



February 14, 2025

Ms. Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification New Cingular Wireless PCS LLC ("AT&T") Site CT2386
1990 Litchfield Turnpike, Woodbridge, CT (the "Property")
Latitude: 41.373194 N Longitude: -72.981194 W

Dear Ms. Bachman:

AT&T currently maintains (3) antennas each at 145'cl, 155'cl, 167'cl on the existing 170' monopole tower ("Tower") at 1990 Litchfield Turnpike, Woodbridge, CT. The Tower is owned by Crown Castle & property is owned by Sarah Russell-Shepherd. AT&T intends to modify its Facility by removing all (9) antennas and adding (3) TPA65R-BU6D antennas at the 147' cl, (3) AIR6472 B77G B77M antennas at the 157'cl and (3) TPA65R-BU6D antennas at the 167' level on the Tower. AT&T also intends on removing (3) RRUs and adding (3) 4490 B5/B12A & (3) 4890 B25/B66A RRUs at the 147'cl, and (3) 4494 B14/B29 RRUs at the 167'cl on the Tower. The height of AT&Ts existing and proposed antennas is 147', 157' & 167' on the Tower. The height of the proposed RRUs is 147' & 167' on the tower. Pipe mounts to be replaced per the mount analysis.

This modification may include B2, B5, B17, B14, B29, B30, B66 & n77 hardware that is 4G(LTE) and/or 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

The Tower and AT&Ts use, were approved by the CT Siting Council, under Docket 388, on July 29, 2010. The approval contained no conditions that could be violated by this modification. Therefore, AT&Ts modification complies with the above-mentioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent to the Hon. Mica Cardozo, First Selectman, Town of Woodbridge, Ms. Kristine Sullivan, Land Use Analyst, Acting ZEO, Town of Woodbridge, Crown Castle, the Tower owner and Ms. Sarah Russell-Shepherd, the property owner.

The planned modification of the facility falls squarely within those activities explicitly provided for in R.C.S.A §16-50j-72(b)(2). Specifically:

1. The proposed modifications will not result in an increase in the height of the existing Tower.
2. The proposed modifications will not require an extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing Tower and foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits the proposed modifications to the above referenced telecommunication facility constitute an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2).

Sincerely,

Hollis M. Redding

Hollis M. Redding
SAI Communications, LLC
12 Industrial Way
Salem, NH 03079
Mobile: 860-834-6964
hredding@saigrp.com

Enclosures

Cc:

Hon. Mica Cardozo, First Selectman, Town of Woodbridge
Ms. Kristine Sullivan, Land Use Analyst, Acting ZEO, Town of Woodbridge
Crown Castle, the Tower owner
Sarah Russell-Shepherd, the property owner



C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
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Calculated Radio Frequency Emissions Report



CT2386

1990 Litchfield Turnpike, Woodbridge, CT

February 13, 2025

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of AT&T's antenna arrays mounted at 167', 157', 147' AGL on the existing monopole tower located at 1990 Litchfield Turnpike in Woodbridge, CT. The coordinates of the monopole tower are 41° 22' 23.2" N, 72° 58' 50.10" W.

AT&T is proposing the following:

- 1) Install nine (9) directional panel antennas, three (3) per sector to support its commercial LTE and 5G network.

This report considers the antenna configuration for AT&T's¹ proposed installation, in addition to existing antenna configuration^{2 3} for T-Mobile and Woodbridge, Town Of to calculate the resulting % Maximum Permissible Exposure (MPE) at ground level around the existing facility.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the various frequency ranges are defined in the document referenced in Attachment A of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

¹ As referenced to AT&T's Radio Frequency Design Sheet modified on 10/24/2024 and construction drawings prepared by B+T Group dated 11/22/2024.

² As referenced to the Structural Analysis Report prepared by Telamon Tower Engineering, PLLC dated 02/04/2025.

³ Technical operating information for the town of Woodbridge is in reference to FCC license "WPJM614".

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{\text{GRF}^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

$R = \text{Radial Distance} = \sqrt{H^2 + V^2}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor (GRF) of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

The percent of MPE values presented in this report reflect levels that one may encounter from one sector of a carrier's antennas. Most carriers use 3 or 4 sectors per site with azimuths approximately 90 or 120 degrees apart, respectively; therefore, one could not be standing in the main beam of all sectors at the same time. In cases where antenna models are not uniform across all sectors, the antenna model with the highest gain was used for the calculations. This results in a conservative or "worst case" assumption for percent of MPE calculations.

4. Antenna Inventory

Table 1 below outlines AT&T's proposed antenna configuration for the site. The associated data model and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Azimuth	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
AT&T	Alpha / 20°	739	240	14.5	6764	TPA65R-BU6D	73	0	6	147
		850	240	15.1	7766		63			
		1900	240	18.1	15496		66			
		2100	240	18.4	16604		66			
		722	80	14.5	2255	TPA65R-BU6D	73	0	6	167
		763	160	14.5	4509		73			
		3500	200	19.1	16257	AIR 6472	60	0	3	157
		3700	200	18.9	15525		60			
	Beta / 180°	739	240	14.5	6764	TPA65R-BU6D	73	0	6	147
		850	240	15.1	7766		63			
		1900	240	18.1	15496		66			
		2100	240	18.4	16604		66			
		722	80	14.5	2255	TPA65R-BU6D	73	0	6	167
		763	160	14.5	4509		73			
		3500	200	19.1	16257	AIR 6472	60	0	3	157
		3700	200	18.9	15525		60			
	Gamma / 290°	739	240	14.5	6764	TPA65R-BU6D	73	0	6	147
		850	240	15.1	7766		63			
		1900	240	18.1	15496		66			
		2100	240	18.4	16604		66			
		722	80	14.5	2255	TPA65R-BU6D	73	0	6	167
		763	160	14.5	4509		73			
		3500	200	19.1	16257	AIR 6472	60	0	3	157
		3700	200	18.9	15525		60			

Table 1: Proposed Antenna Inventory^{4 5}

⁴ As referenced to AT&T's Radio Frequency Design Sheet modified on 10/24/2024 and construction drawings prepared by B+T Group dated 11/22/2024

⁵ Transmit power assumes 0 dB of cable loss.

5. Calculation Results

The calculated % MPE results for the proposed and existing antenna configuration are shown in Figure 1 below. Each frequency band and technology is calculated as well as the resulting cumulative percent of MPE. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

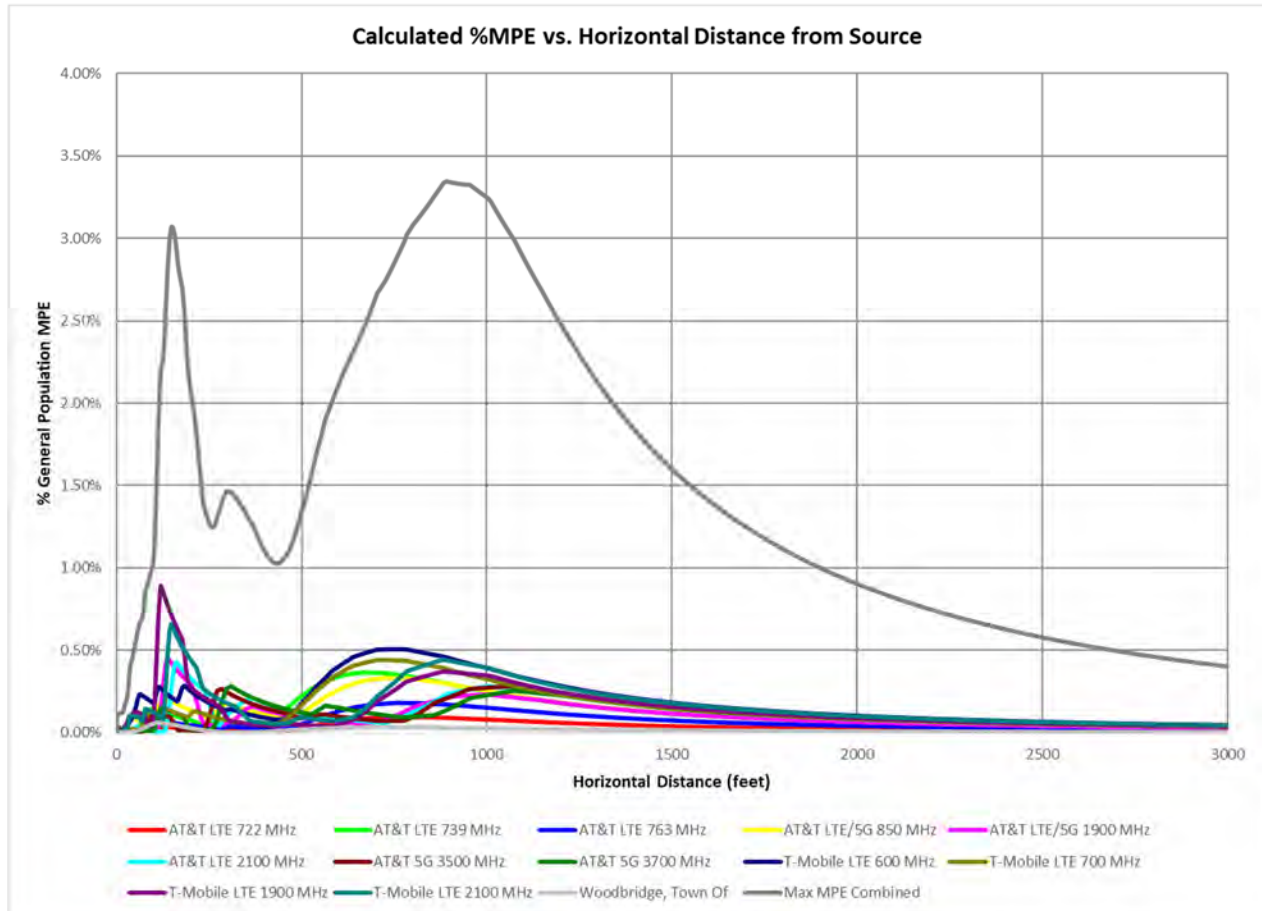


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (3.35% of the General Population limit) is calculated to occur at a horizontal distance of 890 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1250 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm ²)	Limit (mW/cm ²)	% MPE
AT&T 5G 3500 MHz	1	200.0	157.0	890	0.002084	1.000	0.21%
AT&T 5G 3700 MHz	1	200.0	157.0	890	0.001368	1.000	0.14%
AT&T LTE 2100 MHz	1	240.0	147.0	890	0.002332	1.000	0.23%
AT&T LTE 722 MHz	1	80.0	167.0	890	0.000435	0.481	0.09%
AT&T LTE 739 MHz	1	240.0	147.0	890	0.001484	0.493	0.30%
AT&T LTE 763 MHz	1	160.0	167.0	890	0.000870	0.509	0.17%
AT&T LTE/5G 1900 MHz	1	240.0	147.0	890	0.002163	1.000	0.22%
AT&T LTE/5G 850 MHz	1	240.0	147.0	890	0.001700	0.567	0.30%
T-Mobile LTE 1900 MHz	2	140.0	130.0	890	0.003704	1.000	0.37%
T-Mobile LTE 2100 MHz	2	140.0	130.0	890	0.004407	1.000	0.44%
T-Mobile LTE 600 MHz	4	60.0	130.0	890	0.001831	0.400	0.46%
T-Mobile LTE 700 MHz	4	40.0	130.0	890	0.001811	0.467	0.39%
Woodbridge, Town Of	1	75.0	180.0	890	0.000093	0.301	0.03%
Total							3.35%

Table 2: Maximum Percent of General Population Exposure Values^{6 7 8 9}

⁶ Frequencies listed are representative of the operating band and are not the specific operating frequency.

⁷ The total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

⁸ When the technical operating information was unavailable, reasonable assumptions were made based on available data and industry standards for the analysis.

⁹ Technical operating information for the town of Woodbridge is in reference to FCC license "WPJM614".

6. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **3.35 % of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 890 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.1, ANSI/IEEE Std. C95.3 and FCC OET Bulletin 65 Edition 97-01.



Report Prepared By: Ram Acharya
RF Engineer
C Squared Systems, LLC

February 12, 2025

Date



Reviewed/Approved By: Martin Lavin
Senior RF Engineer
C Squared Systems, LLC

February 13, 2025

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2019, IEEE Standard Safety Levels With Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2021, IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure¹⁰

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure¹¹

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

¹⁰ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

¹¹ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

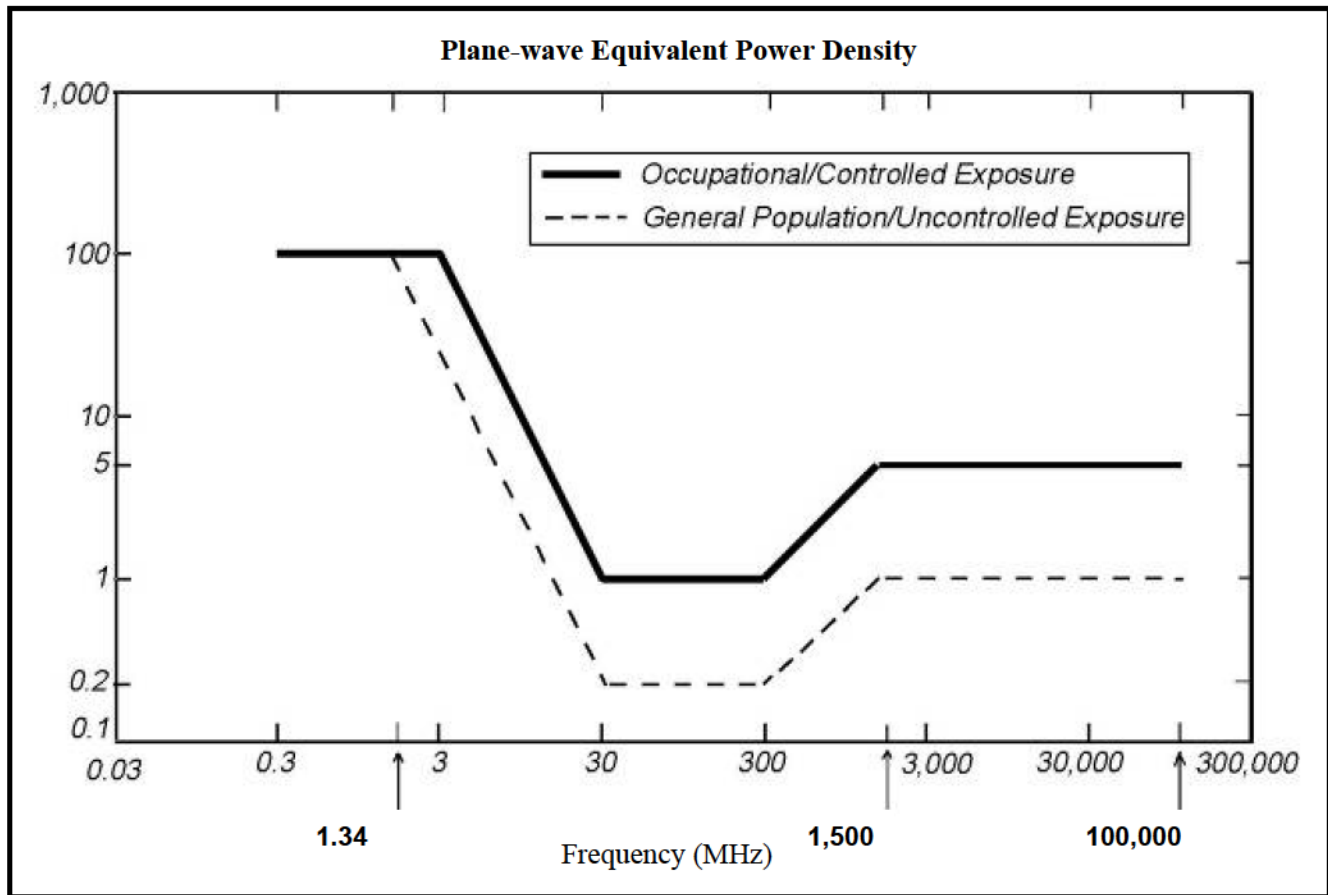
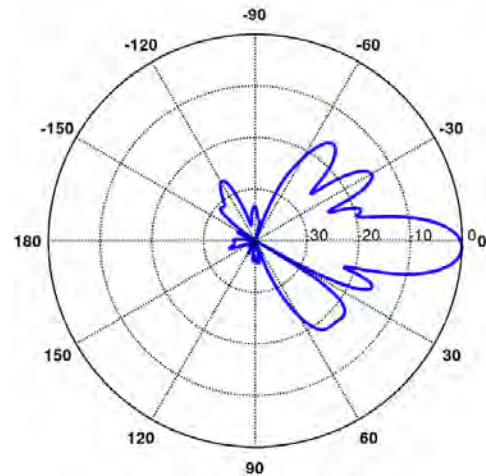


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Model Data and Electrical Patterns

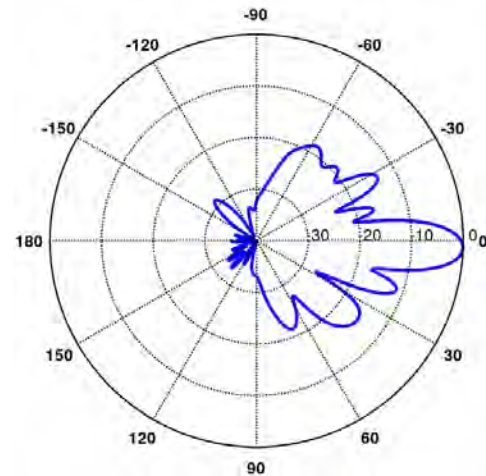
722/739/763 MHz

Manufacturer: COMMSCOPE
 Model #: TPA65R-BU6D
 Frequency Band: 698-806 MHz
 Gain: 14.5 dBi
 Electrical Down-Tilt: 2°
 Vertical Beamwidth: 12.8°
 Horizontal Beamwidth: 73°
 Polarization: Dual Linear 45°
 Dimensions (L x W x D): 71.2" x 20.7" x 7.7"



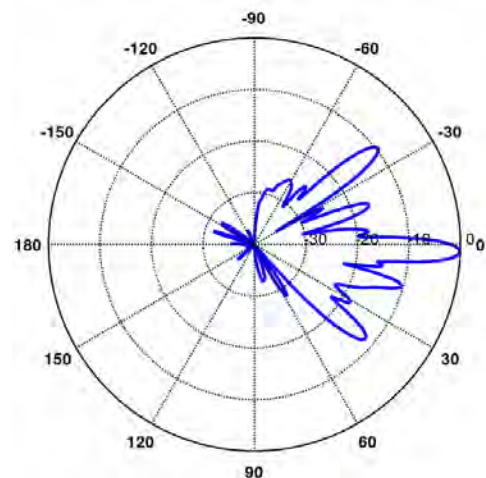
850 MHz

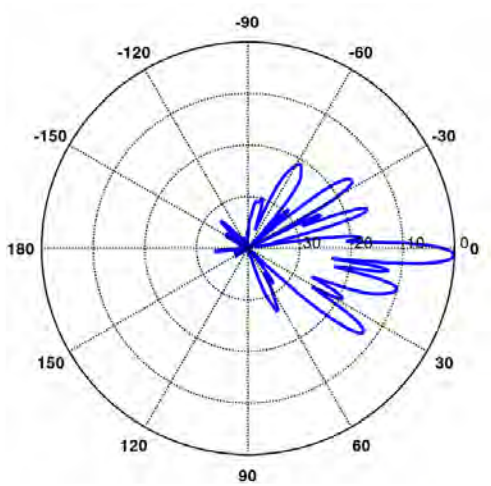
Manufacturer: COMMSCOPE
 Model #: TPA65R-BU6D
 Frequency Band: 824-896 MHz
 Gain: 15.1 dBi
 Electrical Down-Tilt: 2°
 Vertical Beamwidth: 11.1°
 Horizontal Beamwidth: 63°
 Polarization: Dual Linear 45°
 Dimensions (L x W x D): 71.2" x 20.7" x 7.7"



1900 MHz

Manufacturer: COMMSCOPE
 Model #: TPA65R-BU6D
 Frequency Band: 1850-1990 MHz
 Gain: 18.1 dBi
 Electrical Down-Tilt: 2°
 Vertical Beamwidth: 5.2°
 Horizontal Beamwidth: 66°
 Polarization: Dual Linear 45°
 Dimensions (L x W x D): 71.2" x 20.7" x 7.7"



2100 MHz Manufacturer: COMMSCOPE Model #: TPA65R-BU6D Frequency Band: 1920-2180 MHz Gain: 18.4 dBi Electrical Down-Tilt: 2° Vertical Beamwidth: 4.8° Horizontal Beamwidth: 66° Polarization: Dual Linear 45° Dimensions (L x W x D): 71.2" x 20.7" x 7.7"	
3500 MHz Manufacturer: ERICSSON Model #: AIR 6472 B77G B77M Frequency Band: 3450-3550 MHz Gain: - dBi Electrical Down-Tilt: 2° Vertical Beamwidth: 87-105° Horizontal Beamwidth: 60° Polarization: N/A° Dimensions (L x W x D): 36.3" x 15.83" x 7.4"	N/A
3700 MHz Manufacturer: ERICSSON Model #: AIR 6472 B77G B77M Frequency Band: 3840-3980 MHz Gain: - dBi Electrical Down-Tilt: 2° Vertical Beamwidth: 87-105° Horizontal Beamwidth: 60° Polarization: N/A° Dimensions (L x W x D): 36.3" x 15.83" x 7.4"	N/A

REVIEWED BY; JACOBS
ROBERT PADILLA
12.5.24



SITE NAME:
WOODBIDGE CT ROUTE 69

USID: 101343
FA NUMBER: 10128136

IWM	PTN
WSCTB0028842	2051A1F6V1
WSCTB0028512	2051A1F6TV
WSCTB0028317	2051A1F6TT
WSCTB0028727	2051A1F6TW
WSCTB0028411	2051A1F6TX
WSCTB0028894	2051A1F6TY
WSCTB0028413	2051A1F6V0
WSCTB0028378	2051A1F6TZ

EXISTING 170'-0" MONOPOLE
5G NR 1DR-1 CBAND

RF DATA SHEET

RFDS ID	RFDS-34365
LAST MODIFIED DATE	7/15/24

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT, LICENSE NO.: 23924, EXPIRATION DATE: 1/31/25.



JACOBS

2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

PROJECT SUMMARY

TOWER OWNER: CROWN CASTLE
ADDRESS: 2000 CORPORATE DRIVE
CANONSBURG, PA 15317
(866) 238-8005

CONTACT:

BU NUMBER: 857256

SITE ADDRESS: 1990 LITCHFIELD TURNPIKE
WOODBIDGE, CT 06525

CUSTOMER/APPLICANT: AT&T WIRELESS
1425 US HWY 206, STE N2C04A
BEDMINSTER, NJ 07921

NAD83
LATITUDE: 41.373194' N
LONGITUDE: 72.981194' W

JURISDICTION: CT SITING COUNCIL

COUNTY: NEW HAVEN

GROUND ELEVATION: 289' AMSL

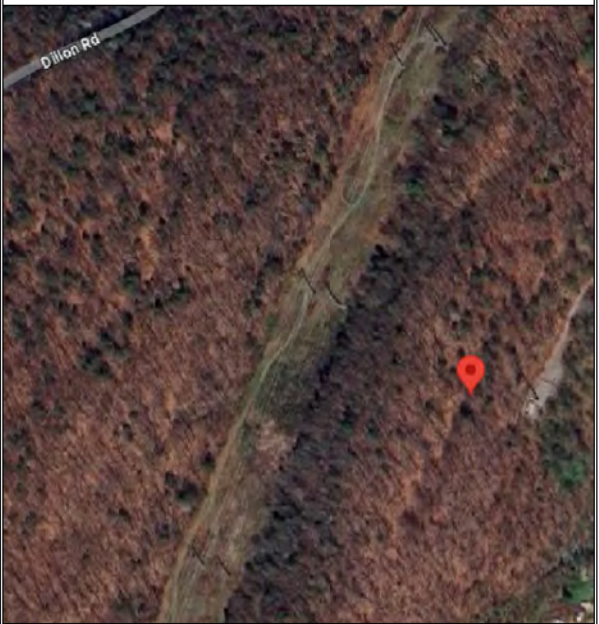
OCCUPANCY TYPE: UNMANNED

A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT
FOR HUMAN HABITATION

CONSTRUCTION TYPE: II-B

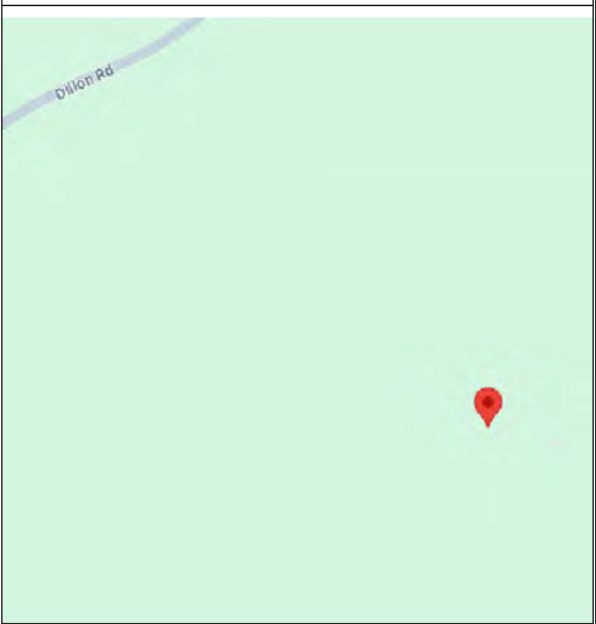
OCCUPANCY GROUP: U

AREA MAP



NO SCALE

LOCATION MAP



NO SCALE

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
C-1	OVERALL SITE PLAN	0
C-2	EXISTING & FINAL EQUIPMENT PLANS	0
C-3	GROUND EQUIPMENT DETAILS	0
C-3.1	GROUND EQUIPMENT DETAILS	0
C-4	TOWER ELEVATION & ANTENNA MOUNTING DETAILS	0
C-5-C-5.2	EXISTING & FINAL ANTENNA PLANS	0
C-6	ANTENNA & CABLE SCHEDULE	0
C-7	TOWER EQUIPMENT DETAILS	0
C-7.1	TOWER EQUIPMENT DETAILS	0
C-7.2	TOWER EQUIPMENT DETAILS	0
G-1	GROUNDING DETAILS	0
RF-1	PLUMBING DIAGRAM	0

PROJECT DESCRIPTION

TOWER SOW:

1. REMOVE (9) ANTENNAS
2. REMOVE (6) POWERWAVE TMAs
3. REMOVE (10) MOUNTING PIPES & (3) PIPE TO PIPE CLAMP SETS
4. REMOVE (3) ERICSSON RRHS
6. RELOCATE (1) DC6 SQUID
7. INSTALL (6) NEW TPA65R-BU6D ANTENNA, A1, B1, C1 AND A3, B3, C3
8. INSTALL (3) NEW AIR6472 B77G B77M WITH FIXED BRACKET, A2, B2, C2
9. INSTALL (3) 4490 B5/B12A RRHS ON NEW MOUNT PIPE
10. INSTALL (3) 4890 B25/B66A RRHS ON NEW MOUNT PIPE
11. INSTALL (3) 4494 B14/B29 RRHS ON NEW MOUNT PIPE
12. INSTALL (1) DC9-48-60-24-8C-EV ON NEW MOUNT PIPE
13. INSTALL (2) NEW 6AWG DC TRUNKS
14. INSTALL (1) NEW 24-PAIR FIBER TRUNK
15. INSTALL (3) 3-1/2" O.D. X 10'-6" PIPES W/ ATTACHMENT HARDWARE
16. INSTALL (3) 2-3/8" O.D. X 10'-6" PIPES W/ ATTACHMENT HARDWARE

GROUND SOW:

1. REMOVE EXISTING INFINITY D AND (12) 180AH BATTERIES
2. FROM THE AT&T SHELTER
3. REMOVE EXISTING (3) 24V/48V CONVERTERS (FROM POWER PLANT)
4. REMOVE (3) +24V DC RECTIFIERS (FROM POWER PLANT)
5. REMOVE (12) 180 AH BATTERIES (FROM BATTERY RACK)
6. REMOVE (3) ERICSSON - RRUW 02 B5 WITH RRU RACK
7. REMOVE (2) ERICSSON - RRUW 02 B2 WITH RRU RACK
8. EXISTING BATTERY RACK TO BE DECOM-IN-PLACE
9. INSTALL NEW VERTIV 7100 WITH (2) STRINGS OF ENERSYS SBS190AH BATTERIES
11. INSTALL (10) -48V DC RECTIFIERS IN THE VERTIV 7100
12. INSTALL (4) -48V/-58V DC CONVERTERS IN THE VERTIV 7100
13. INSTALL NEW (1) 6672 AND (1) 6610 IN LTE FIF RACK
14. INSTALL NEW DC12-RM IN LTE FIF RACK

CONTACT INFORMATION

A&E FIRM: B+T GROUP
1717 S. BOULDER, STE. 300
TULSA, OK 74119
CONTACT: JASON TOWNLEY
EMAIL: JTOWNLEY@BTGRP.COM

ELECTRIC PROVIDER: UNITED
ILLUMINATING CO.
(800) 722-5584

PHONE:

TELCO PROVIDER: AT&T
PHONE: (866) 620-6900

CONSTRUCTION PM:
CONTACT: DALE VANDEWALKER
EMAIL: DALE.VANDEWALKER@JACOBS.COM

DRIVING DIRECTIONS

DEPART 1425 US HWY 206, BEDMINSTER, NJ ON: HEAD NORTHEAST TOWARD SOMERSET CENTER. CONTINUE ONTO SOMERSET CENTER. TURN RIGHT ONTO US-206 S. TURN LEFT ONTO SCHLEY MOUNTAIN RD. MERGE WITH I-287 N. KEEP LEFT TO STAY ON I-287 N. ENTERING NEW YORK. TAKE THE I-87 S/NEW YORK STATE THRUWAY/I-287 EXIT TOWARD GOV MARIO M. CUOMO BR/NEW YORK CITY MERGE WITH I-87 S. TOLL ROAD. KEEP LEFT TO CONTINUE ON I-287 E, FOLLOW SIGNS FOR WHITE PLAINS/RYE. TAKE EXIT 9 S-N TOWARD HUTCHINSON PKWY/MERRITT PKWY. MERGE WITH WESTCHESTER AVE. TURN RIGHT ONTO THE RAMP TO WESTCHESTER AVE/NORTH HUTCHINSON PKWY/MERRITT PKWY. MERGE WITH HUTCHINSON RIV PKWY N. ENTERING CONNECTICUT. CONTINUE ONTO CT-15 N. TAKE EXIT 59 FOR CT-69 TOWARD CT-63/NEW HAVEN/WOODBRIDGE. TURN LEFT ONTO CT-69 N/WHALLEY AVE. CONTINUE TO FOLLOW CT-69 N.

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING/DWELLING	2022 CONNECTICUT SBC/2021 IBC
MECHANICAL	2022 CONNECTICUT SBS/2021 IMC
ELECTRICAL	2022 CONNECTICUT SBC/2020 NEC

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11x17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SEE SHEET GN-1 FOR ADDITIONAL CONSTRUCTION NOTES



CALL CONNECTICUT ONE CALL
(800) 922-4455
CALL 3 WORKING DAYS
BEFORE YOU DIG!



USID: 101343
FA: 10128136

**WOODBIDGE CT
ROUTE 69**

1990 LITCHFIELD TURNPIKE
WOODBIDGE, CT 06525

EXISTING MONOPOLE

PROJECT NO: 173131.001.01
CHECKED BY: LR

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	10/9/24	BKR	PRELIMINARY REVIEW
B	10/25/24	BKR	PRELIMINARY REVIEW
0	11/22/24	BKR	CONSTRUCTION

MTS ENGINEERING P.L.L.C.
PEC.0002304
Expires 2/10/25



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SHEET NUMBER: T-1
REVISION: 0

PROJECT COMPLIANCE NOTES:

1. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE AND IS NOT FOR HUMAN HABITAT.
(NO HANDICAP ACCESS IS REQUIRED).
2. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.
3. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS PROPOSAL, UNLESS DURING EMERGENCY.
4. OUTDOOR STORAGE AND SOLID WASTE CONTAINERS ARE NOT PROPOSED.
5. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST AT&T SYSTEM GROUNDING STANDARDS. "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF LTE SITES AND WILL FOLLOW AT&T GROUNDING AND BONDING REQUIREMENTS FOR NETWORK FACILITIES AT&T DOC ID ATT–TP–76416 AND AT&T POLICY LETTER ATT–CEM–13002.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED DURING CONSTRUCTION OPERATION.
7. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
8. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM DRAWINGS PROVIDED BY THE APPLICANT REPRESENTATIVE. THE CONTRACTOR SHALL NOTIFY TURF VENDOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. NO ADDITIONAL PARKING IS PROPOSED. EXISTING ACCESS AND PARKING WILL BE USED.
10. NO ADDITIONAL LANDSCAPING IS PROPOSED AT THIS SITE.
11. ALL COAXIAL CABLE/FIBER AND DC CABLE INSTALLATION IS TO FOLLOW MANUFACTURER'S INSTRUCTION.

GREENFIELD GROUNDING NOTES:

ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

THE SUBCONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG SOLID TINNED COPPER FOR OUTDOOR BTS.

CONNECTIONS TO THE GROUND BAR SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BAR ARE PERMITTED.

ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH 1–#2 AWG TIN–PLATED COPPER GROUND CONDUCTOR.

GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

ELECTRICAL INSTALLATION NOTES:

ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

WIRING, RACEWAY & SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR APPROVED EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).

PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.

SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.

POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.

ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR APPROVED EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).

RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR APPROVED EQUAL); AND RATED NEMA 1 (OR BETTER).

EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.

METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "AT&T WIRELESS".

PROJECT GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

TURF VENDOR–

CONTRACTOR–

OWNER–

OEM–

GENERAL CONTRACTOR (CONSTRUCTION)

AT&T

ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY TURF VENDOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE TURF VENDOR.
9. CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
10. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. CONSTRUCTION SHALL COMPLY WITH AT&T AND MANUFACTURER SPECIFICATIONS.
14. ALL ITEMS REMOVED FROM SERVICE ON SITES THAT HAVE AN AT&T ASSET TAG MUST BE LOGGED BACK IN WITH AT&T.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

AGL	ABOVE GRADE LEVEL
BTS	BASE TRANSCIVER STATION
(E)	EXISTING
MIN.	MINIMUM
N.T.S.	NOT TO SCALE
REF	REFERENCE
RF	RADIO FREQUENCY
T.B.D.	TO BE DETERMINED
T.B.R.	TO BE RESOLVED
TYP	TYPICAL
REQ	REQUIRED
EGR	EQUIPMENT GROUND RING
AWG	AMERICAN WIRE GAUGE
MGB	MASTER GROUND BAR
EG	EQUIPMENT GROUND
BCW	BARE COPPER WIRE
SIAD	SMART INTEGRATED ACCESS DEVICE
GEN	GENERATOR
IGR	INTERIOR GROUND RING (HALO)
RBS	RADIO BASE STATION

SYMBOLS:

	SOLID GROUND BUS BAR
	SOLID NEUTRAL BUS BAR
	SUPPLEMENTAL GROUND CONDUCTOR
	2–POLE THERMAL–MAGNETIC CIRCUIT BREAKER
	SINGLE–POLE THERMAL–MAGNETIC CIRCUIT BREAKER
	CHEMICAL GROUND ROD
	TEST WELL
	DISCONNECT SWITCH
	METER







2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
FA: 10128136

WOODBRIDGE CT
ROUTE 69

1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525

EXISTING MONOPOLE

PROJECT NO: 173131.001.01

CHECKED BY: LR

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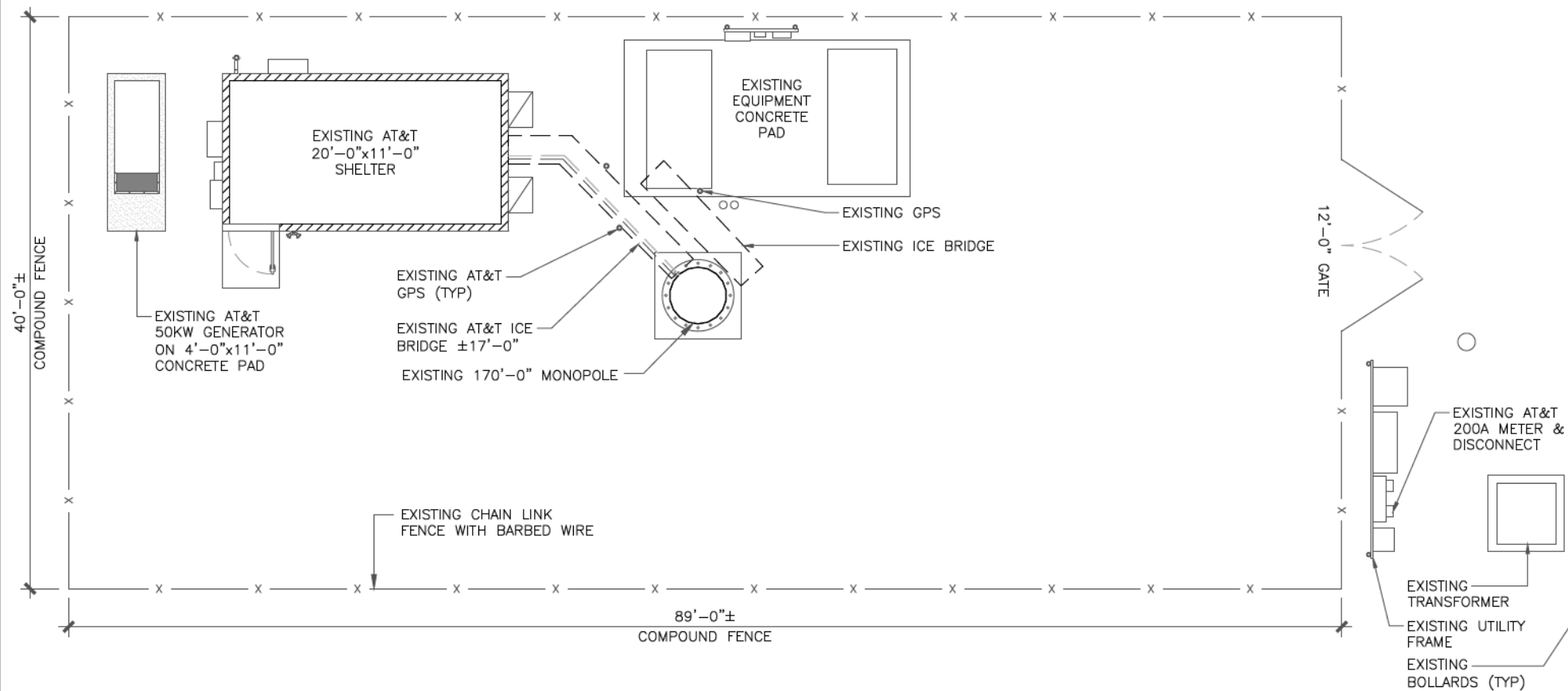
11/22/24

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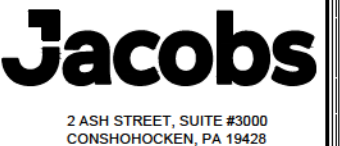
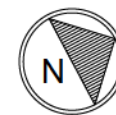
SHEET NUMBER: GN-1

REVISION: 0

1. THE SUBCONTRACTOR SHALL GIVE ALL NOTICES AND REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE SUBCONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID SUBCONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SUBCONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE AT&T REPRESENTATIVE (B&T ENGINEERING) OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF SUBCONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE SUBCONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIAL AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE SUBCONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE THEMSELVES WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE SUBCONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS INFORMED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE SUBCONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE, UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS, AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEERING, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
11. THE SUBCONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE SUBCONTRACTOR SHALL REPAIR ANY DAMAGE THE MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE SUBCONTRACTOR SHALL MAINTAIN THE GENERAL WORK AREA AS CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST OR SMUDGES OF ANY NATURE.
13. THE SUBCONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
14. THE SUBCONTRACTOR SHALL NOTIFY THE AT&T REPRESENTATIVE (B&T ENGINEERING) WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE SUBCONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE AT&T REPRESENTATIVE (B&T ENGINEERING).
15. THE SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOBS.



1 OVERALL SITE PLAN
SCALE: 0' 4' 8' 16' 32'

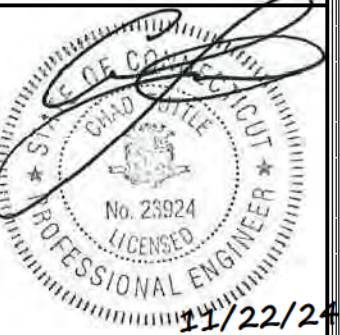


USID: 101343
FA: 10128136
**WOODBRIDGE CT
ROUTE 69**
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
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SHEET NUMBER: C-1
REVISION: 0

GROUND SCOPE OF WORK

MONOPOLE, SHELTER
EXISTING ANT AZ - A_20 B_180 C_290
PROPOSED ANT AZ - A_20 B_180 C_290

CIVIL SOW:

- 1. REMOVE EXISTING INFINITY D AND (12) 180AH BATTERIES FROM THE AT&T SHELTER
- 2. REMOVE EXISTING (3) 24V/48V CONVERTERS (FROM POWER PLANT)
- 3. REMOVE (3) +24V DC RECTIFIERS (FROM POWER PLANT)
- 4. REMOVE (12) 180 AH BATTERIES (FROM BATTERY RACK)
- 5. REMOVE (3) ERICSSON - RRUW 02 B5 WITH RRU RACK
- 6. REMOVE (2) ERICSSON - RRUW 02 B2 WITH RRU RACK
- 7. EXISTING BATTERY RACK TO BE DECOM-IN-PLACE.
- 8. INSTALL NEW VERTIV 7100 WITH (2) STRINGS OF ENERSYS SBS190AH BATTERIES
- 9. INSTALL (10) -48V DC RECTIFIERS IN THE VERTIV 7100

- 10. INSTALL (4) -48V/-58V DC CONVERTERS IN THE VERTIV 7100
- 11. INSTALL NEW (1) 6672 AND (1) 6610 IN LTE FIF RACK
- 12. INSTALL NEW DC12-RM IN LTE FIF RACK



Jacobs

2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
FA: 10128136
WOODBRIDGE CT
ROUTE 69
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01

CHECKED BY: LR

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	10/9/24	BKR	PRELIMINARY REVIEW
B	10/25/24	BKR	PRELIMINARY REVIEW
0	11/22/24	BKR	CONSTRUCTION

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PEC.0002304
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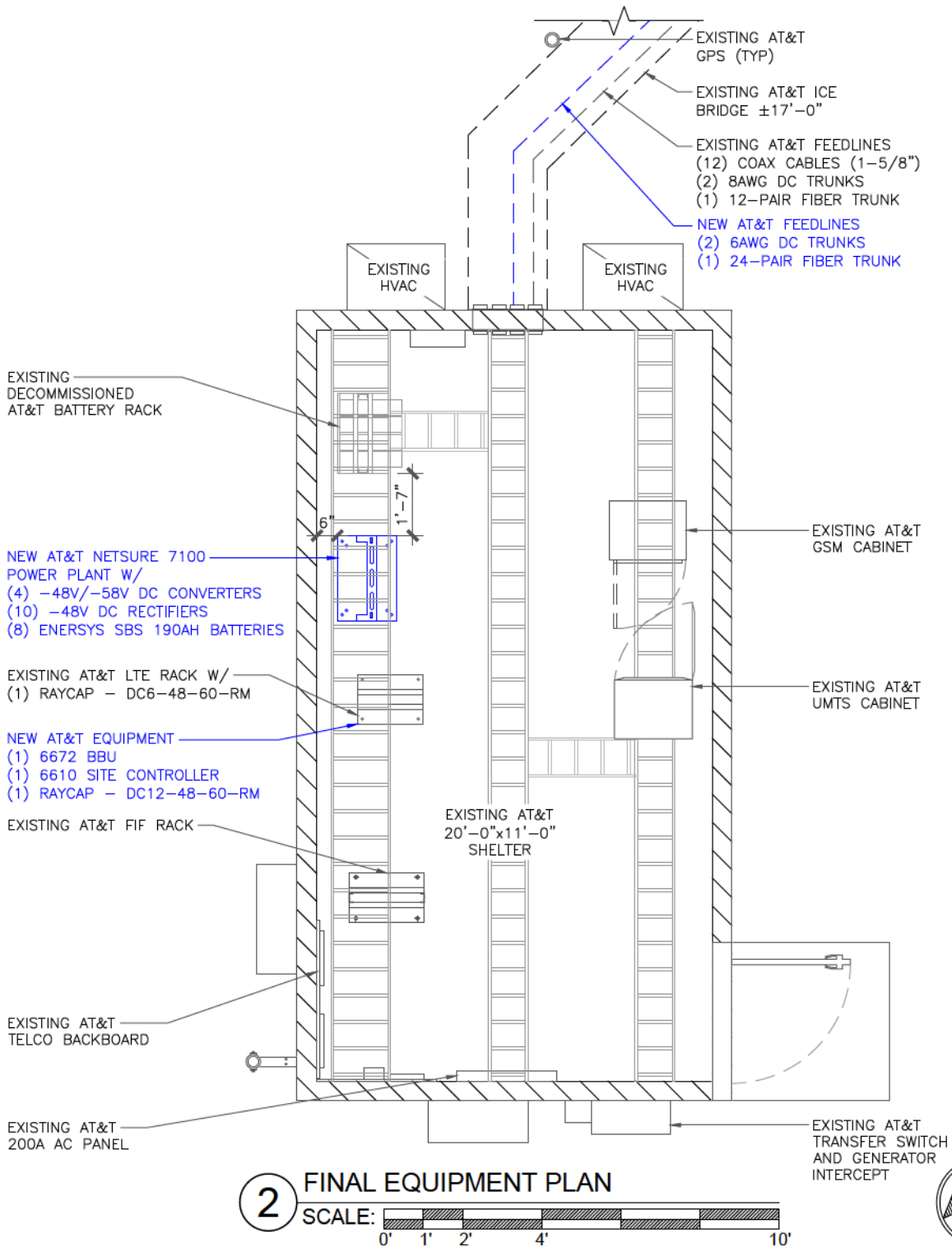
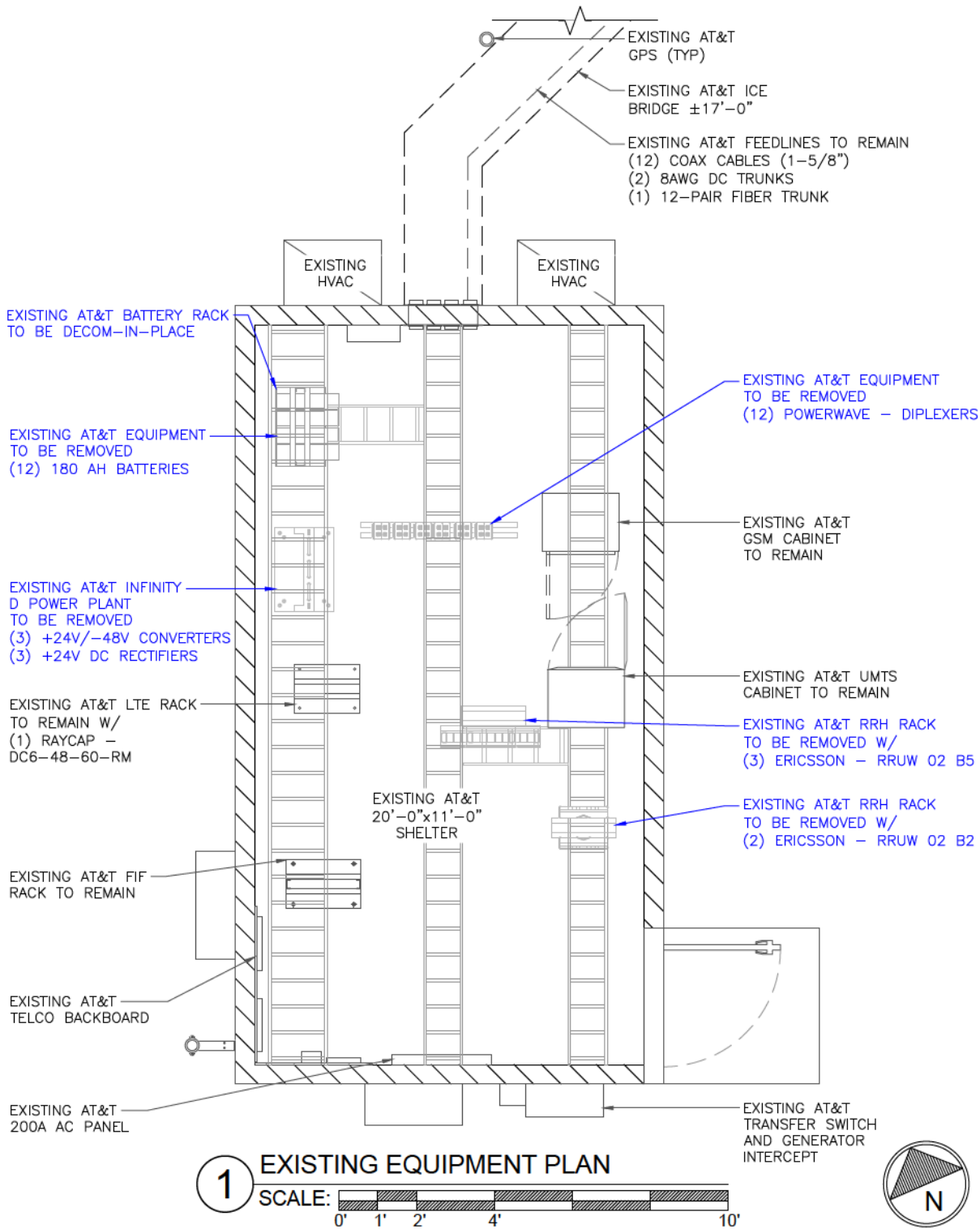
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SHEET NUMBER:

C-2

REVISION:

0





RAYCAP — DC12-48-60-RM
DIMENSIONS: 3.48"x17.23"x15.40"
WEIGHT: 27 LBS

1 RACK-MOUNTED DC12 DETAIL
SCALE: N.T.S.



2 6672 BBU
SCALE: N.T.S.

CONTROLLER 6610:
MANUFACTURER: ERICSSON
MODEL NO: CONTROLLER 6610
DIMENSIONS (HxWxD): 1.6"x5.5"x1.26"
WEIGHT: 0.28LBS



3 6610 SITE CONTROLLER
SCALE: N.T.S.



VERTIV — R48-2000e3 eSURE RECTIFIER (NEQ. 15930)
WEIGHT: 2.49 LBS
SIZE (HxWxD): 1.61x3.33x9.94 IN.

4 RECTIFIER DETAIL
SCALE: N.T.S.



PRODUCT DETAILS	
SPECIFICATIONS	
Chemistry:	Sealed Lead Acid
Nominal Voltage:	12v
Nominal Capacity:	190.0Ah
Terminals:	M5
Dimensions (L x W x H):	22.10 x 4.90 x 12.40
Weight (pounds):	132.3

5 SBS190F 190AH BATTERY DETAIL
SCALE: N.T.S.



VERTIV — C48/58 - 2000P3 eSURE CONVERTER
WEIGHT: 2.49 LBS
SIZE (HxWxD): 1.61x3.33x9.94 IN.

6 CONVERTER DETAIL
SCALE: N.T.S.



Jacobs

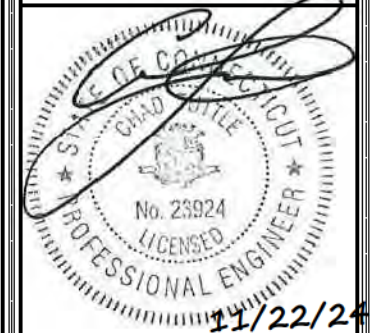
2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

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FA: 10128136
WOODBRIDGE CT
ROUTE 69
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
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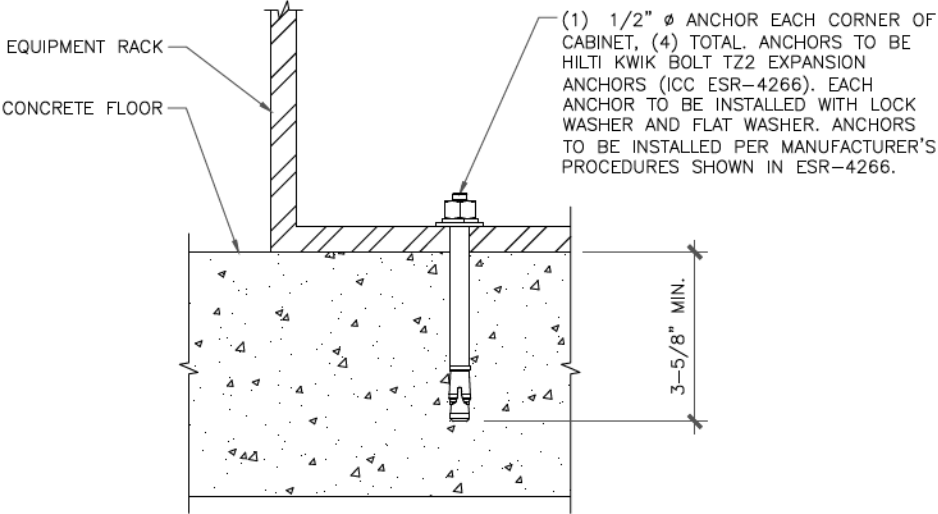
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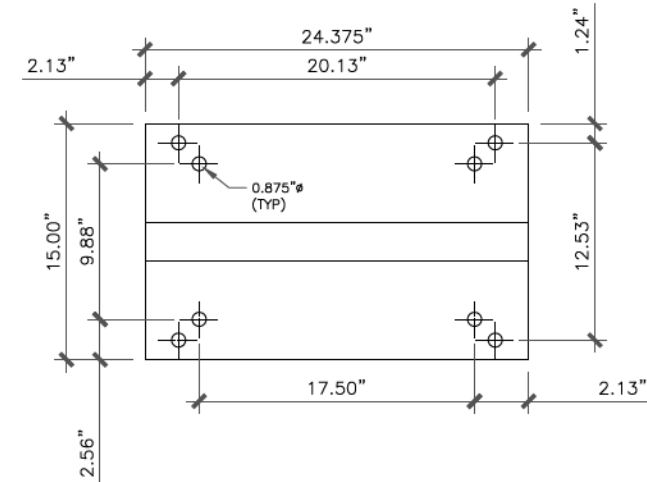
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SHEET NUMBER: C-3
REVISION: 0

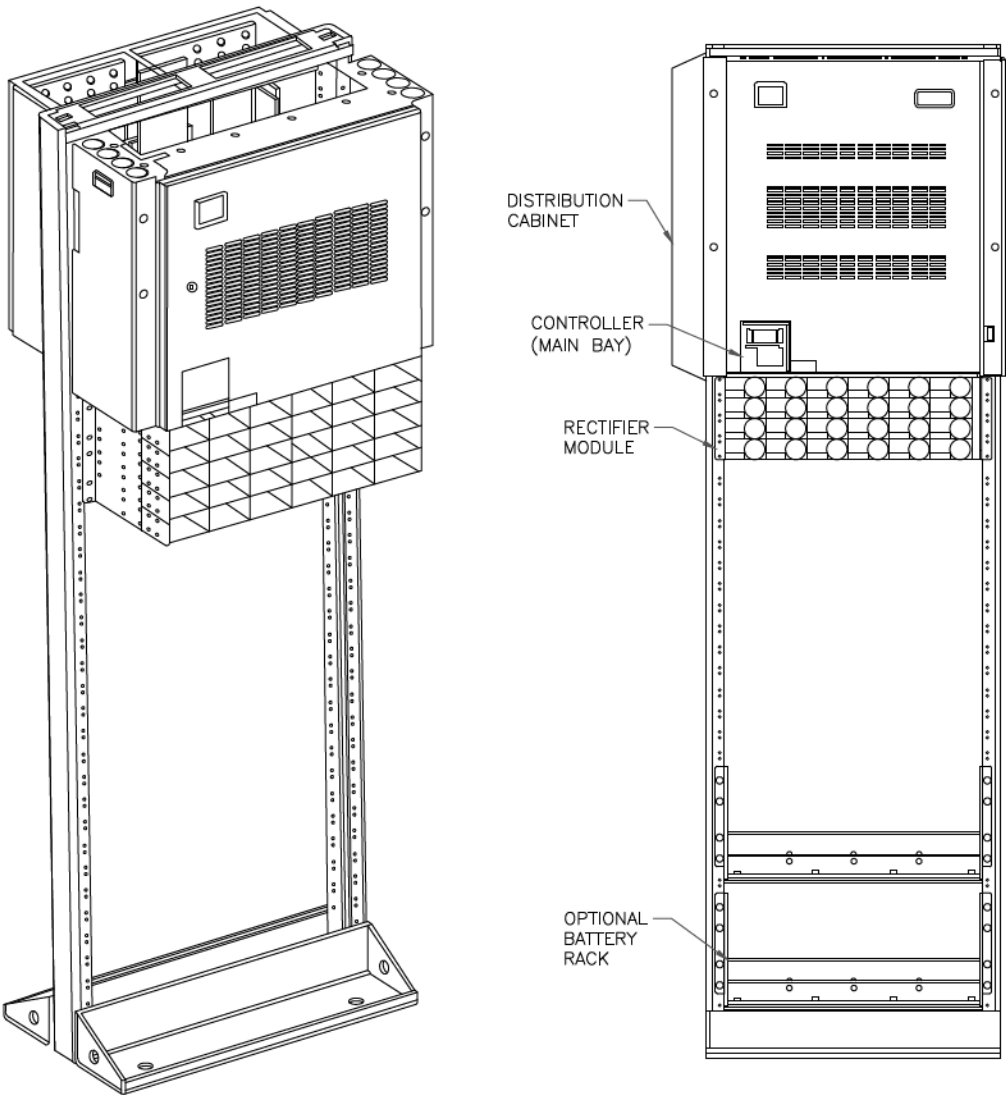


1 RACK ANCHOR DETAIL
SCALE: N.T.S.

2 NOT USED
SCALE: N.T.S.



REFER TO SCOPE OF WORK ON SHEET C-1 FOR REQUIRED QUANTITY OF RECTIFIERS AND OR/ CONVERTERS FOR PROPOSED LOADING



3 VERTIV - NETSURE 7100 POWER PLANT
SCALE: N.T.S.



Jacobs

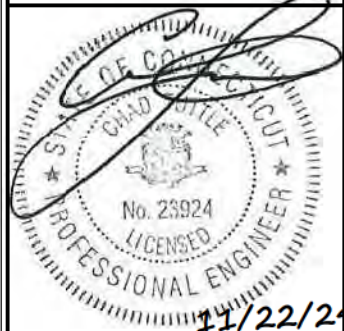
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CONSHOHOCKEN, PA 19428

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FA: 10128136
**WOODBRIDGE CT
ROUTE 69**
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
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SHEET NUMBER: REVISION:

C-3.1 0

STRUCTURE W/ APPURTENANCES
ELEV. = 189'-7"

TOP OF TOWER
ELEV. = 170'-0"

TOP OF AT&T ANTENNAS
ELEV. = 169'-11"

NEW AT&T ANTENNAS
RAD CENTER = 167'-0"

BOTTOM OF AT&T ANTENNAS
ELEV. = 164'-1"

TOP OF AT&T ANTENNAS
ELEV. = 158'-6"

NEW AT&T ANTENNAS
RAD CENTER = 157'-0"

BOTTOM OF AT&T ANTENNAS
ELEV. = 155'-6"

TOP OF AT&T ANTENNAS
ELEV. = 149'-11"

NEW AT&T ANTENNAS
RAD CENTER = 147'-0"

BOTTOM OF AT&T ANTENNAS
ELEV. = 144'-1"

NEW AT&T ANTENNAS ON
EXISTING ANTENNA MOUNTS
(SEE SHEET C-5.2)

NEW VALMONT - PHH-AL
HOISTING GRIP ANCHOR KIT

NEW AT&T ANTENNAS ON
EXISTING ANTENNA MOUNTS
(SEE SHEET C-5.1)

NEW VALMONT - PHH-AL
HOISTING GRIP ANCHOR KIT

NEW AT&T ANTENNAS ON
EXISTING ANTENNA MOUNTS
(SEE SHEET C-5)

NEW VALMONT - PHH-AL
HOISTING GRIP ANCHOR KIT

EXISTING 170'-0" MONOPOLE

NEW AT&T FEEDLINES
(2) 6AWG DC TRUNKS
(1) 24-PAIR FIBER TRUNK

EXISTING AT&T FEEDLINES
(12) COAX CABLES (1-5/8")
(2) 8AWG DC TRUNKS
(1) 12-PAIR FIBER TRUNK

EXISTING AT&T
50KW GENERATOR

EXISTING AT&T
ICE BRIDGE

EXISTING AT&T
EQUIPMENT
SHELTER

1

TOWER ELEVATION

SCALE:

0' 8' 16' 32' 48'

NOTE:
THESE DRAWINGS ARE NOT INTENDED
TO REFLECT THE STRUCTURAL
INTEGRITY OF THE TOWER. THE
PROPOSED ANTENNAS AND
TRANSMISSION LINES SHOWN ARE
REPRESENTATIVE IN NATURE AND DO
NOT REFLECT THE ACTUAL
CONFIGURATIONS REQUIRED. THE
CONTRACTOR SHALL REFER TO THE
STRUCTURAL ANALYSIS OF THIS TOWER
SITE FOR THE APPROVED LOCATION
AND CONFIGURATION OF ALL ANTENNAS
AND TRANSMISSION LINES. ALL
ANTENNAS MUST BE MOUNTED AND
THE TRANSMISSION LINES CONFIGURED
IN STRICT ACCORDANCE WITH THE
STRUCTURAL ANALYSIS.

EXISTING MOUNT IS SUFFICIENT PER
MOUNT ANALYSIS BY B+T GROUP
DATED 10/31/24.

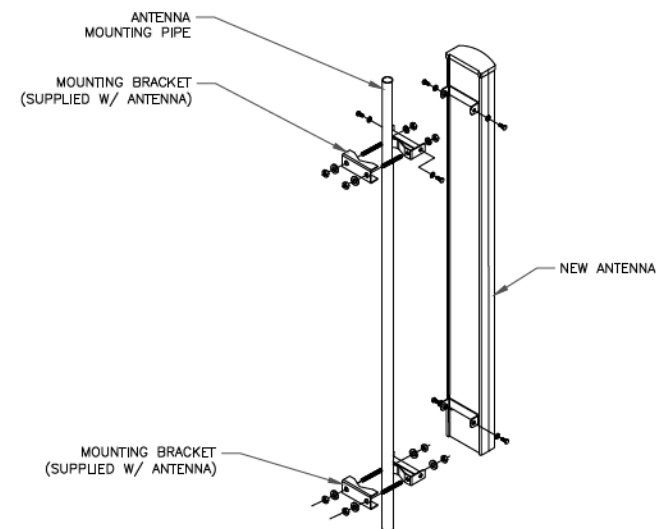
2

NOT USED

SCALE: N.T.S.

INSTALLER NOTE:

ALL PIPES, BRACKETS, AND MISCELLANEOUS
HARDWARE TO BE GALVANIZED UNLESS NOTED
OTHERWISE.



3

ANTENNA MOUNTING DETAIL

SCALE: N.T.S.



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2 ASH STREET, SUITE #3000
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**WOODBRIDGE CT
ROUTE 69**
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

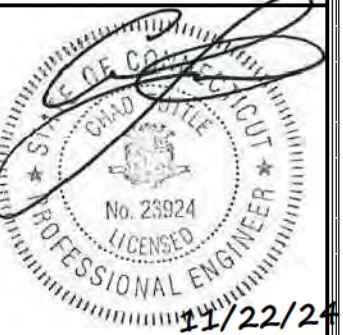
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SHEET NUMBER:

C-4

REVISION:

0

TOWER SCOPE OF WORK

MONOPOLE, SHELTER
EXISTING ANT AZ - A 20 B 180 C 290
PROPOSED ANT AZ - A 20 B 180 C 290

- TOWER TOP SOW:
1. REMOVE (3) ANTENNAS
 2. REMOVE (3) POWERWAVE TMAs
 3. INSTALL (3) NEW TPA65R-BU6D ANTENNA, A1, B1, C1



USID: 101343
FA: 10128136

**WOODBRIDGE CT
ROUTE 69**

1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525

EXISTING MONOPOLE

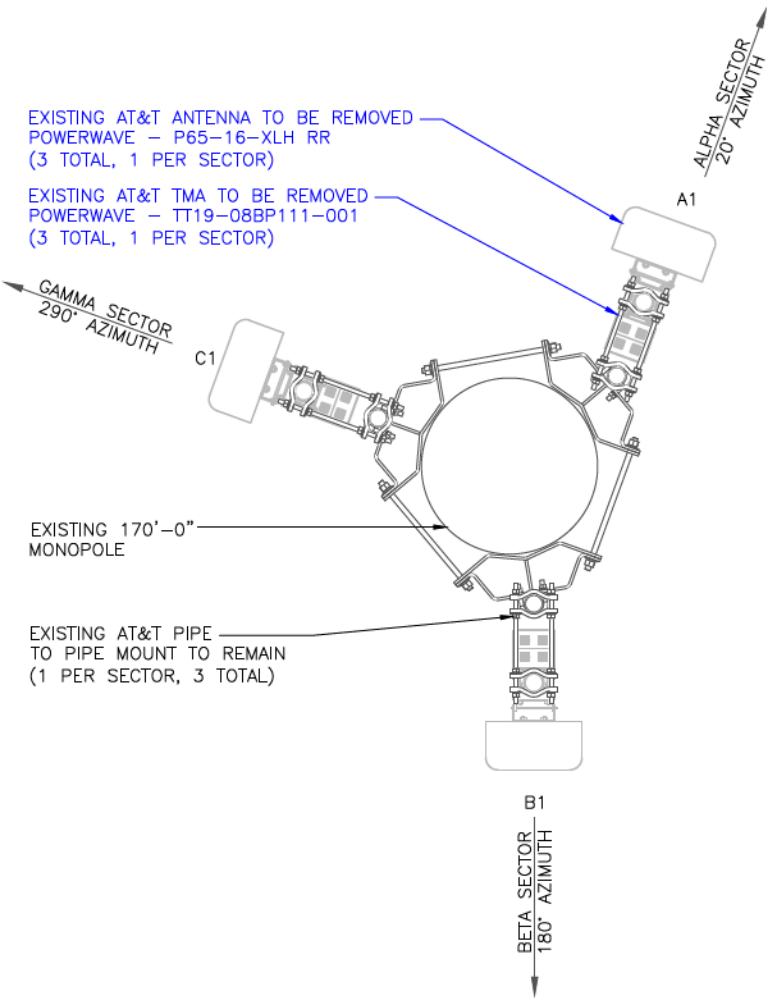
PROJECT NO: 173131.001.01
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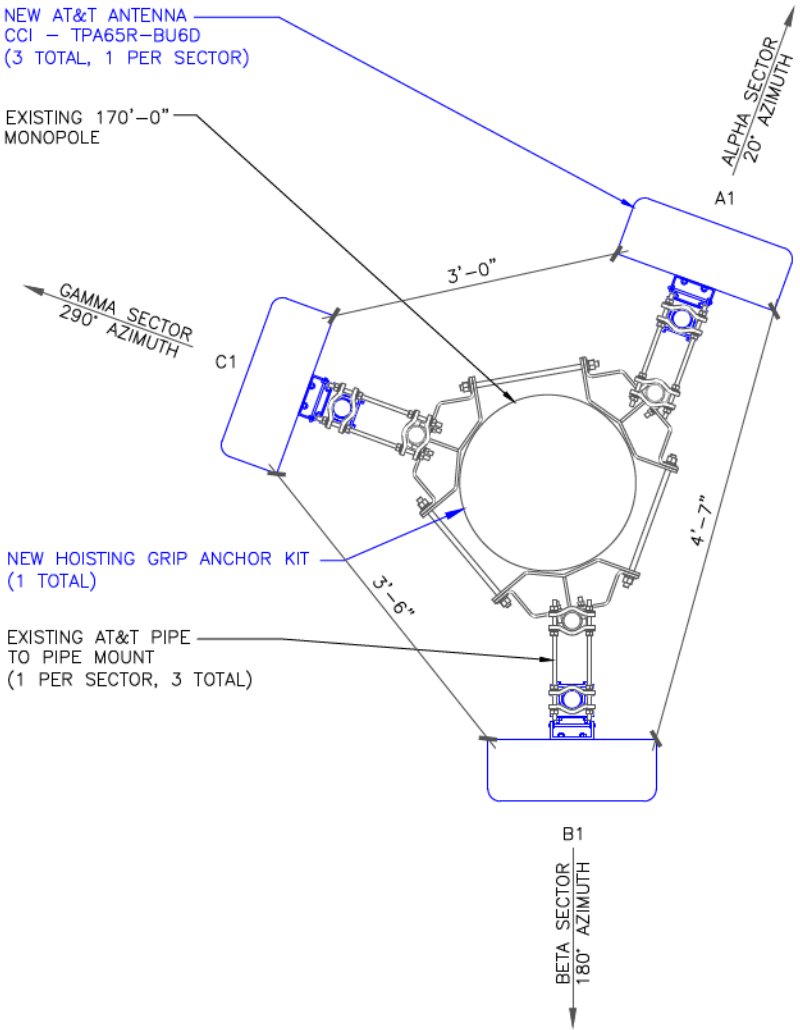
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SHEET NUMBER: C-5
REVISION: 0



1 EXISTING ANTENNA PLAN AT 145'-0"
SCALE: 0' 1' 2' 3' 4' 5'



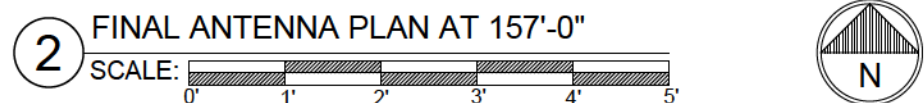
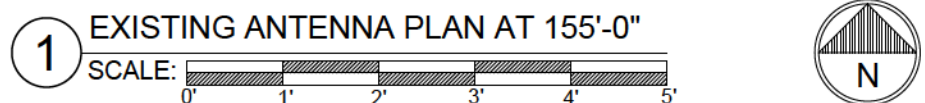
2 FINAL ANTENNA PLAN AT 147'-0"
SCALE: 0' 1' 2' 3' 4' 5'



MONOPOLE, SHELTER
EXISTING ANT AZ - A 20 B 180 C 290
PROPOSED ANT AZ - A 20 B 180 C 290

1. REMOVE (3) ANTENNAS
2. REMOVE (10) MOUNTING PIPES & (3) PIPE TO PIPE CLAMP SETS
3. REMOVE (3) ERICSSON RRHs
4. RELOCATE (1) DC6 SQUID
5. INSTALL (3) NEW AIR6472 B77G B77M WITH FIXED BRACKET, A2, B2, C2
6. INSTALL (3) 4490 B5/B12A RRHs ON NEW MOUNT PIPE
7. INSTALL (3) 4890 B25/B66A RRHs ON NEW MOUNT PIPE

8. INSTALL (3) 4494 B14/B29 RRHs ON NEW MOUNT PIPE
9. INSTALL (1) DC9-48-60-24-8C-EV ON NEW MOUNT PIPE
10. INSTALL (2) NEW 6AWG DC TRUNKS
11. INSTALL (1) NEW 24-PAIR FIBER TRUNKS
12. INSTALL (3) 3-1/2" O.D. x 10'-6" PIPES W/ ATTACHMENT HARDWARE FOR AIR ANTENNAS
13. INSTALL (3) 2-3/8" O.D. x 10'-6" PIPES W/ ATTACHMENT HARDWARE



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2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
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**WOODBIDGE CT
ROUTE 69**

1990 LITCHFIELD TURNPIKE
WOODBIDGE, CT 06525

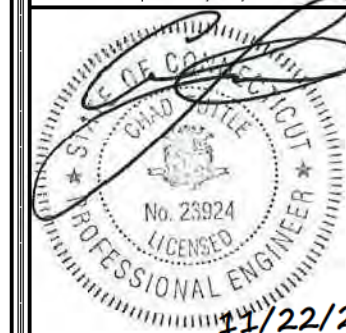
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SHEET NUMBER:	REVISION:
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C-5.1	0
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TOWER SCOPE OF WORK

MONOPOLE, SHELTER
EXISTING ANT AZ - A 20 B 180 C 290
PROPOSED ANT AZ - A 20 B 180 C 290

TOWER TOP SOW:

- 1. REMOVE (3) ANTENNAS
- 2. REMOVE (3) POWERWAVE TMAs
- 3. INSTALL (3) NEW TPA65R-BU6D ANTENNAS B3, B3, B3



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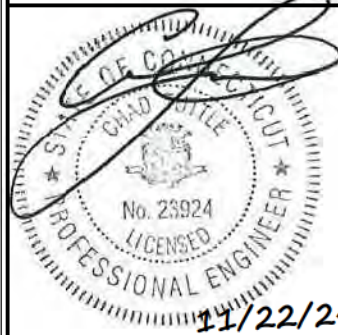
2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
FA: 10128136
WOODBRIDGE CT
ROUTE 69
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
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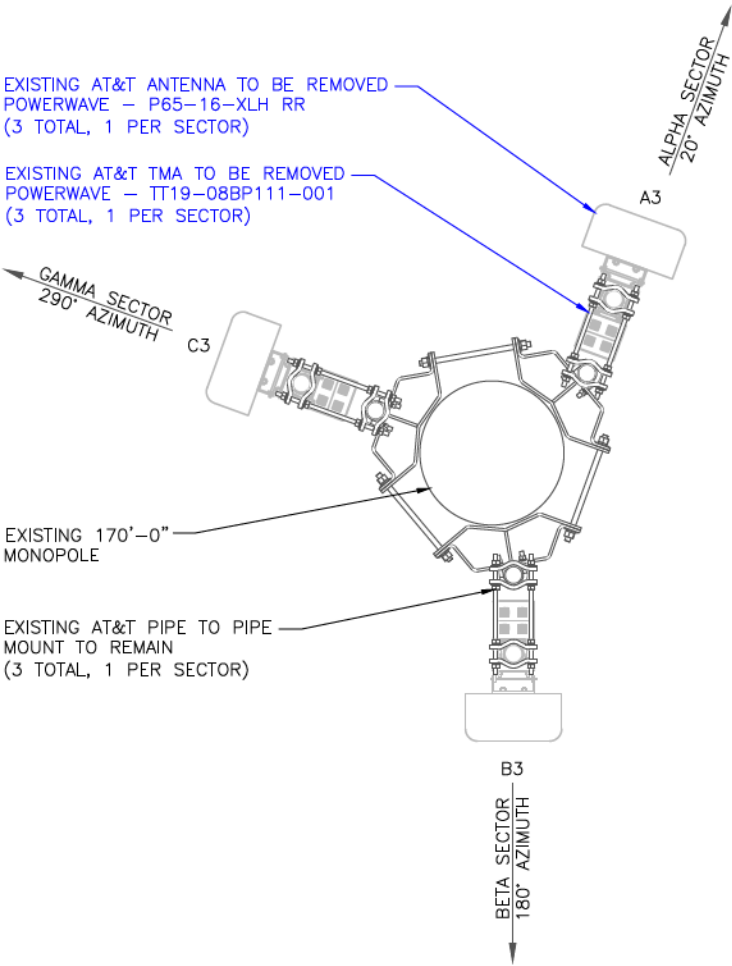
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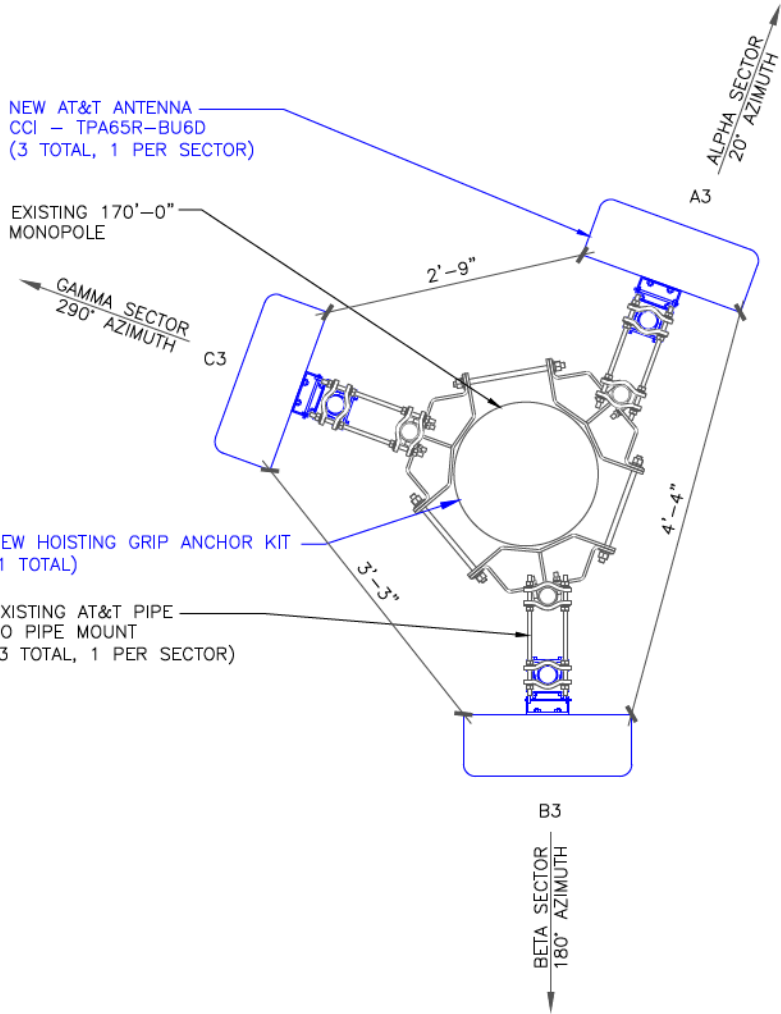
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C-5.2 0



1 EXISTING ANTENNA PLAN AT 167'-0"
SCALE: 0' 1' 2' 3' 4' 5'



2 FINAL ANTENNA PLAN AT 167'-0"
SCALE: 0' 1' 2' 3' 4' 5'



SECTOR	ANTENNA POSITION	TECHNOLOGY	ANTENNA VENDOR	ANTENNA MODEL	AZIMUTH	RAD CENTER	RRH (QTY) MODEL	SURGE PROTECTION W/ (QTY) FIBER (QTY) DC	FEEDER LENGTH
ALPHA	A1	LTE	CCI	TPA65R-BU6D (71.2"x21"x7.8")	20°	147'-0"	(1) 4490 B5/B12A (20.6"x15.6"x7.0") (1) 4890 B25/B66A (20.6"x15.6"x7.0")	(1) DC9-48-60-24-8C-EV (1) 24 PAIR FIBER (2) 6AWG DC	215'-0"
	A2	CBAND	ERICSSON	AIR6472 B77G B77M (36.42"x16.14"x7.48")	20°	157'-0"	INTEGRATED WITHIN		
	A3	LTE	CCI	TPA65R-BU6D (71.2"x21"x7.8")	20°	167'-0"	(1) 4494 B14/B29 (17.48"x15.12"x5.63")		
BETA	B1	LTE	CCI	TPA65R-BU6D (71.2"x21"x7.8")	180°	147'-0"	(1) 4490 B5/B12A (20.6"x15.6"x7.0") (1) 4890 B25/B66A (20.6"x15.6"x7.0")	(1) DC6-48-60-18F (1) 12 PAIR FIBER (2) 8AWG DC	215'-0"
	B2	CBAND	ERICSSON	AIR6472 B77G B77M (36.42"x16.14"x7.48")	180°	157'-0"	INTEGRATED WITHIN		
	B3	LTE	CCI	TPA65R-BU6D (71.2"x21"x7.8")	180°	167'-0"	(1) 4494 B14/B29 (17.48"x15.12"x5.63")		
GAMMA	C1	LTE	CCI	TPA65R-BU6D (71.2"x21"x7.8")	290°	147'-0"	(1) 4490 B5/B12A (20.6"x15.6"x7.0") (1) 4890 B25/B66A (20.6"x15.6"x7.0")	SHARED	-
	C2	CBAND	ERICSSON	AIR6472 B77G B77M (36.42"x16.14"x7.48")	290°	157'-0"	INTEGRATED WITHIN		
	C3	LTE	CCI	TPA65R-BU6D (71.2"x21"x7.8")	180°	167'-0"	(1) 4494 B14/B29 (17.48"x15.12"x5.63")		

NOTES:

1. VERIFY ANTENNA DIMENSIONS WITH MANUFACTURER.
2. VERIFY FINAL ANTENNA MODEL WITH CURRENT VERSION OF THE AT&T RFDS.
3. ALL FEEDLINE LENGTHS SHALL BE FIELD VERIFIED PRIOR TO INSTALLATION.
4. BLUE DENOTES NEW EQUIPMENT.

UNUSED FEEDLINES		
(QTY) TYPE	SIZE	LENGTH
(12) COAX	1-5/8"	215'-0"



USID: 101343
FA: 10128136

WOODBRIDGE CT
ROUTE 69

1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525

EXISTING MONOPOLE

PROJECT NO: 173131.001.01

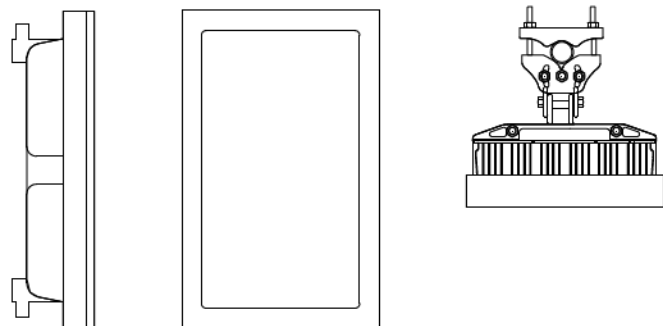
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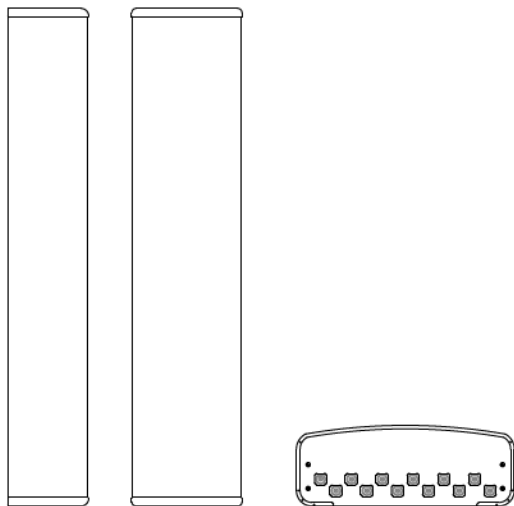
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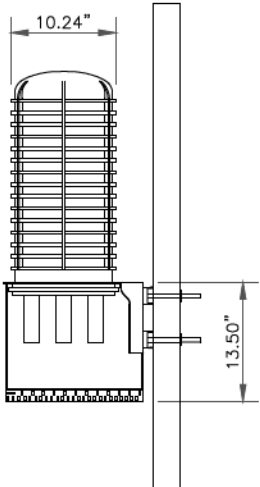
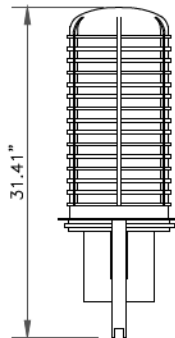
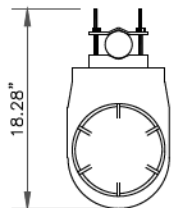
ERICSSON – AIR6472 B77G B77M
WEIGHT: 92.59 LBS
SIZE (HxWxD): 36.42x16.14x7.48 IN.

1 ANTENNA DETAIL
SCALE: N.T.S.



CCI ANTENNAS – TPA65R-BU6D
WEIGHT: 72.5 LBS
SIZE (HxWxD): 71.2X21X7.8 IN.

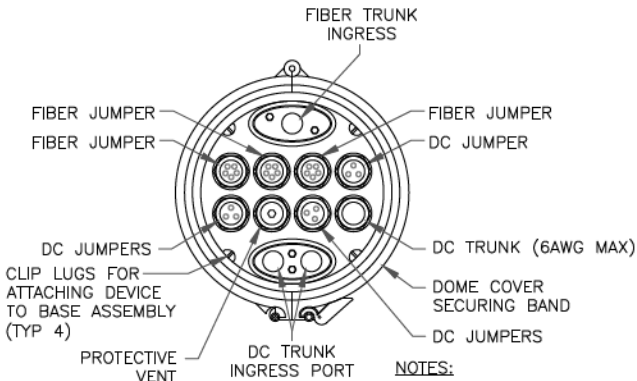
2 ANTENNA DETAIL
SCALE: N.T.S.



RAYCAP
DC9-48-60-24-8C-EV

RAYCAP – DC9-48-60-24-8C-EV
SIZE: 10.24x31.40 IN.
WEIGHT: 26.2 LBS
NOMINAL OPERATING VOLTAGE: 48 VDC
VOLTAGE PROTECTION RATING: 330 V
WIND LOADING: 150 MPH SUSTAINED (105.7 LBS)
WIND LOADING: 195 MPH GUST (213.6 LBS)

CONTRACTOR TO USE "THREAD LUBRICANT" ON
MOUNTING BOLTS DURING INSTALLATION



- NOTES:
- 1. REMOVE CABLE SEALING GLAND AND
INSTALL M32x1.5 METRIC-TO-1" NPT
ADAPTER (COOPER CROUSE-HINES P/N
CAP 740 994 OR EQUIVALENT MFR) WHEN
CONNECTING CONDUIT TO OVP.

5 SURGE UNIT MOUNTING DETAIL
SCALE: N.T.S.



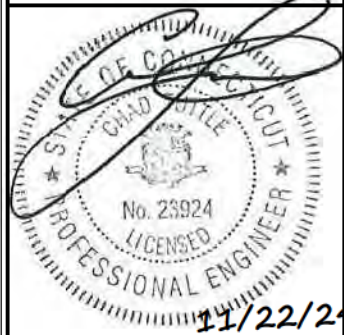
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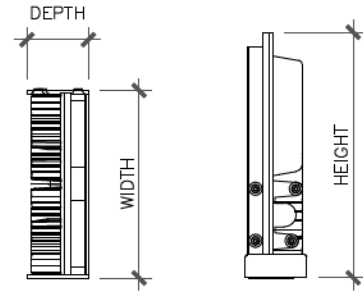
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B	10/25/24	BKR	PRELIMINARY REVIEW
O	11/22/24	BKR	CONSTRUCTION

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PEC.0002304
Expires 2/10/25

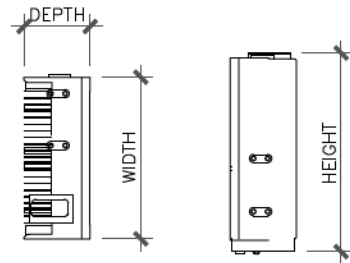


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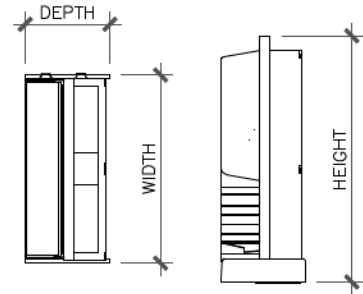
SHEET NUMBER: C-7
REVISION: 0



ERICSSON — RADIO 4490 B5/B12A
WEIGHT: 65.0 LBS
SIZE (HxWxD): 20.6x15.6x7.0 IN.



ERICSSON — RADIO 4494 B14/B29
WEIGHT: 57.33 LBS
SIZE (HxWxD): 17.48x15.12x5.63 IN.



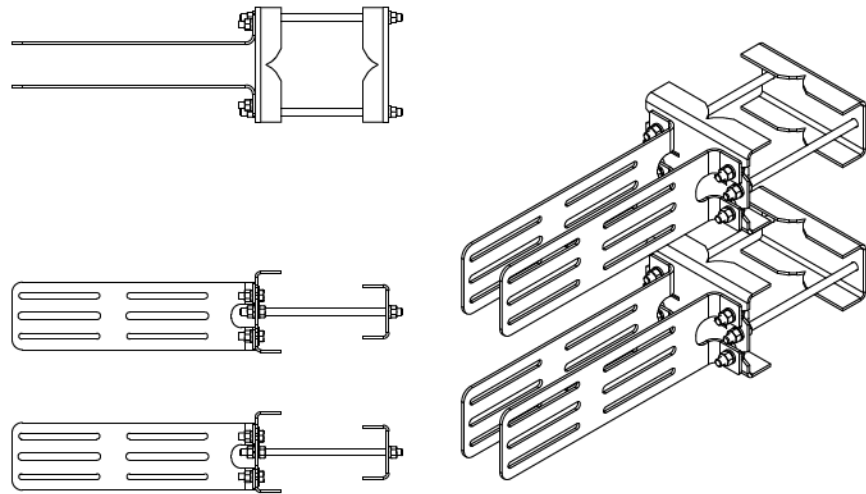
ERICSSON — RADIO 4890/B66A
WEIGHT: 67.24 LBS
SIZE (HxWxD): 20.6x15.6x7.0 IN.

1 RRH DETAIL
SCALE: N.T.S.

2 RRH DETAIL
SCALE: N.T.S.

3 RRH DETAIL
SCALE: N.T.S.

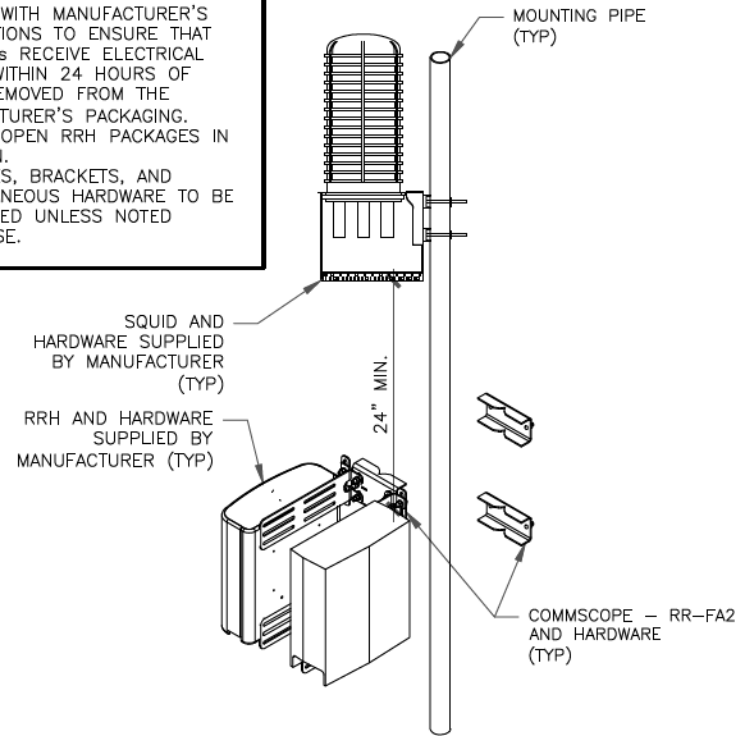
- MOUNTING NOTES:**
- REFER TO PRODUCT SPECS FOR BOLT SIZE & PIPE DIAMETER TOLERANCES.
 - THE PART NO. RR-FA2 (OR APPROVED EQUAL) IS REQUIRED FOR (2) RRHs.



COMMSCOPE — RR-FA2
FAST ACCESS DUAL RRH MOUNT

5 DUAL RRH MOUNT BRACKET DETAIL
SCALE: N.T.S.

- INSTALLER NOTES:**
- COMPLY WITH MANUFACTURER'S INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
 - DO NOT OPEN RRH PACKAGES IN THE RAIN.
 - ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



6 DUAL RRH AND SQUID MOUNTING DETAIL
SCALE: N.T.S.



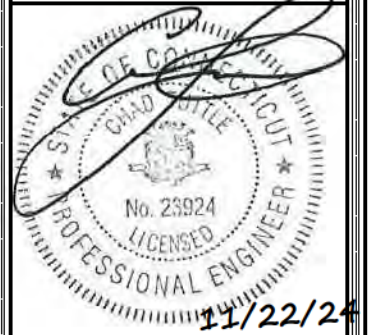
2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
FA: 10128136
**WOODBRIDGE CT
ROUTE 69**
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
CHECKED BY: LR

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	10/9/24	BKR	PRELIMINARY REVIEW
B	10/25/24	BKR	PRELIMINARY REVIEW
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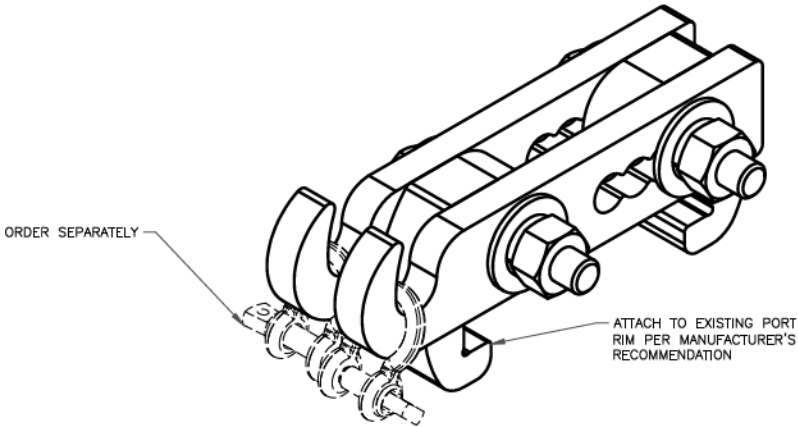
SHEET NUMBER: REVISION:

C-7.1 0

4 NOT USED
SCALE: N.T.S.

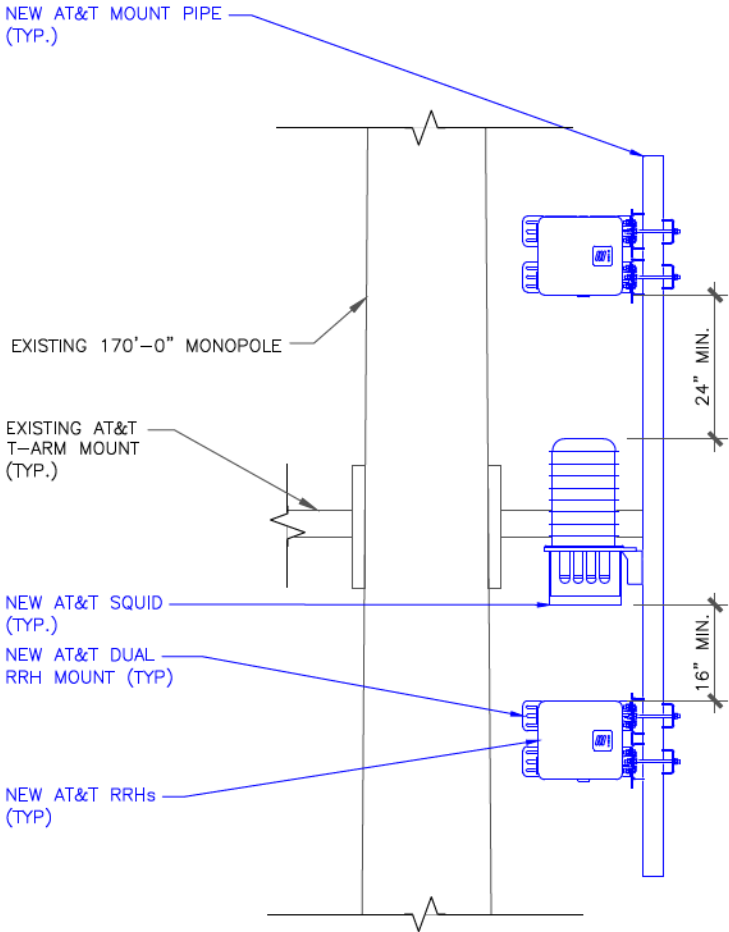
1 NOT USED
SCALE: N.T.S.

NOTE: - REFERENCE MANUFACTURER DRAWINGS FOR FULL SPECIFICATIONS



FINISH:
HOT DIP GALVANIZED.

2 VALMONT - PHH-AL
SCALE: N.T.S.



3 VERTICAL RRH & SQUID PLACEMENT DETAIL
SCALE: N.T.S.



Jacobs
2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
FA: 10128136
**WOODBRIDGE CT
ROUTE 69**
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
CHECKED BY: LR

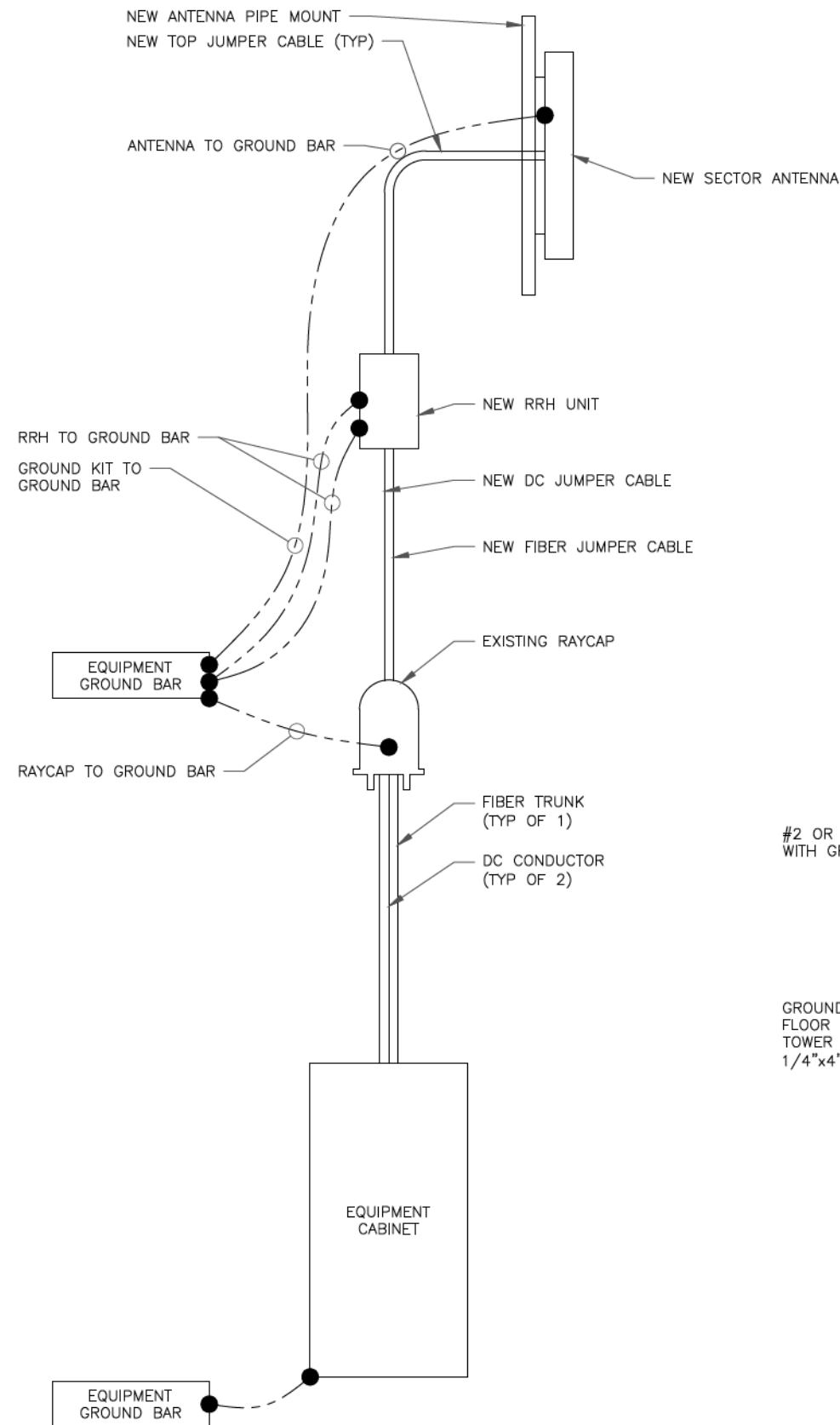
ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	10/9/24	BKR	PRELIMINARY REVIEW
B	10/25/24	BKR	PRELIMINARY REVIEW
0	11/22/24	BKR	CONSTRUCTION

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PEC.0002304
Expires 2/10/25

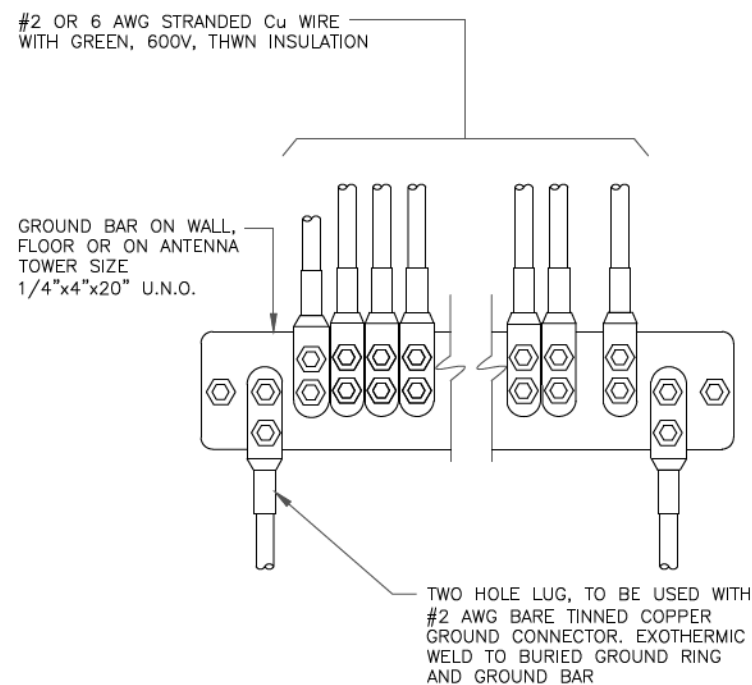


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REVISION: 0



1 GROUNDING SCHEMATIC
SCALE: N.T.S.



2 INSTALLATION OF GROUND
WIRE TO GROUND BAR
SCALE: N.T.S.



Jacobs

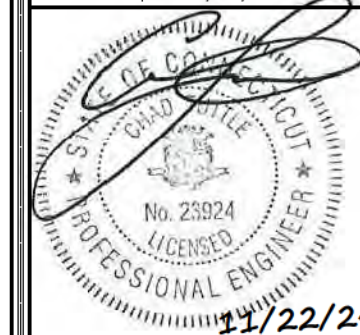
2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
FA: 10128136
**WOODBRIDGE CT
ROUTE 69**
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
CHECKED BY: LR

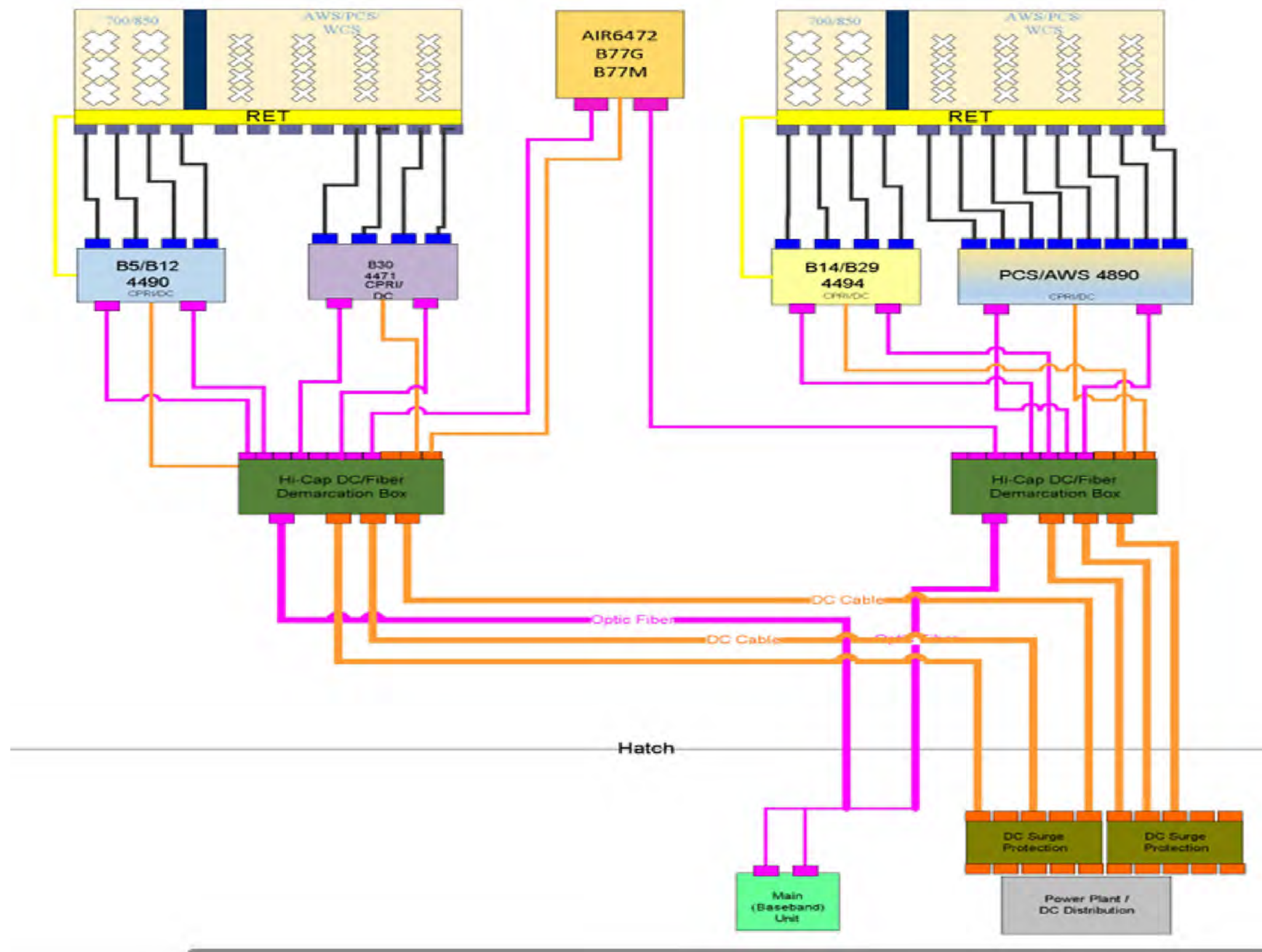
ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	10/9/24	BKR	PRELIMINARY REVIEW
B	10/25/24	BKR	PRELIMINARY REVIEW
O	11/22/24	BKR	CONSTRUCTION

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SHEET NUMBER: **G-1**
REVISION: **0**



1 PLUMBING DIAGRAM (ALL SECTORS)
SCALE: N.T.S.



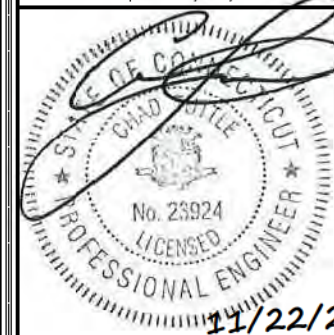
Jacobs
2 ASH STREET, SUITE #3000
CONSHOHOCKEN, PA 19428

USID: 101343
FA: 10128136
**WOODBRIDGE CT
ROUTE 69**
1990 LITCHFIELD TURNPIKE
WOODBRIDGE, CT 06525
EXISTING MONOPOLE

PROJECT NO: 173131.001.01
CHECKED BY: LR

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
A	10/9/24	BKR	PRELIMINARY REVIEW
B	10/25/24	BKR	PRELIMINARY REVIEW
0	11/22/24	BKR	CONSTRUCTION

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SHEET NUMBER: **RF-1** REVISION: **0**

Date: **February 04, 2025**



Telamon Tower Engineering, PLLC
319 Chapanoke Road,
Raleigh, NC 27603
(405) 348-5460

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Site Number: CT2386
FA#: 10128136

Crown Castle Designation: **BU Number:** 857526
Site Name: WOODBRIDGE CT ROUTE 69
JDE Job Number: 2138002
Work Order Number: 2358786
Order Number: 692181 Rev. 0

Engineering Firm Designation: **Telamon Project Number:** 42285-857526-2358786-01-STR

Site Data: **1990 LITCHFIELD TURNPIKE, WOODBRIDGE, New Haven County CT,**
Latitude 41° 22' 23.20", Longitude -72° 58' 50.10"
170 Foot - Monopole Tower

Telamon is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration

Sufficient Capacity – 82.9%

This analysis utilizes an ultimate 3-second gust wind speed of 119 mph as required by the 2022 Connecticut State Building Code. Applicable standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Rasika Hirve

Respectfully submitted by:

David Chickering, P.E.
Director of Business Process Improvement



David Chickering
Telamon Tower Engineering PLLC
PE # 35683 Exp. 01/31/2026

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tnxTower Output

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1) INTRODUCTION

This tower is a 170 ft. Monopole tower designed by Nello Corp in October of 2010.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	119 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
163.0	167.0	3	cci antennas	TPA65R-BU6D_CCIV2 w/ Mount Pipe	2	3/8
	163.0	1	tower mounts	Side Arm Mount [SO 102-3]	2	7/8
	157.0	1	raycap	DC9-48-60-24-8C-EV_220506	6	1-5/8 Conduit
153.0	157.0	3	ericsson	4890 B25 B66	2	3/4
		3	ericsson	AIR 6472 B77G B77M_20240625		
		3	ericsson	RADIO 4490HP B5/B12A		
		3	ericsson	RADIO 4494 44B14 20B29		
		1	raycap	DC6-48-60-18-8F		
	153.0	1	tower mounts	Side Arm Mount [SO 102-3]		
142.0	147.0	3	cci antennas	TPA65R-BU6D_CCIV2 w/ Mount Pipe	6	1-5/8
		1	tower mounts	Side Arm Mount [SO 102-3]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
170.0	180.0	1	dbspectra	DS4C06F36D-D	2	1-1/4
	170.0	1	tower mounts	Side Arm Mount [SO 901-3]		
130.0	130.0	3	SitePro1	VFA12-HD	3	1-5/8
		3	amphenol	APXVAALL24M-U-J20 w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_20210820_TMO		
		3	ericsson	Radio 4480_TMOV2		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	4570938	CCISITES
4-GEOTECHNICAL REPORTS	4570939	CCISITES
4-TOWER MANUFACTURER DRAWINGS	5163862	CCISITES

3.1) Analysis Method

tnxTower (version 8.2.4.3), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Telamon should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	170 - 117	Pole	TP27.6754x18x0.1875	1	-8.64	981.48	50.0	Pass
L2	117 - 96.5	Pole	TP30.8552x26.6615x0.1875	2	-10.94	1095.53	78.3	Pass
L3	96.5 - 47.5	Pole	TP39.2379x29.7812x0.25	3	-18.49	1856.82	82.9	Pass
L4	47.5 - 0	Pole	TP47.2217x37.8458x0.3125	4	-30.50	2857.98	76.9	Pass
							Summary	
						Pole (L3)	82.9	Pass
						Rating =	82.9	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	48.9	Pass
1	Base Plate	0	48.3	Pass
1	Base Foundation (Structure)	0	38.9	Pass
1	Base Foundation (Soil Interaction)	0	44.5	Pass

Structure Rating (max from all components) =	82.9%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

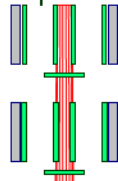
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

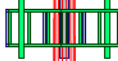
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 119 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 82.9%

170.0 ft



117.0 ft



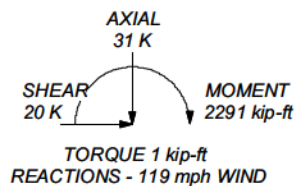
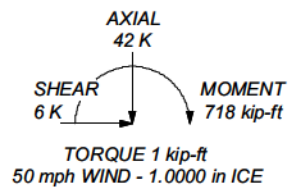
96.5 ft



47.5 ft

0.0 ft

ALL REACTIONS
ARE FACTORED



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	53.00	18	0.1875	3.50	18.0000	27.6754		2.4
2	24.00	18	0.1875	4.00	26.6615	30.8552		1.4
3	53.00	18	0.2500	5.00	29.7812	39.2379	A572-65	4.9
4	52.50	18	0.3125		37.8458	47.2217		7.5
								16.2



telamon

Telamon
319 Chapanoke Road,
Suite 118, Raleigh, NC 27603
Phone: (405) 348-5460
FAX: (405) 341-6334

Job:	BU# 857526 - WOODBRIDGE CT ROUTE 69		
Project:	42285-857526-2358786-01-STR		
Client:	Crown Castle	Drawn by:	RH
Code:	TIA-222-H	Date:	02/04/25
Path:		Scale:	NTS
		Dwg No.	E-1

Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- Tower is located in New Haven County, Connecticut.
- Tower base elevation above sea level: 289.42 ft.
- Basic wind speed of 119 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Horizontals	✓ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Consider Moments - Diagonals	✓ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
Use Moment Magnification	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
✓ Use Code Stress Ratios	Retention Guys To Initial Tension	Offset Girt At Foundation
✓ Use Code Safety Factors - Guys	✓ Bypass Mast Stability Checks	✓ Consider Feed Line Torque
Escalate Ice	✓ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Always Use Max Kz	✓ Project Wind Area of Appurtenances	Use TIA-222-H Bracing Resist. Exemption
Use Special Wind Profile	✓ Alternative Appurt. EPA Calculation	Use TIA-222-H Tension Splice Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	✓ Include Shear-Torsion Interaction
Secondary Horizontal Braces Leg	✓ Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	✓ Pole Without Linear Attachments
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole With Shroud Or No Appurtenances
Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules	Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	170.00-117.00	53.00	3.50	18	18.0000	27.6754	0.1875	0.7500	A572-65 (65 ksi)
L2	117.00-96.50	24.00	4.00	18	26.6615	30.8552	0.1875	0.7500	A572-65 (65 ksi)
L3	96.50-47.50	53.00	5.00	18	29.7812	39.2379	0.2500	1.0000	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L4	47.50-0.00	52.50		18	37.8458	47.2217	0.3125	1.2500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	18.2488	10.6007	424.9328	6.3234	9.1440	46.4712	850.4248	5.3013	2.8380	15.136
	28.0734	16.3587	1561.6019	9.7582	14.0591	111.0741	3125.2586	8.1809	4.5409	24.218
L2	27.6649	15.7553	1395.0902	9.3983	13.5440	103.0041	2792.0161	7.8792	4.3624	23.266
	31.3023	18.2511	2168.6490	10.8870	15.6744	138.3557	4340.1515	9.1273	5.1005	27.203
L3	30.9268	23.4330	2581.8414	10.4836	15.1289	170.6566	5167.0801	11.7187	4.8015	19.206
	39.8046	30.9369	5941.1964	13.8407	19.9329	298.0605	11890.210	15.4714	6.4659	25.863
L4	39.2881	37.2283	6625.8766	13.3243	19.2256	344.6374	13260.471	18.6177	6.1109	19.555
	47.9020	46.5281	12935.060	16.6528	23.9886	539.2165	25887.141	23.2685	7.7610	24.835

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 170.00- 117.00				1	1	1			
L2 117.00- 96.50				1	1	1			
L3 96.50- 47.50				1	1	1			
L4 47.50-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter r in	Perimeter r in	Weight klf
*											

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf
Safety Line 3/8	C	No	No	CaAa (Out Of Face)	170.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.04 0.14 0.24
Step Pegs 5/8" Dia, 7" L, 30" S	C	No	No	CaAa (Out Of Face)	170.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.03 0.13 0.23
170								
LDF6-50A(1-1/4)	C	No	No	Inside Pole	170.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00
163								

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf
LDF7-50A(1-5/8)	C	No	No	Inside Pole	163.00 - 0.00	6	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
FB-L98B-009-XXX(3/8)	C	No	No	Inside Pole	163.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
RFFT-48SM-001-XXX(3/8)	C	No	No	Inside Pole	163.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
WR-VG66ST-BRD_CCIV2(7/8)	C	No	No	Inside Pole	163.00 - 0.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
2" Rigid Conduit	C	No	No	Inside Pole	163.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
153									
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	153.00 - 0.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
142									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	142.00 - 0.00	6	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
130									
HB158-21U6S24-xxM_TMO(1-5/8)	C	No	No	Inside Pole	130.00 - 0.00	3	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	170.00-117.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.533	0.84
L2	117.00-96.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.367	0.53
L3	96.50-47.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.267	1.27
L4	47.50-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.167	1.23

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	170.00-117.00	A	0.983	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	24.383	0.98
L2	117.00-96.50	A	0.956	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	9.431	0.58
L3	96.50-47.50	A	0.918	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	21.998	1.39

Tower Section <i>n</i>	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight <i>K</i>
L4	47.50-0.00	A	0.823	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	20.613	1.34

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	170.00-117.00	-0.5140	0.2968	-1.6463	0.9505
L2	117.00-96.50	-0.5197	0.3000	-1.7346	1.0015
L3	96.50-47.50	-0.5233	0.3021	-1.7563	1.0140
L4	47.50-0.00	-0.5268	0.3041	-1.7630	1.0178

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft²	C _A A _A Side ft²	Weight K
170									
DS4C06F36D-D	C	From Leg	2.00	0.0000	170.00	No Ice	5.82	5.82	0.05
			0.00			1/2"	7.79	7.79	0.09
			10.00			Ice	9.78	9.78	0.15
Side Arm Mount [SO 901-3]	C	None		0.0000	170.00	1" Ice			
			No Ice			1.14	1.14	0.32	
			1/2"			1.49	1.49	0.34	
			Ice			1.91	1.91	0.37	
163									
TPA65R-BU6D_CCIV2 w/ Mount Pipe	A	From Leg	1.00	0.0000	163.00	No Ice	11.96	5.97	0.09
			0.00			1/2"	12.70	6.63	0.18
			4.00			Ice	13.46	7.30	0.28
TPA65R-BU6D_CCIV2 w/ Mount Pipe	B	From Leg	1.00	0.0000	163.00	1" Ice			
			No Ice			11.96	5.97	0.09	
			1/2"			12.70	6.63	0.18	
			Ice			13.46	7.30	0.28	
TPA65R-BU6D_CCIV2 w/ Mount Pipe	C	From Leg	1.00	0.0000	163.00	1" Ice			
			No Ice			11.96	5.97	0.09	
			1/2"			12.70	6.63	0.18	
			Ice			13.46	7.30	0.28	
DC9-48-60-24-8C- EV_220506	B	From Leg	1.00	0.0000	163.00	1" Ice			
			No Ice			2.11	2.69	0.02	
			1/2"			2.30	2.91	0.04	
			Ice			2.50	3.13	0.07	
Side Arm Mount [SO 102-3]	C	None		0.0000	163.00	1" Ice			
			No Ice			3.60	3.60	0.07	
			1/2"			4.18	4.18	0.10	
			Ice			4.75	4.75	0.14	
153									
AIR 6472 B77G B77M_20240625	A	From Leg	1.00	0.0000	153.00	No Ice	4.78	2.44	0.07
			0.00			1/2"	5.07	2.68	0.10
			4.00			Ice	5.37	2.92	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
AIR 6472 B77G B77M_20240625	B	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	4.78 5.07 5.37	2.44 2.68 2.92	0.07 0.10 0.14
AIR 6472 B77G B77M_20240625	C	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	4.78 5.07 5.37	2.44 2.68 2.92	0.07 0.10 0.14
RADIO 4494 44B14 20B29	A	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	0.84 0.97 1.10	0.06 0.07 0.09
RADIO 4494 44B14 20B29	B	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	0.84 0.97 1.10	0.06 0.07 0.09
RADIO 4494 44B14 20B29	C	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	0.84 0.97 1.10	0.06 0.07 0.09
RADIO 4490HP B5/B12A	A	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	0.99 1.13 1.28	0.07 0.09 0.10
RADIO 4490HP B5/B12A	B	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	0.99 1.13 1.28	0.07 0.09 0.10
RADIO 4490HP B5/B12A	C	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	0.99 1.13 1.28	0.07 0.09 0.10
4890 B25 B66	A	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	1.01 1.15 1.30	0.07 0.09 0.11
4890 B25 B66	B	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	1.01 1.15 1.30	0.07 0.09 0.11
4890 B25 B66	C	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	2.20 2.39 2.58	1.01 1.15 1.30	0.07 0.09 0.11
DC6-48-60-18-8F	B	From Leg	1.00 0.00 4.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	1.14 1.79 2.00	1.14 1.79 2.00	0.03 0.05 0.07
6' x 2" Mount Pipe	A	From Leg	1.00 0.00 0.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Leg	1.00 0.00 0.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	C	From Leg	1.00 0.00 0.00	0.0000	153.00	1" Ice No Ice 1/2" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
Side Arm Mount [SO 102- 3]	C	None		0.0000	153.00	1" Ice No Ice 1/2" Ice 1" Ice	3.60 4.18 4.75	3.60 4.18 4.75	0.07 0.10 0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
142									
TPA65R-BU6D_CCIV2 w/ Mount Pipe	A	From Leg	1.00	0.0000	142.00	No Ice	11.96	5.97	0.09
			0.00			1/2"	12.70	6.63	0.18
			5.00			Ice	13.46	7.30	0.28
TPA65R-BU6D_CCIV2 w/ Mount Pipe	B	From Leg	1.00	0.0000	142.00	1" Ice			
			0.00			No Ice	11.96	5.97	0.09
			5.00			1/2"	12.70	6.63	0.18
TPA65R-BU6D_CCIV2 w/ Mount Pipe	C	From Leg	1.00	0.0000	142.00	Ice	13.46	7.30	0.28
			0.00			1" Ice			
			5.00			No Ice	11.96	5.97	0.09
6' x 2" Mount Pipe	A	From Leg	1.00	0.0000	142.00	1/2"	12.70	6.63	0.18
			0.00			Ice	13.46	7.30	0.28
			0.00			1" Ice			
6' x 2" Mount Pipe	B	From Leg	1.00	0.0000	142.00	No Ice	11.96	5.97	0.09
			0.00			1/2"	12.70	6.63	0.18
			0.00			Ice	13.46	7.30	0.28
6' x 2" Mount Pipe	C	From Leg	1.00	0.0000	142.00	1" Ice			
			0.00			No Ice	11.96	5.97	0.09
			0.00			1/2"	12.70	6.63	0.18
Side Arm Mount [SO 102- 3]	C	None		0.0000	142.00	Ice	13.46	7.30	0.28
						1" Ice			
						No Ice	11.96	5.97	0.09
130									
APXVAALL24M-U-J20 w/ Mount Pipe	A	From Leg	4.00	0.0000	130.00	No Ice	11.60	6.48	0.14
			0.00			1/2"	12.31	7.14	0.25
			0.00			Ice	13.03	7.81	0.38
APXVAALL24M-U-J20 w/ Mount Pipe	B	From Leg	4.00	0.0000	130.00	1" Ice			
			0.00			No Ice	11.60	6.48	0.14
			0.00			1/2"	12.31	7.14	0.25
APXVAALL24M-U-J20 w/ Mount Pipe	C	From Leg	4.00	0.0000	130.00	Ice	13.03	7.81	0.38
			0.00			1" Ice			
			0.00			No Ice	11.60	6.48	0.14
Radio 4480_TMOV2	A	From Leg	4.00	0.0000	130.00	1/2"	12.31	7.14	0.25
			0.00			Ice	13.03	7.81	0.38
			0.00			1" Ice			
Radio 4480_TMOV2	B	From Leg	4.00	0.0000	130.00	No Ice	2.88	1.40	0.08
			0.00			1/2"	3.09	1.56	0.10
			0.00			Ice	3.31	1.73	0.13
Radio 4480_TMOV2	C	From Leg	4.00	0.0000	130.00	1" Ice			
			0.00			No Ice	2.88	1.40	0.08
			0.00			1/2"	3.09	1.56	0.10
RADIO 4460 B2/B25 B66_20210820_TMO	A	From Leg	0.00	0.0000	130.00	Ice	3.31	1.73	0.13
			0.00			1" Ice			
			0.00			No Ice	2.59	2.00	0.11
RADIO 4460 B2/B25 B66_20210820_TMO	B	From Leg	4.00	0.0000	130.00	1/2"	2.79	2.18	0.13
			0.00			Ice	3.00	2.37	0.16
			0.00			1" Ice			
RADIO 4460 B2/B25 B66_20210820_TMO	C	From Leg	4.00	0.0000	130.00	No Ice	2.59	2.00	0.11
			0.00			1/2"	2.79	2.18	0.13
			0.00			Ice	3.00	2.37	0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(3) 8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	130.00	1" Ice No Ice 1/2" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(3) 8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	130.00	1" Ice No Ice 1/2" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(3) 8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	130.00	1" Ice No Ice 1/2" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
SitePro1 VFA12-HD	A	From Leg	2.00 0.00 0.00	0.0000	130.00	1" Ice No Ice 1/2" Ice	13.20 19.50 25.80	9.20 14.60 19.50	0.66 0.80 1.01
SitePro1 VFA12-HD	B	From Leg	2.00 0.00 0.00	0.0000	130.00	1" Ice No Ice 1/2" Ice	13.20 19.50 25.80	9.20 14.60 19.50	0.66 0.80 1.01
SitePro1 VFA12-HD	C	From Leg	2.00 0.00 0.00	0.0000	130.00	1" Ice No Ice 1/2" Ice	13.20 19.50 25.80	9.20 14.60 19.50	0.66 0.80 1.01
* ***						1" Ice			

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	170 - 117	Pole	Max Tension	45	0.00	-0.00	0.00
			Max. Compression	26	-16.14	0.35	-0.50
			Max. Mx	20	-8.64	295.67	-0.53
			Max. My	14	-8.64	0.48	-296.18
			Max. Vy	20	-12.15	295.67	-0.53
			Max. Vx	14	12.16	0.48	-296.18
			Max. Torque	12			-0.85
L2	117 - 96.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.18	0.45	-0.56
			Max. Mx	20	-10.95	553.50	-0.80
			Max. My	14	-10.94	0.75	-554.25
			Max. Vy	20	-13.61	553.50	-0.80
			Max. Vx	14	13.62	0.75	-554.25
			Max. Torque	12			-0.92
L3	96.5 - 47.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.43	0.70	-0.70
			Max. Mx	20	-18.49	1293.88	-1.41
			Max. My	14	-18.49	1.41	-1295.18
			Max. Vy	20	-17.18	1293.88	-1.41
			Max. Vx	14	17.19	1.41	-1295.18
			Max. Torque	12			-1.10
L4	47.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.32	1.03	-0.89
			Max. Mx	20	-30.50	2287.50	-2.04
			Max. My	14	-30.50	2.10	-2289.38
			Max. Vy	20	-20.44	2287.50	-2.04
			Max. Vx	14	20.45	2.10	-2289.38
			Max. Torque	12			-1.31

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	33	42.32	0.00	-6.44
	Max. H _x	20	30.52	20.40	-0.01
	Max. H _z	2	30.52	-0.01	20.42
	Max. M _x	2	2288.65	-0.01	20.42
	Max. M _z	8	2286.65	-20.40	0.01
	Max. Torsion	24	1.30	10.19	17.68
	Min. Vert	7	22.89	-17.68	10.22
	Min. H _x	8	30.52	-20.40	0.01
	Min. H _z	14	30.52	0.01	-20.42
	Min. M _x	14	-2289.38	0.01	-20.42
	Min. M _z	20	-2287.50	20.40	-0.01
	Min. Torsion	12	-1.31	-10.19	-17.68

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	25.44	0.00	0.00	0.28	0.33	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	30.52	0.01	-20.42	-2288.65	-1.28	-1.01
0.9 Dead+1.0 Wind 0 deg - No Ice	22.89	0.01	-20.42	-2252.60	-1.36	-1.01
1.2 Dead+1.0 Wind 30 deg - No Ice	30.52	10.21	-17.69	-1982.82	-1144.58	-0.45
0.9 Dead+1.0 Wind 30 deg - No Ice	22.89	10.21	-17.69	-1951.59	-1126.60	-0.45
1.2 Dead+1.0 Wind 60 deg - No Ice	30.52	17.68	-10.22	-1145.61	-1981.08	0.23
0.9 Dead+1.0 Wind 60 deg - No Ice	22.89	17.68	-10.22	-1127.60	-1949.90	0.23
1.2 Dead+1.0 Wind 90 deg - No Ice	30.52	20.40	-0.01	-1.34	-2286.65	0.85
0.9 Dead+1.0 Wind 90 deg - No Ice	22.89	20.40	-0.01	-1.40	-2250.65	0.84
1.2 Dead+1.0 Wind 120 deg - No Ice	30.52	17.67	10.20	1143.40	-1979.42	1.24
0.9 Dead+1.0 Wind 120 deg - No Ice	22.89	17.67	10.20	1125.26	-1948.26	1.24
1.2 Dead+1.0 Wind 150 deg - No Ice	30.52	10.19	17.68	1981.87	-1141.67	1.31
0.9 Dead+1.0 Wind 150 deg - No Ice	22.89	10.19	17.68	1950.48	-1123.75	1.30
1.2 Dead+1.0 Wind 180 deg - No Ice	30.52	-0.01	20.42	2289.38	2.10	1.02
0.9 Dead+1.0 Wind 180 deg - No Ice	22.89	-0.01	20.42	2253.13	1.96	1.01
1.2 Dead+1.0 Wind 210 deg - No Ice	30.52	-10.21	17.69	1983.55	1145.41	0.45
0.9 Dead+1.0 Wind 210 deg - No Ice	22.89	-10.21	17.69	1952.13	1127.21	0.45
1.2 Dead+1.0 Wind 240 deg - No Ice	30.52	-17.68	10.22	1146.34	1981.92	-0.23
0.9 Dead+1.0 Wind 240 deg - No Ice	22.89	-17.68	10.22	1128.13	1950.52	-0.23
1.2 Dead+1.0 Wind 270 deg - No Ice	30.52	-20.40	0.01	2.04	2287.50	-0.85
0.9 Dead+1.0 Wind 270 deg - No Ice	22.89	-20.40	0.01	1.92	2251.27	-0.85
1.2 Dead+1.0 Wind 300 deg - No Ice	30.52	-17.67	-10.20	-1142.71	1980.24	-1.24
0.9 Dead+1.0 Wind 300 deg - No Ice	22.89	-17.67	-10.20	-1124.75	1948.87	-1.24
1.2 Dead+1.0 Wind 330 deg - No Ice	30.52	-10.19	-17.68	-1981.16	1142.48	-1.30

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 330 deg - No Ice	22.89	-10.19	-17.68	-1949.96	1124.34	-1.29
1.2 Dead+1.0 Ice+1.0 Temp	42.32	-0.00	0.00	0.89	1.03	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	42.32	0.00	-6.44	-715.07	0.77	-0.82
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	42.32	3.22	-5.58	-619.30	-357.01	-0.44
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	42.32	5.58	-3.22	-357.34	-618.83	0.05
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	42.32	6.44	-0.00	0.64	-714.55	0.53
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	42.32	5.58	3.22	358.70	-618.50	0.87
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	42.32	3.22	5.58	620.92	-356.43	0.97
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	42.32	-0.00	6.44	717.02	1.44	0.82
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	42.32	-3.22	5.58	621.26	359.23	0.44
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	42.32	-5.58	3.22	359.29	621.05	-0.05
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	42.32	-6.44	0.00	1.31	716.76	-0.53
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	42.32	-5.58	-3.22	-356.76	620.71	-0.87
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	42.32	-3.22	-5.58	-618.97	358.64	-0.97
Dead+Wind 0 deg - Service	25.44	0.00	-4.89	-543.69	-0.05	-0.24
Dead+Wind 30 deg - Service	25.44	2.45	-4.24	-471.02	-271.77	-0.11
Dead+Wind 60 deg - Service	25.44	4.23	-2.45	-272.05	-470.57	0.06
Dead+Wind 90 deg - Service	25.44	4.89	-0.00	-0.10	-543.19	0.21
Dead+Wind 120 deg - Service	25.44	4.23	2.44	271.96	-470.17	0.30
Dead+Wind 150 deg - Service	25.44	2.44	4.23	471.23	-271.08	0.32
Dead+Wind 180 deg - Service	25.44	-0.00	4.89	544.30	0.75	0.24
Dead+Wind 210 deg - Service	25.44	-2.45	4.24	471.63	272.47	0.11
Dead+Wind 240 deg - Service	25.44	-4.23	2.45	272.65	471.27	-0.06
Dead+Wind 270 deg - Service	25.44	-4.89	0.00	0.70	543.88	-0.21
Dead+Wind 300 deg - Service	25.44	-4.23	-2.44	-271.35	470.87	-0.30
Dead+Wind 330 deg - Service	25.44	-2.44	-4.23	-470.62	271.77	-0.32

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-25.44	0.00	0.00	25.44	0.00	0.000%
2	0.01	-30.52	-20.42	-0.01	30.52	20.42	0.000%
3	0.01	-22.89	-20.42	-0.01	22.89	20.42	0.000%
4	10.21	-30.52	-17.69	-10.21	30.52	17.69	0.000%
5	10.21	-22.89	-17.69	-10.21	22.89	17.69	0.000%
6	17.68	-30.52	-10.22	-17.68	30.52	10.22	0.000%
7	17.68	-22.89	-10.22	-17.68	22.89	10.22	0.000%
8	20.40	-30.52	-0.01	-20.40	30.52	0.01	0.000%
9	20.40	-22.89	-0.01	-20.40	22.89	0.01	0.000%
10	17.67	-30.52	10.20	-17.67	30.52	-10.20	0.000%
11	17.67	-22.89	10.20	-17.67	22.89	-10.20	0.000%
12	10.19	-30.52	17.68	-10.19	30.52	-17.68	0.000%
13	10.19	-22.89	17.68	-10.19	22.89	-17.68	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
14	-0.01	-30.52	20.42	0.01	30.52	-20.42	0.000%
15	-0.01	-22.89	20.42	0.01	22.89	-20.42	0.000%
16	-10.21	-30.52	17.69	10.21	30.52	-17.69	0.000%
17	-10.21	-22.89	17.69	10.21	22.89	-17.69	0.000%
18	-17.68	-30.52	10.22	17.68	30.52	-10.22	0.000%
19	-17.68	-22.89	10.22	17.68	22.89	-10.22	0.000%
20	-20.40	-30.52	0.01	20.40	30.52	-0.01	0.000%
21	-20.40	-22.89	0.01	20.40	22.89	-0.01	0.000%
22	-17.67	-30.52	-10.20	17.67	30.52	10.20	0.000%
23	-17.67	-22.89	-10.20	17.67	22.89	10.20	0.000%
24	-10.19	-30.52	-17.68	10.19	30.52	17.68	0.000%
25	-10.19	-22.89	-17.68	10.19	22.89	17.68	0.000%
26	0.00	-42.32	0.00	0.00	42.32	-0.00	0.000%
27	0.00	-42.32	-6.44	-0.00	42.32	6.44	0.000%
28	3.22	-42.32	-5.58	-3.22	42.32	5.58	0.000%
29	5.58	-42.32	-3.22	-5.58	42.32	3.22	0.000%
30	6.44	-42.32	-0.00	-6.44	42.32	0.00	0.000%
31	5.58	-42.32	3.22	-5.58	42.32	-3.22	0.000%
32	3.22	-42.32	5.58	-3.22	42.32	-5.58	0.000%
33	-0.00	-42.32	6.44	0.00	42.32	-6.44	0.000%
34	-3.22	-42.32	5.58	3.22	42.32	-5.58	0.000%
35	-5.58	-42.32	3.22	5.58	42.32	-3.22	0.000%
36	-6.44	-42.32	0.00	6.44	42.32	-0.00	0.000%
37	-5.58	-42.32	-3.22	5.58	42.32	3.22	0.000%
38	-3.22	-42.32	-5.58	3.22	42.32	5.58	0.000%
39	0.00	-25.44	-4.89	-0.00	25.44	4.89	0.000%
40	2.45	-25.44	-4.24	-2.45	25.44	4.24	0.000%
41	4.23	-25.44	-2.45	-4.23	25.44	2.45	0.000%
42	4.89	-25.44	-0.00	-4.89	25.44	0.00	0.000%
43	4.23	-25.44	2.44	-4.23	25.44	-2.44	0.000%
44	2.44	-25.44	4.23	-2.44	25.44	-4.23	0.000%
45	-0.00	-25.44	4.89	0.00	25.44	-4.89	0.000%
46	-2.45	-25.44	4.24	2.45	25.44	-4.24	0.000%
47	-4.23	-25.44	2.45	4.23	25.44	-2.45	0.000%
48	-4.89	-25.44	0.00	4.89	25.44	-0.00	0.000%
49	-4.23	-25.44	-2.44	4.23	25.44	2.44	0.000%
50	-2.44	-25.44	-4.23	2.44	25.44	4.23	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00036145
3	Yes	5	0.00000001	0.00016279
4	Yes	7	0.00000001	0.00007623
5	Yes	6	0.00000001	0.00033265
6	Yes	7	0.00000001	0.00007635
7	Yes	6	0.00000001	0.00033319
8	Yes	5	0.00000001	0.00033238
9	Yes	5	0.00000001	0.00015046
10	Yes	7	0.00000001	0.00007834
11	Yes	6	0.00000001	0.00034260
12	Yes	7	0.00000001	0.00007496
13	Yes	6	0.00000001	0.00032679
14	Yes	5	0.00000001	0.00043650
15	Yes	5	0.00000001	0.00019584
16	Yes	7	0.00000001	0.00007736
17	Yes	6	0.00000001	0.00033776
18	Yes	7	0.00000001	0.00007722
19	Yes	6	0.00000001	0.00033715
20	Yes	5	0.00000001	0.00040724
21	Yes	5	0.00000001	0.00018349
22	Yes	7	0.00000001	0.00007501
23	Yes	6	0.00000001	0.00032701

24	Yes	7	0.00000001	0.00007841
25	Yes	6	0.00000001	0.00034289
26	Yes	4	0.00000001	0.00003285
27	Yes	6	0.00000001	0.00020110
28	Yes	6	0.00000001	0.00043879
29	Yes	6	0.00000001	0.00044329
30	Yes	6	0.00000001	0.00019882
31	Yes	6	0.00000001	0.00046207
32	Yes	6	0.00000001	0.00043401
33	Yes	6	0.00000001	0.00020216
34	Yes	6	0.00000001	0.00045765
35	Yes	6	0.00000001	0.00045204
36	Yes	6	0.00000001	0.00019977
37	Yes	6	0.00000001	0.00043465
38	Yes	6	0.00000001	0.00046374
39	Yes	4	0.00000001	0.00048105
40	Yes	5	0.00000001	0.00029245
41	Yes	5	0.00000001	0.00029319
42	Yes	4	0.00000001	0.00046526
43	Yes	5	0.00000001	0.00031397
44	Yes	5	0.00000001	0.00028175
45	Yes	4	0.00000001	0.00049565
46	Yes	5	0.00000001	0.00030426
47	Yes	5	0.00000001	0.00030314
48	Yes	4	0.00000001	0.00047940
49	Yes	5	0.00000001	0.00028177
50	Yes	5	0.00000001	0.00031437

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	170 - 117	39.644	46	1.9837	0.0069
L2	120.5 - 96.5	20.144	46	1.6637	0.0025
L3	100.5 - 47.5	13.748	46	1.3555	0.0016
L4	52.5 - 0	3.579	46	0.6347	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
170.00	DS4C06F36D-D	46	39.644	1.9837	0.0069	43247
163.00	TPA65R-BU6D_CCIV2 w/ Mount Pipe	46	36.731	1.9607	0.0062	30890
153.00	AIR 6472 B77G B77M_20240625	46	32.607	1.9224	0.0051	12719
142.00	TPA65R-BU6D_CCIV2 w/ Mount Pipe	46	28.182	1.8644	0.0041	7721
130.00	APXVAALL24M-U-J20 w/ Mount Pipe	46	23.572	1.7701	0.0031	5404

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	170 - 117	166.472	14	8.3434	0.0286
L2	120.5 - 96.5	84.695	14	7.0065	0.0101

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L3	100.5 - 47.5	57.821	14	5.7098	0.0068
L4	52.5 - 0	15.062	16	2.6725	0.0024

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
170.00	DS4C06F36D-D	14	166.472	8.3434	0.0287	10718
163.00	TPA65R-BU6D_CCIV2 w/ Mount Pipe	14	154.260	8.2484	0.0256	7655
153.00	AIR 6472 B77G B77M_20240625	14	136.972	8.0898	0.0213	3149
142.00	TPA65R-BU6D_CCIV2 w/ Mount Pipe	14	118.418	7.8482	0.0169	1908
130.00	APXVAALL24M-U-J20 w/ Mount Pipe	14	99.080	7.4533	0.0128	1332

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	170 - 117 (1)	TP27.6754x18x0.1875	53.00	0.00	0.0	15.978 5	-8.64	934.74	0.009
L2	117 - 96.5 (2)	TP30.8552x26.6615x0.18 75	24.00	0.00	0.0	17.835 1	-10.94	1043.36	0.010
L3	96.5 - 47.5 (3)	TP39.2379x29.7812x0.25	53.00	0.00	0.0	30.229 0	-18.49	1768.40	0.010
L4	47.5 - 0 (4)	TP47.2217x37.8458x0.31 25	52.50	0.00	0.0	46.528 1	-30.50	2721.89	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	170 - 117 (1)	TP27.6754x18x0.1875	296.44	576.81	0.514	0.00	576.81	0.000
L2	117 - 96.5 (2)	TP30.8552x26.6615x0.18 75	554.65	685.04	0.810	0.00	685.04	0.000
L3	96.5 - 47.5 (3)	TP39.2379x29.7812x0.25	1295.94	1508.41	0.859	0.00	1508.41	0.000
L4	47.5 - 0 (4)	TP47.2217x37.8458x0.31 25	2290.52	2877.60	0.796	0.00	2877.60	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	170 - 117 (1)	TP27.6754x18x0.1875	12.17	280.42	0.043	0.22	659.36	0.000
L2	117 - 96.5 (2)	TP30.8552x26.6615x0.1875	13.63	313.01	0.044	0.26	821.49	0.000
L3	96.5 - 47.5 (3)	TP39.2379x29.7812x0.25	17.20	530.52	0.032	0.35	1769.93	0.000
L4	47.5 - 0 (4)	TP47.2217x37.8458x0.3125	20.46	816.57	0.025	0.45	3354.52	0.000

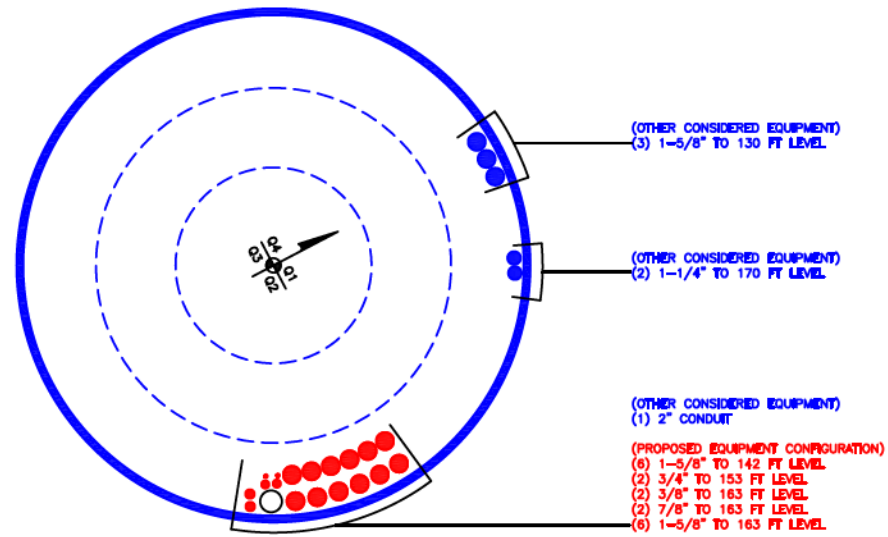
Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	170 - 117 (1)	0.009	0.514	0.000	0.043	0.000	0.525	1.050	
L2	117 - 96.5 (2)	0.010	0.810	0.000	0.044	0.000	0.822	1.050	
L3	96.5 - 47.5 (3)	0.010	0.859	0.000	0.032	0.000	0.871	1.050	
L4	47.5 - 0 (4)	0.011	0.796	0.000	0.025	0.000	0.808	1.050	

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	170 - 117	Pole	TP27.6754x18x0.1875	1	-8.64	981.48	50.0	Pass
L2	117 - 96.5	Pole	TP30.8552x26.6615x0.1875	2	-10.94	1095.53	78.3	Pass
L3	96.5 - 47.5	Pole	TP39.2379x29.7812x0.25	3	-18.49	1856.82	82.9	Pass
L4	47.5 - 0	Pole	TP47.2217x37.8458x0.3125	4	-30.50	2857.98	76.9	Pass
							Summary	
							Pole (L3)	Pass
							RATING = 82.9	Pass

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C

ADDITIONAL CALCULATIONS

Monopole Base Plate Connection

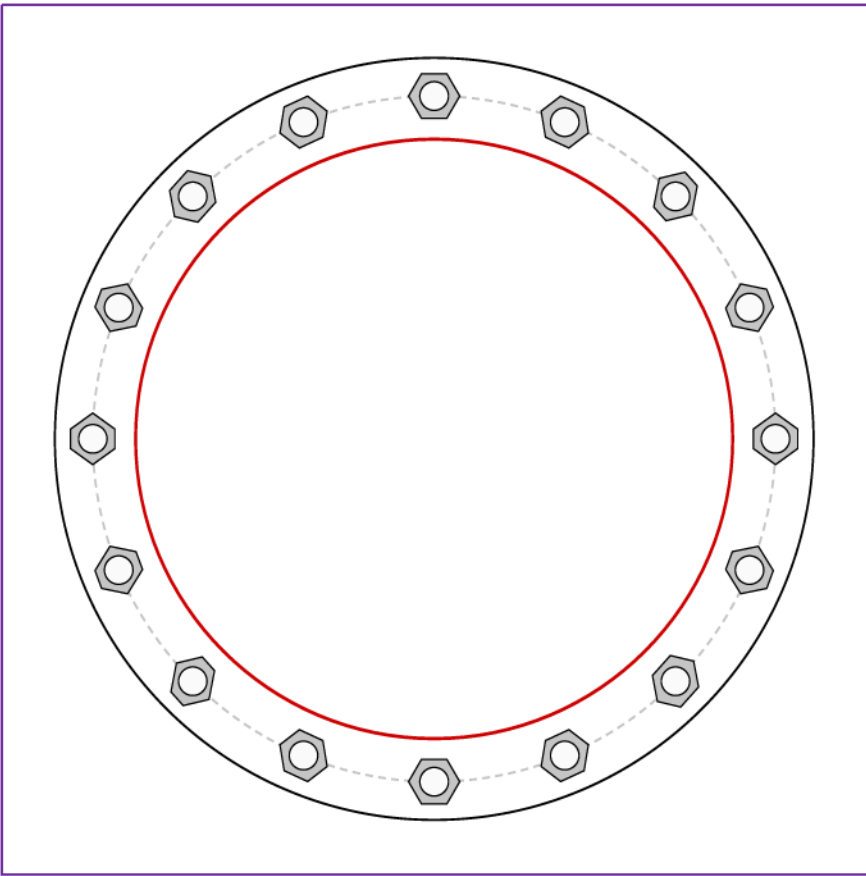


Site Info	
BU #	857526
Site Name	DODBRIDGE CT ROUTE
Order #	692181 Rev.0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.5

Applied Loads	
Moment (kip-ft)	2290.51
Axial Force (kips)	30.50
Shear Force (kips)	20.46

*TIA-222-H Section 15.5 Applied



Connection Properties		Analysis Results	
Anchor Rod Data		Anchor Rod Summary <i>(units of kips, kip-in)</i>	
(16) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 54" BC		$Pu_t = 125.25$	$\phi Pn_t = 243.75$ Stress Rating
Base Plate Data		$Vu = 1.28$	$\phi Vn = 149.1$ 48.9%
60" OD x 2.25" Plate (A572-50; $F_y=50$ ksi, $F_u=65$ ksi)		$Mu = n/a$	$\phi Mn = n/a$ Pass
Stiffener Data		Base Plate Summary	
N/A		Max Stress (ksi):	22.8 (Flexural)
Pole Data		Allowable Stress (ksi):	45
47.2217" x 0.3125" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)		Stress Rating:	48.3% Pass

Pier and Pad Foundation



BU #: 857526
 Site Name: WOODBRIDGE CT
 App. Number: 692181 Rev.0

TIA-222 Revision: H
 Tower Type: Monopole

Top & Bot. Pad Rein. Different?: ☐
 Block Foundation?: ☐
 Rectangular Pad?: ☐

Superstructure Analysis Reactions		
Compression, P_{comp} :	30.52	kips
Base Shear, Vu_{comp} :	20.42	kips
Moment, M_u :	2290.51	ft-kips
Tower Height, H :	170	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	6	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, Sc :	11	
Pier Rebar Quantity, mc :	44	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	9.5	ft
Pad Width, W_1 :	21	ft
Pad Thickness, T :	2.5	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	26	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	100	pcf
Ultimate Gross Bearing, Q_{ult} :	24.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	30	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :		
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	248.71	20.42	7.8%	Pass
Bearing Pressure (ksf)	18.00	2.54	14.1%	Pass
Overturning (kip*ft)	5617.82	2499.82	44.5%	Pass
Pier Flexure (Comp.) (kip*ft)	8157.43	2443.66	28.5%	Pass
Pier Compression (kip)	13497.04	68.69	0.5%	Pass
Pad Flexure (kip*ft)	2819.02	851.29	28.8%	Pass
Pad Shear - 1-way (kips)	523.97	158.98	28.9%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.164	0.044	25.2%	Pass
Flexural 2-way (Comp) (kip*ft)	3588.39	1466.20	38.9%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating*:	38.9%
Soil Rating*:	44.5%

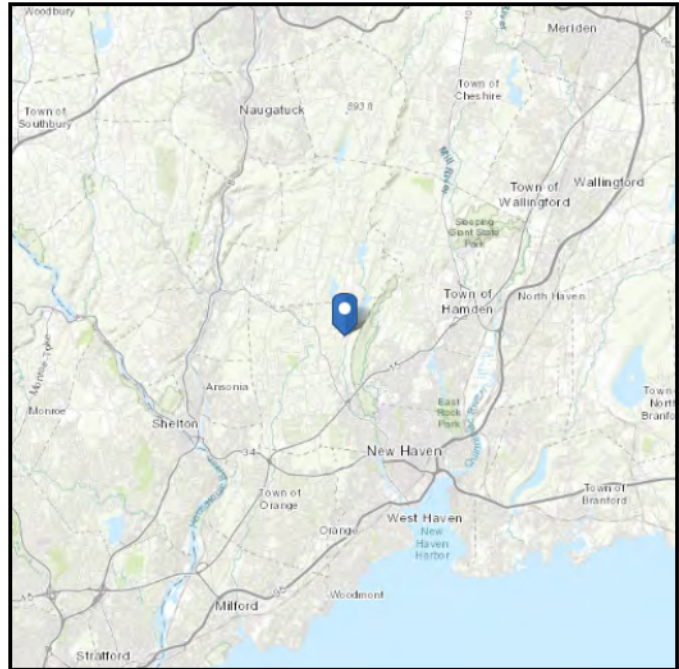
<--Toggle between Gross and Net

ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Latitude: 41.373111
Longitude: -72.980583
Elevation: 289.4151334673207 ft
(NAVD 88)



Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Jan 30 2025

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

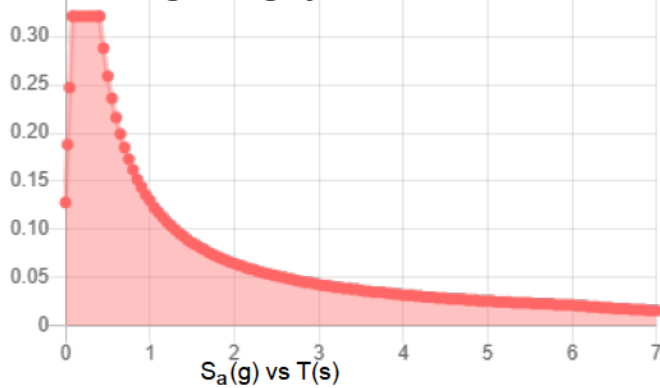
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

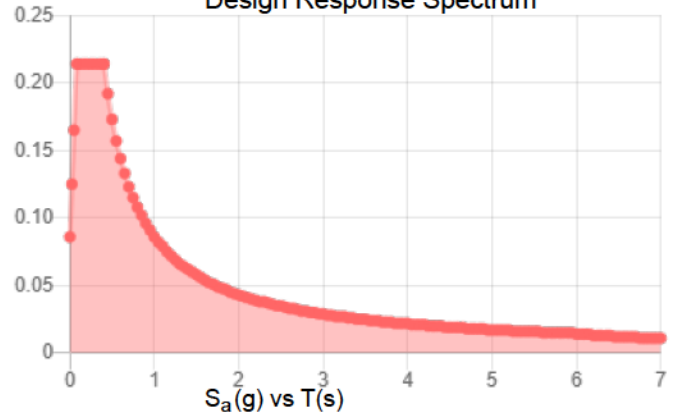
Results:

S_s :	0.201	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA _M :	0.177
S_{MS} :	0.321	F_{PGA} :	1.576
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.214	C_v :	0.701

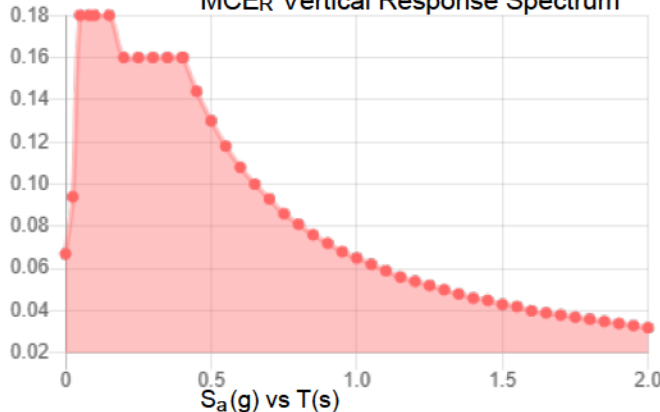
Seismic Design Category: B
MCE_R Response Spectrum



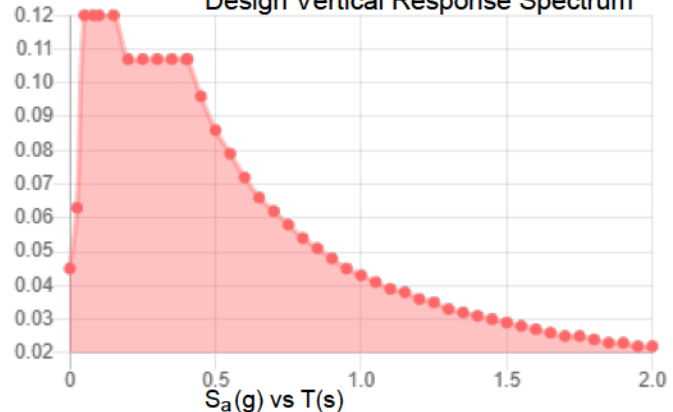
Design Response Spectrum



MCE_R Vertical Response Spectrum



Design Vertical Response Spectrum



Data Accessed: Thu Jan 30 2025

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Thu Jan 30 2025

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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Reviewed
C. Svalina
Jacobs
11/5/2024



October 31, 2024

Michael Street
Jacobs Telecommunications, Inc.
450 Raritan Center Parkway
Edison, NJ 08837
(732) 225-3330

MTS Engineering, P.L.L.C.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
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towersupport@btgrp.com

Subject: Appurtenance Mount Analysis Report

Carrier Designation: **Site Number:** 10128136
Site Name: Woodbridge CT Route 69
IWM Job Number: WSCTB0028317

Engineering Firm Designation: **Project Number:** 173131.001.01.0002

Site Data: 1990 Litchfield Turnpike, Woodbridge, CT, 06526, New Haven County
Latitude 41.37319°, Longitude -72.98119°
170' Monopole
(6) 6' Pipe Mounts and (3) 4.75' T-Arms

Dear Mr. Street,

We are pleased to submit this “**Appurtenance Mount Analysis Report**” to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

Existing + Proposed Equipment

Note: See Table 1 for the final loading configuration

Sufficient Capacity

(Passing at 33.8% with
Requirements in Section 5)

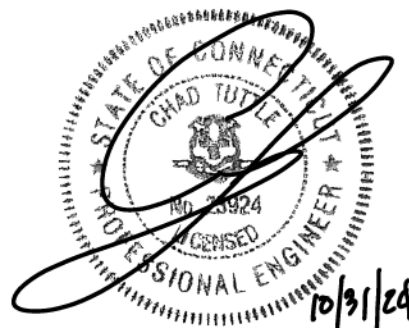
This analysis utilizes an ultimate 3-second gust wind speed of 119 mph as required by the 2022 Connecticut State Building Code. Applicable standard references and design criteria are listed in Section 2 - Analysis Criteria.

All the equipment proposed in this report shall be installed in accordance with the drawings for the determined available structural capacity to be effective.

We appreciate the opportunity of providing our continuing professional services to you and *Jacobs Telecommunications, Inc.* If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Colton Jung

Respectfully submitted by: MTS Engineering, P.L.L.C.
COA: PEC.0002304 Expires: 04/11/2025



Chad E. Tuttle, P.E.

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1) INTRODUCTION

The appurtenance mount consists of (3) 6' Pipe Mounts at 167' & 147' and (3) 4.75' T-Arms at 157', attached to monopole at 1990 Litchfield Turnpike, Woodbridge, CT, 06526, New Haven County. The proposed antenna loading information was obtained from Jacobs Telecommunications, Inc. All information provided to us was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 119 mph with no ice and 50 mph with 1 inch escalated ice thickness. Exposure Category C, Topographic Category 1 and Risk Category II were used in this analysis. In addition, the pipe and T-Arm mounts have been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 250-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed and Existing Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Manufacturer	Model / Type	Note
Proposed	167	1	3	CCI Antennas	TPA65R-BU6D	1
	157	2	3	Ericsson	AIR 6472 B77G B77M	2
		-	3	Ericsson	4490 B5/B12A	3
			3	Ericsson	4494 B14/B29	
			3	Ericsson	4890 B25/B66A	
			1	Raycap	DC9-48-60-24-8C-EV	
	147	1	3	CCI Antennas	TPA65R-BU6D	1
Existing	155	-	1	Raycap	DC6-48-60-18F	4

Note:

- (1) Proposed Antennas to be installed on existing mounting pipes.
- (2) Proposed Antennas to be installed on proposed mounting pipes.
- (3) Proposed Equipment to be installed on the proposed Mounting Pipes.
- (4) Existing Equipment to be relocated on the proposed Mounting Pipes.

Table 2 – Documents Provided

Documents	Remarks	Reference	Source
10128136_WSCTB0028317_CT238 6_DE130_DRAFT – DE130	Existing Loading Proposed Loading	--	Jacobs Telecommunications, Inc.
RFDS		Date: 09/16/2024	
CDs by MTS Engineering, P.L.L.C.		Date: 10/25/2024	On File
Structural Analysis	MTS Engineering, P.L.L.C.	Date: 08/08/2012	On File

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 22.0.1), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

The following assumptions have been included in the analysis of the mount:

Component	Section	Length	Note
Existing Mount Pipes	2" Std. Pipe	6'-0"	At 167' & 147', Per Photos
Face Horizontal Pipes	4" Std. Pipe	4'-9"	At 157', Per Photos
Support Arms		1'-0"	

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
9. The following material grades were assumed (Unless Noted Otherwise):
 - a) Connection Bolts : ASTM A325
 - b) Steel Pipe : ASTM A53 (GR. 35)
 - c) HSS (Round) : ASTM 500 (GR. B-42)
 - d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - e) Channel : ASTM A36 (GR. 36)
 - f) Steel Solid Rod : ASTM A36 (GR. 36)
 - g) Steel Plate : ASTM A36 (GR. 36)
 - h) Steel Angle : ASTM A36 (GR. 36)
 - i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. MTS Engineering, P.L.L.C. should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3(a) - Mount Component Stresses vs. Capacity (Pipe Mount) – At 167' elevation

Notes	Component	Elevation (ft.)	% Capacity*	Pass / Fail
-	Mount Pipes	167	33.8	Pass
-	Connection Bolts	167	10.3	Pass

Note: *Member Capacity based on Recommended Modification on Section 5.

Table 3(b) - Mount Component Stresses vs. Capacity (T-Arms) – At 157' elevation

Notes	Component	Elevation (ft.)	% Capacity*	Pass / Fail
-	Face Horizontals	157	13.9	Pass
-	Support Arms	157	14.4	Pass
-	Mount Pipes	157	31.0	Pass
-	Connection Bolts	157	26.2	Pass

Note: *Member Capacity based on Recommended Modification on Section 5.

Table 3(c) - Mount Component Stresses vs. Capacity (Pipe Mount) – At 147' elevation

Notes	Component	Elevation (ft.)	% Capacity*	Pass / Fail
-	Mount Pipes	147	32.9	Pass
-	Connection Bolts	147	10.1	Pass

Note: *Member Capacity based on Recommended Modification on Section 5.

5) REQUIREMENTS

The existing 6' Pipe mount and 4.75' T-Arm mount have sufficient capacity to carry the existing and proposed loads and are in compliance with the ANSI/TIA-222-H standard for the proposed loading and existing loading. (Refer to the RISA output for the specific members).

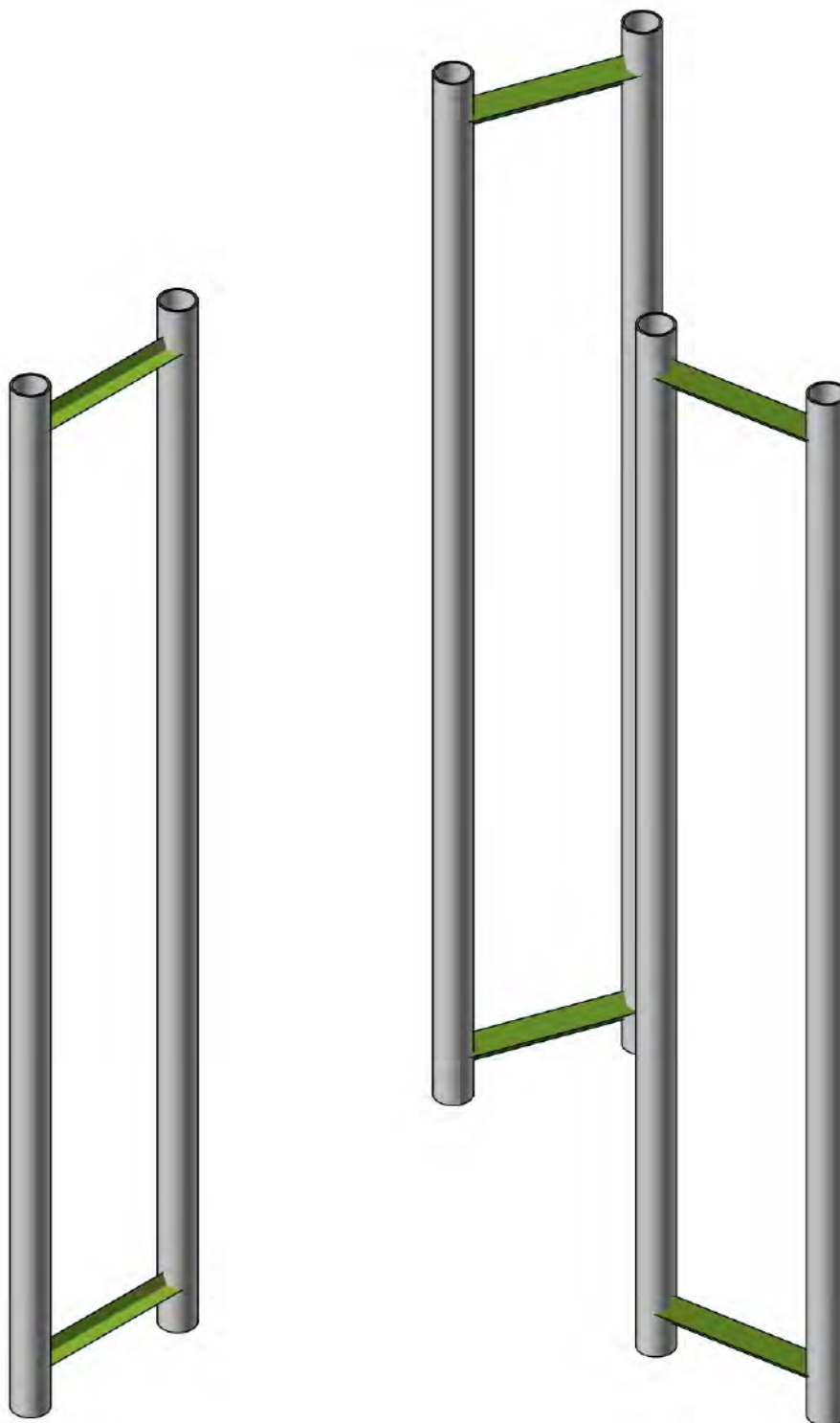
For 157' Elevation,

1. Install (3) new 3.5"x0.165" x 10'-6" long Commscope Part# MT-547-126 (P/N: ANT.57351) or approved equal antenna mounting pipes in position 1 attached to the face horizontals of the mount using (3) Commscope Part# CO-200 (P/N: ANT.54854) or approved equal cross over plates.
2. Install (3) new 2" Std. x 10'-6" long Commscope Part# MT-537, (P/N: ANT.16531) or approved equal mount pipes attached to face horizontals at Position 2 using (3) new Commscope Part# CO-200 (P/N: ANT.54854) or approved equal cross over plates.

Install proposed mount pipes per requirements set by ATT-790-202-083.

APPENDIX A

(RISA-3D Output)



Envelope Only Solution



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RP

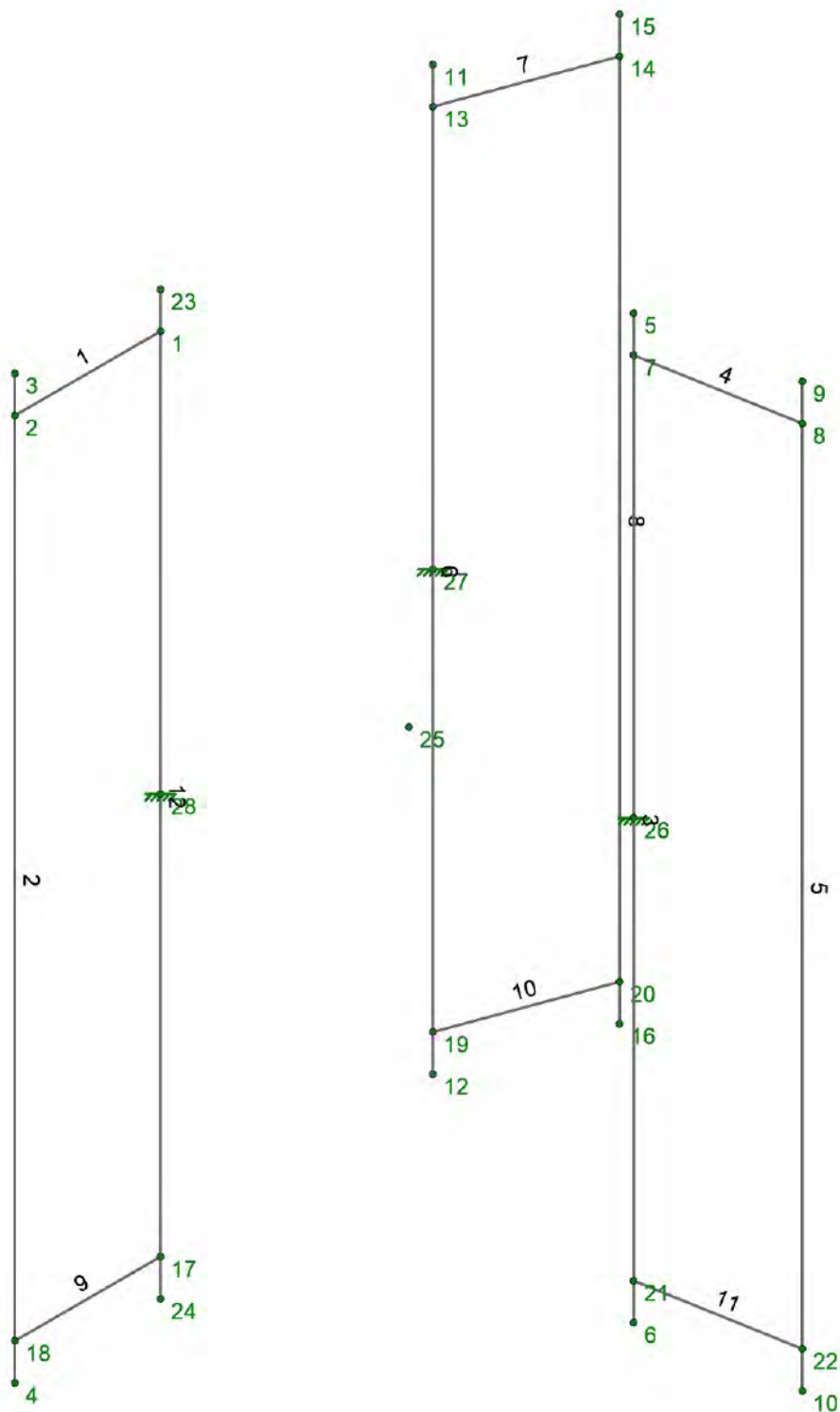
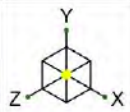
173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-1

Oct 31, 2024 at 03:45 PM

173131_001_01_0002_Woo...



Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

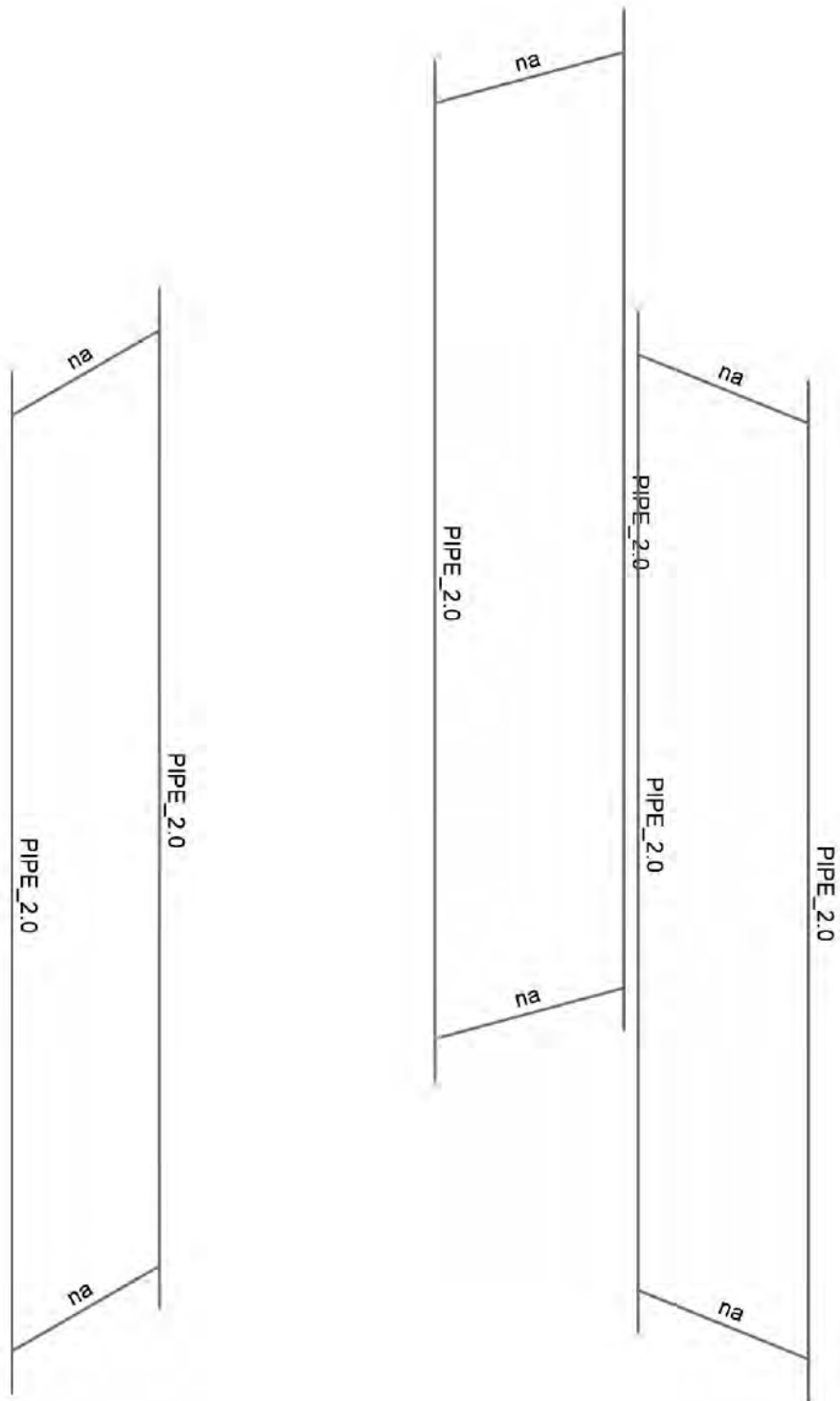
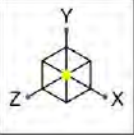
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10128136 - Woodbridge CT Route 69

SK-2

Oct 31, 2024 at 03:45 PM

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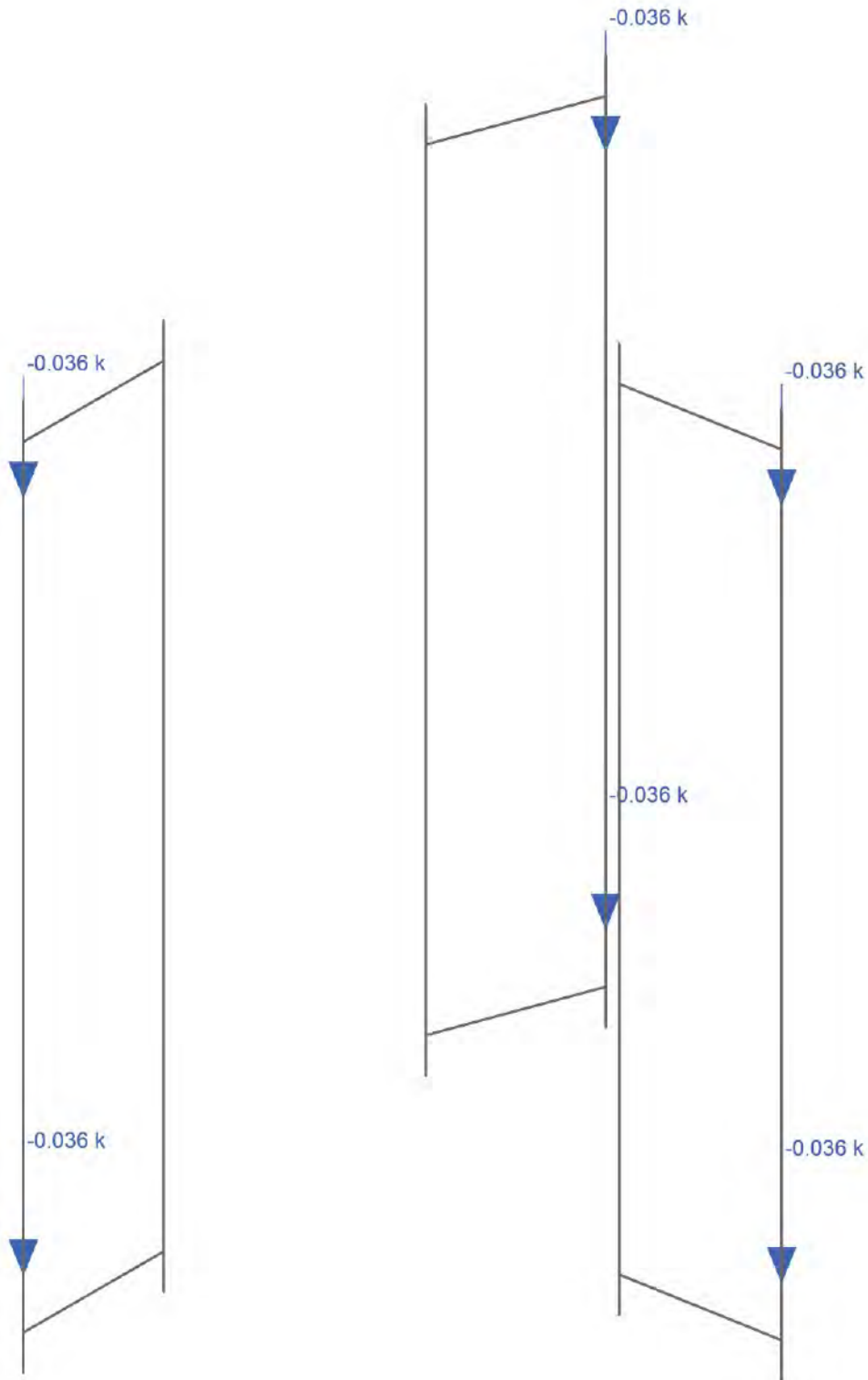
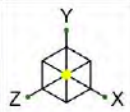
Envelope Only Solution



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RP
173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-3
Oct 31, 2024 at 03:45 PM
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Loads: BLC 1, Dead
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RP

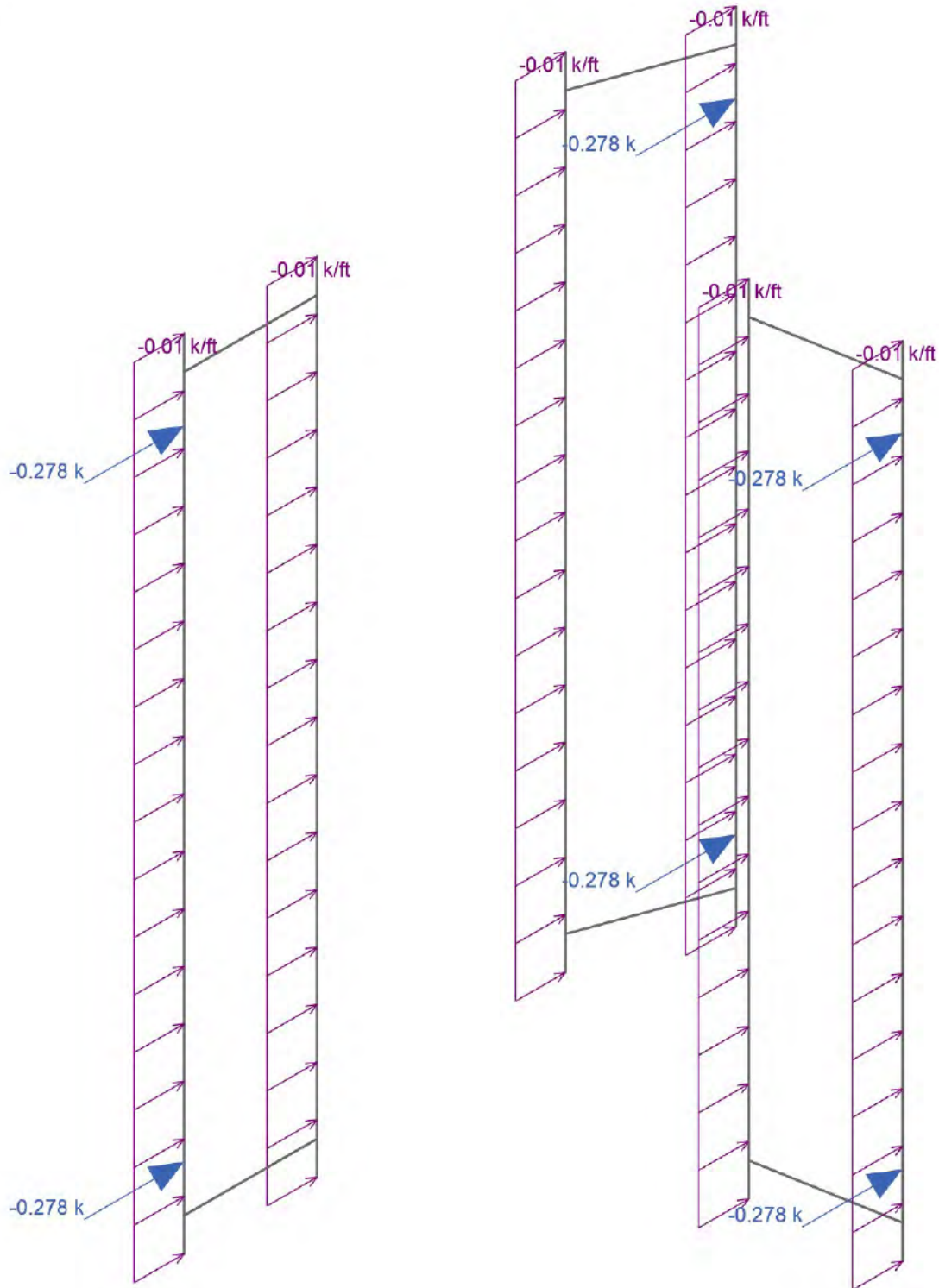
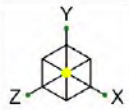
173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-4

Oct 31, 2024 at 03:45 PM

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Loads: BLC 2, 0 Wind - No Ice
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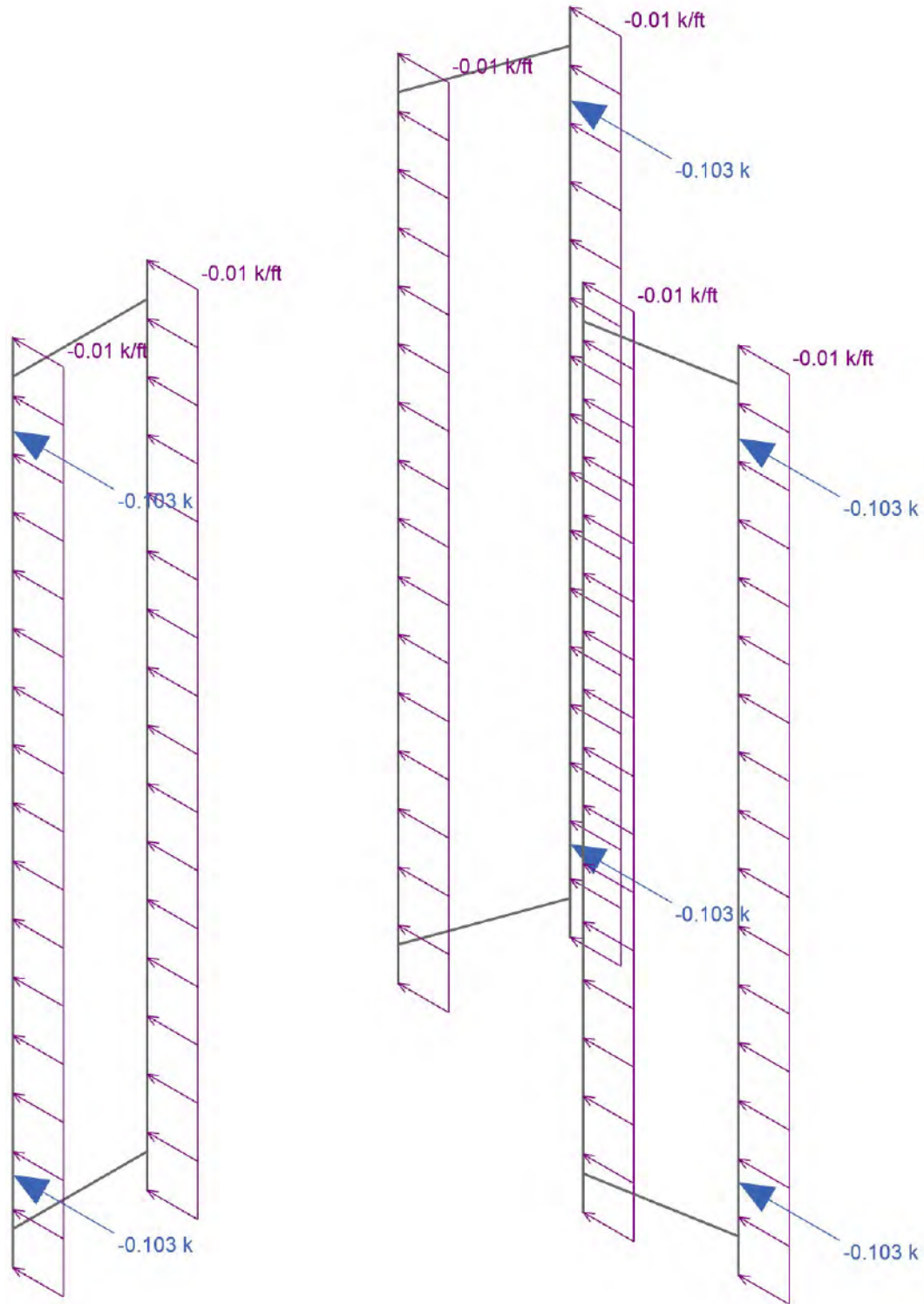
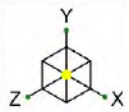
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10128136 - Woodbridge CT Route 69

SK-5

Oct 31, 2024 at 03:46 PM

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Loads: BLC 3, 90 Wind - No Ice
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RP

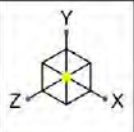
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10128136 - Woodbridge CT Route 69

SK-6

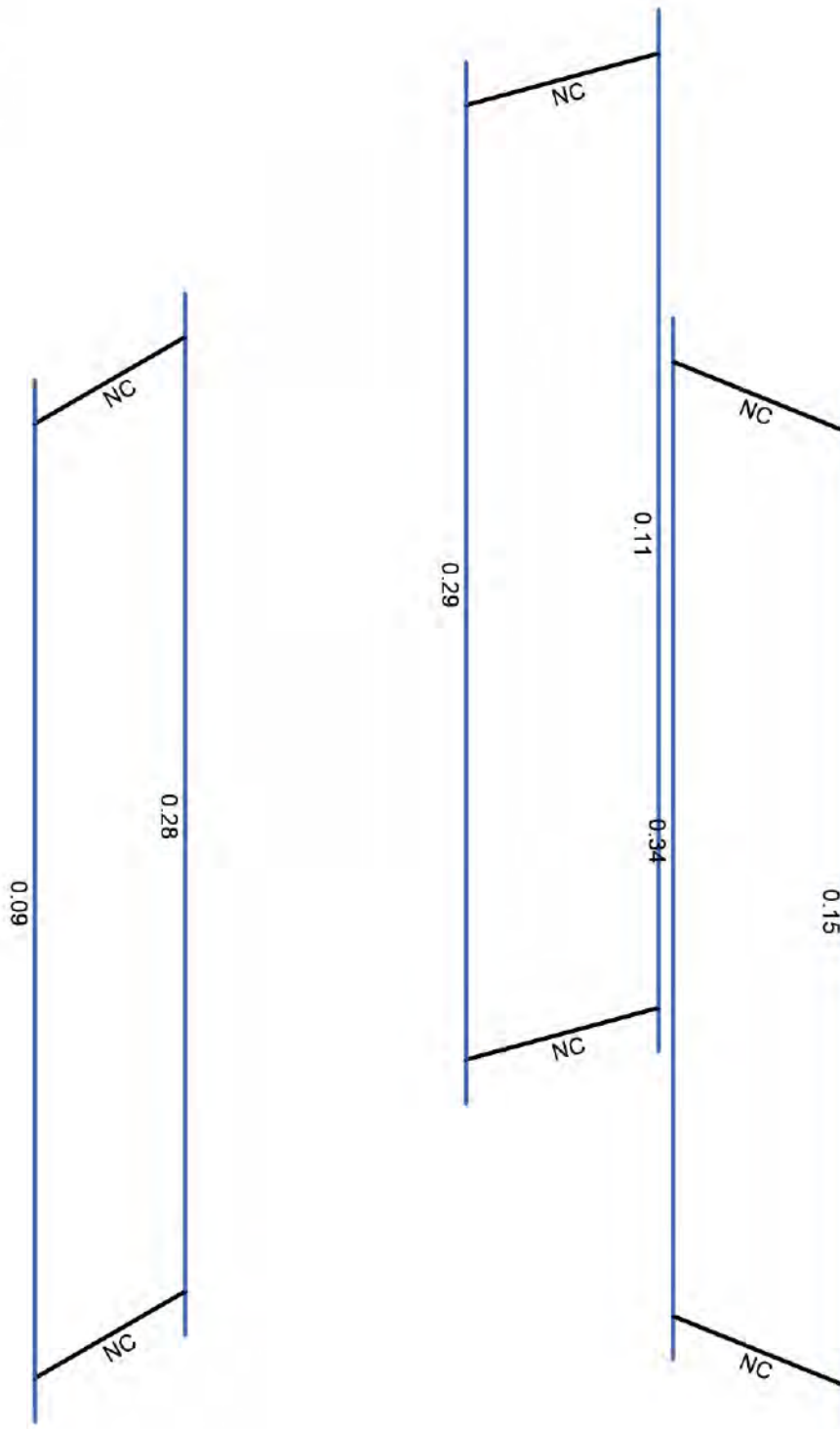
Oct 31, 2024 at 03:46 PM

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Code Check
(Env)

Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution



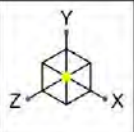
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10128136 - Woodbridge CT Route 69

SK-7

Oct 31, 2024 at 03:46 PM

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Shear Check
(Env)

Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0.-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution



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173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-8
Oct 31, 2024 at 03:46 PM
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Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	-0.455281	2.75	1.250873	
2	2	-0.455281	2.75	2.250873	
3	3	-0.455281	3	2.250873	
4	4	-0.455281	-3	2.250873	
5	5	1.310929	3	-0.231152	
6	6	1.310929	-3	-0.231152	
7	7	1.310929	2.75	-0.231152	
8	8	2.295736	2.75	-0.4048	
9	9	2.295736	3	-0.4048	
10	10	2.295736	-3	-0.4048	
11	11	-0.855648	3	-1.019721	
12	12	-0.855648	-3	-1.019721	
13	13	-0.855648	2.75	-1.019721	
14	14	-0.513628	2.75	-1.959414	
15	15	-0.513628	3	-1.959414	
16	16	-0.513628	-3	-1.959414	
17	17	-0.455281	-2.75	1.250873	
18	18	-0.455281	-2.75	2.250873	
19	19	-0.855648	-2.75	-1.019721	
20	20	-0.513628	-2.75	-1.959414	
21	21	1.310929	-2.75	-0.231152	
22	22	2.295736	-2.75	-0.4048	
23	23	-0.455281	3	1.250873	
24	24	-0.455281	-3	1.250873	
25	25	0	0	0	
26	26	1.310929	0	-0.231152	
27	27	-0.855648	0	-1.019721	
28	28	-0.455281	0	1.250873	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	26	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	27	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	28	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁻⁶ /F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3
9	Fe-410	29007.787	11156.841	0.3	0.667	0.49	36.26	1.5	58.016	1.5
10	Fe-570	29007.787	11156.841	0.3	0.667	0.49	49.313	1.5	58.016	1.5

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Mount Pipes	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		RIGID	None	None	RIGID	Typical
2	2	3	4	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
3	3	5	6	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
4	4	7	8		RIGID	None	None	RIGID	Typical
5	5	9	10	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
6	6	11	12	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
7	7	13	14		RIGID	None	None	RIGID	Typical
8	8	15	16	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
9	9	17	18		RIGID	None	None	RIGID	Typical
10	10	19	20		RIGID	None	None	RIGID	Typical
11	11	21	22		RIGID	None	None	RIGID	Typical
12	12	23	24	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	Col-Wall Vert Release	Physical	Deflection Ratio Options	Seismic DR
1	1		Yes	** NA **	None
2	2		Yes	** NA **	None
3	3		Yes	** NA **	None
4	4		Yes	** NA **	None
5	5		Yes	** NA **	None
6	6		Yes	** NA **	None
7	7		Yes	** NA **	None
8	8		Yes	** NA **	None
9	9		Yes	** NA **	None
10	10		Yes	** NA **	None
11	11		Yes	** NA **	None
12	12		Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	2	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
2	3	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
3	5	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
4	6	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
5	8	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
6	12	Mount Pipes	6	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.036	%10
2	2	Y	-0.036	%90
3	2	Y	0	0
4	2	Y	0	0
5	2	Y	0	0
6	8	Y	-0.036	%10

Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	8	Y	-0.036	%90
8	8	Y	0	0
9	8	Y	0	0
10	8	Y	0	0
11	5	Y	-0.036	%10
12	5	Y	-0.036	%90
13	5	Y	0	0
14	5	Y	0	0
15	5	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Z	-0.278	%10
2	2	Z	-0.278	%90
3	2	Z	0	0
4	2	Z	0	0
5	2	Z	0	0
6	8	Z	-0.278	%10
7	8	Z	-0.278	%90
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0
11	5	Z	-0.278	%10
12	5	Z	-0.278	%90
13	5	Z	0	0
14	5	Z	0	0
15	5	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	X	-0.103	%10
2	2	X	-0.103	%90
3	2	X	0	0
4	2	X	0	0
5	2	X	0	0
6	8	X	-0.103	%10
7	8	X	-0.103	%90
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0
11	5	X	-0.103	%10
12	5	X	-0.103	%90
13	5	X	0	0
14	5	X	0	0
15	5	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Z	-0.049	%10
2	2	Z	-0.049	%90
3	2	Z	0	0
4	2	Z	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
5	2	Z	0	0
6	8	Z	-0.049	%10
7	8	Z	-0.049	%90
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0
11	5	Z	-0.049	%10
12	5	Z	-0.049	%90
13	5	Z	0	0
14	5	Z	0	0
15	5	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	X	-0.018	%10
2	2	X	-0.018	%90
3	2	X	0	0
4	2	X	0	0
5	2	X	0	0
6	8	X	-0.018	%10
7	8	X	-0.018	%90
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0
11	5	X	-0.018	%10
12	5	X	-0.018	%90
13	5	X	0	0
14	5	X	0	0
15	5	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Z	-0.018	%10
2	2	Z	-0.018	%90
3	2	Z	0	0
4	2	Z	0	0
5	2	Z	0	0
6	8	Z	-0.018	%10
7	8	Z	-0.018	%90
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0
11	5	Z	-0.018	%10
12	5	Z	-0.018	%90
13	5	Z	0	0
14	5	Z	0	0
15	5	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	X	-0.007	%10
2	2	X	-0.007	%90

Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
3	2	X	0	0
4	2	X	0	0
5	2	X	0	0
6	8	X	-0.007	%10
7	8	X	-0.007	%90
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0
11	5	X	-0.007	%10
12	5	X	-0.007	%90
13	5	X	0	0
14	5	X	0	0
15	5	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.101	%10
2	2	Y	-0.101	%90
3	2	Y	0	0
4	2	Y	0	0
5	2	Y	0	0
6	8	Y	-0.101	%10
7	8	Y	-0.101	%90
8	8	Y	0	0
9	8	Y	0	0
10	8	Y	0	0
11	5	Y	-0.101	%10
12	5	Y	-0.101	%90
13	5	Y	0	0
14	5	Y	0	0
15	5	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Z	-0.023	%10
2	2	Z	-0.023	%90
3	2	Z	0	0
4	2	Z	0	0
5	2	Z	0	0
6	8	Z	-0.023	%10
7	8	Z	-0.023	%90
8	8	Z	0	0
9	8	Z	0	0
10	8	Z	0	0
11	5	Z	-0.023	%10
12	5	Z	-0.023	%90
13	5	Z	0	0
14	5	Z	0	0
15	5	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	X	-0.023	%10
2	2	X	-0.023	%90
3	2	X	0	0
4	2	X	0	0
5	2	X	0	0
6	8	X	-0.023	%10
7	8	X	-0.023	%90
8	8	X	0	0
9	8	X	0	0
10	8	X	0	0
11	5	X	-0.023	%10
12	5	X	-0.023	%90
13	5	X	0	0
14	5	X	0	0
15	5	X	0	0

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	Z	-0.01	-0.01	0	%100
2	3	Z	-0.01	-0.01	0	%100
3	5	Z	-0.01	-0.01	0	%100
4	6	Z	-0.01	-0.01	0	%100
5	8	Z	-0.01	-0.01	0	%100
6	12	Z	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	X	-0.01	-0.01	0	%100
2	3	X	-0.01	-0.01	0	%100
3	5	X	-0.01	-0.01	0	%100
4	6	X	-0.01	-0.01	0	%100
5	8	X	-0.01	-0.01	0	%100
6	12	X	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	Z	-0.002	-0.002	0	%100
2	3	Z	-0.002	-0.002	0	%100
3	5	Z	-0.002	-0.002	0	%100
4	6	Z	-0.002	-0.002	0	%100
5	8	Z	-0.002	-0.002	0	%100
6	12	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	X	-0.002	-0.002	0	%100
2	3	X	-0.002	-0.002	0	%100
3	5	X	-0.002	-0.002	0	%100
4	6	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
5	8	X	-0.002	-0.002	0	%100
6	12	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	Z	-0.0003	-0.0003	0	%100
2	3	Z	-0.0003	-0.0003	0	%100
3	5	Z	-0.0003	-0.0003	0	%100
4	6	Z	-0.0003	-0.0003	0	%100
5	8	Z	-0.0003	-0.0003	0	%100
6	12	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	X	-0.0003	-0.0003	0	%100
2	3	X	-0.0003	-0.0003	0	%100
3	5	X	-0.0003	-0.0003	0	%100
4	6	X	-0.0003	-0.0003	0	%100
5	8	X	-0.0003	-0.0003	0	%100
6	12	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	Y	-0.005	-0.005	0	%100
2	3	Y	-0.005	-0.005	0	%100
3	5	Y	-0.005	-0.005	0	%100
4	6	Y	-0.005	-0.005	0	%100
5	8	Y	-0.005	-0.005	0	%100
6	12	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	Z	-0.001	-0.001	0	%100
2	3	Z	-0.001	-0.001	0	%100
3	5	Z	-0.001	-0.001	0	%100
4	6	Z	-0.001	-0.001	0	%100
5	8	Z	-0.001	-0.001	0	%100
6	12	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	2	X	-0.001	-0.001	0	%100
2	3	X	-0.001	-0.001	0	%100
3	5	X	-0.001	-0.001	0	%100
4	6	X	-0.001	-0.001	0	%100
5	8	X	-0.001	-0.001	0	%100
6	12	X	-0.001	-0.001	0	%100

Nodal Loads and Enforced Displacements

No Data to Print...

Basic Load Cases

	BLC Description	Category	Y Gravity	Point	Distributed
1	Dead	DL	-1	15	
2	0 Wind - No Ice	WLZ		15	6
3	90 Wind - No Ice	WLX		15	6
4	0 Wind - Ice	WLZ		15	6
5	90 Wind - Ice	WLX		15	6
6	0 Wind - Service	WLZ		15	6
7	90 Wind - Service	WLX		15	6
8	Ice	OL1		15	6
9	0 Seismic	ELZ		15	6
10	90 Seismic	ELX		15	6
11	Live Load a	LL			
12	Live Load b	LL			
13	Live Load c	LL			
14	Live Load d	LL			
15	Maint LL 1	LL			
16	Maint LL 2	LL			
17	Maint LL 3	LL			
18	Maint LL 4	LL			
19	Maint LL 5	LL			
20	Maint LL 6	LL			
21	Maint LL 7	LL			
22	Maint LL 8	LL			
23	Maint LL 9	LL			
24	Maint LL 10	LL			
25	Maint LL 11	LL			
26	Maint LL 12	LL			
27	Maint LL 13	LL			
28	Maint LL 14	LL			
29	Maint LL 15	LL			
30	Maint LL 16	LL			
31	Maint LL 17	LL			
32	Maint LL 18	LL			
33	Maint LL 19	LL			
34	Maint LL 20	LL			
35	Maint LL 21	LL			
36	Maint LL 22	LL			
37	Maint LL 23	LL			
38	Maint LL 24	LL			

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5
104	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					33	1.5
105	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					34	1.5
106	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					35	1.5
107	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					36	1.5
108	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					37	1.5
109	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					38	1.5

Envelope Node Reactions

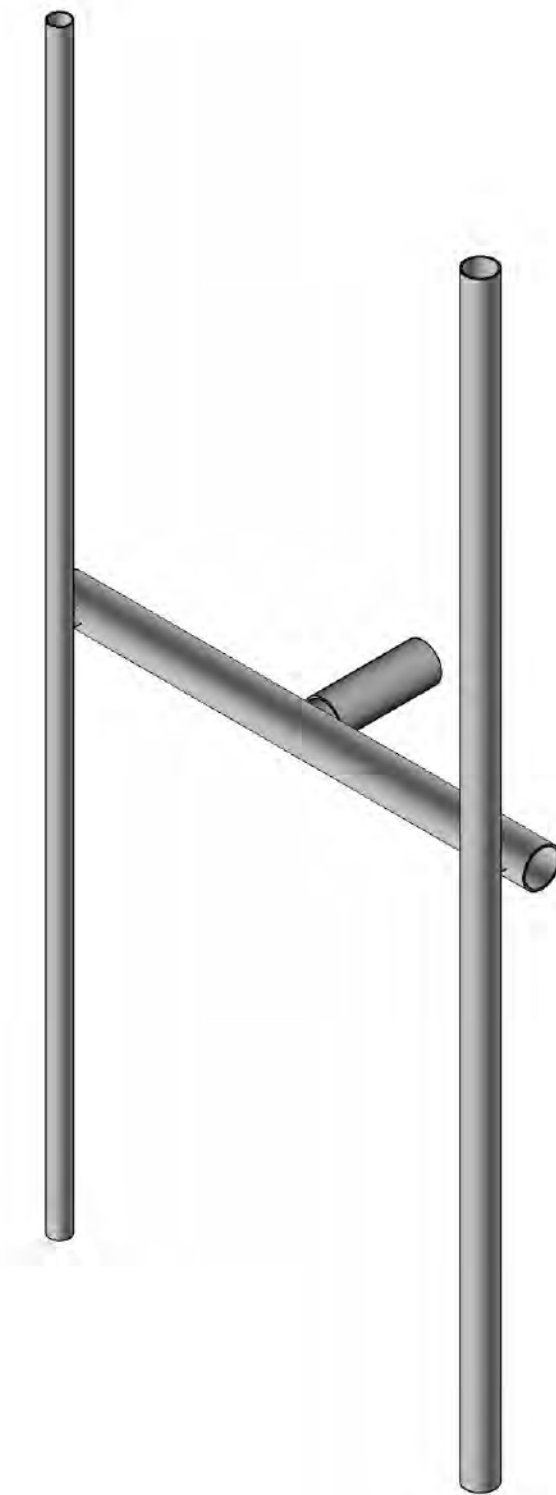
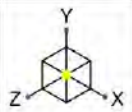
Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	27	max	0.33	5	0.398	16	0.68	2	0.323	15	0.325	10
2		min	-0.33	11	0.137	10	-0.68	8	0.105	9	-0.323	4
3	28	max	0.33	5	0.398	20	0.68	2	-0.112	2	0.268	5
4		min	-0.33	11	0.137	2	-0.68	8	-0.343	20	-0.268	11
5	26	max	0.33	5	0.398	14	0.68	2	0.06	14	0.609	8
6		min	-0.33	11	0.137	8	-0.68	8	0.018	8	-0.607	2
7	Totals:	max	0.99	5	1.194	15	2.039	2				

Envelope Node Reactions (Continued)

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
8 min	-0.99	11	0.411	9	-2.039	8						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	3	PIPE 2.0	0.338	3	8	0.219	3	8	20.867	32.13	1.872	1.872	1	H1-1b	
2	6	PIPE 2.0	0.294	3	8	0.127	3	9	20.867	32.13	1.872	1.872	1	H1-1b	
3	12	PIPE 2.0	0.284	3	2	0.098	3	11	20.867	32.13	1.872	1.872	1	H1-1b	
4	5	PIPE 2.0	0.151	0.25	2	0.032	0.25	2	20.867	32.13	1.872	1.872	1	H1-1b	
5	8	PIPE 2.0	0.107	0.25	3	0.033	5.75	8	20.867	32.13	1.872	1.872	1	H1-1b	
6	2	PIPE 2.0	0.093	0.25	8	0.033	5.75	2	20.867	32.13	1.872	1.872	1	H1-1b	



Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

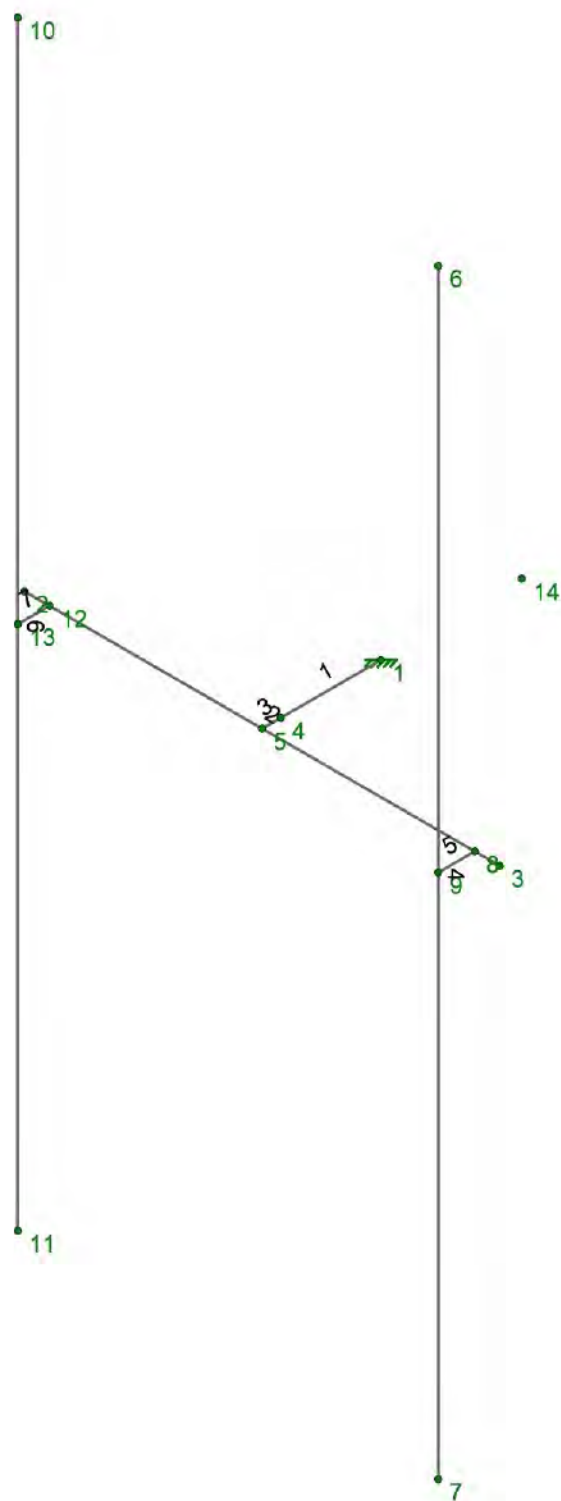
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10128136 - Woodbridge CT Route 69

SK-1

Oct 31, 2024 at 03:52 PM

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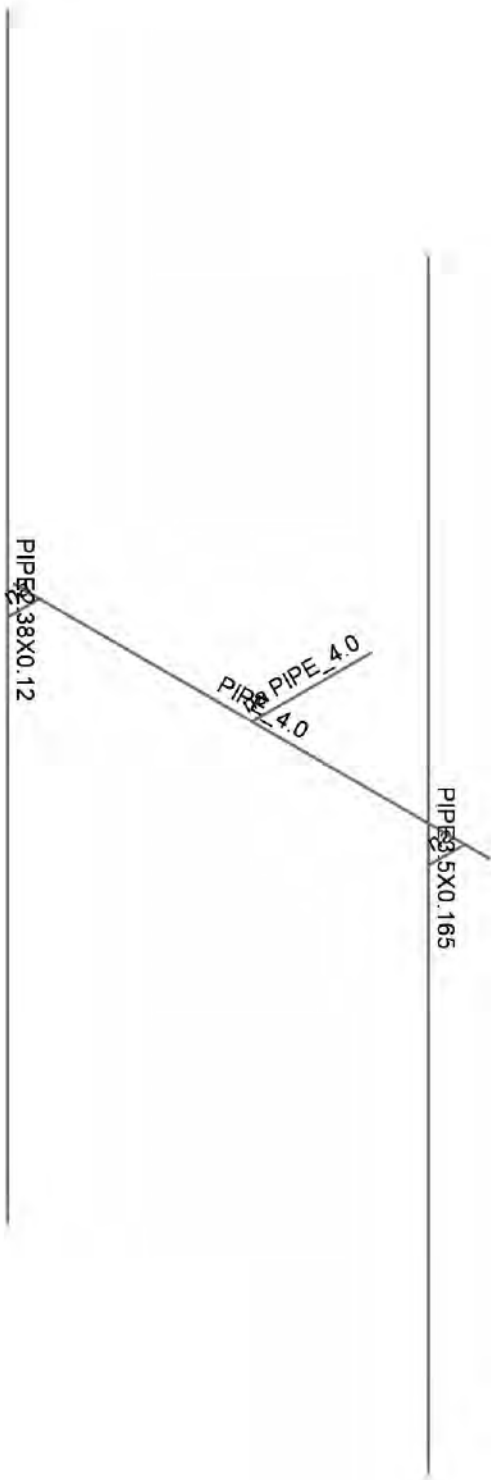
IRISA
A NEMETSCHKE COMPANY

RP

10128136 - Woodbridge CT Route 69

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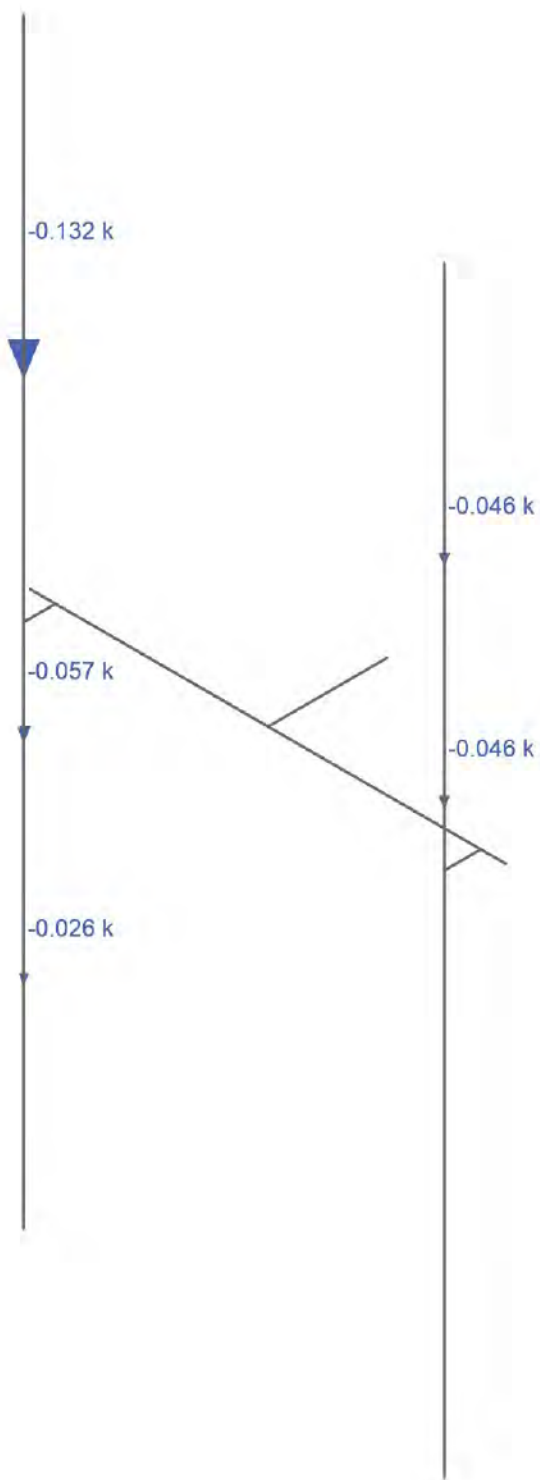
Envelope Only Solution



MTS Engineering, P.L.L.C.
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10128136 - Woodbridge CT Route 69

SK-3
Oct 31, 2024 at 03:52 PM
173131_001_01_0002_Woo...



Loads: BLC 1, Dead
Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

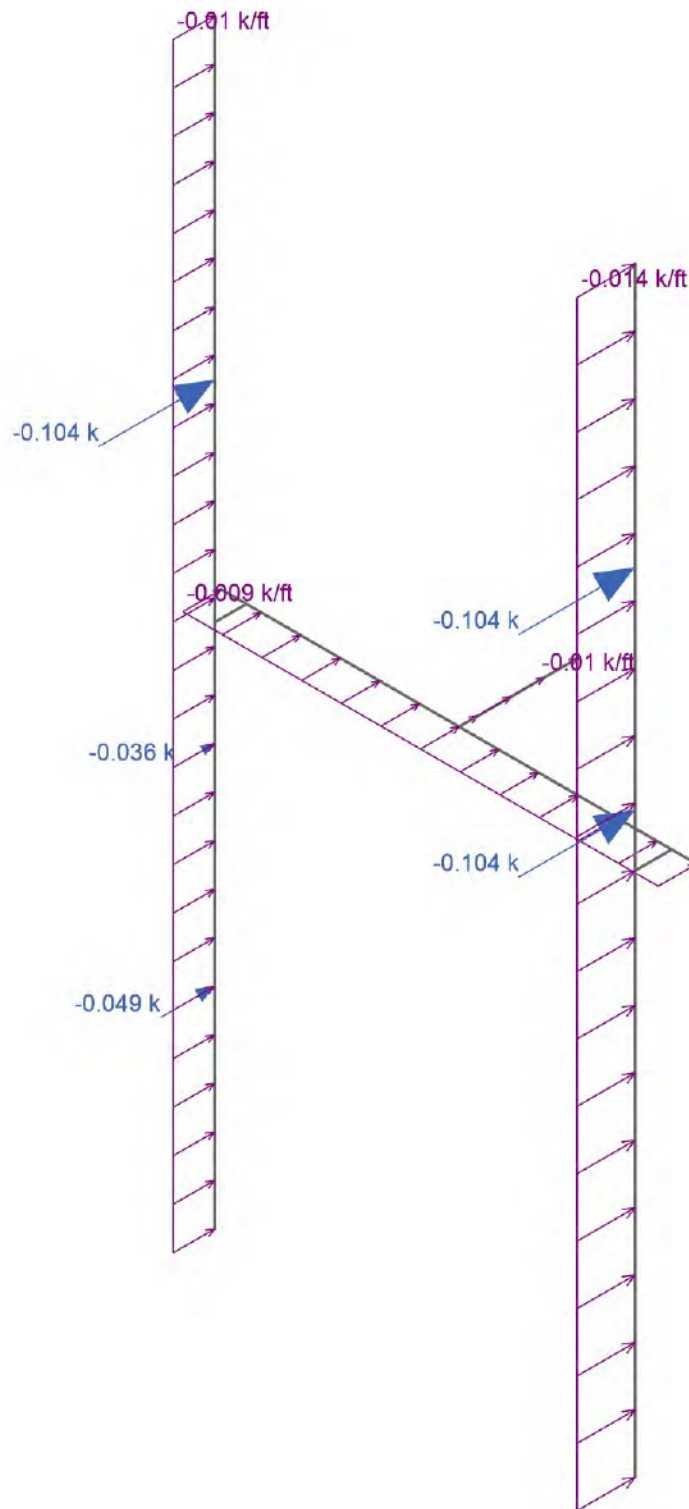
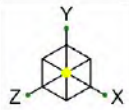
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10128136 - Woodbridge CT Route 69

SK-4

Oct 31, 2024 at 03:52 PM

173131_001_01_0002_Woo...



Loads: BLC 2, 0 Wind - No Ice
Envelope Only Solution



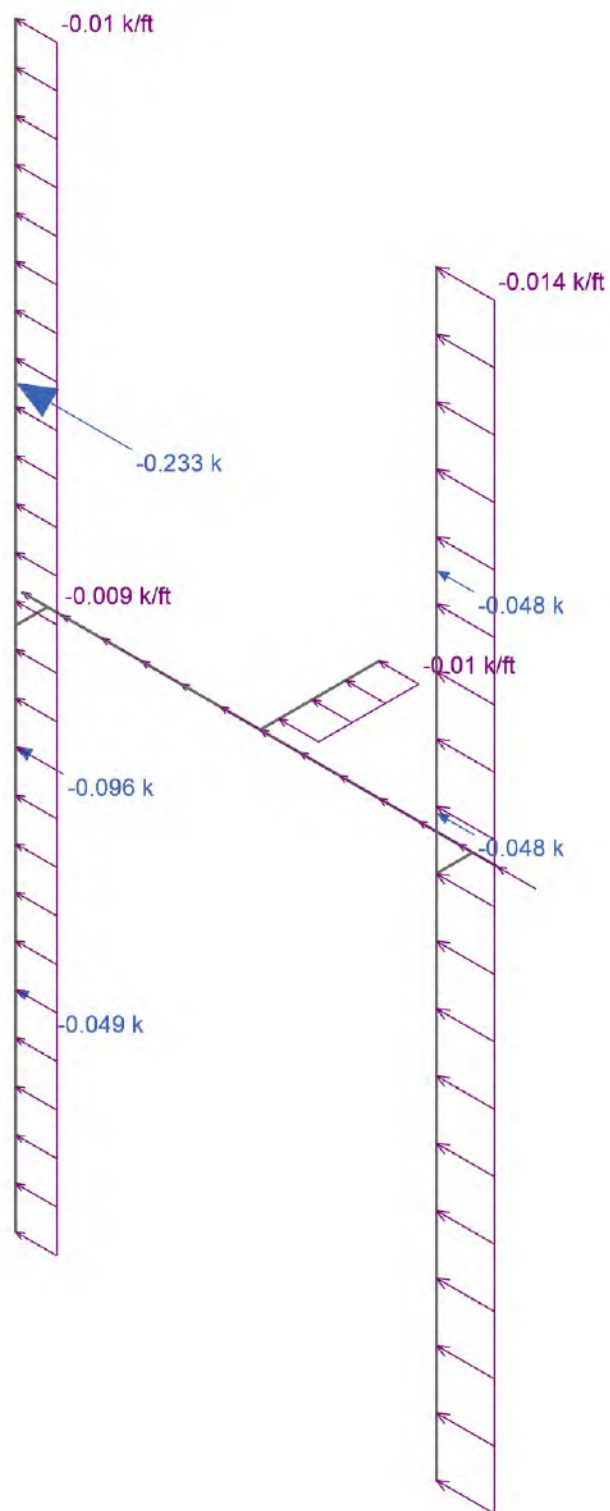
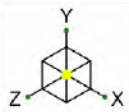
MTS Engineering, P.L.L.C.
RP
173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-5

Oct 31, 2024 at 03:53 PM

173131_001_01_0002_Woo...



Loads: BLC 3, 90 Wind - No Ice
Envelope Only Solution



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RP

173131.001.01.0002

10128136 - Woodbridge CT Route 69

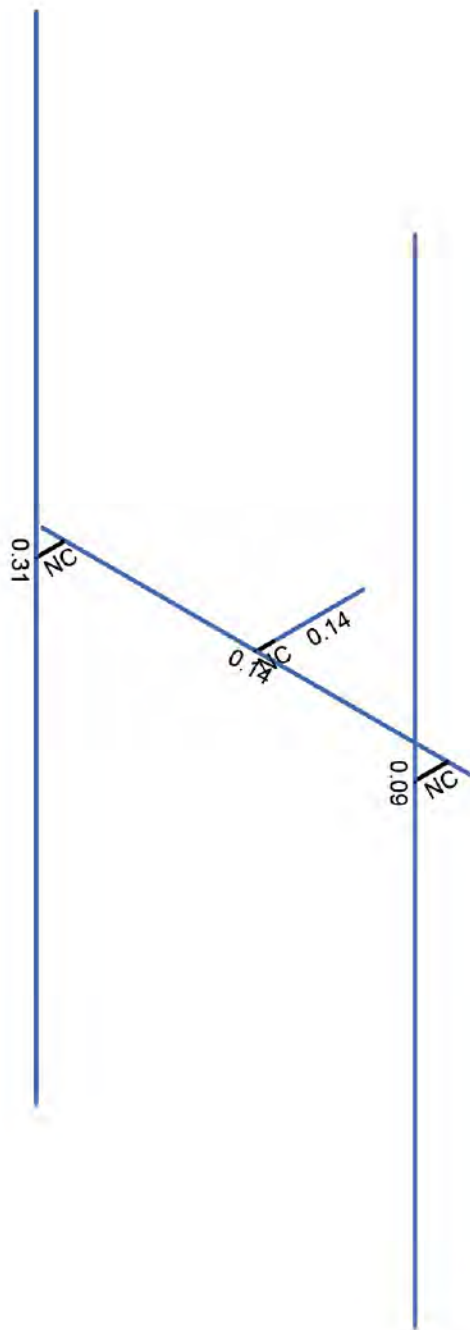
SK-6

Oct 31, 2024 at 03:53 PM

173131_001_01_0002_Woo...



Code Check (Env)	
	No Calc
	> 1.0
	.90-1.0
	.75-.90
	.50-.75
	0-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution



MTS Engineering, P.L.L.C.
RP
173131.001.01.0002

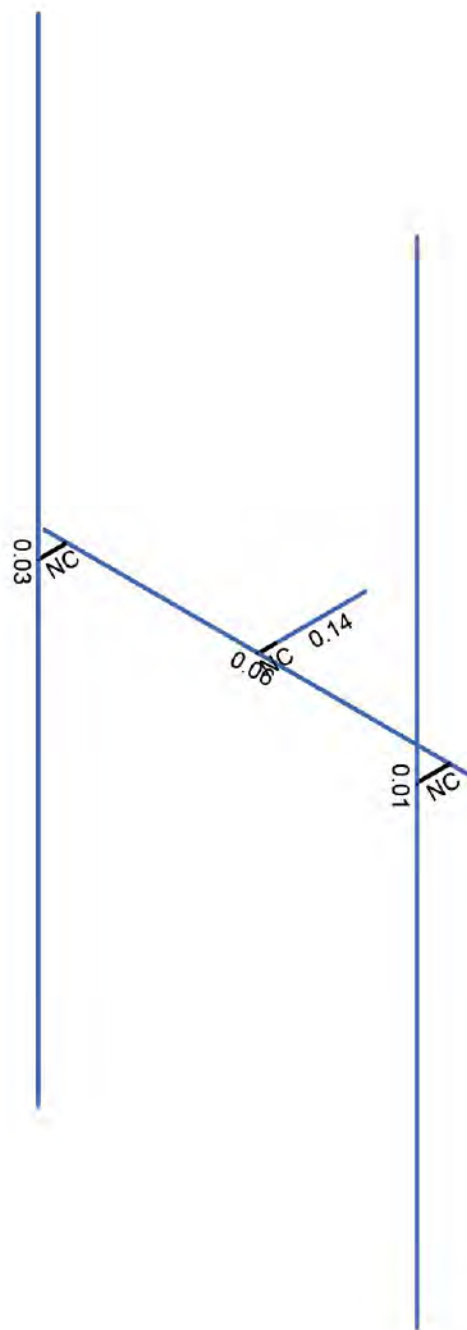
10128136 - Woodbridge CT Route 69

SK-7
Oct 31, 2024 at 03:53 PM
173131_001_01_0002_Woo...



Shear Check
(Env)

■	No Calc
■	> 1.0
■	.90-1.0
■	.75-.90
■	.50-.75
■	0.-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution



MTS Engineering, P.L.L.C.
RP
173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-8

Oct 31, 2024 at 03:53 PM

173131_001_01_0002_Woo...

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	1.4071	
2	2	-2.375	0	2.5946	
3	3	2.375	0	2.5946	
4	4	0	0	2.4071	
5	5	0	0	2.5946	
6	6	2.125	5.25	2.959183	
7	7	2.125	-5.25	2.959183	
8	8	2.125	0	2.5946	
9	9	2.125	0	2.959183	
10	10	-2.125	5.25	2.912308	
11	11	-2.125	-5.25	2.912308	
12	12	-2.125	0	2.5946	
13	13	-2.125	0	2.912308	
14	14	0	0	0	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁻⁵ °F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3
9	Fe-410	29007.787	11156.841	0.3	0.667	0.49	36.26	1.5	58.016	1.5
10	Fe-570	29007.787	11156.841	0.3	0.667	0.49	49.313	1.5	58.016	1.5

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Main Horizontals	PIPE 4.0	Beam	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82
2	Support Arms	PIPE 4.0	Beam	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82
3	MF-P1	PIPE3.5X0.165	Column	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409
4	MF-P2	PIPE2.38X0.12	Column	Pipe	A500 Gr.C	Typical	0.852	0.545	0.545

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	4		Support Arms	Beam	Pipe	A53 Gr.B	Typical
2	2	2	3		Main Horizontals	Beam	Pipe	A53 Gr.B	Typical
3	3	4	5		RIGID	None	None	RIGID	Typical
4	4	6	7	270	MF-P1	Column	Pipe	A500 Gr.C	Typical
5	5	8	9		RIGID	None	None	RIGID	Typical
6	6	10	11	270	MF-P2	Column	Pipe	A500 Gr.C	Typical
7	7	12	13		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	Col-Wall Vert Release	Physical	Deflection Ratio Options	Seismic DR
1	1		Yes	Default	None
2	2		Yes	Default	None
3	3		Yes	** NA **	None
4	4		Yes	** NA **	None
5	5		Yes	** NA **	None
6	6		Yes	** NA **	None
7	7		Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	1	Support Arms	1	Lbyy	N/A	N/A	Lateral
2	2	Main Horizontals	4.75	Lbyy	N/A	N/A	Lateral
3	4	MF-P1	10.5	Lbyy	N/A	N/A	Lateral
4	6	MF-P2	10.5	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Y	-0.046	%25
2	4	Y	-0.046	%45
3	4	Y	0	0
4	4	Y	0	0
5	4	Y	0	0
6	6	Y	-0.065	%30
7	6	Y	-0.057	%60
8	6	Y	-0.067	%30
9	6	Y	-0.026	%80
10	6	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Z	-0.104	%25
2	4	Z	-0.104	%45
3	4	Z	0	0
4	4	Z	0	0
5	4	Z	0	0
6	6	Z	-0.052	%30
7	6	Z	-0.036	%60
8	6	Z	-0.052	%30
9	6	Z	-0.049	%80
10	6	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	X	-0.048	%25
2	4	X	-0.048	%45
3	4	X	0	0
4	4	X	0	0
5	4	X	0	0
6	6	X	-0.116	%30

Member Point Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	6	X	-0.096	%60
8	6	X	-0.117	%30
9	6	X	-0.049	%80
10	6	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Z	-0.018	%25
2	4	Z	-0.018	%45
3	4	Z	0	0
4	4	Z	0	0
5	4	Z	0	0
6	6	Z	-0.009	%30
7	6	Z	-0.006	%60
8	6	Z	-0.009	%30
9	6	Z	-0.009	%80
10	6	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	X	-0.009	%25
2	4	X	-0.009	%45
3	4	X	0	0
4	4	X	0	0
5	4	X	0	0
6	6	X	-0.021	%30
7	6	X	-0.017	%60
8	6	X	-0.021	%30
9	6	X	-0.009	%80
10	6	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Z	-0.007	%25
2	4	Z	-0.007	%45
3	4	Z	0	0
4	4	Z	0	0
5	4	Z	0	0
6	6	Z	-0.003	%30
7	6	Z	-0.002	%60
8	6	Z	-0.003	%30
9	6	Z	-0.003	%80
10	6	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	X	-0.003	%25
2	4	X	-0.003	%45
3	4	X	0	0
4	4	X	0	0

Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
5	4	X	0	0
6	6	X	-0.007	%30
7	6	X	-0.006	%60
8	6	X	-0.007	%30
9	6	X	-0.003	%80
10	6	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Y	-0.041	%25
2	4	Y	-0.041	%45
3	4	Y	0	0
4	4	Y	0	0
5	4	Y	0	0
6	6	Y	-0.045	%30
7	6	Y	-0.036	%60
8	6	Y	-0.045	%30
9	6	Y	-0.043	%80
10	6	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	Z	-0.027	%25
2	4	Z	-0.027	%45
3	4	Z	0	0
4	4	Z	0	0
5	4	Z	0	0
6	6	Z	-0.019	%30
7	6	Z	-0.017	%60
8	6	Z	-0.019	%30
9	6	Z	-0.008	%80
10	6	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	4	X	-0.027	%25
2	4	X	-0.027	%45
3	4	X	0	0
4	4	X	0	0
5	4	X	0	0
6	6	X	-0.019	%30
7	6	X	-0.017	%60
8	6	X	-0.019	%30
9	6	X	-0.008	%80
10	6	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	2	Y	-0.25	%95

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%50

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.01	-0.01	0	%100
2	2	Z	-0.009	-0.009	0	%100
3	4	Z	-0.014	-0.014	0	%100
4	6	Z	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.01	-0.01	0	%100
2	2	X	-0.009	-0.009	0	%100
3	4	X	-0.014	-0.014	0	%100
4	6	X	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.003	-0.003	0	%100
2	2	Z	-0.003	-0.003	0	%100
3	4	Z	-0.002	-0.002	0	%100
4	6	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.003	-0.003	0	%100
2	2	X	-0.003	-0.003	0	%100
3	4	X	-0.002	-0.002	0	%100
4	6	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0005	-0.0005	0	%100
2	2	Z	-0.0006	-0.0006	0	%100
3	4	Z	-0.0005	-0.0005	0	%100
4	6	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0005	-0.0005	0	%100
2	2	X	-0.0006	-0.0006	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
3	4	X	-0.0005	-0.0005	0	%100
4	6	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.008	-0.008	0	%100
2	2	Y	-0.008	-0.008	0	%100
3	4	Y	-0.007	-0.007	0	%100
4	6	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.003	-0.003	0	%100
2	2	Z	-0.003	-0.003	0	%100
3	4	Z	-0.002	-0.002	0	%100
4	6	Z	-0.0008	-0.0008	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.003	-0.003	0	%100
2	2	X	-0.003	-0.003	0	%100
3	4	X	-0.002	-0.002	0	%100
4	6	X	-0.0008	-0.0008	0	%100

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	8	L	Y	-0.25

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	12	L	Y	-0.25

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	Dead	DL	-1		10	
2	0 Wind - No Ice	WLZ			10	4
3	90 Wind - No Ice	WLX			10	4
4	0 Wind - Ice	WLZ			10	4
5	90 Wind - Ice	WLX			10	4
6	0 Wind - Service	WLZ			10	4
7	90 Wind - Service	WLX			10	4
8	Ice	OL1			10	4
9	0 Seismic	ELZ			10	4
10	90 Seismic	ELX			10	4
11	Live Load a	LL		1		
12	Live Load b	LL		1		
13	Live Load c	LL				

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
14	Live Load d	LL				
15	Maint LL 1	LL			1	
16	Maint LL 2	LL			1	
17	Maint LL 3	LL			1	
18	Maint LL 4	LL				
19	Maint LL 5	LL				
20	Maint LL 6	LL				
21	Maint LL 7	LL				
22	Maint LL 8	LL				
23	Maint LL 9	LL				
24	Maint LL 10	LL				
25	Maint LL 11	LL				
26	Maint LL 12	LL				
27	Maint LL 13	LL				
28	Maint LL 14	LL				
29	Maint LL 15	LL				
30	Maint LL 16	LL				
31	Maint LL 17	LL				
32	Maint LL 18	LL				
33	Maint LL 19	LL				
34	Maint LL 20	LL				
35	Maint LL 21	LL				
36	Maint LL 22	LL				
37	Maint LL 23	LL				
38	Maint LL 24	LL				

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5

Load Combinations (Continued)

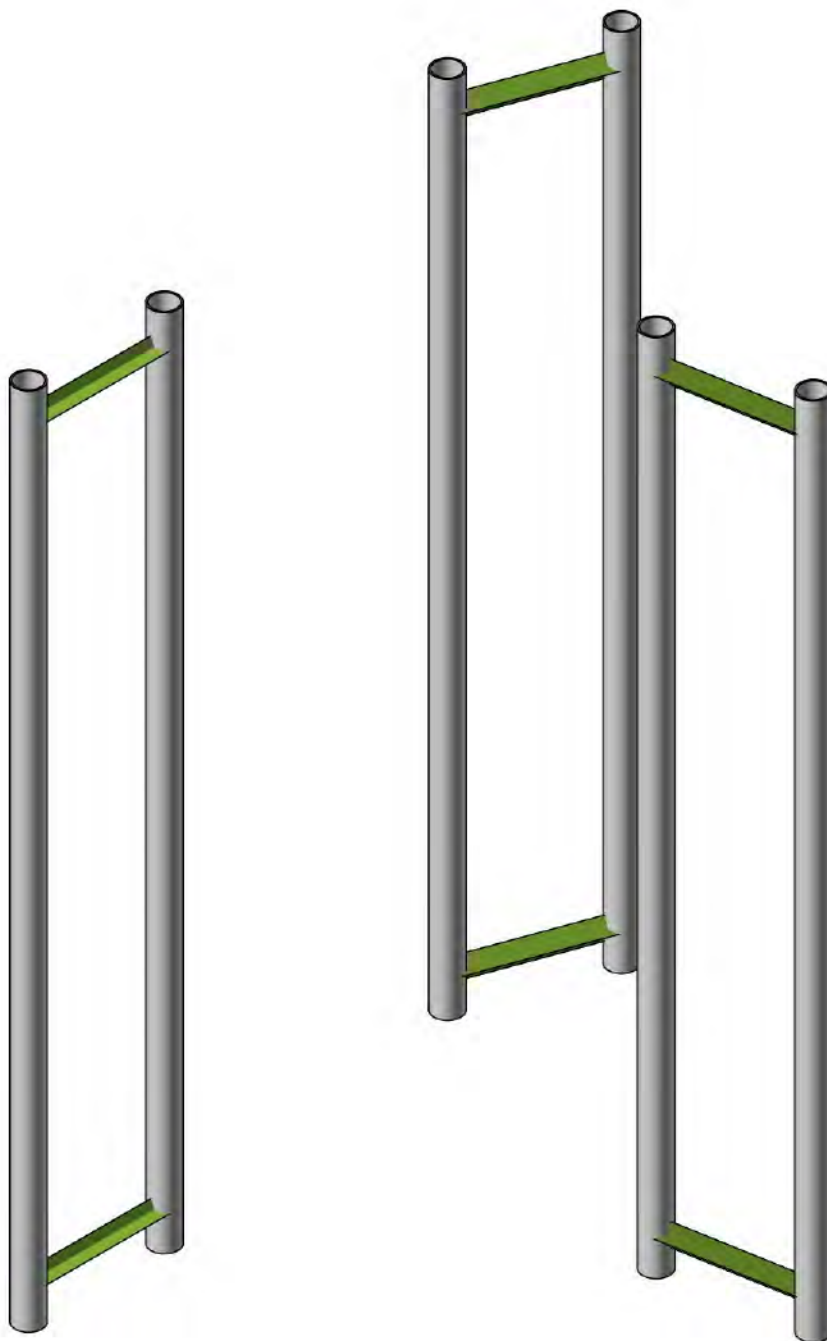
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83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5
104	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					33	1.5
105	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					34	1.5
106	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					35	1.5
107	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					36	1.5
108	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					37	1.5
109	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					38	1.5

Envelope Node Reactions

Node Label			X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	0.784	5	0.973	25	0.707	2	-0.446	2	1.167	5	0.588	47
2		min	-0.784	11	0.55	7	-0.707	8	-1.495	20	-1.168	11	-1.056	53
3	Totals:	max	0.784	5	0.973	25	0.707	2						
4		min	-0.784	11	0.55	7	-0.707	8						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

Member	Shape	Code Check	Loc [ft]	LC	Shear	Check	Loc [ft]	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	PIPE 4.0	0.141	0	20	0.144	0	53	92.942	93.24	10.631	10.631	1	H1-1b
2	2	PIPE 4.0	0.139	2.375	53	0.058	2.375	8	86.748	93.24	10.631	10.631	1	H1-1b
3	4	PIPE 3.5X0.165	0.085	5.25	8	0.013	5.25	8	33.261	71.57	6.336	6.336	1	H1-1b
4	6	PIPE 2.38X0.12	0.31	5.25	5	0.027	5.25	5	7.755	35.273	2.115	2.115	1	H1-1b



Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

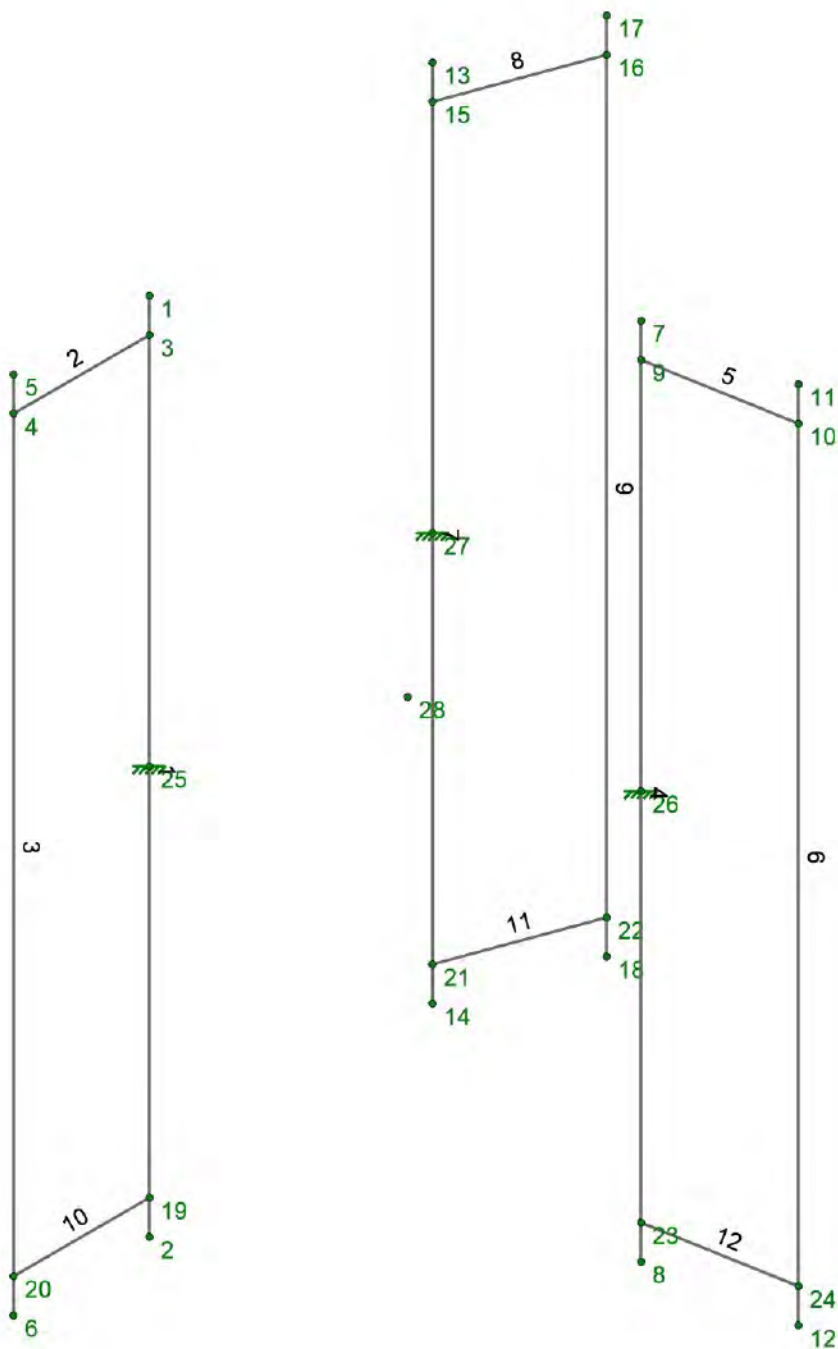
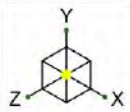
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10128136 - Woodbridge CT Route 69

SK-1

Oct 31, 2024 at 03:59 PM

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Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

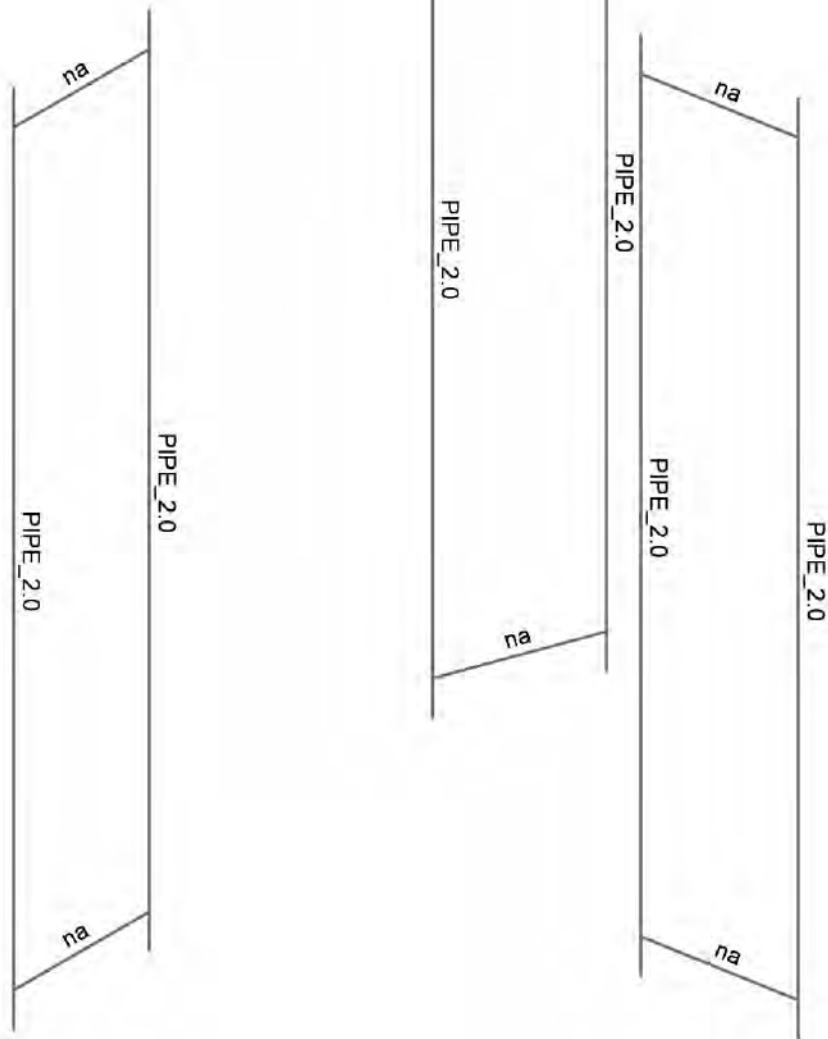
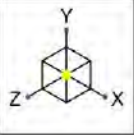
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Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

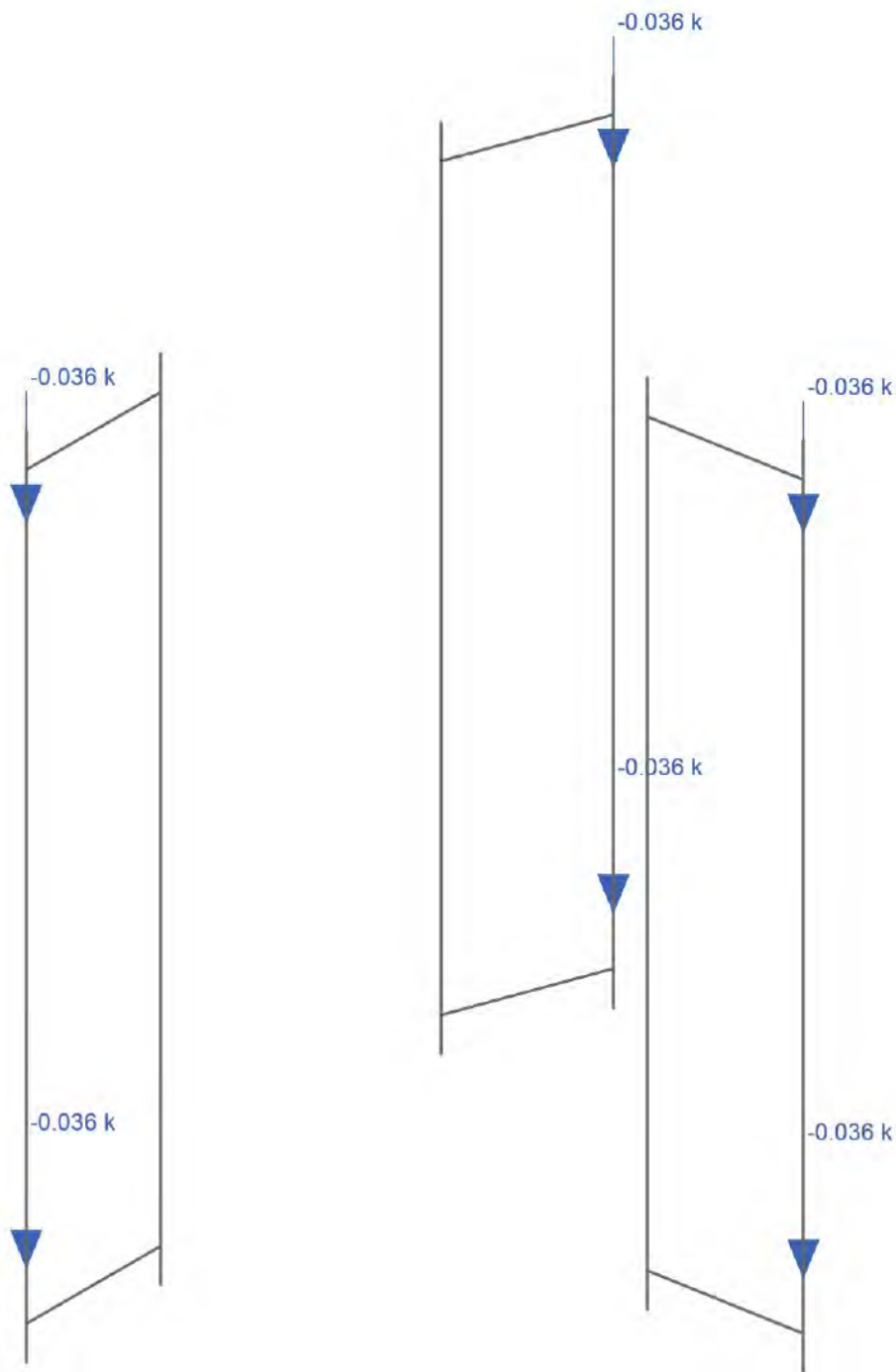
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10128136 - Woodbridge CT Route 69

SK-3

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Loads: BLC 1, Dead
Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

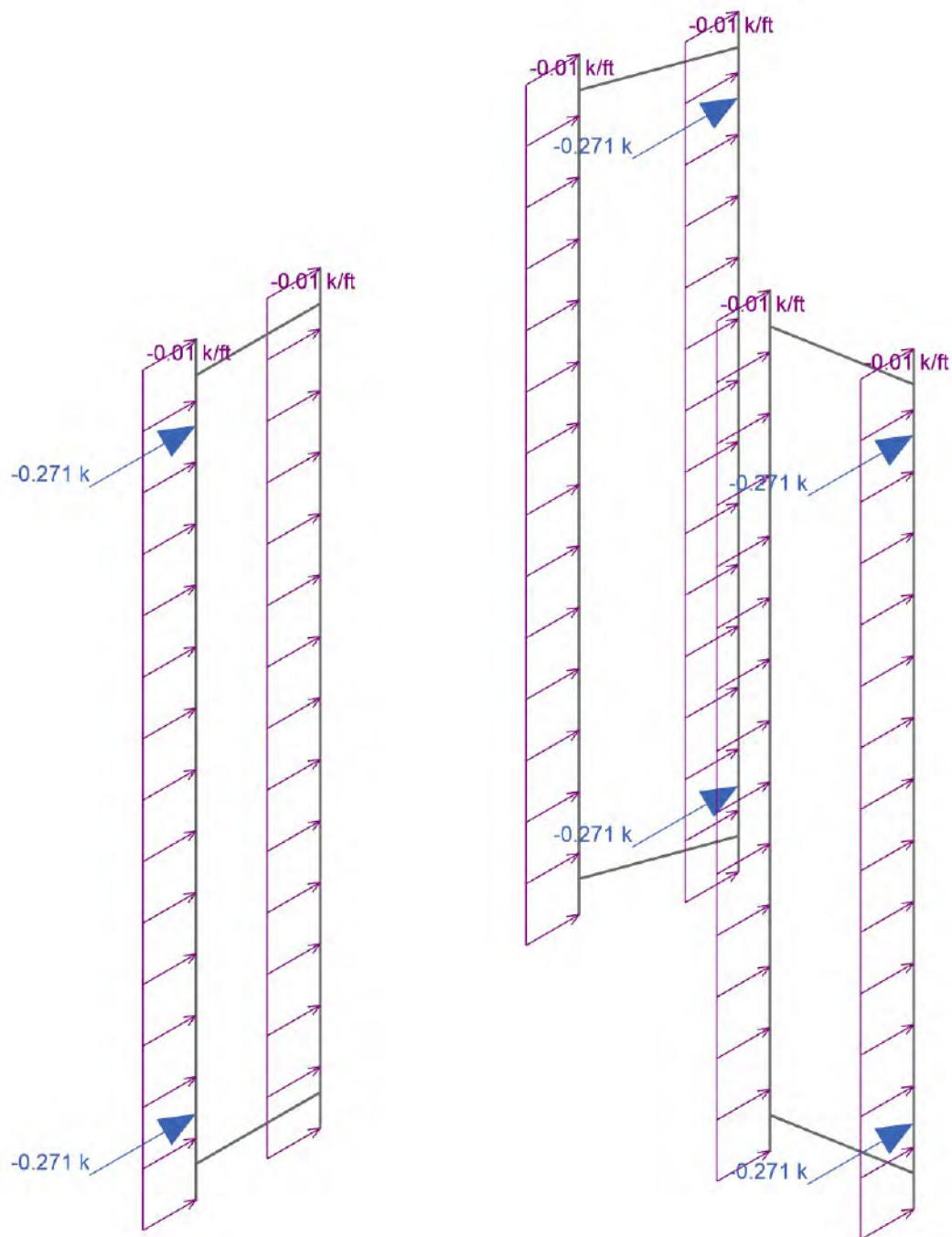
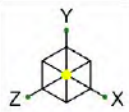
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10128136 - Woodbridge CT Route 69

SK-4

Oct 31, 2024 at 04:00 PM

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Loads: BLC 2, 0 Wind - No Ice
Envelope Only Solution



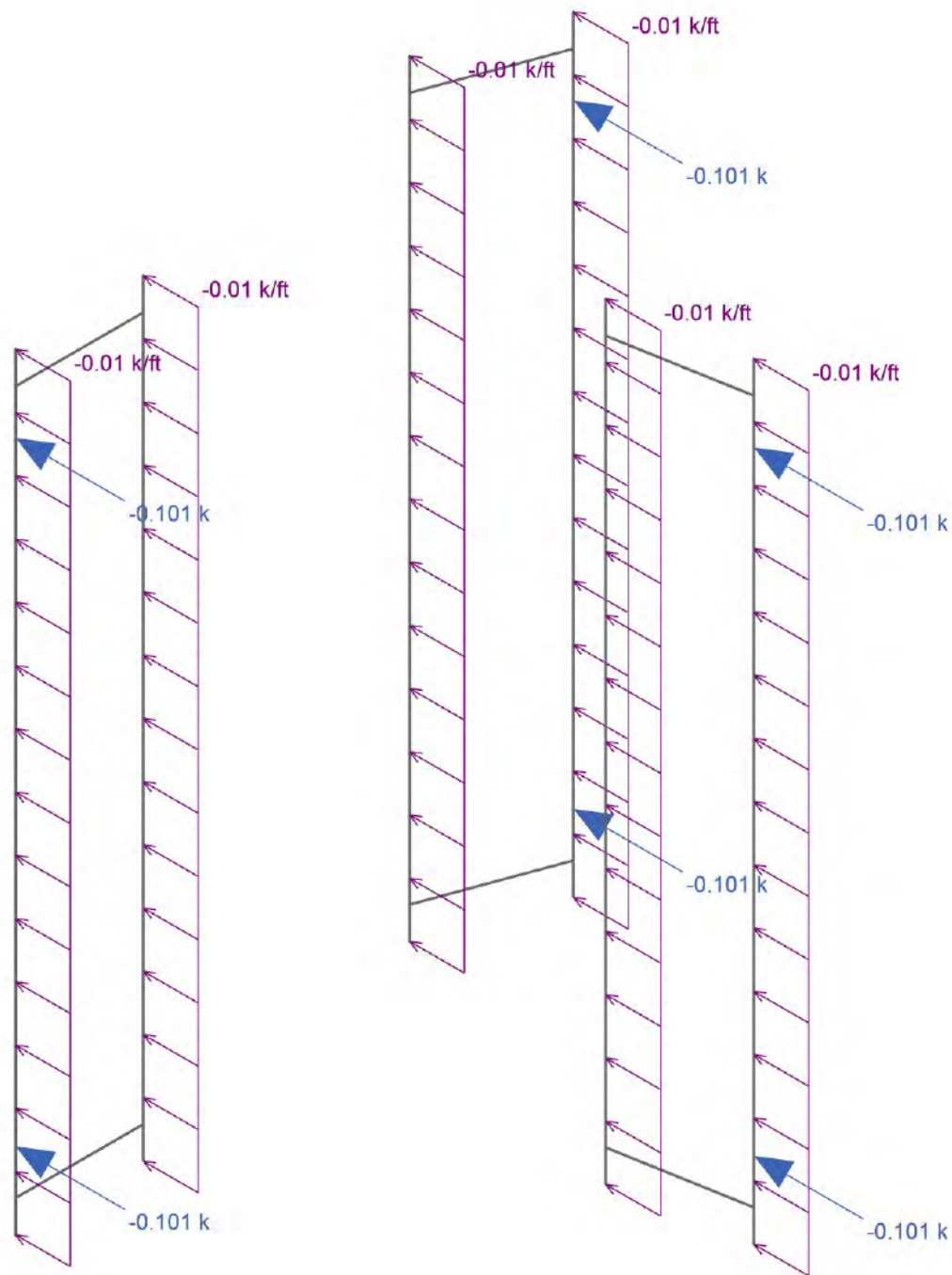
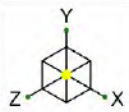
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10128136 - Woodbridge CT Route 69

SK-5

Oct 31, 2024 at 04:00 PM

173131_001_01_0002_Woo...



Loads: BLC 3, 90 Wind - No Ice
Envelope Only Solution



MTS Engineering, P.L.L.C.

RP

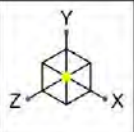
173131.001.01.0002

10128136 - Woodbridge CT Route 69

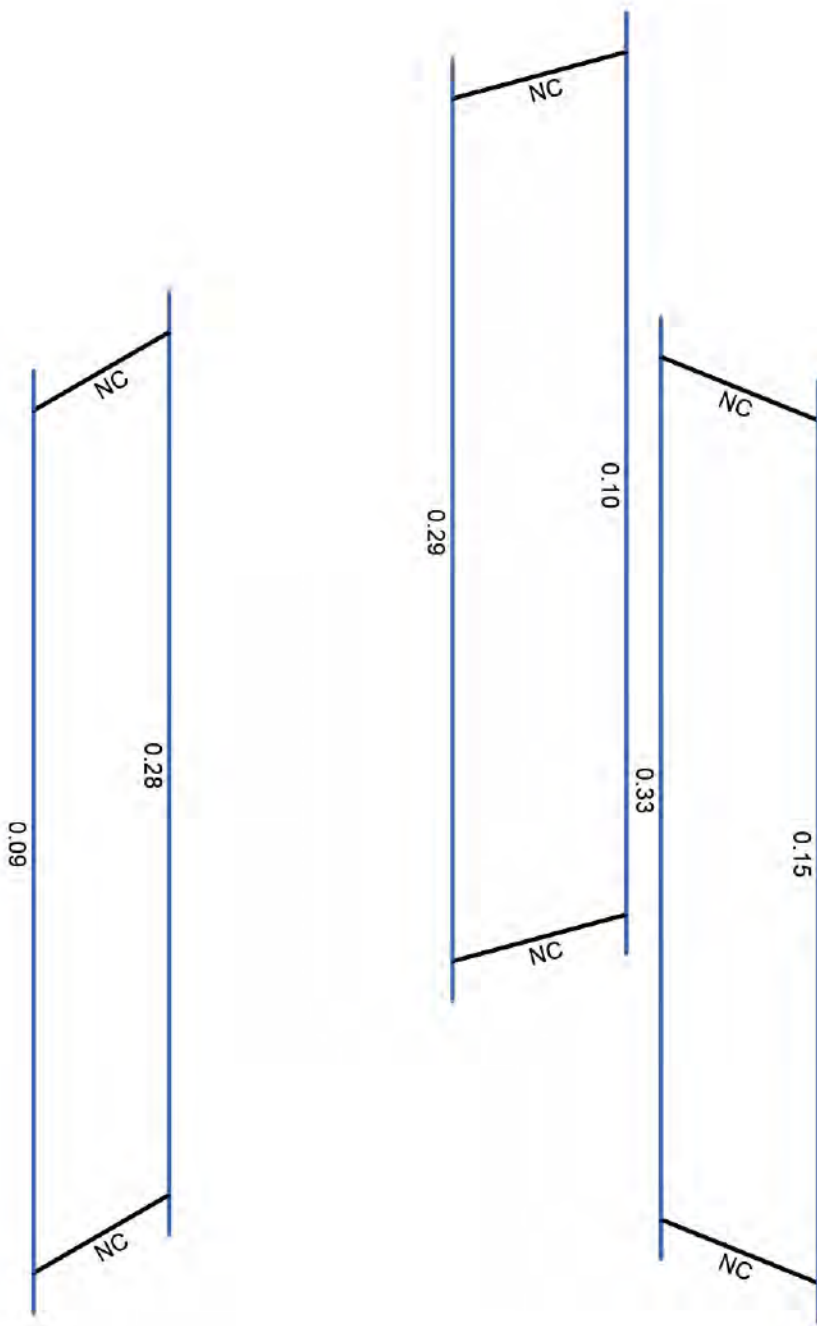
SK-6

Oct 31, 2024 at 04:00 PM

173131_001_01_0002_Woo...



Code Check (Env)	
■	No Calc
■	> 1.0
■	.90-1.0
■	.75-.90
■	.50-.75
■	0-.50



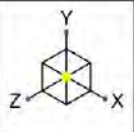
Member Code Checks Displayed (Enveloped)
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RP
173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-7
Oct 31, 2024 at 04:00 PM
173131_001_01_0002_Woo...



Shear Check
(Env)

No Calc

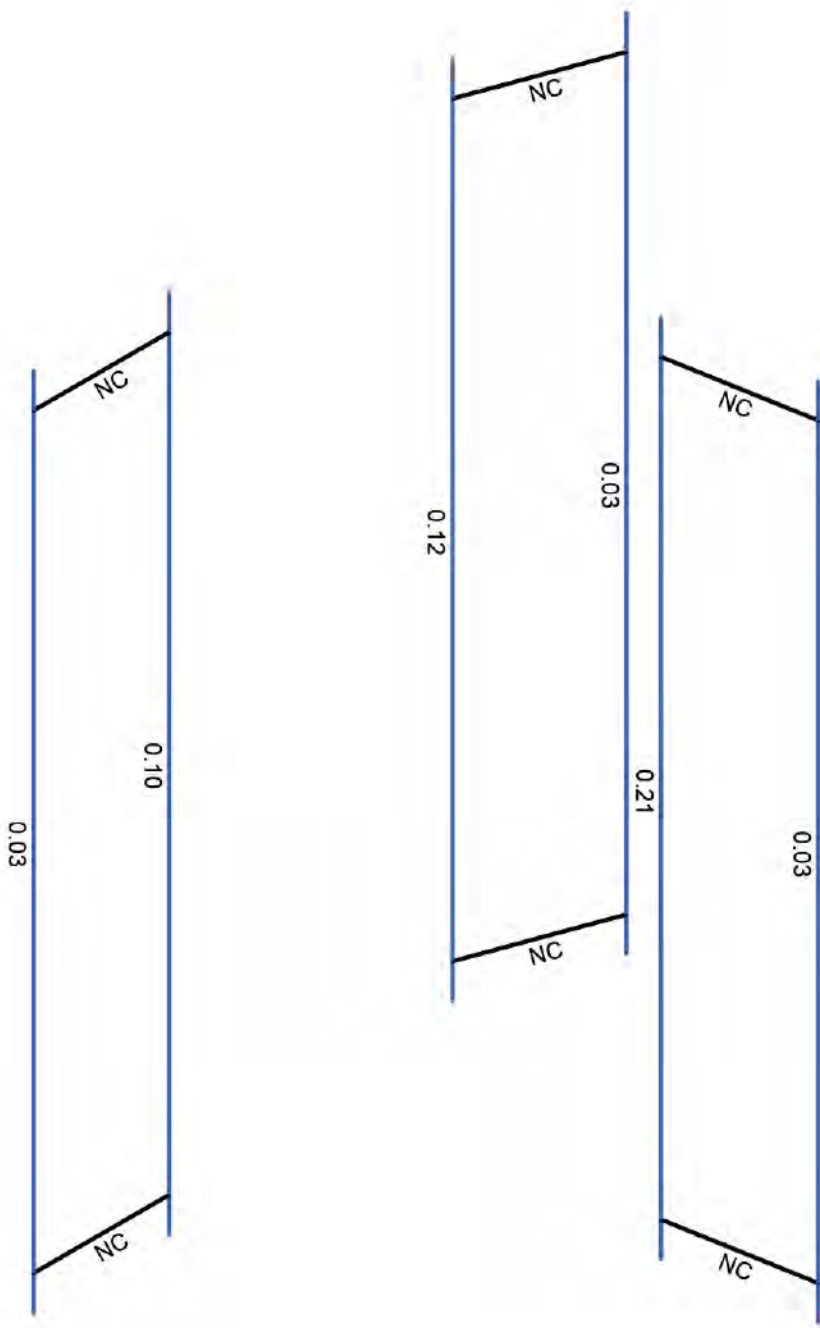
> 1.0

.90-1.0

.75-.90

.50-.75

0.-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution



MTS Engineering, P.L.L.C.
RP
173131.001.01.0002

10128136 - Woodbridge CT Route 69

SK-8
Oct 31, 2024 at 04:00 PM
173131_001_01_0002_Woo...

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	-0.50731	3	1.393822	
2	2	-0.50731	-3	1.393822	
3	3	-0.50731	2.75	1.393822	
4	4	-0.50731	2.75	2.393822	
5	5	-0.50731	3	2.393822	
6	6	-0.50731	-3	2.393822	
7	7	1.46074	3	-0.257568	
8	8	1.46074	-3	-0.257568	
9	9	1.46074	2.75	-0.257568	
10	10	2.445548	2.75	-0.431216	
11	11	2.445548	3	-0.431216	
12	12	2.445548	-3	-0.431216	
13	13	-0.95343	3	-1.136254	
14	14	-0.95343	-3	-1.136254	
15	15	-0.95343	2.75	-1.136254	
16	16	-0.61141	2.75	-2.075947	
17	17	-0.61141	3	-2.075947	
18	18	-0.61141	-3	-2.075947	
19	19	-0.50731	-2.75	1.393822	
20	20	-0.50731	-2.75	2.393822	
21	21	-0.95343	-2.75	-1.136254	
22	22	-0.61141	-2.75	-2.075947	
23	23	1.46074	-2.75	-0.257568	
24	24	2.445548	-2.75	-0.431216	
25	25	-0.50731	0	1.393822	
26	26	1.46074	0	-0.257568	
27	27	-0.95343	0	-1.136254	
28	28	0	0	0	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	26	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	25	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	27	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁻⁶ /F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3
9	Fe-410	29007.787	11156.841	0.3	0.667	0.49	36.26	1.5	58.016	1.5
10	Fe-570	29007.787	11156.841	0.3	0.667	0.49	49.313	1.5	58.016	1.5

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Mount Pipes	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
2	2	3	4		RIGID	None	None	RIGID	Typical
3	3	5	6	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
4	4	7	8	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
5	5	9	10		RIGID	None	None	RIGID	Typical
6	6	11	12	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
7	7	13	14	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
8	8	15	16		RIGID	None	None	RIGID	Typical
9	9	17	18	270	Mount Pipes	Column	Pipe	A53 Gr.B	Typical
10	10	19	20		RIGID	None	None	RIGID	Typical
11	11	21	22		RIGID	None	None	RIGID	Typical
12	12	23	24		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	Col-Wall Vert Release	Physical	Deflection Ratio Options	Seismic DR
1	1		Yes	** NA **	None
2	2		Yes	** NA **	None
3	3		Yes	** NA **	None
4	4		Yes	** NA **	None
5	5		Yes	** NA **	None
6	6		Yes	** NA **	None
7	7		Yes	** NA **	None
8	8		Yes	** NA **	None
9	9		Yes	** NA **	None
10	10		Yes	** NA **	None
11	11		Yes	** NA **	None
12	12		Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	1	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
2	3	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
3	4	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
4	6	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
5	7	Mount Pipes	6	Lbyy	N/A	N/A	Lateral
6	9	Mount Pipes	6	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.036	%10
2	3	Y	-0.036	%90
3	3	Y	0	0
4	3	Y	0	0
5	3	Y	0	0
6	9	Y	-0.036	%10

Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	9	Y	-0.036	%90
8	9	Y	0	0
9	9	Y	0	0
10	9	Y	0	0
11	6	Y	-0.036	%10
12	6	Y	-0.036	%90
13	6	Y	0	0
14	6	Y	0	0
15	6	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Z	-0.271	%10
2	3	Z	-0.271	%90
3	3	Z	0	0
4	3	Z	0	0
5	3	Z	0	0
6	9	Z	-0.271	%10
7	9	Z	-0.271	%90
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	6	Z	-0.271	%10
12	6	Z	-0.271	%90
13	6	Z	0	0
14	6	Z	0	0
15	6	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	X	-0.101	%10
2	3	X	-0.101	%90
3	3	X	0	0
4	3	X	0	0
5	3	X	0	0
6	9	X	-0.101	%10
7	9	X	-0.101	%90
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	6	X	-0.101	%10
12	6	X	-0.101	%90
13	6	X	0	0
14	6	X	0	0
15	6	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Z	-0.048	%10
2	3	Z	-0.048	%90
3	3	Z	0	0
4	3	Z	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
5	3	Z	0	0
6	9	Z	-0.048	%10
7	9	Z	-0.048	%90
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	6	Z	-0.048	%10
12	6	Z	-0.048	%90
13	6	Z	0	0
14	6	Z	0	0
15	6	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	X	-0.018	%10
2	3	X	-0.018	%90
3	3	X	0	0
4	3	X	0	0
5	3	X	0	0
6	9	X	-0.018	%10
7	9	X	-0.018	%90
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	6	X	-0.018	%10
12	6	X	-0.018	%90
13	6	X	0	0
14	6	X	0	0
15	6	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Z	-0.017	%10
2	3	Z	-0.017	%90
3	3	Z	0	0
4	3	Z	0	0
5	3	Z	0	0
6	9	Z	-0.017	%10
7	9	Z	-0.017	%90
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	6	Z	-0.017	%10
12	6	Z	-0.017	%90
13	6	Z	0	0
14	6	Z	0	0
15	6	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	X	-0.006	%10
2	3	X	-0.006	%90

Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
3	3	X	0	0
4	3	X	0	0
5	3	X	0	0
6	9	X	-0.006	%10
7	9	X	-0.006	%90
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	6	X	-0.006	%10
12	6	X	-0.006	%90
13	6	X	0	0
14	6	X	0	0
15	6	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Y	-0.099	%10
2	3	Y	-0.099	%90
3	3	Y	0	0
4	3	Y	0	0
5	3	Y	0	0
6	9	Y	-0.099	%10
7	9	Y	-0.099	%90
8	9	Y	0	0
9	9	Y	0	0
10	9	Y	0	0
11	6	Y	-0.099	%10
12	6	Y	-0.099	%90
13	6	Y	0	0
14	6	Y	0	0
15	6	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	Z	-0.019	%10
2	3	Z	-0.019	%90
3	3	Z	0	0
4	3	Z	0	0
5	3	Z	0	0
6	9	Z	-0.019	%10
7	9	Z	-0.019	%90
8	9	Z	0	0
9	9	Z	0	0
10	9	Z	0	0
11	6	Z	-0.019	%10
12	6	Z	-0.019	%90
13	6	Z	0	0
14	6	Z	0	0
15	6	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	3	X	-0.019	%10
2	3	X	-0.019	%90
3	3	X	0	0
4	3	X	0	0
5	3	X	0	0
6	9	X	-0.019	%10
7	9	X	-0.019	%90
8	9	X	0	0
9	9	X	0	0
10	9	X	0	0
11	6	X	-0.019	%10
12	6	X	-0.019	%90
13	6	X	0	0
14	6	X	0	0
15	6	X	0	0

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.01	-0.01	0	%100
2	3	Z	-0.01	-0.01	0	%100
3	4	Z	-0.01	-0.01	0	%100
4	6	Z	-0.01	-0.01	0	%100
5	7	Z	-0.01	-0.01	0	%100
6	9	Z	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.01	-0.01	0	%100
2	3	X	-0.01	-0.01	0	%100
3	4	X	-0.01	-0.01	0	%100
4	6	X	-0.01	-0.01	0	%100
5	7	X	-0.01	-0.01	0	%100
6	9	X	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	3	Z	-0.002	-0.002	0	%100
3	4	Z	-0.002	-0.002	0	%100
4	6	Z	-0.002	-0.002	0	%100
5	7	Z	-0.002	-0.002	0	%100
6	9	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	3	X	-0.002	-0.002	0	%100
3	4	X	-0.002	-0.002	0	%100
4	6	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
5	7	X	-0.002	-0.002	0	%100
6	9	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0003	-0.0003	0	%100
2	3	Z	-0.0003	-0.0003	0	%100
3	4	Z	-0.0003	-0.0003	0	%100
4	6	Z	-0.0003	-0.0003	0	%100
5	7	Z	-0.0003	-0.0003	0	%100
6	9	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0003	-0.0003	0	%100
2	3	X	-0.0003	-0.0003	0	%100
3	4	X	-0.0003	-0.0003	0	%100
4	6	X	-0.0003	-0.0003	0	%100
5	7	X	-0.0003	-0.0003	0	%100
6	9	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.005	-0.005	0	%100
2	3	Y	-0.005	-0.005	0	%100
3	4	Y	-0.005	-0.005	0	%100
4	6	Y	-0.005	-0.005	0	%100
5	7	Y	-0.005	-0.005	0	%100
6	9	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	3	Z	-0.001	-0.001	0	%100
3	4	Z	-0.001	-0.001	0	%100
4	6	Z	-0.001	-0.001	0	%100
5	7	Z	-0.001	-0.001	0	%100
6	9	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	3	X	-0.001	-0.001	0	%100
3	4	X	-0.001	-0.001	0	%100
4	6	X	-0.001	-0.001	0	%100
5	7	X	-0.001	-0.001	0	%100
6	9	X	-0.001	-0.001	0	%100

Nodal Loads and Enforced Displacements

No Data to Print...

Basic Load Cases

	BLC Description	Category	Y Gravity	Point	Distributed
1	Dead	DL	-1	15	
2	0 Wind - No Ice	WLZ		15	6
3	90 Wind - No Ice	WLX		15	6
4	0 Wind - Ice	WLZ		15	6
5	90 Wind - Ice	WLX		15	6
6	0 Wind - Service	WLZ		15	6
7	90 Wind - Service	WLX		15	6
8	Ice	OL1		15	6
9	0 Seismic	ELZ		15	6
10	90 Seismic	ELX		15	6
11	Live Load a	LL			
12	Live Load b	LL			
13	Live Load c	LL			
14	Live Load d	LL			
15	Maint LL 1	LL			
16	Maint LL 2	LL			
17	Maint LL 3	LL			
18	Maint LL 4	LL			
19	Maint LL 5	LL			
20	Maint LL 6	LL			
21	Maint LL 7	LL			
22	Maint LL 8	LL			
23	Maint LL 9	LL			
24	Maint LL 10	LL			
25	Maint LL 11	LL			
26	Maint LL 12	LL			
27	Maint LL 13	LL			
28	Maint LL 14	LL			
29	Maint LL 15	LL			
30	Maint LL 16	LL			
31	Maint LL 17	LL			
32	Maint LL 18	LL			
33	Maint LL 19	LL			
34	Maint LL 20	LL			
35	Maint LL 21	LL			
36	Maint LL 22	LL			
37	Maint LL 23	LL			
38	Maint LL 24	LL			

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5
101	1.2 D + 1.5 LL Maint (16)	Yes	Y	1	1.2					30	1.5
102	1.2 D + 1.5 LL Maint (17)	Yes	Y	1	1.2					31	1.5
103	1.2 D + 1.5 LL Maint (18)	Yes	Y	1	1.2					32	1.5
104	1.2 D + 1.5 LL Maint (19)	Yes	Y	1	1.2					33	1.5
105	1.2 D + 1.5 LL Maint (20)	Yes	Y	1	1.2					34	1.5
106	1.2 D + 1.5 LL Maint (21)	Yes	Y	1	1.2					35	1.5
107	1.2 D + 1.5 LL Maint (22)	Yes	Y	1	1.2					36	1.5
108	1.2 D + 1.5 LL Maint (23)	Yes	Y	1	1.2					37	1.5
109	1.2 D + 1.5 LL Maint (24)	Yes	Y	1	1.2					38	1.5

Envelope Node Reactions

Node Label			X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	26	max	0.321	5	0.395	14	0.661	2	0.06	14	0.593	8	0.335	21
2		min	-0.321	11	0.137	8	-0.661	8	0.018	8	-0.591	2	0.11	3
3	27	max	0.321	5	0.395	16	0.661	2	0.32	15	0.316	10	0.117	22
4		min	-0.321	11	0.137	10	-0.661	8	0.105	9	-0.314	4	0.038	4
5	25	max	0.321	5	0.395	14	0.661	2	-0.112	2	0.261	5	0.001	11
6		min	-0.321	11	0.137	8	-0.661	8	-0.34	20	-0.261	11	-0.001	5
7	Totals:	max	0.963	5	1.186	15	1.984	2						

Envelope Node Reactions (Continued)

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
8 min	-0.963	11	0.411	9	-1.984	8						

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	4	PIPE 2.0	0.329	3	8	0.213	3	8	20.867	32.13	1.872	1.872	1	H1-1b	
2	7	PIPE 2.0	0.287	3	8	0.123	3	9	20.867	32.13	1.872	1.872	1	H1-1b	
3	1	PIPE 2.0	0.277	3	2	0.095	3	11	20.867	32.13	1.872	1.872	1	H1-1b	
4	6	PIPE 2.0	0.147	0.25	2	0.031	0.25	2	20.867	32.13	1.872	1.872	1	H1-1b	
5	9	PIPE 2.0	0.105	0.25	3	0.032	5.75	8	20.867	32.13	1.872	1.872	1	H1-1b	
6	3	PIPE 2.0	0.091	0.25	8	0.033	5.75	2	20.867	32.13	1.872	1.872	1	H1-1b	

APPENDIX B

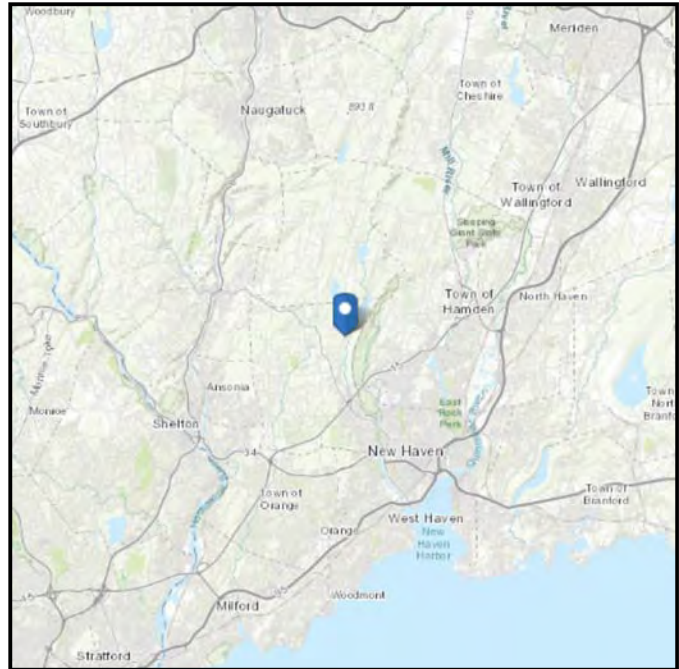
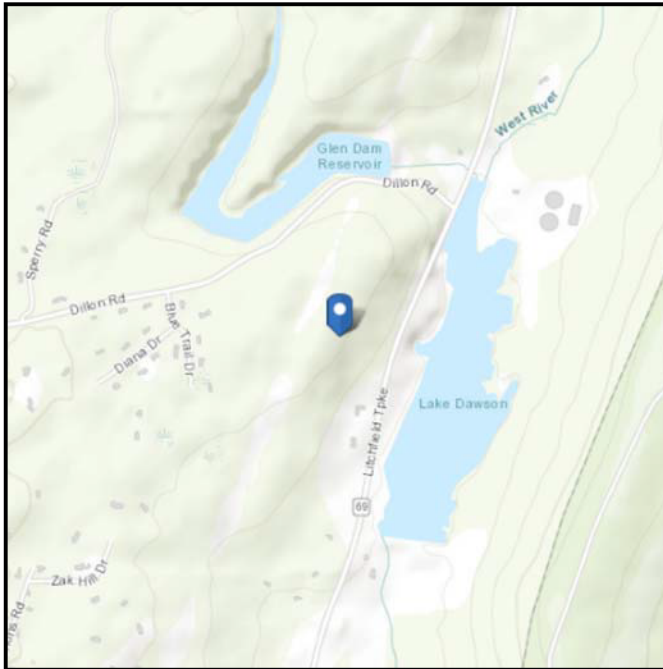
(Additional Calculations)

ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Latitude: 41.373197
Longitude: -72.981194
Elevation: 323.3757022410668 ft
(NAVD 88)



Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Wed Oct 30 2024

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

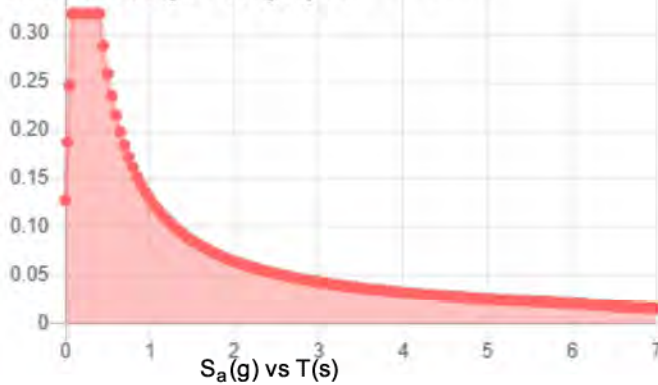
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

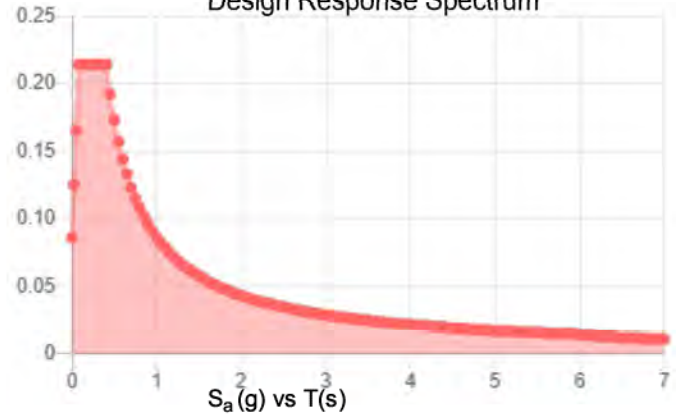
Results:

S_s :	0.2	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA _M :	0.177
S_{MS} :	0.321	F_{PGA} :	1.576
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.214	C_v :	0.701

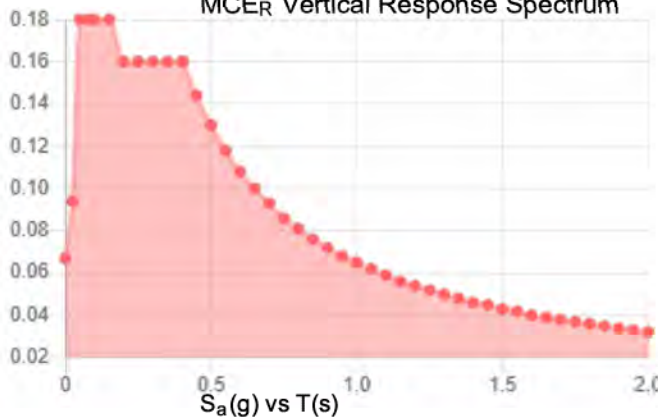
Seismic Design Category: B
MCE_R Response Spectrum



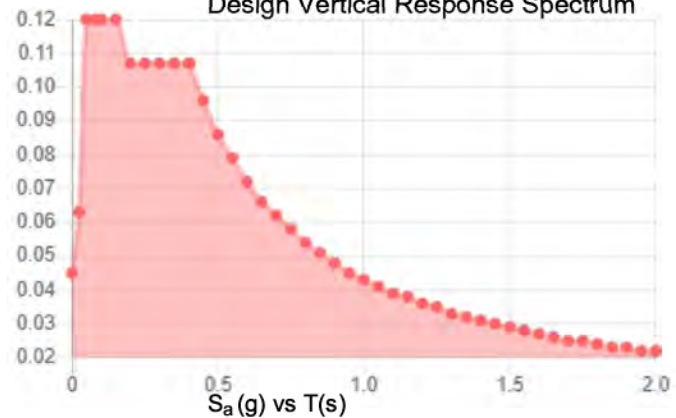
Design Response Spectrum



MCE_R Vertical Response Spectrum



Design Vertical Response Spectrum



Data Accessed: Wed Oct 30 2024

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Wed Oct 30 2024

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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

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

PROJECT	173131.001.01.0002 - Woodbridge C1 KSC		
SUBJECT	Pipe Mount Analysis		
DATE	10/31/24		



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Tower Type	:	Monopole	
Ground Elevation	z_s	: 323 ft	[ASCE7 Hazard Tool]
Tower Height	:	170.00 ft	
Mount Elevation	:	167.00 ft	
Antenna Elevation	:	167.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V	: 119 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	: 50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	: 30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	: 1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S	: 0.20	
	S_1	: 0.05	
	S_{DS}	: 0.21	
	S_{D1}	: 0.09	
Gust Factor	G_h	: 1.00	[Sec. 16.6]
Pressure Coefficient	K_z	: 1.41	[Sec. 2.6.5.2]
Topography Factor	K_{zt}	: 1.00	[Sec. 2.6.6]
Elevation Factor	K_e	: 0.99	[Sec. 2.6.8]
Directionality Factor	K_d	: 0.95	[Sec. 16.6]
Shielding Factor	K_a	: 0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz}	: 1.18 in	[Sec. 2.6.10]
Importance Factor	I_e	: 1	[Table 2-3]
Response Coefficient	C_s	: 0.107	[Sec. 2.7.7.1]
Amplification	A_s	: 2.929412	[Sec. 16.7]
	q_z	: 47.99 psf	

PROJECT	173131.001.01.0002 - Woodbridge C1 KSC		
SUBJECT	T-Arms Mount Analysis		
DATE	10/31/24		



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

B+T GRP

Tower Type	:	Monopole	
Ground Elevation	z_s :	323 ft	[ASCE7 Hazard Tool]
Tower Height	:	170.00 ft	
Mount Elevation	:	157.00 ft	
Antenna Elevation	:	157.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V :	119 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i :	50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s :	30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i :	1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S :	0.20	
	S_1 :	0.05	
	S_{DS} :	0.21	
	S_{D1} :	0.09	
Gust Factor	G_h :	1.00	[Sec. 16.6]
Pressure Coefficient	K_z :	1.39	[Sec. 2.6.5.2]
Topography Factor	K_{zt} :	1.00	[Sec. 2.6.6]
Elevation Factor	K_e :	0.99	[Sec. 2.6.8]
Directionality Factor	K_d :	0.95	[Sec. 16.6]
Shielding Factor	K_a :	0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz} :	1.17 in	[Sec. 2.6.10]
Importance Factor	I_e :	1	[Table 2-3]
Response Coefficient	C_s :	0.107	[Sec. 2.7.7.1]
Amplification	A_s :	2.694118	[Sec. 16.7]
	q_z :	47.37 psf	

PROJECT	173131.001.01.0002 - Woodbridge C1 KSC		
SUBJECT	Pipe Mount Analysis		
DATE	10/31/24		



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Tower Type	:	Monopole	
Ground Elevation	z_s	: 323 ft	[ASCE7 Hazard Tool]
Tower Height	:	170.00 ft	
Mount Elevation	:	147.00 ft	
Antenna Elevation	:	147.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V	: 119 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	: 50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	: 30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	: 1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S	: 0.20	
	S_1	: 0.05	
	S_{DS}	: 0.21	
	S_{D1}	: 0.09	
Gust Factor	G_h	: 1.00	[Sec. 16.6]
Pressure Coefficient	K_z	: 1.37	[Sec. 2.6.5.2]
Topography Factor	K_{zt}	: 1.00	[Sec. 2.6.6]
Elevation Factor	K_e	: 0.99	[Sec. 2.6.8]
Directionality Factor	K_d	: 0.95	[Sec. 16.6]
Shielding Factor	K_a	: 0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz}	: 1.16 in	[Sec. 2.6.10]
Importance Factor	I_e	: 1	[Table 2-3]
Response Coefficient	C_s	: 0.107	[Sec. 2.7.7.1]
Amplification	A_s	: 2.458824	[Sec. 16.7]
	q_z	: 46.72 psf	

PROJECT	173131.001.01.0002 - Woodbridge C1 KSC			
SUBJECT	Pipe Mount Analysis			
DATE	10/31/24	PAGE	1	OF 1



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	0.68	k
Vertical Shear	:	0.398	k
Horizontal Shear	:	0.33	k
Torsion	:	0.001	k.ft
Moment from Horizontal Forces	:	0.268	k.ft
Moment from Vertical Forces	:	0.343	k.ft

Bolt Parameters

Bolt Grade	:	A307	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	0.52	k
Force from Horz. Moment	:	0.49	k
Force from Vert. Moment	:	0.62	k
Shear Load / Bolt	:	0.13	k
Tension Load / Bolt	:	0.17	k
Resultant from Moments / Bolt	:	0.39	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	45.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	10.36	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	5.45%		OKAY
Nominal Shear Stress, F_{nv}	:	27.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	6.22	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	4.81%		OKAY
Unity Check, Combined	:	10.26%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	0.37%		OKAY

PROJECT	173131.001.01.0002 - Woodbridge C1 KSC			
SUBJECT	T-Arms Mount Analysis			
DATE	10/31/24	PAGE	1	OF 1



[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	0.707	k
Vertical Shear	:	0.973	k
Horizontal Shear	:	0.784	k
Torsion	:	1.056	k.ft
Moment from Horizontal Forces	:	1.168	k.ft
Moment from Vertical Forces	:	1.495	k.ft

Bolt Parameters

Bolt Grade	:	A307	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	1.25	k
Force from Horz. Moment	:	2.12	k
Force from Vert. Moment	:	2.71	k
Shear Load / Bolt	:	0.31	k
Tension Load / Bolt	:	0.18	k
Resultant from Moments / Bolt	:	1.72	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	45.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	10.36	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	18.29%		OKAY
Nominal Shear Stress, F_{nv}	:	27.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	6.22	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	7.87%		OKAY
Unity Check, Combined	:	26.16%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	0.90%		OKAY

PROJECT	173131.001.01.0002 - Woodbridge C1 KSC			
SUBJECT	Pipe Mount Analysis			
DATE	10/31/24	PAGE	1	OF 1

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	0.661	k
Vertical Shear	:	0.395	k
Horizontal Shear	:	0.321	k
Torsion	:	0.001	k.ft
Moment from Horizontal Forces	:	0.261	k.ft
Moment from Vertical Forces	:	0.34	k.ft

Bolt Parameters

Bolt Grade	:	A307	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	0.51	k
Force from Horz. Moment	:	0.47	k
Force from Vert. Moment	:	0.62	k
Shear Load / Bolt	:	0.13	k
Tension Load / Bolt	:	0.17	k
Resultant from Moments / Bolt	:	0.39	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	45.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	10.36	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	5.34%		OKAY
Nominal Shear Stress, F_{nv}	:	27.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	6.22	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	4.70%		OKAY
Unity Check, Combined	:	10.05%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	0.37%		OKAY

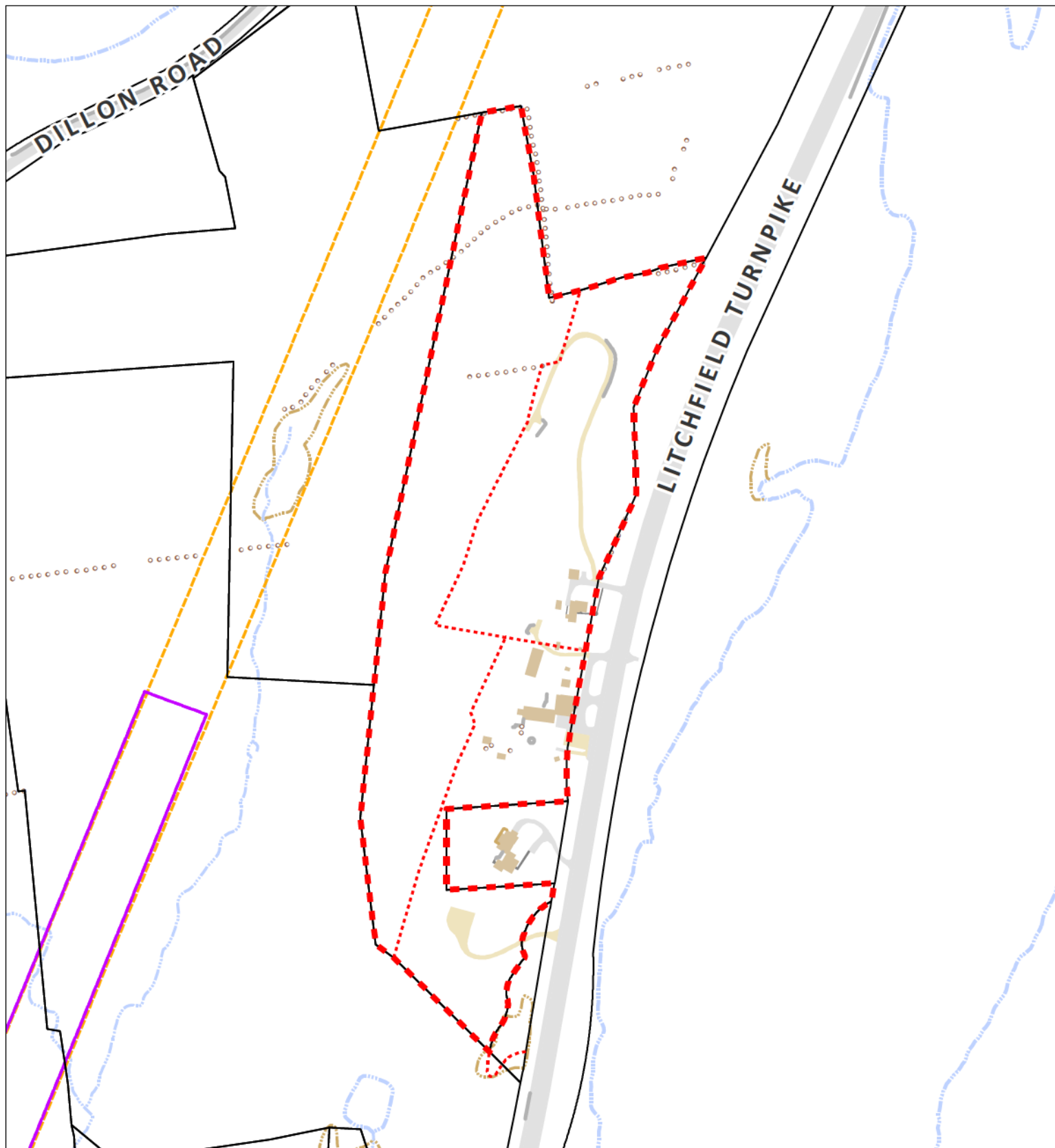
Location:		1990 LITCHFIELD TPK		Map Id:	1501 1000 1990		Zone:	A		Date Printed:	2/13/2025	
				Neighborhood:	1				Last Update:	2/12/2025		
Owner Of Record					Volume/Page	Date		Sales Type		Valid	Sale Price	
RUSSELL SHEPHERD SARAH					0914/0299	11/3/2023		Quit Claim		No	0	
1990 LITCHFIELD TPK, WOODBRIDGE, CT 06525							Exempt					
Prior Owner History												
SHEPHERD FREDERICK T JR EST OF					0366/0152	11/9/2001		Probate		No	0	
SHEPHERD FREDERICK T JR					0277/0021	12/12/1997		Certificate of Devise		No	0	
SHEPHERD EDYTHE H EST OF					0248/0061	4/18/1996		Probate		No	0	
SHEPHERD EDYTHE H					0043/0215	10/23/1951				No	0	
Permit Number	Date	Permit Description										
E-22-203	10/28/2022	same as above										
E-22-203	10/24/2022	REPLACE 100 AMP METER,RISER,CONDUIT TO DISCONNECT.ADD 2 GROUND RODS. SERVICE WAS DAMAGED FROM STORM.										
E2018-204	11/30/2018	WIRE COMMUNICATION EQUIP & 200AMP SERVICE										
B2018-238	10/24/2018	16 X 10 CONCRETE PAD FOR COMMUNICATION SYSTEM										
M2008-1004	11/17/2008	WOOD BURNING FURNACE										
Supplemental Data								Appraised Value				
Census/Tract	1602			VisionPID	2398			Total Land Value		201,700		
Dev Map ID	SEE DEED			Street Description	Paved							
GIS ID				TOPO	Level			Total Building Value		179,700		
Route	A5-E5											
District							Total Outbldg Value		55,900			
Utilities	Well, Septic											
Acres					State Item Codes							
Land Type	Acres	490	Total Value		Code	Quantity		Value				
Res Vac Excess	15.78	0.00			13-Residential Dwelling	1.00		125,790				
Excess	3.50	0.00			11-Residential Land	1.50		96,600				
House Lot	1.50	0.00			14-Residential Outbuilding	10.00		39,130				
					12-Residential Excess Land	3.50		24,010				
					51-Residential Vacant Land	15.78		20,580				
Total	201,700											
Assessment History (Prior Years as of Oct 1)						490 Appraised Totals						
	2025	2024	2023	2022	2021	Type	Acres	Value	Type	Acres	Value	
Land	141,190	141,190	144,970	144,970	144,970							
Building	125,790	125,790	79,940	79,940	79,940							
Outbuilding	39,130	39,130	11,550	11,550	11,550							
Total	306,110	306,110	236,460	236,460	236,460	Totals		0.00		0		
Application Date: Expiration Date:												
Comments												
8/1/2024	KIT, DR W/FPL, LR W/FPL, HBTH, DEN W/FPL, FBTH NON WORKING TOILET, 4 BDRM, WALK UP ATTIC, CNG A TO F CONDITION, REMOVE CONCRETE SILO, 2 FRAME SHED, RE											

A large, two-story white house with a prominent chimney and a wrap-around porch, surrounded by lush green trees and a white picket fence.

Detached Component Computations							
Type	Year	Condition	Area/Qty	Type	Year	Condition	Area/Qty
1 Story Poultry House	1991	Very Poor	360	Lean To Shed	1991	Very Poor	112
1 Story Poultry House	1991	Very Poor	360				
1 Story Poultry House	1991	Very Poor	200				
Barn w/Loft	1991	Very Poor	2220				
Detached Garage with Loft	1991	Very Poor	322				
Detached Garage with Loft	2010	Very Good	240				
Farm Utility Storage	1991	Very Poor	720				
Frame Milk House	1991	Very Poor	900				
Lean To Shed	1991	Very Poor	207				

Town of Woodbridge, Connecticut - Assessment Parcel Map

GIS ID: 1501-1000-1990 Address: 1990 LITCHFIELD TPK



Approximate Scale:

1:3,900

Map Produced; April 2024

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Woodbridge and its mapping contractors assume no legal responsibility for the information contained herein.

DOCKET NO. 388 - New Cingular Wireless PCS, LLC (AT&T)	}	Connecticut
application for a Certificate of Environmental Compatibility and	}	Siting
Public Need for the construction, maintenance and operation of a	}	Council
telecommunications facility located at 1990 Litchfield Turnpike,	}	
Woodbridge, Connecticut.	}	
		July 29, 2010

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, management, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New Cingular Wireless PCS, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility located at 1990 Litchfield Turnpike, Woodbridge, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole with flush-mounted antennas, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 170 feet above ground level. The height at the top of the Certificate Holder's antennas shall not exceed 170 feet above ground level.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Woodbridge for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Woodbridge public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
8. At least one wireless telecommunications carrier shall install their equipment and shall become operational not later than 120 days after the tower is erected. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
9. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Woodbridge. Any proposed modifications to this Decision and Order shall likewise be so served.
10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
11. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.
13. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The New Haven Register.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

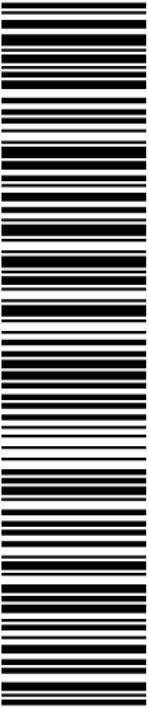
Applicant

New Cingular Wireless PCS, LLC (AT&T)

Its Representative

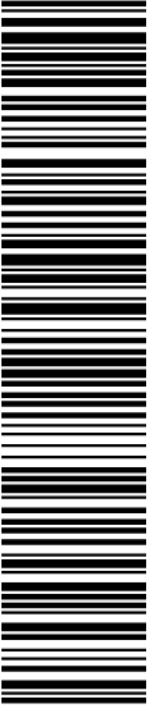
Christopher B Fisher, Esq.
Daniel M. Laub, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601

Michele Briggs
AT&T
500 Enterprise Drive
Rocky Hill, CT 06067-3900

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		TOWN OF WOODBRIDGE MICA CORDOZO FIRST SELECTMAN KRISTIN 11 MEETINGHOUSE LN WOODBRIDGE CT 06525-1519	
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		CT SITING COUNCIL MELANIE BACHMAN EXECUTIVE DIRECTOR 10 FRANKLIN SQ NEW BRITAIN CT 06051-2655	
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