Data:

Enclosure Model =	2'-4" (Max) diameter Concealment Enclosure		
Enclosure Shape =	Flat		(User Input)
Enclosure Height =	$L_{enc} := 66$	in	(User Input)
Enclosure Width =	$W_{enc} := 28$	in	(User Input)
Enclosure Thickness =	$T_{enc} := 28$	in	(User Input)

Wind Load (Front)

Surface Area for One Enclosure =	$SA_{enc} := \frac{L_{enc} \cdot W_{enc}}{144} = 12.8$	sf
Enclosure Projected Surface Area =	$A_{enc} := SA_{enc} = 12.8$	sf
Total Enclosure Wind Force =	$F_{enc} := F \cdot A_{enc} = 269$	lbs

Wind Load (Side)

Surface Area for One Enclosure =	$SA_{enc} := \frac{L_{enc} \cdot T_{enc}}{144} = 12.8$	sf
Enclosure Projected Surface Area =	$A_{enc} := SA_{enc} = 12.8$	sf
Total Enclosure Wind Force =	$F_{enc} := F \cdot A_{enc} = 269$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Amphenol CUUD120X06Fxyz0		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 24$	in	(User Input)
Antenna Width =	$W_{ant} := 14.6$	in	(User Input)
Antenna Thickness =	$T_{ant} := 14.6$	in	(User Input)
Antenna Weight =	$WT_{ant} := 30$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := 0 = 0$	(Antenna in Enclosure)	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 0$		sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 0$		lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := 0 = 0$	(Antenna in Enclosure)	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 0$		sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 0$		lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 30$	lbs

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Subject: Wind Load on Equipment per ASCE 7-16

Location: Killingly, CT

Rev. 3: 4/10/23

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 22105.07

Design Wind Load on Other Structures: (Based on IBC 2021, CSBC 2022 and ASCE 7-16)

Wind Speed =	$V := 125$ mph	(User Input)	(CSBC Appendix P)
Risk Category =	$BC := II$	(User Input)	(IBC Table 1604.5)
Exposure Category =	$Exp := C$	(User Input)	
Height Above Grade =	$Z := 45$ ft	(User Input)	
Structure Type =	$Structuretype := Square\_Chimney$	(User Input)	
Structure Height =	$Height := 1.5$ ft	(User Input)	
Horizontal Dimension of Structure =	$Width := 1.5$ ft	(User Input)	

Terrain Exposure Constants:

Nominal Height of the Atmospheric Boundary Layer =

$$zg := \begin{cases} 1200 & \text{if } Exp = B = 900 \\ 900 & \text{if } Exp = C \\ 700 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

3-Sec Gust Speed Power Law Exponent =

$$\alpha := \begin{cases} 7 & \text{if } Exp = B = 9.5 \\ 9.5 & \text{if } Exp = C \\ 11.5 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Integral Length Scale Factor =

$$l := \begin{cases} 320 & \text{if } Exp = B = 500 \\ 500 & \text{if } Exp = C \\ 650 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Integral Length Scale Power Law Exponent =

$$E := \begin{cases} \frac{1}{3} & \text{if } Exp = B = 0.2 \\ \frac{1}{5} & \text{if } Exp = C \\ \frac{1}{8} & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Turbulence Intensity Factor =

$$c := \begin{cases} 0.3 & \text{if } Exp = B = 0.2 \\ 0.2 & \text{if } Exp = C \\ 0.15 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Exposure Constant =

$$Z_{min} := \begin{cases} 30 & \text{if } Exp = B = 15 \\ 15 & \text{if } Exp = C \\ 7 & \text{if } Exp = D \end{cases}$$ (Table 26.11-1)

Exposure Coefficient =

$$K_z := \begin{cases} 2.01\left(\frac{Z}{zg}\right)^{\left(\frac{2}{\alpha}\right)} & \text{if } 15 \le Z \le zg = 1.07 \\ 2.01\left(\frac{15}{zg}\right)^{\left(\frac{2}{\alpha}\right)} & \text{if } Z < 15 \end{cases}$$ (Table 26.10-1)

Topographic Factor =	$K_{zt} := 1$	(Eq. 26.8-2)
Wind Directionality Factor =	$K_d = 0.9$	(Table 26.6-1)
Velocity Pressure =	$q_z := 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 = 38.51$	(Eq. 26.10-2)
Peak Factor for Background Response =	$g_Q := 3.4$	(Sec 26.11.4)
Peak Factor for Wind Response =	$g_v := 3.4$	(Sec 26.11.4)
Equivalent Height of Structure =	$z := \begin{cases} Z_{min} & \text{if } Z_{min} > 0.6 \cdot Height \\ 0.6 \cdot Height & \text{otherwise} \end{cases} = 15$	(Sec 26.11.4)
Intensity of Turbulence =	$I_z := c \cdot \left(\frac{33}{z}\right)^{\left(\frac{1}{6}\right)} = 0.228$	(Eq. 26.11-7)
Integral Length Scale of Turbulence =	$L_Z := l \cdot \left(\frac{z}{33}\right)^{E} = 427.057$	(Eq. 26.11-9)
Background Response Factor =	$Q := \sqrt{\frac{1}{1 + 0.63\left(\frac{Width + Height}{L_Z}\right)^{0.63}}} = 0.986$	(Eq. 26.11-8)
Gust Response Factor =	$G := 0.925 \cdot \left[\frac{\left(1 + 1.7 \cdot g_Q \cdot I_z \cdot Q\right)}{1 + 1.7 \cdot g_v \cdot I_z}\right] = 0.918$	(Eq. 26.11-6)
Force Coefficient =	$C_f = 1.3$	(Fig 29.4-1 - 29.4-4)
Wind Force =	$F := q_z \cdot G \cdot C_f = 46$	psf

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject: Wind Load on Equipment per ASCE 7-16

Location: Killingly, CT

Rev. 3: 4/10/23

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 22105.07

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Samsung RF4439d-25A(B2/B66A)		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 15$	in	(User Input)
Antenna Width =	$W_{ant} := 15$	in	(User Input)
Antenna Thickness =	$T_{ant} := 10$	in	(User Input)
Antenna Weight =	$WT_{ant} := 75$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 1.6$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 1.6$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 72$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 1$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 48$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 75$	lbs

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Subject: Wind Load on Equipment per ASCE 7-16

Location: Killingly, CT

Rev. 3: 4/10/23

Prepared by: T.J.L; Checked by: C.F.C.
Job No. 22105.07

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Commecope SDX1926Q-43 Diplexer		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 4.173$	in	(User Input)
Antenna Width =	$W_{ant} := 6.929$	in	(User Input)
Antenna Thickness =	$T_{ant} := 2.913$	in	(User Input)
Antenna Weight =	$WT_{ant} := 7$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

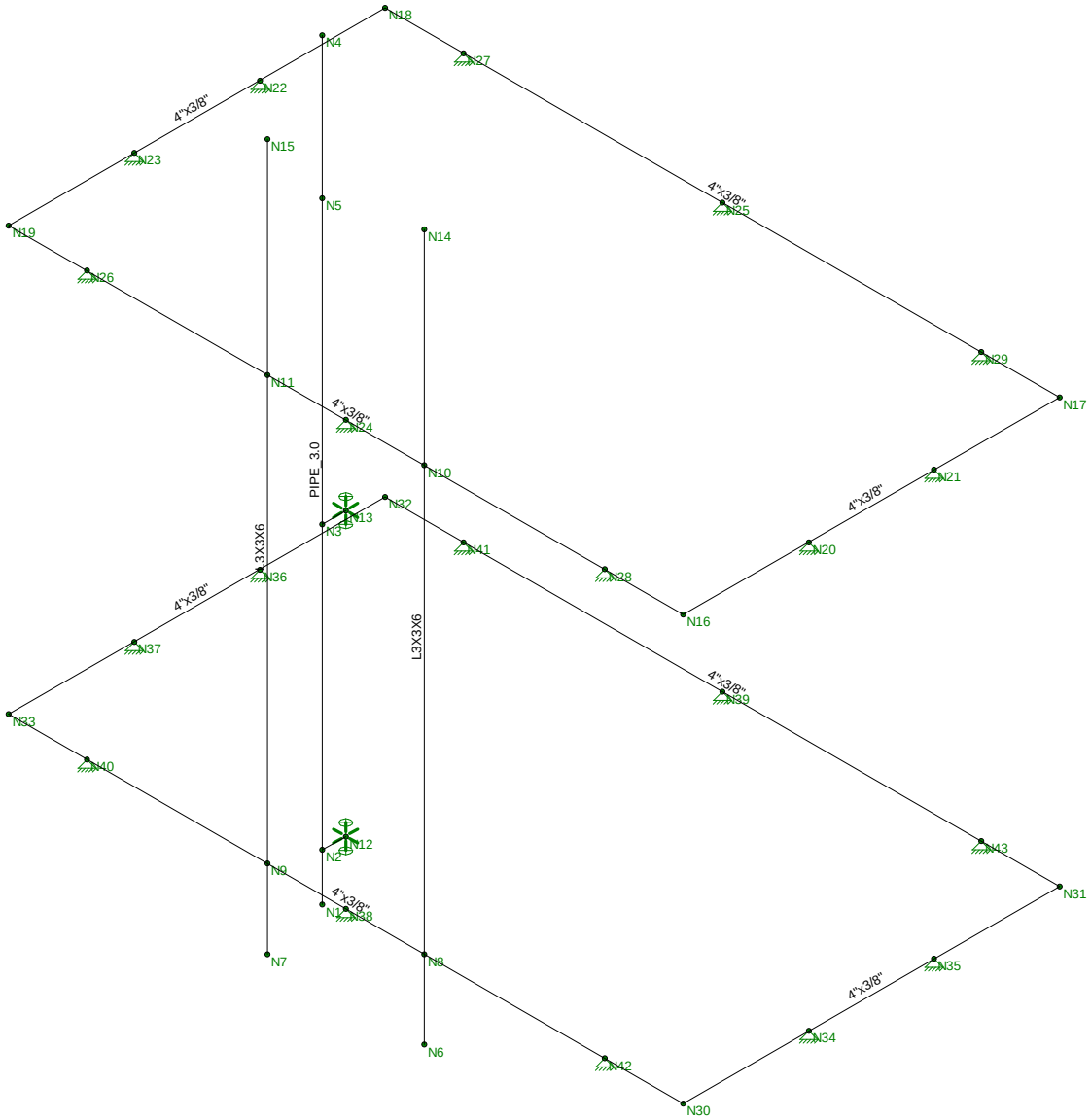
Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 0.2$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 0.2$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 9$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 0.1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 0.1$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 4$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 7$	lbs



Envelope Only Solution

Centek Engineering		
TJL	Danielson SC2	Dec 7, 2022 at 9:07 AM
22105.07	Member Framing	Mount.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 15th(360-16): ASD
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	Antenna Mast	PIPE 3.0	Column	Pipe	A53 Grade B	Typical	2.07	2.85	2.85	5.69
2	Angle	L3X3X6	Column	Wide Flange	A36 Gr.36	Typical	2.11	1.75	1.75	.101
3	Plate	4"x3/8"	Beam	Wide Flange	A36 Gr.36	Typical	1.5	.018	2	.066

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	Antenna Mast	8									Lateral
2	M4	Angle	7.503									Lateral
3	M5	Angle	7.503									Lateral
4	M6	Plate	7.166			Lbyy						Lateral
5	M7	Plate	4			Lbyy						Lateral
6	M8	Plate	7.166			Lbyy						Lateral
7	M9	Plate	4			Lbyy						Lateral
8	M10	Plate	7.166			Lbyy						Lateral
9	M11	Plate	4			Lbyy						Lateral
10	M12	Plate	7.166			Lbyy						Lateral
11	M13	Plate	4			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design ...
1	M1	N1	N4			Antenna Mast	Column	Pipe	A53 Grade B	Typical
2	M2	N3	N13			RIGID	None	None	RIGID	Typical
3	M3	N2	N12			RIGID	None	None	RIGID	Typical
4	M4	N7	N15			Angle	Column	Wide Flan...	A36 Gr.36	Typical
5	M5	N6	N14		90	Angle	Column	Wide Flan...	A36 Gr.36	Typical
6	M6	N19	N16			Plate	Beam	Wide Flan...	A36 Gr.36	Typical
7	M7	N16	N17			Plate	Beam	Wide Flan...	A36 Gr.36	Typical
8	M8	N17	N18			Plate	Beam	Wide Flan...	A36 Gr.36	Typical
9	M9	N18	N19			Plate	Beam	Wide Flan...	A36 Gr.36	Typical
10	M10	N33	N30			Plate	Beam	Wide Flan...	A36 Gr.36	Typical
11	M11	N30	N31			Plate	Beam	Wide Flan...	A36 Gr.36	Typical
12	M12	N31	N32			Plate	Beam	Wide Flan...	A36 Gr.36	Typical
13	M13	N32	N33			Plate	Beam	Wide Flan...	A36 Gr.36	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	0	.25	0	
2	N2	0	.5	.25	0	
3	N3	0	3.5	.25	0	
4	N4	0	8	.25	0	
5	N5	0	6.5	.25	0	
6	N6	.833	-1	0	0	
7	N7	-.833	-1	0	0	
8	N8	.833	-.167	0	0	
9	N9	-.833	-.167	0	0	
10	N10	.833	4.333	0	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
11	N11	-.833	4.333	0	0	
12	N12	0	.5	0	0	
13	N13	0	3.5	0	0	
14	N14	.833	6.503	0	0	
15	N15	-.833	6.503	0	0	
16	N16	3.583	4.333	0	0	
17	N17	3.583	4.333	-4	0	
18	N18	-3.583	4.333	-4	0	
19	N19	-3.583	4.333	0	0	
20	N20	3.583	4.333	-1.333333	0	
21	N21	3.583	4.333	-2.666667	0	
22	N22	-3.583	4.333	-2.666667	0	
23	N23	-3.583	4.333	-1.333333	0	
24	N24	0	4.333	0	0	
25	N25	-0.	4.333	-4	0	
26	N26	-2.75	4.333	0	0	
27	N27	-2.75	4.333	-4	0	
28	N28	2.75	4.333	0	0	
29	N29	2.75	4.333	-4	0	
30	N30	3.583	-.167	0	0	
31	N31	3.583	-.167	-4	0	
32	N32	-3.583	-.167	-4	0	
33	N33	-3.583	-.167	0	0	
34	N34	3.583	-.167	-1.333333	0	
35	N35	3.583	-.167	-2.666667	0	
36	N36	-3.583	-.167	-2.666667	0	
37	N37	-3.583	-.167	-1.333333	0	
38	N38	0	-.167	0	0	
39	N39	-0.	-.167	-4	0	
40	N40	-2.75	-.167	0	0	
41	N41	-2.75	-.167	-4	0	
42	N42	2.75	-.167	0	0	
43	N43	2.75	-.167	-4	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	N2						
2	N3						
3	N12	Reaction	Reaction	Reaction		Reaction	
4	N13	Reaction	Reaction	Reaction		Reaction	
5	N26	Reaction	Reaction	Reaction			
6	N23	Reaction	Reaction	Reaction			
7	N22	Reaction	Reaction	Reaction			
8	N25	Reaction	Reaction	Reaction			
9	N27	Reaction	Reaction	Reaction			
10	N21	Reaction	Reaction	Reaction			
11	N29	Reaction	Reaction	Reaction			
12	N20	Reaction	Reaction	Reaction			
13	N24	Reaction	Reaction	Reaction			
14	N28	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]
15	N34	Reaction	Reaction	Reaction			
16	N35	Reaction	Reaction	Reaction			
17	N36	Reaction	Reaction	Reaction			
18	N37	Reaction	Reaction	Reaction			
19	N38	Reaction	Reaction	Reaction			
20	N39	Reaction	Reaction	Reaction			
21	N40	Reaction	Reaction	Reaction			
22	N41	Reaction	Reaction	Reaction			
23	N42	Reaction	Reaction	Reaction			
24	N43	Reaction	Reaction	Reaction			

Member Point Loads

Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
No Data to Print ...			

Member Distributed Loads (BLC 2 : Weight of Equipment)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,k...	Start Location[ft..	End Location[ft,...
1	M4	Y	-.01	-.01	0	0
2	M5	Y	-.01	-.01	0	0

Member Distributed Loads (BLC 3 : Wind X-Direction)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,k...	Start Location[ft..	End Location[ft,...
1	M4	X	.015	.015	0	0
2	M5	X	.015	.015	0	0

Member Distributed Loads (BLC 4 : Wind Z-Direction)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,k...	Start Location[ft..	End Location[ft,...
1	M4	Z	.03	.03	0	0
2	M5	Z	.03	.03	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	Weight of Equipment	DL				2		2		
3	Wind X-Direction	WLX				1		2		
4	Wind Z-Direction	WLZ				1		2		

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	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	LLS	1																
3	IBC 16-12 (a) (a)	Yes	Y		DL	1	W...	.6																		
4	IBC 16-12 (a) (b)	Yes	Y		DL	1	W...	.6																		
5	IBC 16-12 (a) (c)	Yes	Y		DL	1	W...	-.6																		
6	IBC 16-12 (a) (d)	Yes	Y		DL	1	W...	-.6																		

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
7	IBC 16-13 (a) (a)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75														
8	IBC 16-13 (a) (b)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75														
9	IBC 16-13 (a) (c)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75														
10	IBC 16-13 (a) (d)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75														
11	IBC 16-15 (a)	Yes	Y		DL	.6	W...	.6																		
12	IBC 16-15 (b)	Yes	Y		DL	.6	W...	.6																		
13	IBC 16-15 (c)	Yes	Y		DL	.6	W...	-.6																		
14	IBC 16-15 (d)	Yes	Y		DL	.6	W...	-.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	N12	max	.162	3	.916	4	.176	4	0	14	.04	3	0	14
2		min	-.162	5	-.797	14	-.153	14	0	1	-.04	5	0	1
3	N13	max	.323	5	.934	6	.315	14	0	14	.081	5	0	14
4		min	-.323	3	-.786	12	-.337	4	0	1	-.081	3	0	1
5	N26	max	.013	5	.028	5	.032	6	0	14	0	14	0	14
6		min	-.012	11	.012	11	-.032	12	0	1	0	1	0	1
7	N23	max	.003	12	.004	3	.016	12	0	14	0	14	0	14
8		min	-.003	6	0	13	-.016	6	0	1	0	1	0	1
9	N22	max	0	6	.012	5	0	12	0	14	0	14	0	14
10		min	0	12	.006	11	0	6	0	1	0	1	0	1
11	N25	max	0	14	.014	4	0	12	0	14	0	14	0	14
12		min	0	1	.008	14	0	6	0	1	0	1	0	1
13	N27	max	0	12	.013	3	0	14	0	14	0	14	0	14
14		min	0	6	.008	13	0	4	0	1	0	1	0	1
15	N21	max	0	12	.012	3	0	12	0	14	0	14	0	14
16		min	0	6	.006	13	0	6	0	1	0	1	0	1
17	N29	max	0	6	.013	5	0	14	0	14	0	14	0	14
18		min	0	4	.008	11	0	4	0	1	0	1	0	1
19	N20	max	.003	6	.004	5	.016	12	0	14	0	14	0	14
20		min	-.003	12	0	11	-.016	6	0	1	0	1	0	1
21	N24	max	.057	13	.13	4	.142	6	0	14	0	14	0	14
22		min	-.057	11	.076	14	-.142	12	0	1	0	1	0	1
23	N28	max	.012	13	.028	3	.032	6	0	14	0	14	0	14
24		min	-.013	3	.012	13	-.032	12	0	1	0	1	0	1
25	N34	max	.002	14	.004	6	.009	4	0	14	0	14	0	14
26		min	-.002	4	0	12	-.009	14	0	1	0	1	0	1
27	N35	max	0	4	.013	3	0	12	0	14	0	14	0	14
28		min	0	14	.006	13	0	6	0	1	0	1	0	1
29	N36	max	0	14	.013	5	0	12	0	14	0	14	0	14
30		min	0	4	.006	11	0	6	0	1	0	1	0	1
31	N37	max	.002	4	.004	6	.009	4	0	14	0	14	0	14
32		min	-.002	14	0	12	-.009	14	0	1	0	1	0	1
33	N38	max	.038	5	.136	6	.076	14	0	14	0	14	0	14
34		min	-.038	3	.062	12	-.076	4	0	1	0	1	0	1
35	N39	max	0	14	.014	4	0	12	0	14	0	14	0	14
36		min	0	1	.008	14	0	6	0	1	0	1	0	1
37	N40	max	.008	13	.029	4	.019	14	0	14	0	14	0	14
38		min	-.009	3	.01	14	-.019	4	0	1	0	1	0	1
39	N41	max	0	12	.013	3	0	14	0	14	0	14	0	14

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
40		min	0	14	.008	13	0	4	0	1	0	1	0	1
41	N42	max	.009	5	.029	4	.019	14	0	14	0	14	0	14
42		min	-.008	11	.01	14	-.019	4	0	1	0	1	0	1
43	N43	max	0	14	.013	5	0	14	0	14	0	14	0	14
44		min	0	4	.008	11	0	4	0	1	0	1	0	1
45	Totals:	max	.296	13	.652	10	.432	14						
46		min	-.296	3	.391	11	-.432	4						

Envelope Joint Displacements

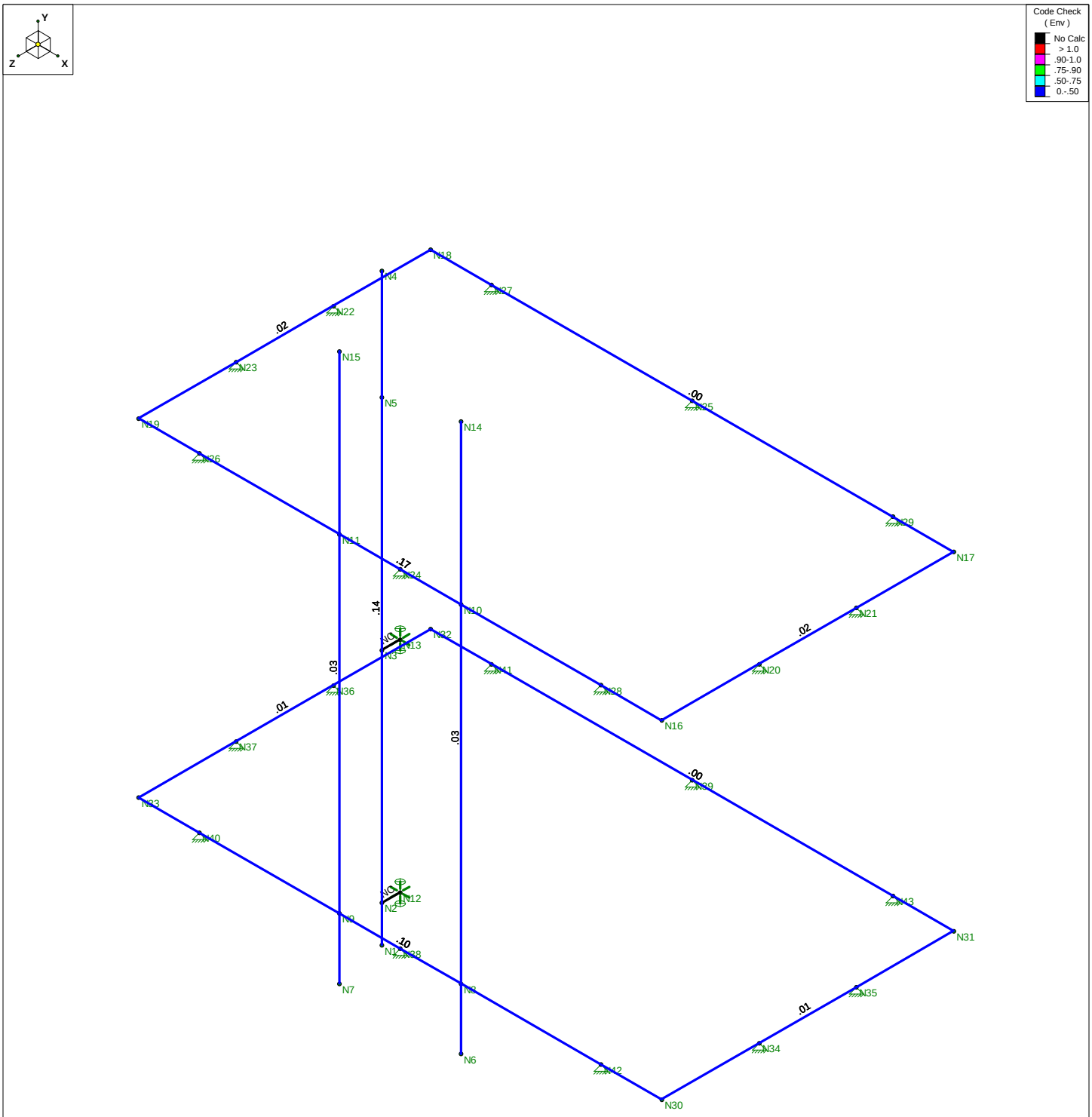
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	.003	3	0	14	0	14	1.885e-04	4	0	14	5.16e-04	3
2		min	-.003	5	0	4	-.001	4	-1.623e-04	14	0	1	-5.16e-04	5
3	N2	max	0	14	0	14	0	14	1.885e-04	4	0	14	5.16e-04	3
4		min	0	1	0	4	0	1	-1.623e-04	14	0	1	-5.16e-04	5
5	N3	max	0	14	.001	14	0	14	4.139e-04	4	0	14	1.072e-03	5
6		min	0	1	-.001	4	0	1	-3.635e-04	14	0	1	-1.072e-03	3
7	N4	max	.125	3	.001	14	.089	4	2.001e-03	4	0	14	2.661e-03	5
8		min	-.125	5	-.001	4	-.087	14	-1.949e-03	14	0	1	-2.661e-03	3
9	N5	max	.077	3	.001	14	.053	4	2.001e-03	4	0	14	2.66e-03	5
10		min	-.077	5	-.001	4	-.052	14	-1.948e-03	14	0	1	-2.66e-03	3
11	N6	max	0	14	0	13	.012	12	3.048e-04	4	1.417e-03	14	-5.906e-06	13
12		min	0	4	0	3	-.012	6	-2.892e-04	14	-1.418e-03	4	-2.117e-05	3
13	N7	max	0	4	0	11	.012	12	3.048e-04	4	1.418e-03	4	2.117e-05	5
14		min	0	14	0	5	-.012	6	-2.892e-04	14	-1.417e-03	14	5.906e-06	11
15	N8	max	0	11	0	13	.015	4	3.143e-04	4	1.417e-03	14	-8.705e-07	14
16		min	0	5	0	3	-.015	14	-2.987e-04	14	-1.418e-03	4	-2.621e-05	4
17	N9	max	0	3	0	11	.015	4	3.143e-04	4	1.418e-03	4	2.621e-05	4
18		min	0	13	0	5	-.015	14	-2.987e-04	14	-1.417e-03	14	8.705e-07	14
19	N10	max	0	3	0	13	.026	12	2.172e-04	4	2.258e-03	6	-5.417e-06	13
20		min	0	13	0	3	-.026	6	-2.008e-04	14	-2.258e-03	12	-2.303e-05	3
21	N11	max	0	11	0	11	.026	12	2.172e-04	4	2.258e-03	12	2.303e-05	5
22		min	0	5	0	5	-.026	6	-2.008e-04	14	-2.258e-03	6	5.417e-06	11
23	N12	max	0	14	0	14	0	14	1.885e-04	4	0	14	5.16e-04	3
24		min	0	1	0	1	0	1	-1.623e-04	14	0	1	-5.16e-04	5
25	N13	max	0	14	0	14	0	14	4.139e-04	4	0	14	1.072e-03	5
26		min	0	1	0	1	0	1	-3.635e-04	14	0	1	-1.072e-03	3
27	N14	max	.003	4	0	13	.035	4	3.851e-04	4	2.258e-03	6	9.402e-05	14
28		min	-.002	14	0	3	-.034	14	-3.686e-04	14	-2.258e-03	12	-1.225e-04	4
29	N15	max	.002	14	0	11	.035	4	3.851e-04	4	2.258e-03	12	1.225e-04	4
30		min	-.003	4	0	5	-.034	14	-3.686e-04	14	-2.258e-03	6	-9.402e-05	14
31	N16	max	0	14	0	3	0	14	-3.091e-06	13	3.103e-04	6	1.42e-05	3
32		min	0	4	0	13	0	4	-1.341e-05	3	-3.103e-04	12	2.369e-06	13
33	N17	max	0	12	0	11	0	14	-7.908e-07	11	4.772e-06	12	-1.726e-06	11
34		min	0	6	0	5	0	4	-1.646e-06	5	-4.772e-06	6	-3.85e-06	5
35	N18	max	0	14	0	13	0	14	-7.908e-07	13	4.772e-06	14	3.85e-06	3
36		min	0	4	0	3	0	4	-1.646e-06	3	-4.771e-06	4	1.726e-06	13
37	N19	max	0	12	0	5	0	14	-3.091e-06	11	3.103e-04	12	-2.369e-06	11
38		min	0	6	0	11	0	4	-1.341e-05	5	-3.103e-04	6	-1.42e-05	5
39	N20	max	0	14	0	14	0	14	-6.272e-07	13	8.293e-05	12	8.424e-06	3
40		min	0	1	0	1	0	1	-4.315e-06	3	-8.294e-05	6	7.607e-07	13

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
41	N21	max	0	14	0	14	0	14	2.633e-07	11	2.191e-05	14	2.652e-06	3
42		min	0	1	0	1	0	1	-6.136e-07	5	-2.19e-05	4	-8.476e-07	13
43	N22	max	0	14	0	14	0	14	2.633e-07	13	2.191e-05	12	8.476e-07	11
44		min	0	1	0	1	0	1	-6.136e-07	3	-2.191e-05	6	-2.652e-06	5
45	N23	max	0	14	0	14	0	14	-6.272e-07	11	8.293e-05	14	-7.607e-07	11
46		min	0	1	0	1	0	1	-4.315e-06	5	-8.293e-05	4	-8.424e-06	5
47	N24	max	0	14	0	14	0	14	2.172e-04	4	1.672e-06	11	4.55e-06	13
48		min	0	1	0	1	0	1	-2.008e-04	14	-1.672e-06	13	-4.55e-06	3
49	N25	max	0	14	0	14	0	14	-8.478e-07	12	0	14	1.205e-07	13
50		min	0	1	0	1	0	1	-1.589e-06	6	0	1	-1.206e-07	3
51	N26	max	0	14	0	14	0	14	5.922e-05	12	9.617e-04	6	-5.748e-06	11
52		min	0	1	0	1	0	1	-6.578e-05	6	-9.616e-04	12	-2.185e-05	5
53	N27	max	0	14	0	14	0	14	-8.194e-07	13	1.822e-06	12	3.187e-07	3
54		min	0	1	0	1	0	1	-1.617e-06	3	-1.822e-06	6	-2.051e-07	13
55	N28	max	0	14	0	14	0	14	5.922e-05	12	9.616e-04	12	2.185e-05	3
56		min	0	1	0	1	0	1	-6.578e-05	6	-9.617e-04	6	5.748e-06	13
57	N29	max	0	14	0	14	0	14	-8.194e-07	11	1.822e-06	14	2.051e-07	11
58		min	0	1	0	1	0	1	-1.617e-06	5	-1.822e-06	4	-3.187e-07	5
59	N30	max	0	14	0	3	0	14	-1.664e-06	13	1.848e-04	14	1.474e-05	3
60		min	0	4	0	13	0	4	-1.384e-05	3	-1.849e-04	4	5.955e-07	13
61	N31	max	0	12	0	11	0	14	-7.598e-07	11	2.843e-06	12	-1.64e-06	11
62		min	0	6	0	5	0	4	-1.706e-06	5	-2.842e-06	6	-4.04e-06	5
63	N32	max	0	14	0	13	0	14	-7.598e-07	13	2.842e-06	14	4.04e-06	3
64		min	0	4	0	3	0	4	-1.706e-06	3	-2.843e-06	4	1.64e-06	13
65	N33	max	0	12	0	5	0	14	-1.664e-06	11	1.849e-04	4	-5.955e-07	11
66		min	0	6	0	11	0	4	-1.384e-05	5	-1.848e-04	14	-1.474e-05	5
67	N34	max	0	14	0	14	0	14	-6.071e-08	13	4.941e-05	12	8.804e-06	3
68		min	0	1	0	1	0	1	-4.49e-06	3	-4.939e-05	6	-4.763e-07	13
69	N35	max	0	14	0	14	0	14	3.523e-07	11	1.305e-05	14	2.872e-06	3
70		min	0	1	0	1	0	1	-8.253e-07	5	-1.305e-05	4	-1.548e-06	13
71	N36	max	0	14	0	14	0	14	3.523e-07	13	1.305e-05	12	1.548e-06	11
72		min	0	1	0	1	0	1	-8.253e-07	3	-1.305e-05	6	-2.872e-06	5
73	N37	max	0	14	0	14	0	14	-6.071e-08	11	4.94e-05	14	4.763e-07	11
74		min	0	1	0	1	0	1	-4.49e-06	5	-4.941e-05	4	-8.804e-06	5
75	N38	max	0	14	0	14	0	14	3.143e-04	4	1.673e-06	13	3.434e-06	13
76		min	0	1	0	1	0	1	-2.987e-04	14	-1.673e-06	11	-3.435e-06	3
77	N39	max	0	14	0	14	0	14	-8.253e-07	12	0	14	1.618e-07	13
78		min	0	1	0	1	0	1	-1.641e-06	6	0	1	-1.618e-07	3
79	N40	max	0	14	0	14	0	14	8.841e-05	12	5.728e-04	14	-3.622e-06	11
80		min	0	1	0	1	0	1	-9.45e-05	6	-5.729e-04	4	-2.25e-05	5
81	N41	max	0	14	0	14	0	14	-7.982e-07	13	1.085e-06	12	4.438e-07	3
82		min	0	1	0	1	0	1	-1.668e-06	3	-1.085e-06	6	-2.655e-07	13
83	N42	max	0	14	0	14	0	14	8.841e-05	12	5.729e-04	4	2.25e-05	3
84		min	0	1	0	1	0	1	-9.45e-05	6	-5.728e-04	14	3.622e-06	13
85	N43	max	0	14	0	14	0	14	-7.982e-07	11	1.085e-06	14	2.655e-07	11
86		min	0	1	0	1	0	1	-1.668e-06	5	-1.085e-06	4	-4.438e-07	5

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

	Memb...	Shape	Code Check	L...	LC	Sh...	L...	Dir	...	Pnc/o...	Pnt/o...	Mnyy/om [k-ft]	Mn...	Cb	Eqn
1	M1	PIPE 3.0	.141	3.5	4	.013	.5		4	30.799	43.383	3.825	3.825	1	H1..
2	M4	L3X3X6	.030	5....	4	.007	5....	z	6	13.206	45.485	1.535	3.374	1....	H2..
3	M5	L3X3X6	.030	5....	4	.007	5....	y	6	13.206	45.485	1.535	3.374	1....	H2..
4	M6	4"x3/8"	.169	3....	4	.005	3....	y	5	.357	32.335	.253	1.786	1....	H1..
5	M7	4"x3/8"	.016	0	4	.001	2....	y	3	1.147	32.335	.253	2.695	1....	H1..
6	M8	4"x3/8"	.002	.8...	6	.001	3....	y	5	.357	32.335	.253	1.658	1....	H1..
7	M9	4"x3/8"	.016	4	4	.001	1....	y	5	1.147	32.335	.253	2.695	1....	H1..
8	M10	4"x3/8"	.103	3....	6	.005	3....	y	5	.357	32.335	.253	1.93	1....	H1..
9	M11	4"x3/8"	.010	0	4	.001	2....	y	3	1.147	32.335	.253	2.695	1....	H1..
10	M12	4"x3/8"	.002	.8...	6	.001	3....	y	5	.357	32.335	.253	1.692	1....	H1..
11	M13	4"x3/8"	.010	4	4	.001	1....	y	5	1.147	32.335	.253	2.695	1....	H1..



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering		
TJL	Danielson SC2	Dec 7, 2022 at 9:07 AM
22105.07	Unity Check	Mount.r3d

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject:	Connection to Host Building
Location:	Killingly, CT
Rev. 0: 8/15/22	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22105.07

Antenna Mast Connection:

Anchor Data:

HAS Threaded Rod w/ Hilti HY70 Adhesive =

Number of Anchor Bolts =	$N := 4$	(User Input)
Diameter of Bolts =	$D := 0.5in$	(User Input)
Embedment of Bolts =	$EM := 6in$	(User Input)
Bolt Spacing =	$Sp := 6in$	(User Input)
Alowable Tension =	$T_{all} := 895 \cdot lb$	(User Input)
Alowable Shear =	$V_{all} := 1075 \cdot lb$	(User Input)

Design Reactions:

Fx =	$F_x := 0.4 \cdot kips$	(User Input)
Fy =	$F_y := 1.0 \cdot kips$	(User Input)
Fz =	$F_z := 0.4 \cdot kips$	(User Input)
Moment X =	$Mx := 0 \cdot ft \cdot kips$	(User Input)
Moment Y =	$My := 0.1 \cdot ft \cdot kips$	(User Input)
Moment Z =	$Mz := 0 \cdot ft \cdot kips$	(User Input)

Anchor Check:

Max Tension Force =

$$T_{Max} := \frac{F_z}{N} + \frac{My}{Sp \cdot \frac{N}{2}} = 200lb$$

Max Shear Force =

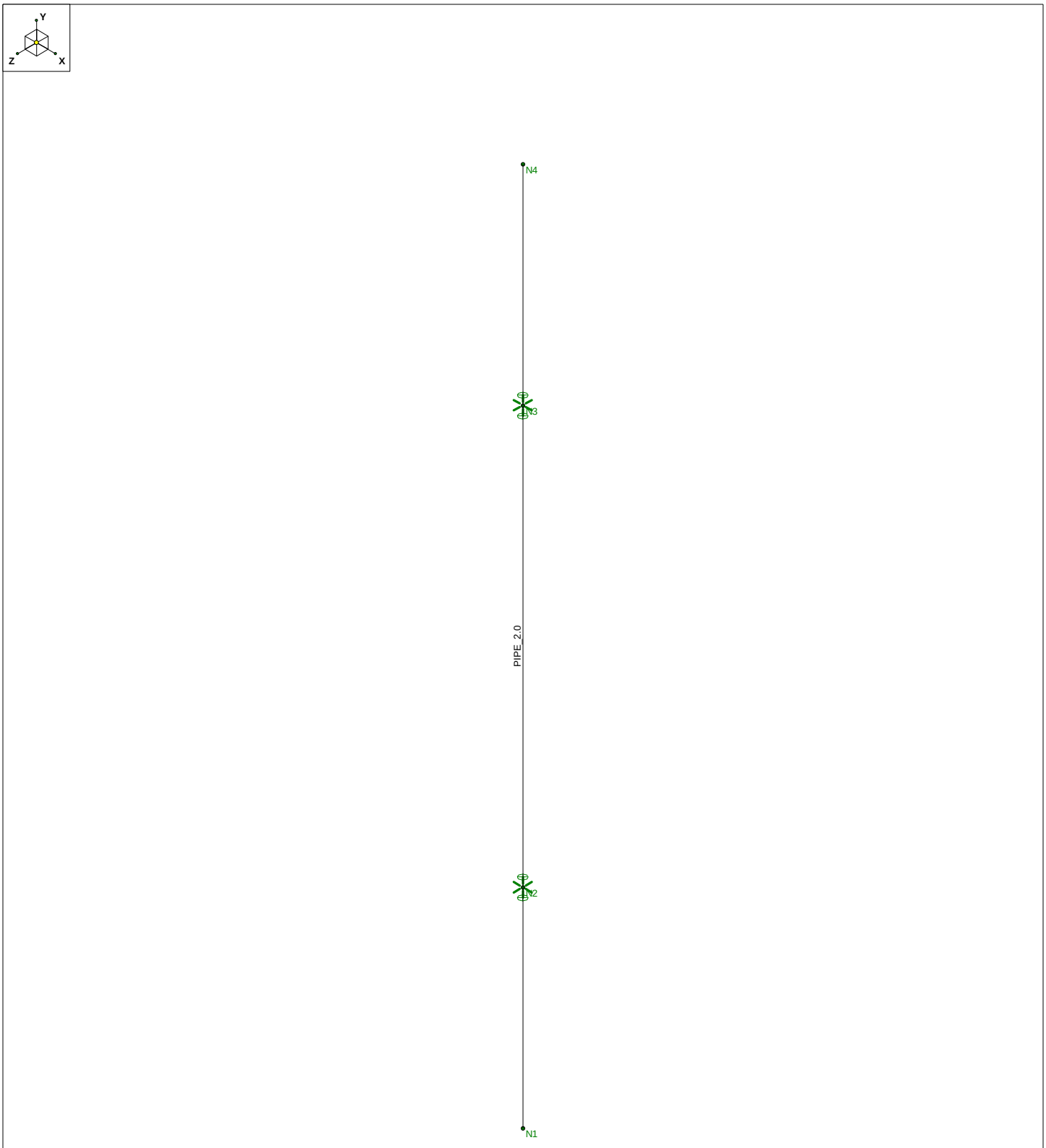
$$V_{Max} := \frac{F_y + F_x}{N} = 350lb$$

Condition 1 =

$$Condition1 := if\left(\frac{T_{Max}}{T_{all}} + \frac{V_{Max}}{V_{all}} \le 1.0, "OK", "NG"\right) = "OK"$$

% of Capacity =

$$\max\left[\frac{T_{Max}}{T_{all}}, \frac{V_{Max}}{V_{all}}, \left(\frac{\frac{T_{Max}}{T_{all}} + \frac{V_{Max}}{V_{all}}}{1.0}\right)\right] = 54.9 \cdot \%$$



Envelope Only Solution

Centek Engineering		
TJL	Danielson SC2	Dec 7, 2022 at 9:10 AM
22105.07	Member Framing	RRH Mount.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 15th(360-16): ASD
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	Mast	PIPE_2.0	Column	Pipe	A53 Grade B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	Mast	4									Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design ...
1	M1	N1	N2			Mast	Column	Pipe	A53 Grade B	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	0	1	0	0	
3	N3	0	3	0	0	
4	N4	0	4	0	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	N2	Reaction	Reaction	Reaction		Reaction	
2	N3	Reaction	Reaction	Reaction		Reaction	

Member Point Loads (BLC 2 : Weight of Equipment)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Y	-.075	3.5
2	M1	Y	-.007	1.5

Member Point Loads (BLC 3 : Wind X-Direction)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	X	.048	3.5
2	M1	X	.004	1.5

Member Point Loads (BLC 4 : Wind Z-Direction)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M1	Z	.072	3.5
2	M1	Z	.009	1.5

Member Distributed Loads (BLC 3 : Wind X-Direction)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,k...	Start Location[ft...	End Location[ft,...
1	M1	X	.01	.01	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	Weight of Equipment	DL					2			
3	Wind X-Direction	WLX					2	1		
4	Wind Z-Direction	WLZ					2			

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	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	LLS	1																
3	IBC 16-12 (a) (a)	Yes	Y		DL	1	W...	.6																		
4	IBC 16-12 (a) (b)	Yes	Y		DL	1	W...	.6																		
5	IBC 16-12 (a) (c)	Yes	Y		DL	1	W...	-.6																		
6	IBC 16-12 (a) (d)	Yes	Y		DL	1	W...	-.6																		
7	IBC 16-13 (a) (a)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75														
8	IBC 16-13 (a) (b)	Yes	Y		DL	1	W...	.45	LL	.75	LLS	.75														
9	IBC 16-13 (a) (c)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75														
10	IBC 16-13 (a) (d)	Yes	Y		DL	1	W...	-.45	LL	.75	LLS	.75														
11	IBC 16-15 (a)	Yes	Y		DL	.6	W...	.6																		
12	IBC 16-15 (b)	Yes	Y		DL	.6	W...	.6																		
13	IBC 16-15 (c)	Yes	Y		DL	.6	W...	-.6																		
14	IBC 16-15 (d)	Yes	Y		DL	.6	W...	-.6																		

Envelope Joint Reactions

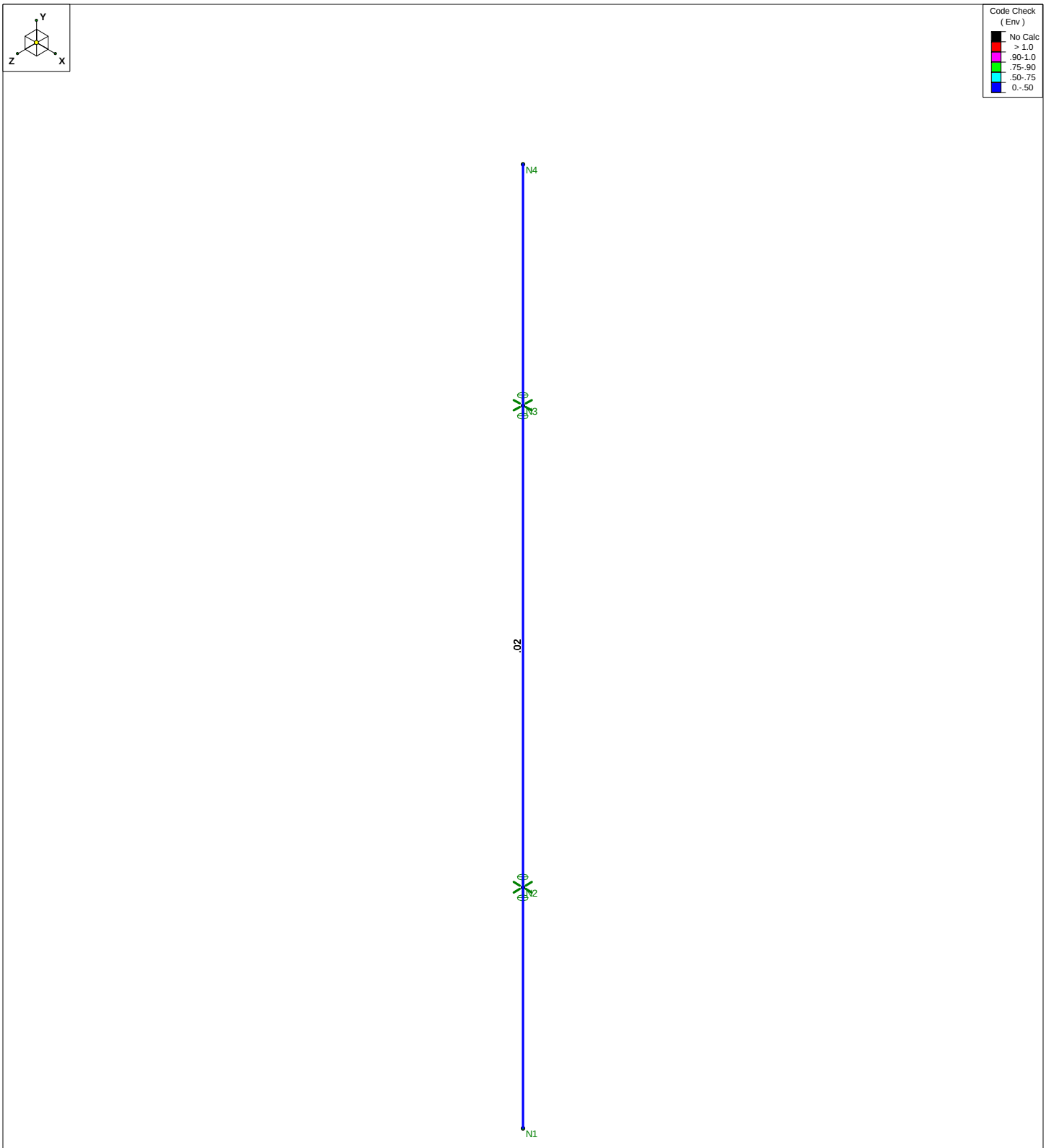
	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N2	max	.007	13	.012	10	.007	4	0	14	0	14	0	14
2		min	-.007	11	.007	11	-.007	6	0	1	0	1	0	1
3	N3	max	.049	5	.084	10	.055	6	0	14	0	14	0	14
4		min	-.049	3	.05	11	-.055	4	0	1	0	1	0	1
5	Totals:	max	.055	13	.096	10	.049	14						
6		min	-.055	3	.058	11	-.049	4						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0	3	0	14	0	4	5.776e-05	6	0	14	6.092e-05	3
2		min	0	5	0	1	0	6	-5.776e-05	4	0	1	-6.092e-05	5
3	N2	max	0	14	0	14	0	14	5.776e-05	6	0	14	5.102e-05	3
4		min	0	1	0	1	0	1	-5.776e-05	4	0	1	-5.102e-05	5
5	N3	max	0	14	0	14	0	14	1.361e-04	4	0	14	1.025e-04	5
6		min	0	1	0	1	0	1	-1.361e-04	6	0	1	-1.025e-04	3
7	N4	max	.002	3	0	14	.002	4	1.896e-04	4	0	14	1.481e-04	5
8		min	-.002	5	0	1	-.002	6	-1.896e-04	6	0	1	-1.481e-04	3

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

	Memb...	Shape	Code Check	L...	LC	Sh...	L...	Dir	...Pnc/o...	Pnt/o...	Mnyy/om [k-ft]	Mn...	Cb	Eqn
1	M1	PIPE_2.0	.020	3	6	.007	3		6 17.646	21.377	1.245	1.245	1	H1..



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering		
TJL	Danielson SC2	Dec 7, 2022 at 9:10 AM
22105.07	Unity Check	RRH Mount.r3d

CENTEK engineering
Centered on Solutions℠ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Subject:	Connection to Host Building
Location:	Killingly, CT
Rev. 1: 8/23/22	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22105.07

RRH Mast Connection:

Anchor Data:

HAS Threaded Rod w/ Hilti HY70 Adhesive =

Number of Anchor Bolts =	$N := 2$	(User Input)
Diameter of Bolts =	$D := 0.5in$	(User Input)
Embedment of Bolts =	$EM := 6in$	(User Input)
Bolt Spacing =	$Sp := 12in$	(User Input)
Alowable Tension =	$T_{all} := 895 \cdot lb$	(User Input)
Alowable Shear =	$V_{all} := 1075 \cdot lb$	(User Input)

Design Reactions:

Fx =	$F_x := 0.05 \cdot kips$	(User Input)
Fy =	$F_y := 0.085 \cdot kips$	(User Input)
Fz =	$F_z := 0.06 \cdot kips$	(User Input)
Moment X =	$Mx := 0 \cdot ft \cdot kips$	(User Input)
Moment Y =	$My := 0 \cdot ft \cdot kips$	(User Input)
Moment Z =	$Mz := 0 \cdot ft \cdot kips$	(User Input)

Anchor Check:

Max Tension Force =

$$T_{Max} := \frac{F_z}{N} + \frac{My}{Sp \cdot \frac{N}{2}} = 30lb$$

Max Shear Force =

$$V_{Max} := \frac{F_y + F_x}{N} = 67.5lb$$

Condition 1 =

$$Condition1 := if\left(\frac{T_{Max}}{T_{all}} + \frac{V_{Max}}{V_{all}} \le 1.0, "OK", "NG"\right) = "OK"$$

% of Capacity =

$$\max\left[\frac{T_{Max}}{T_{all}}, \frac{V_{Max}}{V_{all}}, \left(\frac{\frac{T_{Max}}{T_{all}} + \frac{V_{Max}}{V_{all}}}{1.0}\right)\right] = 9.6 \cdot \%$$

verizon fuze | RFDS

EAST > North East > New England > New England West > DANIELSON SC 2 CT

RF Submit by: Stevens, Wesley - wesley.stevens@verizonwireless.com - 3/30/2023, 7:35:40 AM

EE Submit by: Driscoll, Janet - janet.driscoll@verizonwireless.com - 7/18/2022, 1:10:22 PM

Project Details

FUZE Project ID:	16773947
Project Name:	Radio Swap
Project Alt Name:	DANIELSON SC 2 CT - NENG_SC_ESNAP
Project Type:	Modification
Modification Type:	RF
Designed Sector Carrier 4G:	2
Designed Sector Carrier 5G:	N/A
Additional Sector Carrier 4G:	N/A
Additional Sector Carrier 5G:	N/A
FP Solution Type & Tech Type:	MODIFICATION;4G_PCS,4G_Radio Swap
Carrier Aggregation:	false
MPT Id:	
eCIP-0:	false
Suffix:	Rev1_20230330

Location Information

Site ID:	2796056
E-NodeB ID:	064869
PSLC:	468085
Switch Name:	Wallingford 1
Tower Owner:	
Tower Type:	Rooftop
Site Type:	SMALL-CELL
Site Sub Type:	SPOKE
Street Address:	172 Main St
City:	Danielson
State:	CT
Zip Code:	06239
County:	Windham
Latitude:	41.805792 / 41° 48' 20.8512" N
Longitude:	-71.882572 / 71° 52' 57.2592" W

RFDS Project Scope:

ESNAP
Swap RRH to SS dual high band
Swap antenna
Add diplexer to support 4T

Rev1_20230330: updated RRH to ORAN
Rev0_20220323: initial design

Antenna Summary

Added

1900	AWS	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
LTE	LTE	AMPHENOL	CUUD120X06Fx0z0-T00	64	65	50(01)	false	false	PHYSICAL	1	

Removed

1900	AWS	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
	LTE	ANDREW	NH65PS-DG-F0M	64	65.2	50(01)	false	false	PHYSICAL	1	

Retained

1900	AWS	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No data available.

Added: 1 **Removed:** 1 **Retained:** 0

Equipment Summary

Added

Equipment Type	Location	1900	AWS	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
Kit	Tower			COMMSCOPET-001	SDX1926Q-43			PHYSICAL	1	000000001900083
Kit	Tower			GEMINI	1600131299A			PHYSICAL	1	000000001900078
Kit	Tower			GEMINI	1600270671A			PHYSICAL	1	000000001900057
Kit	Tower			QUADELECTRIC	F113CGRS0101FLF025			PHYSICAL	2	000000001900038
Kit	Tower			QUADELECTRIC	FLI002OT010046M010			PHYSICAL	2	000000001900038
Kit	Tower			QUADELECTRIC	SAMSUNG-CBRS-BRKT			PHYSICAL	1	000000001900068
Kit	Tower			QUADELECTRIC	TRAT303H1B1J00F006			PHYSICAL	8	000000001900028
Kit	Tower			QUADELECTRIC	TRAT303H1B1J00F050			PHYSICAL	8	000000001900028
Kit	Tower			QUADELECTRIC	UXP-4MT-12S			PHYSICAL	8	0000000019001671
Kit	Tower			QUADELECTRIC	WPS-4F			PHYSICAL	8	0000000019001661
Kit	Tower			QUADELECTRIC	WPS-N-4S			PHYSICAL	8	0000000019001664
Kit	Tower			QUADELELECTRIC	V3000			PHYSICAL	1	000000001900059
Other	Tower			SAMSUNGELE-001	SLS-BB1150EDEX			PHYSICAL	1	0000000019001673
RRU	Tower	LTE	LTE	Samsung	B2/B66A RRH ORAN (RF4439d-25A)			PHYSICAL	1	

Removed

Equipment Type	Location	1900	AWS	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower		LTE	Nokia	UHIC B4 RRH 2x60-4R			PHYSICAL	1	

Retained

Equipment Type	Location	1900	AWS	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Service Info

1900 MHz LTE

		0001
Sector		**01**
Azimuth		50
Cell / ENode B ID		064869
Antenna Model		CUUD120X06Fx0z0-T00
Antenna Make		AMPHENOL
Antenna Centerline(Ft)		64
Mechanical Down-Tilt(Deg.)		0
Electrical Down-Tilt		0
Tip Height		65
Regulatory Power		36.26
DLEARFCN		1075
Channel Bandwidth(MHz)		15
Total ERP (W)		298.4
TMA Make		
TMA Model		
RRU Make		Samsung
RRU Model		B2/B66A RRH ORAN (RF4439d-25A)
Number of Tx, Rx Lines		4,4
Position		
Transmitter Id		12616760
Source		ATOLL_API

2100 MHz LTE

	0000	0001
Sector	**01**	**01**
Azimuth	50	50
Cell / ENode B ID	064869	064869
Antenna Model	NH65PS-DG-F0M	CUUD120X06Fx0z0-T00
Antenna Make	ANDREW	AMPHENOL
Antenna Centerline(Ft)	64	64
Mechanical Down-Tilt(Deg.)	0	0
Electrical Down-Tilt	0	0
Tip Height	65.2	65
Regulatory Power	37.47	28.48
DLEARFCN	2050	2050
Channel Bandwidth(MHz)	20	20
Total ERP (W)	411.15	312.46
TMA Make		
TMA Model		
RRU Make	Nokia	Samsung
RRU Model	UHIC B4 RRH 2x60-4R	B2/B66A RRH ORAN (RF4439d-25A)
Number of Tx, Rx Lines	2,2	4,4
Position		
Transmitter Id	1959620	12616759
Source	ATOLL_API	ATOLL_API

Service Comments

Callsigns Per Antenna

Sector	Antenna Make	Antenna Model	Ant CL Height AGL	Tip Height	Azimuth (TN)	Elec Tilt	Mech Tilt	Gain	Beam Width	Regulatory Power	Callsigns						
											700	850	1900	2100	28 GHz	31 GHz	39 GHz
No data available.																	

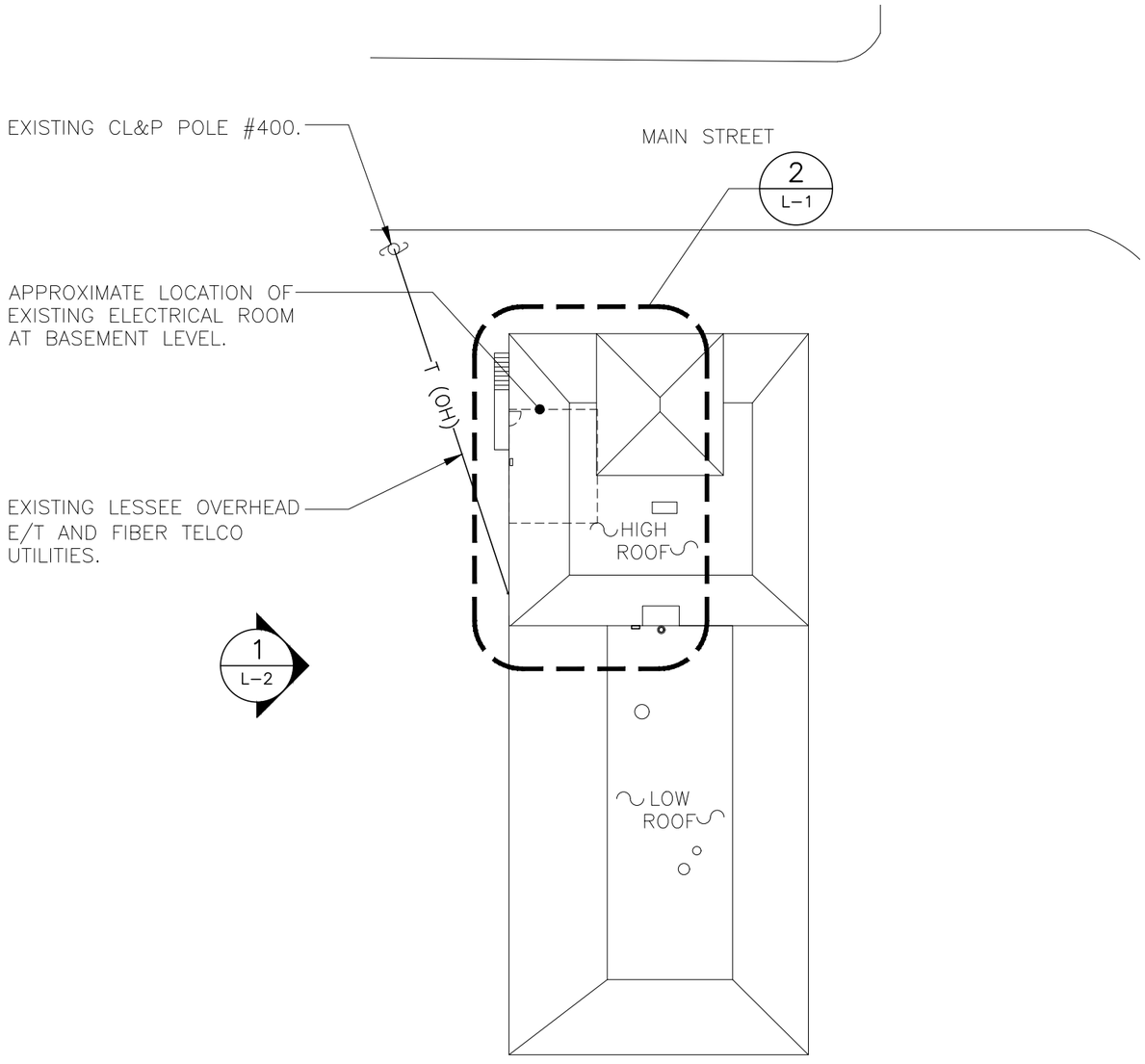
Callsigns

Callsign	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs /Sq Mi	Status	Action	Approved for Insvc
WQEM954	*New London-Norwich, CT*	*CW*	*BTA319*	*C*	*CT*	*Windham*	*Cellco Partnership*	*Yes*	*10.000*	*1895.000-1900.000*	*1975.000-1980.000*	*.000-.000*	*.000-.000*	*36.26*	*1640*	*226.98*	*Active*	*added*	*Yes*
WQDU931	*New London-Norwich, CT*	*CW*	*BTA319*	*C*	*CT*	*Windham*	*Cellco Partnership*	*Yes*	*10.000*	*1900.000-1905.000*	*1980.000-1985.000*	*.000-.000*	*.000-.000*	*36.26*	*1640*	*226.98*	*Active*	*added*	*Yes*
KNLH263	*New London-Norwich, CT*	*CW*	*BTA319*	*F*	*CT*	*Windham*	*Cellco Partnership*	*Yes*	*10.000*	*1890.000-1895.000*	*1970.000-1975.000*	*.000-.000*	*.000-.000*	*36.26*	*1640*	*226.98*	*Active*	*added*	*Yes*
WQGD529	*Connecticut 2 - Windham*	*AW*	*CMA358*	*A*	*CT*	*Windham*	*Cellco Partnership*	*Yes*	*20.000*	*1710.000-1720.000*	*2110.000-2120.000*	*.000-.000*	*.000-.000*	*28.48*	*1640*	*226.98*	*Active*	*added*	*Yes*
WQGA906	*New York-No. New Jer.-Long Island, NY-NJ-CT-PA-MA-*	*AW*	*BEA010*	*B*	*CT*	*Windham*	*Cellco Partnership*	*Yes*	*20.000*	*1720.000-1730.000*	*2120.000-2130.000*	*.000-.000*	*.000-.000*	*28.48*	*1640*	*226.98*	*Active*	*added*	*Yes*
WQJQ689	Northeast	WU	REA001	C	CT	Windham	Cellco Partnership	Yes	22.000	746.000-757.000	776.000-787.000	.000-.000	.000-.000		1000	226.98	Active		Yes
KNKN862	Connecticut 2 - Windham	CL	CMA358	A	CT	Windham	Cellco Partnership	Yes	25.000	824.000-835.000	869.000-880.000	845.000-846.500	890.000-891.500		400	226.98	Active		Yes
WREE837	C09015 - Windham, CT	UU	C09015	L1	CT	Windham	Cellco Partnership	Yes	425.000	27500.000-27925.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WREE838	C09015 - Windham, CT	UU	C09015	L2	CT	Windham	Cellco Partnership	Yes	425.000	27925.000-28350.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD609	New York, NY	UU	PEA001	M1	CT	Windham	Cellco Partnership	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD610	New York, NY	UU	PEA001	M10	CT	Windham	Cellco Partnership	Yes	100.000	38500.000-38600.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD611	New York, NY	UU	PEA001	M2	CT	Windham	Cellco Partnership	Yes	100.000	37700.000-37800.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD612	New York, NY	UU	PEA001	M3	CT	Windham	Cellco Partnership	Yes	100.000	37800.000-37900.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD613	New York, NY	UU	PEA001	M4	CT	Windham	Cellco Partnership	Yes	100.000	37900.000-38000.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD614	New York, NY	UU	PEA001	M5	CT	Windham	Cellco Partnership	Yes	100.000	38000.000-38100.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD615	New York, NY	UU	PEA001	M6	CT	Windham	Cellco Partnership	Yes	100.000	38100.000-38200.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD616	New York, NY	UU	PEA001	M7	CT	Windham	Cellco Partnership	Yes	100.000	38200.000-38300.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD617	New York, NY	UU	PEA001	M8	CT	Windham	Cellco Partnership	Yes	100.000	38300.000-38400.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD618	New York, NY	UU	PEA001	M9	CT	Windham	Cellco Partnership	Yes	100.000	38400.000-38500.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRHD619	New York, NY	UU	PEA001	N1	CT	Windham	Cellco Partnership	Yes	100.000	38600.000-38700.000	.000-.000	.000-.000	.000-.000			226.98	Active		Yes
WRNE581	New York, NY	PM	PEA001	A1	CT	Windham	Cellco Partnership	Yes	20.000	3700.000-3720.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		Yes

WRNE582	New York, NY	PM	PEA001	A2	CT	Windham	Cellco Partnership	Yes	20.000	3720.000-3740.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		Yes
WRNE583	New York, NY	PM	PEA001	A3	CT	Windham	Cellco Partnership	Yes	20.000	3740.000-3760.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		Yes
WRNE584	New York, NY	PM	PEA001	A4	CT	Windham	Cellco Partnership	Yes	20.000	3760.000-3780.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		No
WRNE585	New York, NY	PM	PEA001	A5	CT	Windham	Cellco Partnership	Yes	20.000	3780.000-3800.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		No
WRNE586	New York, NY	PM	PEA001	B1	CT	Windham	Cellco Partnership	Yes	20.000	3800.000-3820.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		No
WRNE587	New York, NY	PM	PEA001	B2	CT	Windham	Cellco Partnership	Yes	20.000	3820.000-3840.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		No
WRNE588	New York, NY	PM	PEA001	B3	CT	Windham	Cellco Partnership	Yes	20.000	3840.000-3860.000	.000-.000	.000-.000	.000-.000		1640	226.98	Active		No

WORK SCOPE NOTE:

THE PROPOSED LESSEE FACILITY UPGRADE TO CONSIST OF THE REPLACEMENT OF A TOTAL OF (1) ANTENNA AND (1) REMOTE RADIO HEAD (ORAN), AT THEIR RESPECTIVE EXISTING LOCATIONS, PLUS (1) DIPLEXER ATTACHED TO THE EXISTING RRH MOUNTING MAST.



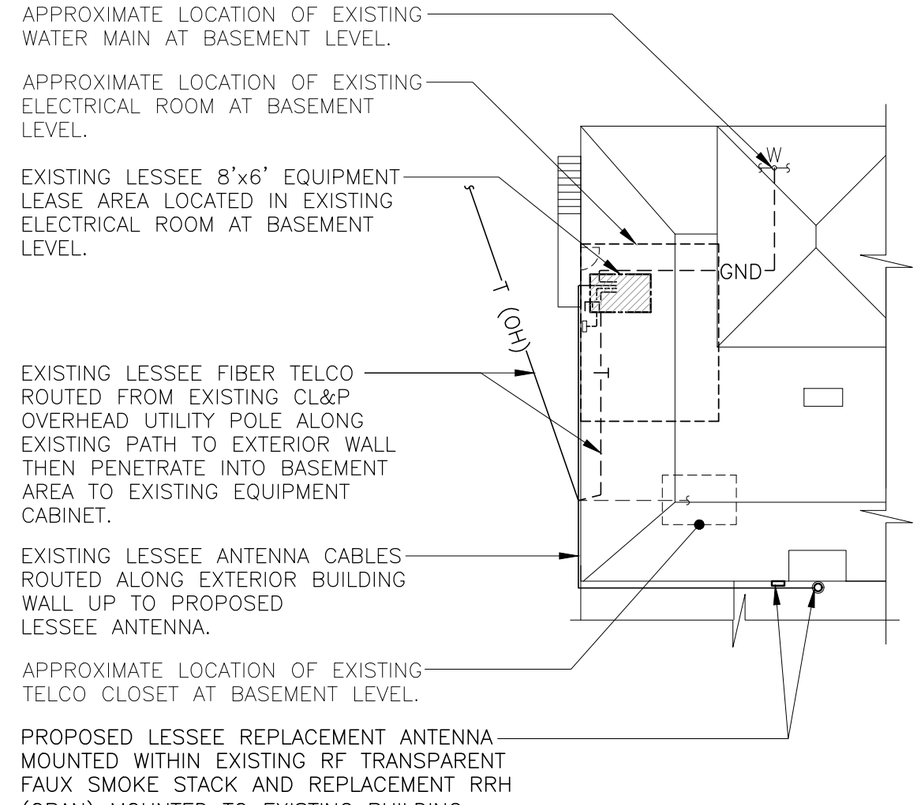
LEASE EXHIBIT

THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.

SITE COORDINATES: LAT.: 41°-48'-20.852"
LNG.: 71°-52'-57.264"

GROUND ELEVATION: 234.2'± A.M.S.L.

COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED BY MARTINEZ COUCH AND ASSOCIATES, DATED DECEMBER 2, 2014.



1 / L-1 **PARTIAL SITE/ROOF PLAN**
SCALE: 1" = 30'

APPROXIMATE NORTH

30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

2 / L-1 **PARTIAL SITE/ROOF PLAN**
SCALE: 1" = 20'

REV.	DESCRIPTION		
C	04/10/23	DRA	TJL LEASE EXHIBIT - REVISED PER UPDATED RFDS
B	08/23/22	DMD	TJL LEASE EXHIBIT - REVISED PER CLIENT COMMENTS
A	08/11/22	DMD	TJL LEASE EXHIBIT - ISSUED FOR CLIENT REVIEW

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Cellco Partnership d/b/a Verizon Wireless

DANIELSON SC2 CT

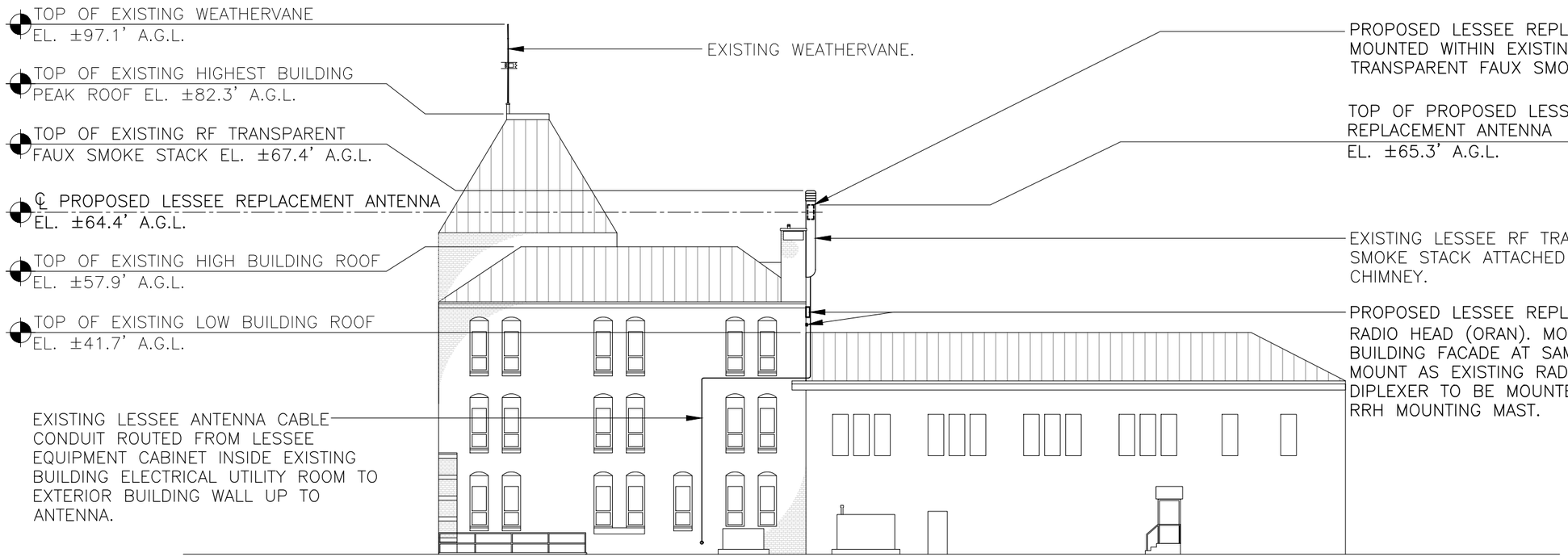
172 MAIN STREET
KILLINGLY, CT 06239

DATE: 08/10/2022
SCALE: AS SHOWN
JOB NO. 22105.07

SHEET NO.
L-1

LEASE EXHIBIT

THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.



1 / L-2 **SOUTHWEST ELEVATION**

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

REV.	DESCRIPTION		
C	04/10/23	DRA	LEASE EXHIBIT – REVISED PER UPDATED RFDS
B	08/23/22	DMD	TJL LEASE EXHIBIT – REVISED PER CLIENT COMMENTS
A	08/11/22	DMD	TJL LEASE EXHIBIT – ISSUED FOR CLIENT REVIEW

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Cellco Partnership d/b/a Verizon Wireless

DANIELSON SC2 CT

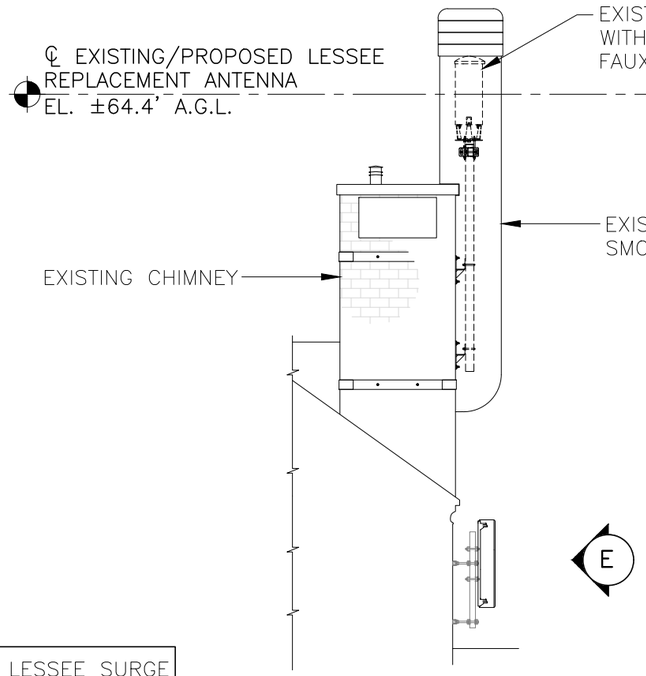
172 MAIN STREET
KILLINGLY, CT 06239

DATE:	08/10/2022
SCALE:	AS SHOWN
JOB NO.	22105.07

SHEET NO.
L-2

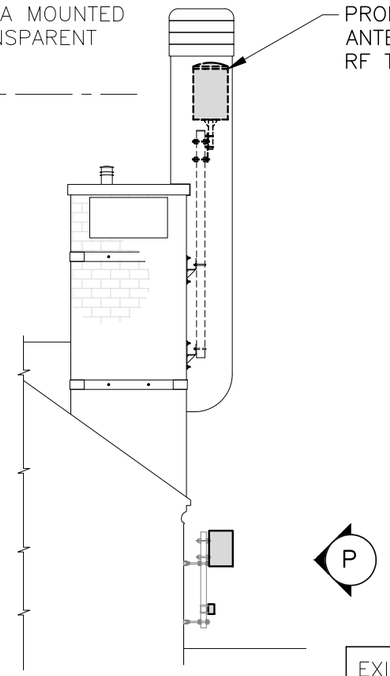
LEASE EXHIBIT

THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.



EXISTING LESSEE SURGE ARRESTOR NOT SHOWN FOR CLARITY

EXISTING CONDITION

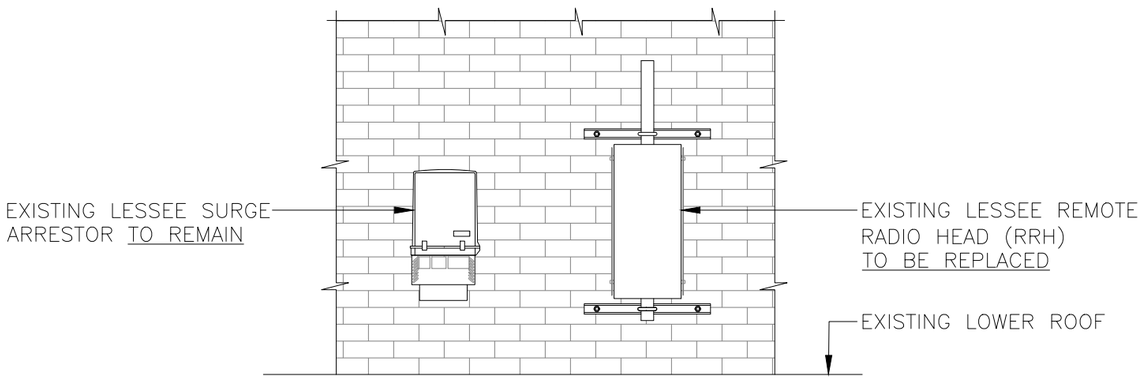


EXISTING LESSEE SURGE ARRESTOR NOT SHOWN FOR CLARITY

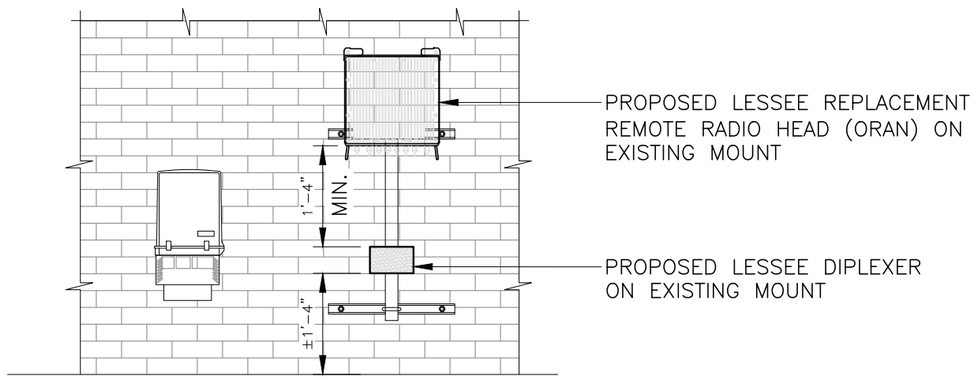
PROPOSED CONDITION

1 / L-3 PARTIAL BUILDING ELEVATIONS

SCALE: 3/16" = 1'- 0"



EXISTING CONDITION ("E")



PROPOSED CONDITION ("P")

2 / L-3 PARTIAL BUILDING ELEVATIONS

SCALE: 1/2" = 1'- 0"

REV.	DESCRIPTION		
C	04/10/23	DRA	TJL LEASE EXHIBIT – REVISED PER UPDATED RFDS
B	08/23/22	DMD	TJL LEASE EXHIBIT – REVISED PER CLIENT COMMENTS
A	08/11/22	DMD	TJL LEASE EXHIBIT – ISSUED FOR CLIENT REVIEW

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172 MAIN STREET
KILLINGLY, CT 06239

DATE:	08/10/2022
SCALE:	AS SHOWN
JOB NO.	22105.07

SHEET NO.
L-3