April 27, 2023

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 CT5206
135 New Road, Madison, CT 06443 (the "Property")
Latitude: 41.293092 N Longitude: 72.578399 W

Dear Ms. Bachman:

AT&T currently maintains (6) antennas at the 77' level on the existing 180' guyed lattice tower ("Tower") located at 135 New Road, Madison, CT. The tower and property are owned by Connecticut Light & Power, d/b/a Eversource ("Eversource"). AT&T intends on modifying its facility by replacing (3) antennas with (3) TPA-65R-BU4DA-K at the 78' level, and adding (3) AIR 6419 B77G at the 80'5" level and (3) AIR 6449 B77 antennas at the 78.10'' level of the tower. The Air 6419 B77G & Air 6449 B77 antennas are stacked one on top of the other. AT&T also intends on adding (3) 4478 B14 remote radio units, ("RRUs") at the 78' level of the tower. The height of AT&Ts existing antennas and RRUs is 77' and proposed antennas & RRUs is 78', 78'10" & 80'5" on the tower.

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 Town of Madison cannot locate a copy of the original approval-see attached email. The AT&T Facility was approved by the CT Siting Council ("Council") under EM-AT&T-076-020927 on October 7, 2002. 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 Hon. Peggy Lyons, First Selectwoman, Town of Madison, Ms. Erin Mannix, Town Planner, Town of Madison, and Eversource, the tower & 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 structure.

2. The proposed modifications will not require an extension of the site boundary.

3. The proposed modification 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 structure 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. Peggy Lyons, First Selectwoman, Town of Madison
Ms. Erin Mannix, Town Planer, Town of Madison
Connecticut Light & Power, the tower & property owner

SAI Group
12 Industrial Way
Salem, NH 03079
(603) 421-0470
www.saigrp.com

Radio Frequency Exposure Theoretical Study

Prepared For:

AT&T Mobility

Site Name:	Madison East
FA#:	10071098
Site ID:	CTL05206
Address:	135 New Road, Madison, CT 06443

Prepared by: **SAI Group**
12 Industrial Way
Salem, NH 03079
(603) 421-0470

Date of Report: April 26, 2023

Statement of Compliance

AT&T's proposed antenna installation along with other existing antennas is calculated to be within *10.16%* of FCC Standard for General Public/Uncontrolled Maximum Permissible Exposure (MPE).

Table of Contents

1 General Summary

SAI Group was contracted by AT&T Mobility to conduct a Radio Frequency (RF) Analysis for a wireless facility located at 135 New Road, Madison, CT to determine whether the radio facility is in compliance with Federal Communications Commission (FCC) regulations and standards regarding RF exposure.

RF exposure is calculated in accordance with FCC's suggested prediction methods.

2 Site Compliance Summary

Compliance Summary (General Public Limit)	
Site Compliance	Yes
Maximum Calculated %MPE at 0-6' Ground Level (Cumulative)	10.16% at about 208ft South-East from the tower.

3 RF Design Specifications

Table below shows the technical data used for the calculation of cumulative %MPE results.

Ant ID	Operator	Antenna Make	Antenna Model	Type	TX Freq (MHz)	Az (Deg)	Ant Gain (dBd)	Total ERP (Watts)	Z Rad Center (ft)
1	AT&T	CCI	TPA-65R-BU4DA	Panel	700	0	10.65	1858	78.00
1	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	0	14.35	1089	78.00
1	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	0	14.35	1089	78.00
1	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	0	14.35	2178	78.00
2	AT&T	ERICSSON	AIR6419	Panel	3500	0	23.45	23990	80.50
3	AT&T	ERICSSON	AIR6449	Panel	3700	0	23.5	24268	76.83
4	AT&T	CCI	DMP65R-BU4DA	Panel	850	0	10.25	1000	78.00
4	AT&T	CCI	DMP65R-BU4DA	Panel	2130	0	14.15	2080	78.00
4	AT&T	CCI	DMP65R-BU4DA	Panel	750	0	9.95	791	78.00
4	AT&T	CCI	DMP65R-BU4DA	Panel	2130	0	14.15	2080	78.00
5	AT&T	CCI	TPA-65R-BU4DA	Panel	700	120	10.55	1816	78.00
5	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	120	14.55	1140	78.00
5	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	120	14.55	1140	78.00
5	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	120	14.55	2281	78.00
6	AT&T	ERICSSON	AIR6419	Panel	3500	120	23.45	23990	80.50
7	AT&T	ERICSSON	AIR6449	Panel	3700	120	23.5	24268	76.83
8	AT&T	CCI	DMP65R-BU4DA	Panel	850	120	10.25	1000	78.00
8	AT&T	CCI	DMP65R-BU4DA	Panel	2130	120	14.25	2129	78.00
8	AT&T	CCI	DMP65R-BU4DA	Panel	750	120	9.95	791	78.00
8	AT&T	CCI	DMP65R-BU4DA	Panel	2130	120	14.25	2129	78.00
9	AT&T	CCI	TPA-65R-BU4DA	Panel	700	240	10.55	1816	78.00
9	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	240	14.55	1140	78.00
9	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	240	14.55	1140	78.00
9	AT&T	CCI	TPA-65R-BU4DA	Panel	1900	240	14.55	2281	78.00
10	AT&T	ERICSSON	AIR6419	Panel	3500	240	23.45	23990	80.50
11	AT&T	ERICSSON	AIR6449	Panel	3700	240	23.5	24268	76.83
12	AT&T	CCI	DMP65R-BU4DA	Panel	850	240	10.25	1000	78.00
12	AT&T	CCI	DMP65R-BU4DA	Panel	2130	240	14.25	2129	78.00
12	AT&T	CCI	DMP65R-BU4DA	Panel	750	240	9.95	791	78.00
12	AT&T	CCI	DMP65R-BU4DA	Panel	2130	240	14.25	2129	78.00
13	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	600	0	12.95	2367	159.00
13	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	600	0	12.95	2367	159.00
13	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	700	0	13.65	3708	159.00
13	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	2100	0	16.45	3533	159.00
13	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	1900	0	15.45	2806	159.00
13	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	1900	0	15.45	2806	159.00
13	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	2100	0	16.45	3533	159.00
14	T-Mobile	ERICSSON	AIR6419 B41	Panel	2500	0	22.05	19239	159.00
14	T-Mobile	ERICSSON	AIR6419 B41	Panel	2500	0	22.05	19239	159.00
15	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	600	120	12.95	2367	159.00
15	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	600	120	12.95	2367	159.00
15	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	700	120	13.65	3708	159.00
15	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	2100	120	16.45	3533	159.00
15	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	1900	120	15.45	2806	159.00
15	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	1900	120	15.45	2806	159.00
15	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	2100	120	16.45	3533	159.00

16	T-Mobile	ERICSSON	AIR6419 B41	Panel	2500	120	22.05	19239	159.00
16	T-Mobile	ERICSSON	AIR6419 B41	Panel	2500	120	22.05	19239	159.00
17	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	600	240	12.95	2367	159.00
17	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	600	240	12.95	2367	159.00
17	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	700	240	13.65	3708	159.00
17	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	2100	240	16.45	3533	159.00
17	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	1900	240	15.45	2806	159.00
17	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	1900	240	15.45	2806	159.00
17	T-Mobile	RFS	APXVAALL24_43-U-NA20	Panel	2100	240	16.45	3533	159.00
18	T-Mobile	ERICSSON	AIR6419 B41	Panel	2500	240	22.05	19239	159.00
18	T-Mobile	ERICSSON	AIR6419 B41	Panel	2500	240	22.05	19239	159.00
19	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	0	15.85	1731	126.00
19	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	0	15.85	1731	126.00
19	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	0	15.85	1731	126.00
19	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	0	15.85	1731	126.00
19	SPRINT	RFS	APXVSPP18-C-A20	Panel	850	0	13.35	1081	126.00
19	SPRINT	RFS	APXVSPP18-C-A20	Panel	850	0	13.35	1081	126.00
20	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	120	15.85	1731	126.00
20	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	120	15.85	1731	126.00
20	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	120	15.85	1731	126.00
20	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	120	15.85	1731	126.00
20	SPRINT	RFS	APXVSPP18-C-A20	Panel	850	120	13.35	1081	126.00
20	SPRINT	RFS	APXVSPP18-C-A20	Panel	850	120	13.35	1081	126.00
21	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	240	15.85	1731	126.00
21	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	240	15.85	1731	126.00
21	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	240	15.85	1731	126.00
21	SPRINT	RFS	APXVSPP18-C-A20	Panel	1900	240	15.85	1731	126.00
21	SPRINT	RFS	APXVSPP18-C-A20	Panel	850	240	13.35	973	126.00
21	SPRINT	RFS	APXVSPP18-C-A20	Panel	850	240	13.35	1081	126.00
22	EVERSOURCE	dbSpectra	DS2C03F36D	Omni	160	0	3	239	177.00
23	EVERSOURCE	GENERIC	OMNI 20FT	Omni	450	0	12	251	180.00
24	EVERSOURCE	GENERIC	OMNI 20FT	Omni	450	0	12	251	180.00
25	EVERSOURCE	ANDREW	ASP973	Omni	850	0	10	100	180.00
26	EVERSOURCE	GENERIC	MICROWAVE 8FT	Dish	10000	0	41.35	546	175.00
27	EVERSOURCE	GENERIC	OMNI 20FT	Omni	450	0	12	991	147.00
27	EVERSOURCE	GENERIC	OMNI 2FT	Omni	2400	0	2.85	193	143.00
29	EVERSOURCE	GENERIC	OMNI 2FT	Omni	2400	0	2.85	193	141.00

NOTE: The Z value indicates the distance of radiation center of the antenna height above the ground site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or calculated based on SAI Group experience. SAI Group has assumed transmission parameters for "Unknown" RF emitters based on either similar installations found at other radio communications sites or from the latest data available for the site. "Generic" antenna models have been used where existing antenna part numbers or radiation patterns are not available. The frequencies presented in this table may have been assumed in order to represent the approximate band of operation and to support a worst-case calculation of power density

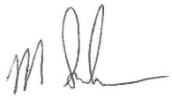
4 Conclusion

I certify to the best of my knowledge that the statements contained in this report are true and accurate. The theoretical computations contained are based on FCC recommended methods, with industry standard assumptions & formulas, and complies with FCC mandated Maximum Permissible RF Exposure requirements.

A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, SAI Group recommends that a comprehensive field survey be performed to resolve any disputes.

Sanket Joshi
RF Engineer
SAI Group

April 26, 2023
Date



Matthew Smelcer
RF Engineering Manager

April 26, 2023
Date

Appendix A – FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted procedures and guidelines for evaluating of the effects of RF exposure. This guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following Tables and diagram:

Table 1. MPE Limits for General Population/ Uncontrolled Exposure

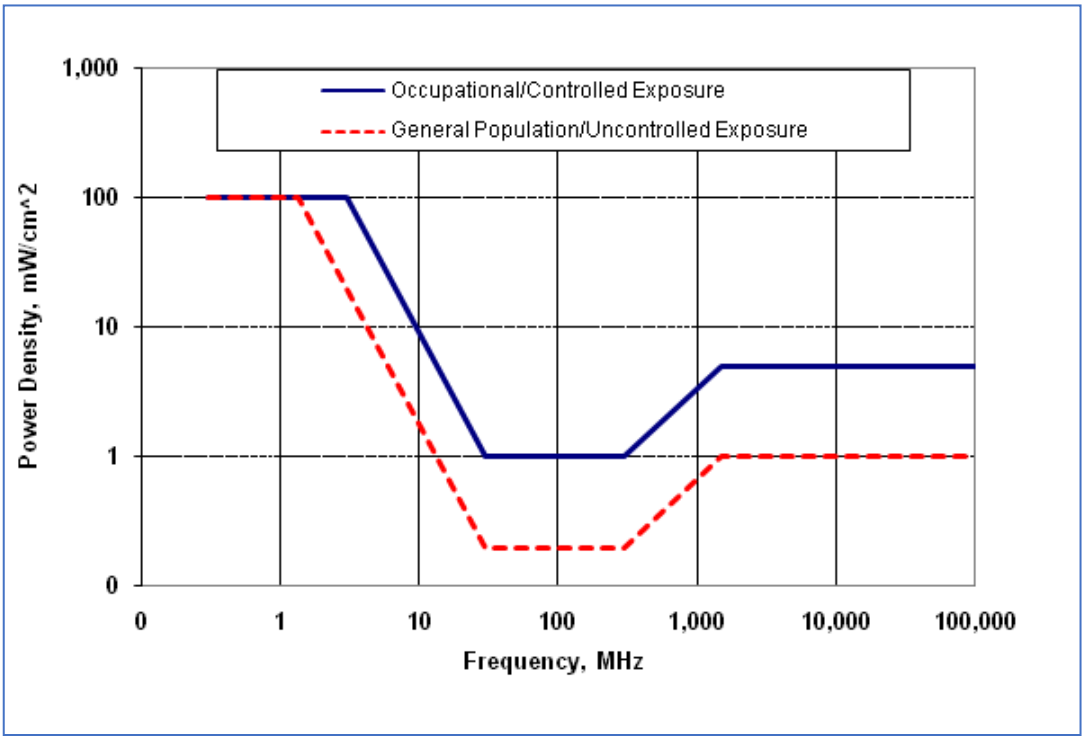
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 1.34	614	1.63	(100)*	30
1.34 -30	824/f	2.19/f	$(180/f^2)$*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	f/1500	30
1500– 100,000	--	--	1.0	30
f = frequency in MHz		* = Plane wave equivalent power density		

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 can't exercise control over their exposure. A site is evaluated with General Public limits if there is no access controls or no RF warning signage present.

Table 2. MPE Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, 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	--	--	5.0	6
f = frequency in MHz		* = Plane wave equivalent power density		

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 such occupational/controlled limits apply provided he or she is made aware of the potential for exposure. Typical criteria to remediate controlled environment are restricted access to the areas where antennas are located along with appropriate RF warning signage. A site with Controlled environment is evaluated with Occupational limits.



Maximum Permissible Exposures. Occupational/Controlled and General Population/Uncontrolled MPE's are functions of frequency.

Appendix B – Calculations Methodology and Assumptions

SAI Group has performed theoretical analysis using Waterford Consultants' RoofMaster™ 2020 Version 30.5.26.2022 which uses a cylindrical model for very conservative power density calculations within the near field of the antenna where the antenna pattern has not truly formed yet. The Cylindrical Model is used to determine the spatially averaged power density in the near field directly in front of an antenna. In order to implement this model in all directions, the calculations utilize the antenna manufacturer horizontal pattern data. Additionally, the model also incorporates factors that reduce the power density by inverse square of horizontal and vertical distances beyond the near field region.

RoofMaster™ uses far field model to calculate the spatial peak power density. The RoofMaster™ implementation of this model incorporated manufacturer's horizontal and vertical pattern data to determine the power density in all directions.

The calculations are based on worst-case assumptions that, all antennas are always operating at full power.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized.

Appendix C – Informative References

The following references can be followed for further information about RF Health and Safety.

FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety

FCC OET Bulletin 56
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

FCC OET Bulletin 65
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf

National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org

American National Standards Institute (ANSI)
http://www.ansi.org

Environmental Protection Agency (EPA)
https://www3.epa.gov/radtown/wireless-technology.html

National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/

Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/

International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org/

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING GUYED TOWER:
- NEW AT&T ANTENNAS: TPA-65R-BU4DA-K (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6449 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T DC/FIBER SURGE ARRESTOR DC9-48-60-24-8C-EV (TOTAL OF 1) WITH (3) AWG6 DC TRUNK & (1) 24 PAIR FIBER LINE.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- ADD (1) 6648 + XCEDE CABLE

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNAS: SBNHH-1D65A (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO REMAIN:
- (3) ANTENNAS, (6) RRHS, (1) SURGE ARRESTOR. (2) AWG6 DC POWER & (1) 12-PAIR FIBER.

SITE ADDRESS:	135 NEW ROAD MADISON, CT 06443
LATITUDE:	41.293091° N, 41° 17' 35.13" N
LONGITUDE:	72.578398° W, 72° 34' 42.23" W
TYPE OF SITE:	GUYED TOWER / OUTDOOR
STRUCTURE HEIGHT:	180'-0"±
RAD CENTER:	78'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CTL05206

SITE NAME: MADISON EAST

FA CODE: 10071098

PACE ID: MRCTB056013, MRCTB056510, MRCTB054291, MRCTB056033

PROJECT: 5G NR RADIO, 5G NR 1ST CBAND, BBU RECONFIGURATION_ LTE 5C UPGRADE

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:

I-95N TO EXIT 62. AT TOP OF RAMP MAKE LEFT AND CROSS OVER HIGHWAY. AT NEXT INTERSECTION, MAKE LEFT ONTO NEW ROAD. AFTER MAKING TURN, LOOK FOR ARAMARK SIGN AT 135 NEW ROAD ON YOUR RIGHT AND ENTER HERE. AFTER PASSING ARAMARK SIGN, TAKE DRIVEWAY ON YOUR RIGHT AND HEAD STRAIGHT TO CL&P GATE. PROCEED THROUGH GATE AND DRIVE TOWARD REAR OF COMPLEX WHERE TOWER IS LOCATED.

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.
5. NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

   TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

72 HOURS

CALL
BEFORE YOU DIG

CALL TOLL FREE 1-800-922-4455

OR CALL 811

UNDERGROUND SERVICE ALERT

TEP NORTHEAST
TEP OPCO, LLC.
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05206
SITE NAME: MADISON EAST

135 NEW ROAD
MADISON, CT 06443
NEW HAVEN COUNTY

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/27/23	ISSUED FOR CONSTRUCTION	GA	HC	DPH
1	02/06/23	ISSUED FOR CONSTRUCTION	YH	HC	DPH
0	08/31/22	ISSUED FOR REVIEW	MR	HC	DPH
A	08/08/22	ISSUED FOR REVIEW	MR	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: MR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
5G NR RADIO, 5G NR 1ST CBAND, BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	T-1	2

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. 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.

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

4. 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.

5. 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 AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.

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

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

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

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

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

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

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

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

   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

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 BE SCALED 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 CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR 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. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. **APPLICABLE BUILDING CODES:**
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

    BUILDING CODE: IBC 2021 WITH 2022 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE (NFPA 70-2020)

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

TEP NORTHEAST
TEP OPCO, LLC.
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SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05206
SITE NAME: MADISON EAST

135 NEW ROAD
MADISON, CT 06443
NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/27/23	ISSUED FOR CONSTRUCTION	GA	HC	DPH
1	02/06/23	ISSUED FOR CONSTRUCTION	YH	HC	DPH
0	08/31/22	ISSUED FOR REVIEW	MR	HC	DPH
A	08/08/22	ISSUED FOR REVIEW	MR	HC	DPH

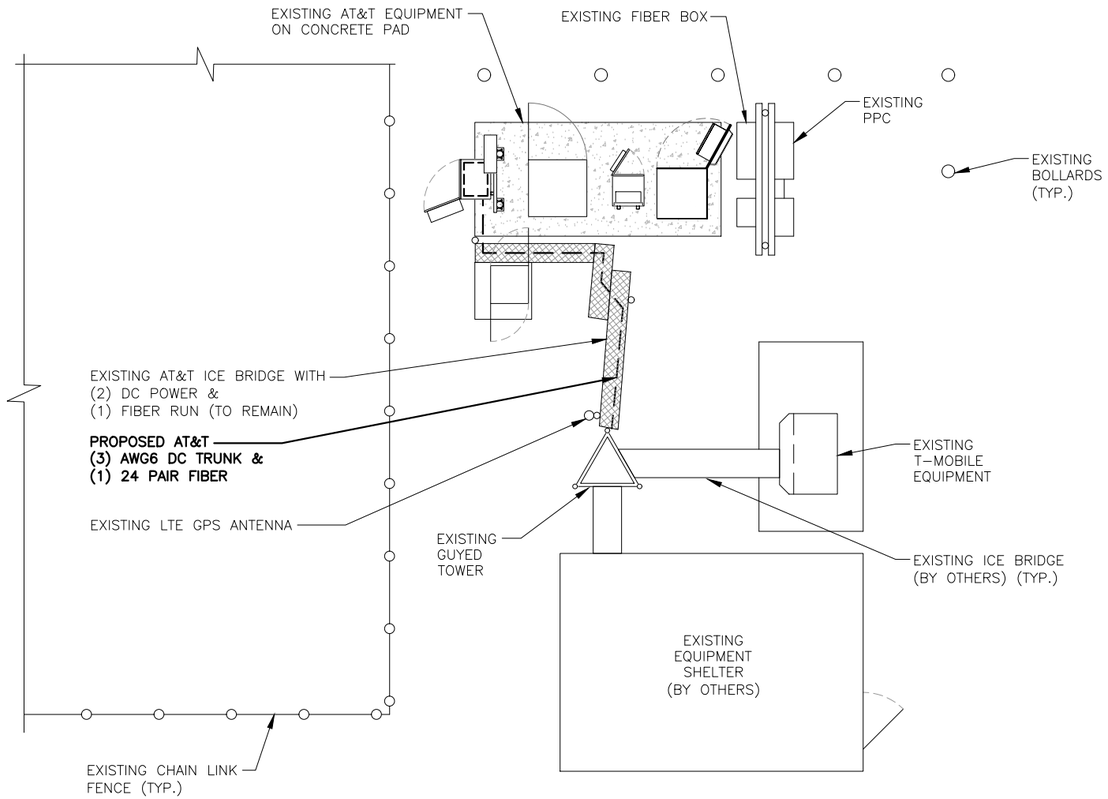
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: MR

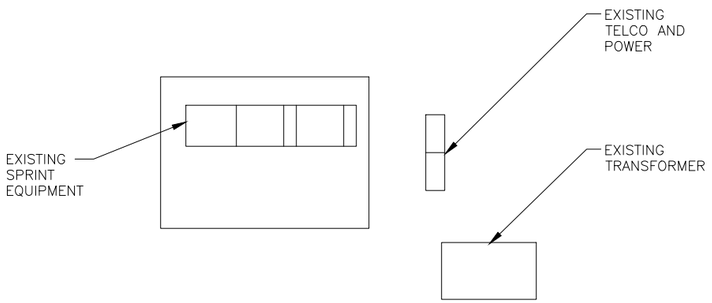
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
5G NR RADIO, 5G NR 1ST CBAND,
BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	GN-1	2





COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"

0 2'-0" 4'-0" 8'-0" 12'-0"

NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

TEP NORTHEAST (TEP OPCO, LLC.) TO PERFORM POST/CLIMB AND INSPECTION TO CONFIRM PROPOSED INSTALLATION COMPLIES WITH THE RECORD STAMPED DRAWINGS AND STRUCTURAL REPORTS PRIOR TO SUBMITTING FCCA (FINAL CONSTRUCTION CONTROL AFFIDAVIT). GC IS RESPONSIBLE FOR COORDINATING INSPECTIONS WITH TEP NORTHEAST (TEP OPCO, LLC.) PRIOR TO CONSTRUCTION BEING COMPLETED.

NOTE:

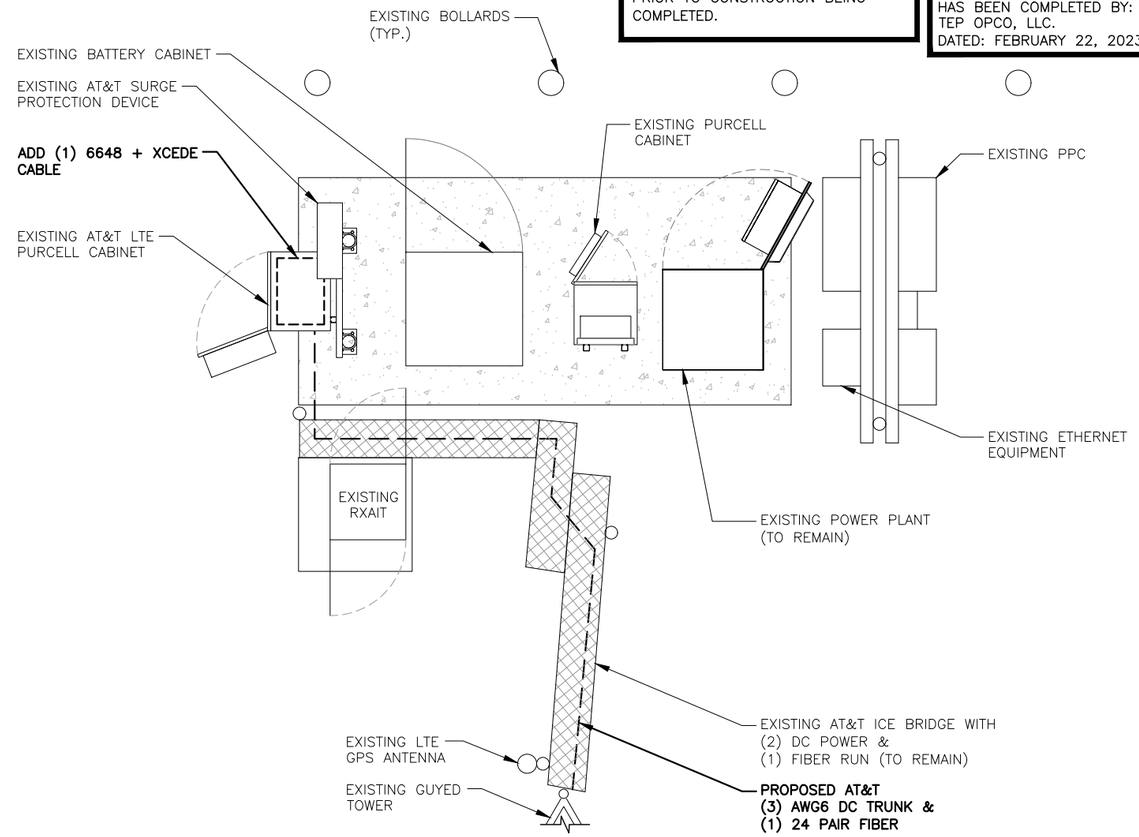
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

REFER TO **STRUCTURAL ANALYSIS** BY: CENTEK ENGINEERING.
DATED: FEBRUARY 22, 2023 (Rev.1)
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
TEP OPCO, LLC.
DATED: FEBRUARY 22, 2023 (REV.1)



EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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SAI
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SALEM, NH 03079

SITE NUMBER: CTL05206
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at&t
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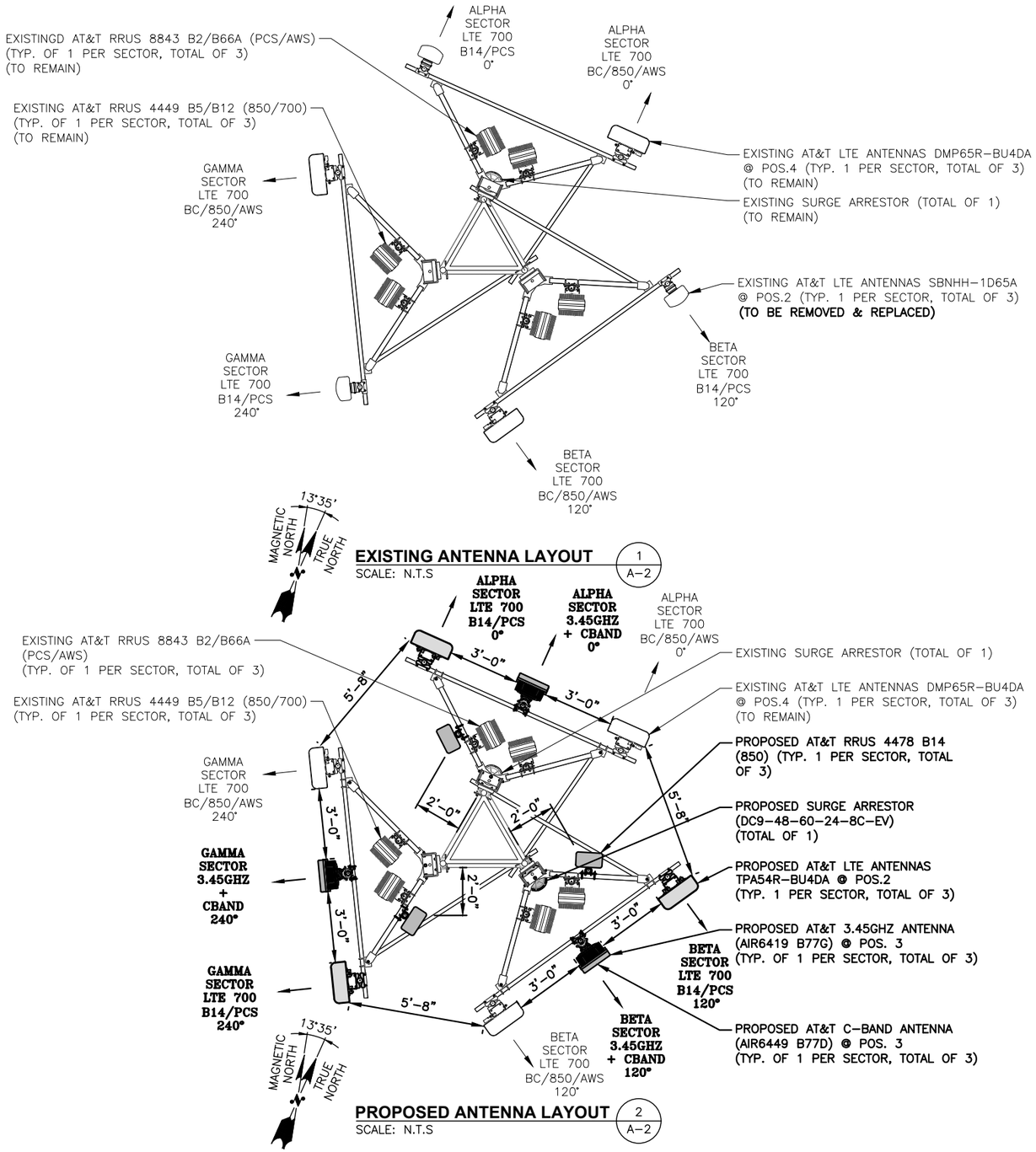
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: MR

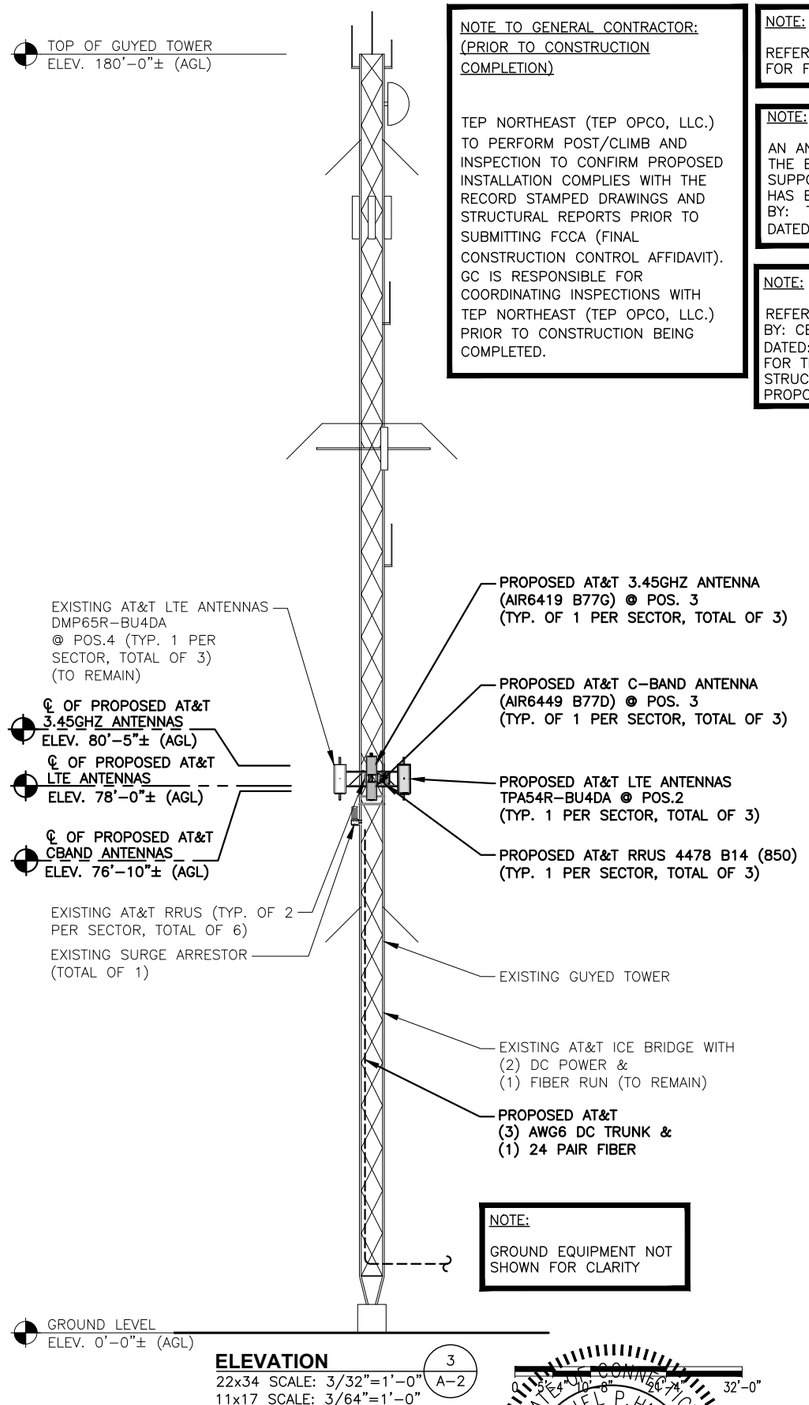
STATE OF CONNECTICUT · DANIEL P. HAMM · NO. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS
5G NR RADIO, 5G NR 1ST CBAND, BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	A-1	2





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NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: TEP NORTHEAST
DATED: FEBRUARY 22, 2023 (Rev1).

NOTE:

REFER TO **STRUCTURAL ANALYSIS** BY: CENTEK ENGINEERING.
DATED: FEBRUARY 22, 2023 (Rev.1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: MR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION
5G NR RADIO, 5G NR 1ST CBAND, B5U RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	A-2	2

ANTENNA SCHEDULE

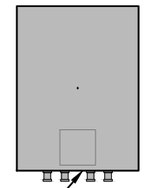
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	–	–	–	–		(E) (1) RAYCAP DC6-48-60-18-8F
A2	**PROPOSED**	**LTE 700 B14/PCS**	**TPA-65R-BU4DA-K**	**48X20.7X7.7**	**78'-0"±**	**80'-0"±**	**0°**	**(P)(1) 4478 B14 (700)** (E)(1) 8843 B2/B66A (PCS/AWS)	**18.1"X13.4"X8.3"** –	(2)(E) DC POWER & (1) FIBER (1)(E) Y-CABLE	
A3	**PROPOSED**	**3.45GHZ + CBAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1X16.1X7.3 30.6X15.9X10.6**	**80'-5"± 76'-10"±**	**81'-8"± 78'-1"±**	**0°**	–	–	–	
A4	EXISTING	**LTE 700 BC/850/AWS**	DMP65R-BU4DA	48X20.7X7.7	78'-0"±	80'-0"±	0°	(E)(1) 4449 B5/B12 (850/700)	–	(1)(E) Y-CABLE	
B1	–	–	–	–	–	–	–	–	–	–	(P) (1) RAYCAP DC9-48-60-24-8C-EV
B2	**PROPOSED**	**LTE 700 B14/PCS**	**TPA-65R-BU4DA-K**	**48X20.7X7.7**	**78'-0"±**	**80'-0"±**	**120°**	**(P)(1) 4478 B14 (700)** (E)(1) 8843 B2/B66A (PCS/AWS)	**18.1"X13.4"X8.3"** –	**(3)(P) DC POWER & (1) FIBER** (1)(E) Y-CABLE	
B3	**PROPOSED**	**3.45GHZ + CBAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1X16.1X7.3 30.6X15.9X10.6**	**80'-5"± 76'-10"±**	**81'-8"± 78'-1"±**	**120°**	–	–	–	
B4	EXISTING	**LTE 700 BC/850/AWS**	DMP65R-BU4DA	48X20.7X7.7	78'-0"±	80'-0"±	**120°**	(E)(1) 4449 B5/B12 (850/700)	–	(1)(E) Y-CABLE	
C1	–	–	–	–	–	–	–	–	–	(1)(E) Y-CABLE	SHARED
C2	**PROPOSED**	**LTE 700 B14/PCS**	**TPA-65R-BU4DA-K**	**48X20.7X7.7**	**78'-0"±**	**80'-0"±**	**240°**	**(P)(1) 4478 B14 (700)** (E)(1) 8843 B2/B66A (PCS/AWS)	**18.1"X13.4"X8.3"** –	–	
C3	**PROPOSED**	**3.45GHZ + CBAND**	**AIR6419 B77G AIR6449 B77 (STACKED)**	**31.1X16.1X7.3 30.6X15.9X10.6**	**80'-5"± 76'-10"±**	**81'-8"± 78'-1"±**	**240°**	–	–	–	
C4	EXISTING	**LTE 700 BC/850/AWS**	DMP65R-BU4DA	48X20.7X7.7	78'-0"±	80'-0"±	**240°**	(E)(1) 4449 B5/B12 (850/700)	–	(1)(E) Y-CABLE	

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
3(E)	4449 (850/700)	17.9"x13.2"x10.4"
3(E)	8843 (PCS/AWS)	14.9"x13.2"x10.9"
3(P)	**4478 B14 (700)**	**18.1"X13.4"X8.3"**

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (2 / A-5)
SCALE: N.T.S

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: TEP NORTHEAST
DATED: FEBRUARY 22, 2023 (Rev1).

NOTE:
REFER TO **STRUCTURAL ANALYSIS** BY: CENTEK ENGINEERING.
DATED: FEBRUARY 22, 2023 (Rev.1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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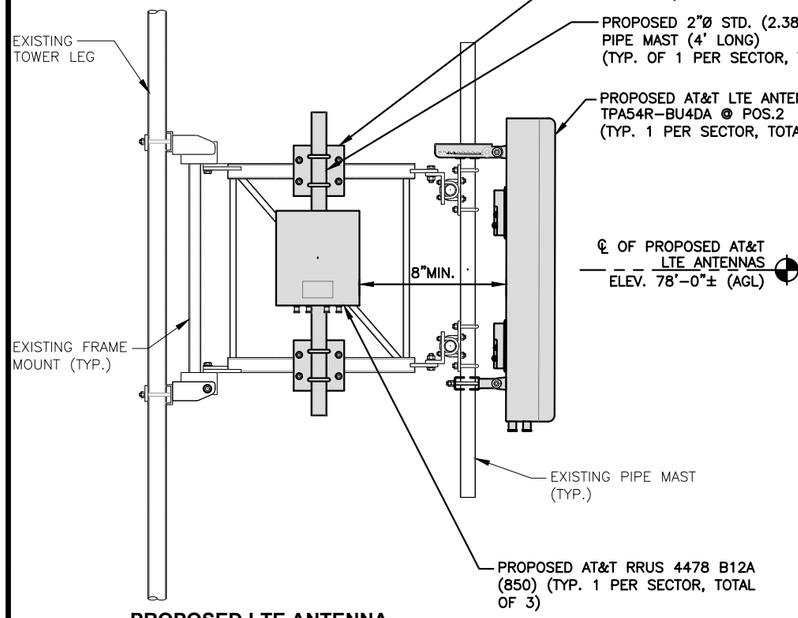
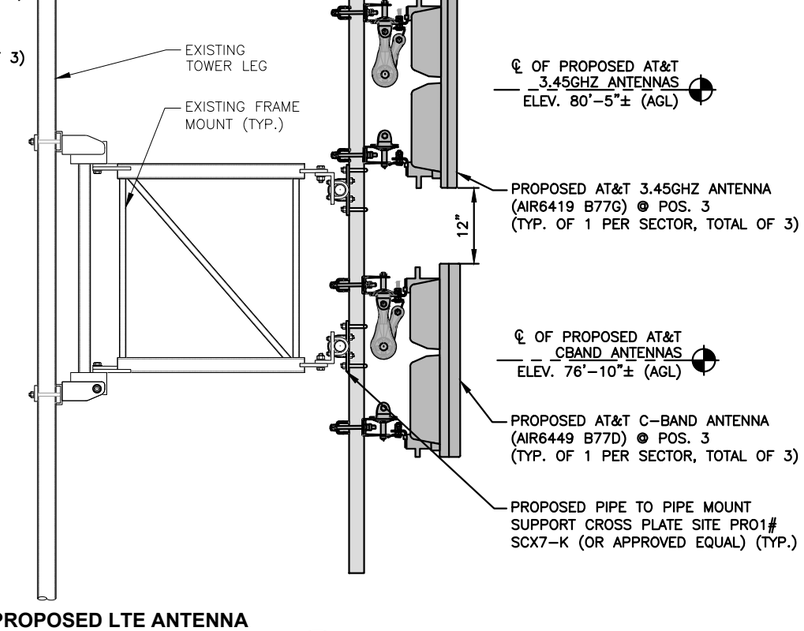
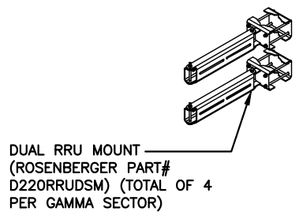
FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S



PROPOSED LTE ANTENNA MOUNTING DETAIL @ POS. 2 (3 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED LTE ANTENNA MOUNTING DETAIL @ POS.3 (4 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



DUAL RRU MOUNT DETAIL (5)
SCALE: N.T.S

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SITE NUMBER: CTL05206
SITE NAME: MADISON EAST

135 NEW ROAD
MADISON, CT 06443
NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	02/27/23	ISSUED FOR CONSTRUCTION	GA	HC	DPH
1	02/06/23	ISSUED FOR CONSTRUCTION	YH	HC	DPH
0	08/31/22	ISSUED FOR REVIEW	MR	HC	DPH
A	08/08/22	ISSUED FOR REVIEW	MR	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: MR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
5G NR RADIO, 5G NR 1ST CBAND, BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	A-3	2

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

TEP NORTHEAST
TEP OPCO, LLC.
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05206
SITE NAME: MADISON EAST

135 NEW ROAD
MADISON, CT 06443
NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: MR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

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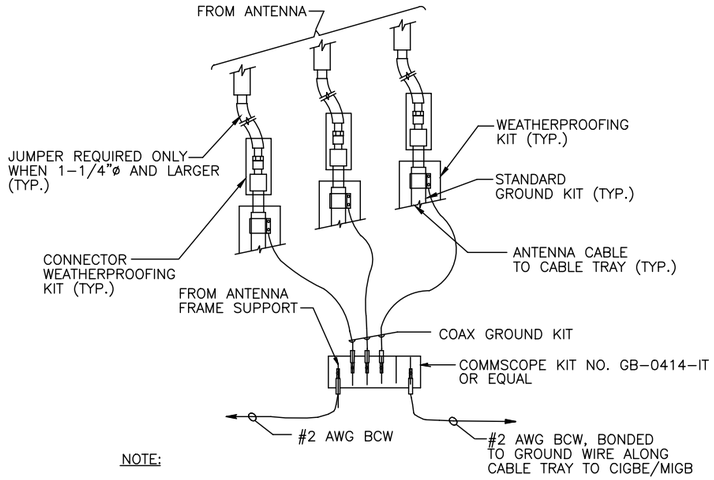
STRUCTURAL NOTES
5G NR RADIO, 5G NR 1ST CBAND, BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	SN-1	2



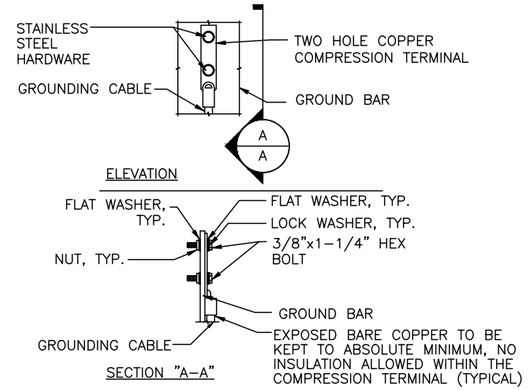
NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

1 / G–1



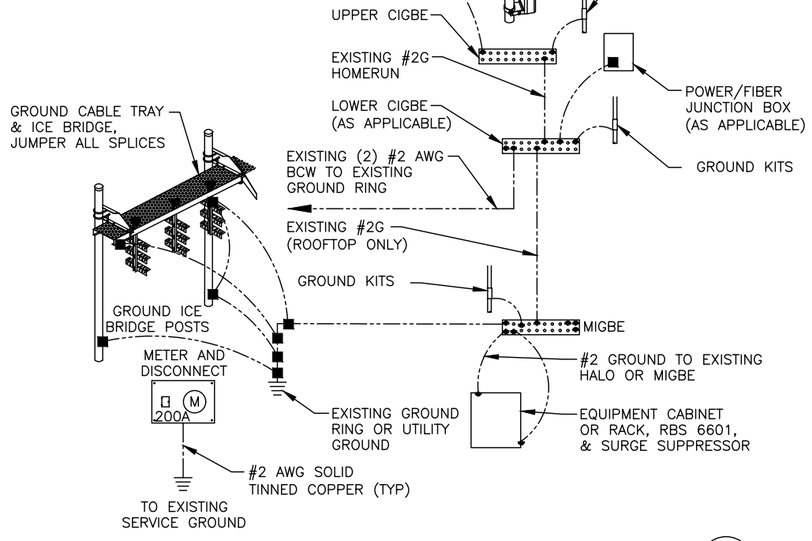
NOTES:

1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G–1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G–1

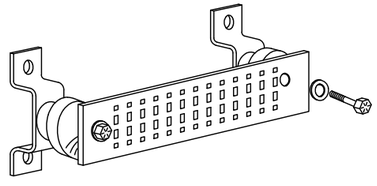
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
+24V POWER SUPPLY RETURN BAR (#2 AWG)
–48V POWER SUPPLY RETURN BAR (#2 AWG)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

INTERIOR GROUND RING (#2 AWG)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
BUILDING STEEL (IF AVAILABLE) (#2 AWG)



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

TEP NORTHEAST
TEP OPCO, LLC.
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

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SALEM, NH 03079

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STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

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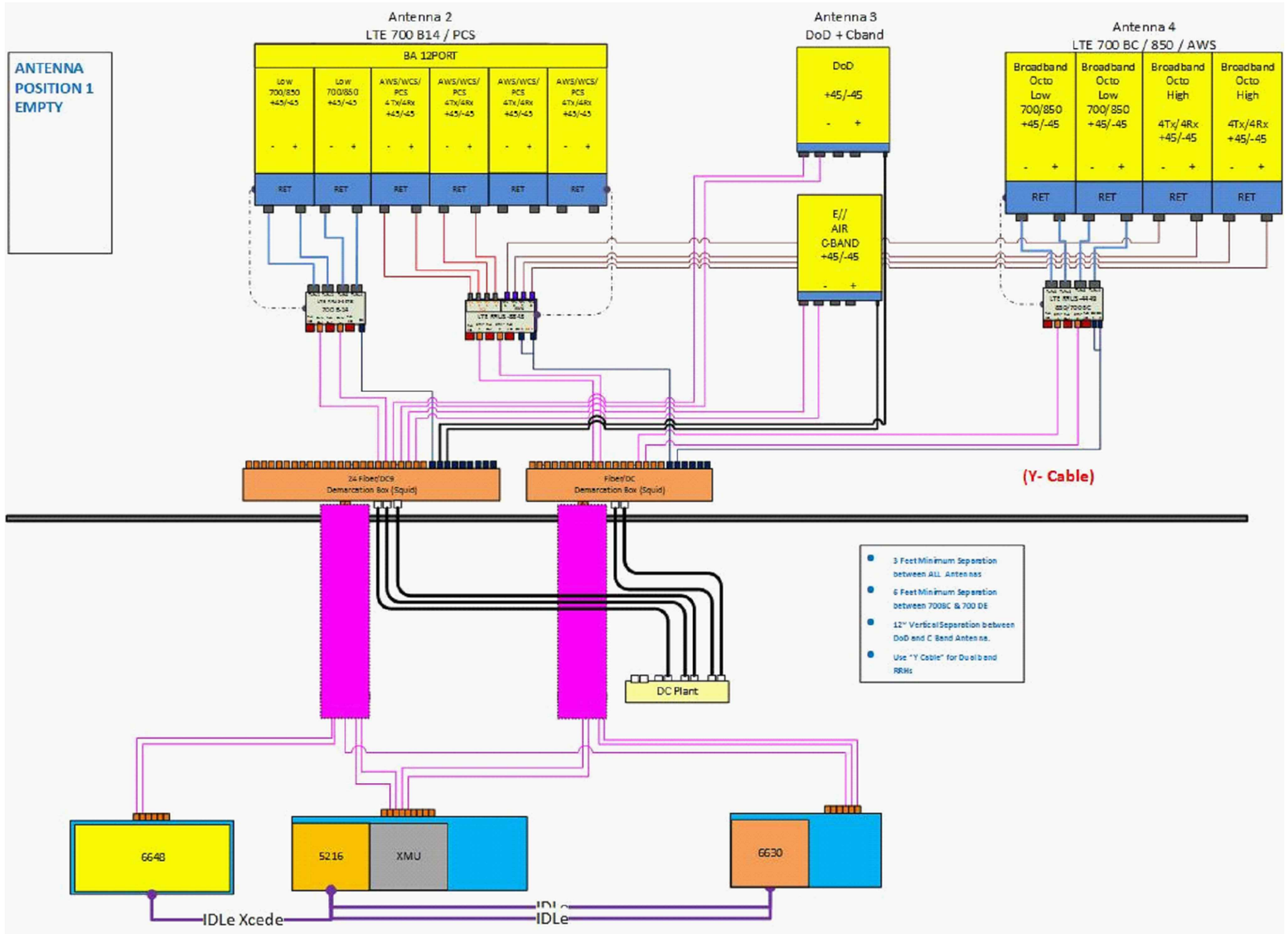
GROUNDING DETAILS
5G NR RADIO, 5G NR 1ST CBAND, 8BOO RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	G–1	2

NOTE:

REV: 2
DATED: 05/24/2022
RFDS ID: 4877956



RF PLUMBING DIAGRAM
SCALE: N.T.S

1
RF–1

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

TEP NORTHEAST
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45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: MR

AT&T

RF PLUMBING DIAGRAM
5G NR RADIO, 5G NR 1ST CBAND, BBU RECONFIGURATION UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05206	RF–1	2

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

180-ft Existing ROHN Guyed Lattice Tower

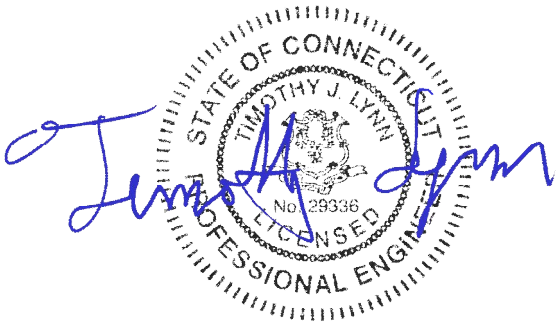
Proposed AT&T Antenna Upgrade

Site Ref: CT5206

135 New Road
Madison, CT 06443

CENTEK Project No. 22007.10

~~Date: September 12, 2022~~
Rev 1: February 22, 2023



Prepared for:
AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by AT&T on the existing guyed lattice tower located in Madison, Connecticut.

The host tower is a 180-ft, three legged, Model 80 guyed lattice tower originally designed and manufactured by UNR-ROHN. The tower geometry and structure member size information were obtained from a previous structural analysis report prepared by Centek project no. 22006.01 dated April 4, 2022.

Antenna and appurtenance inventory were obtained from the aforementioned structural analysis report and a RF data sheet.

The tower consists of nine (9) vertical sections consisting of ROHN steel pipe legs conforming to ASTM A572-50. Diagonal and horizontal lateral support bracing consists of a combination of steel angle and pipe construction conforming to ASTM A36 and A53 Gr. B 35ksi. All connections are bolted. The width of the tower face is 3.41-ft at the top and bottom with a 5-ft tall tapered base section.

Antenna and Appurtenance Summary

The existing and proposed loads considered in the analysis consist of the following:

- EVERSOURCE (Existing):
  Antenna: One (1) dbspectra DS2C03F36D-D Omni-directional whip antenna mounted on a standoff to a leg of the existing tower with an elevation of ±177-ft above grade level.
  Coax Cable: Two (2) 7/8" ∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- EVERSOURCE (Existing):
  Antenna: Two (2) 20-ft and one (1) 14-ft Omni-directional whip antennas mounted to a leg of the existing tower with an elevation of ±180-ft above grade level.
  Coax Cable: One (1) 1-5/8" ∅ and one (1) 7/8" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- EVERSOURCE (Existing):
  Antenna: One (1) 8.5-ft ∅ Microwave dish antenna with radome mounted to the leg of the existing tower with a RAD center elevation of ±175-ft above grade level.
  Coax Cable: One (1) Elliptical coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- T-MOBILE (Existing):
  Antennas: Three (3) RFS APXVAALL24_43 panel antennas, three (3) Ericsson AIR6419 panel antennas, three (3) Ericsson 4460 RRHs and three (3) Ericsson 4480 RRHs mounted on three (3) V-Frame (SitePro p/n VFA-12HD) with a RAD center elevation of 159-ft above grade level.
  Coax Cables: Three (3) 6x24 hybrid cables running on the face of the existing tower as specified in Section 3 of this report.

- EVERSOURCE (Existing):
  Antenna: One (1) 20-ft Omni-directional whip antenna pipe mounted with RAD center elevation of ±147-ft above grade level.
  Coax Cable: Two (2) 7/8" ∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- EVERSOURCE (Existing):
  Antenna: Two (2) 2-ft Omni-directional whip antennas mounted on a 2-ft stand-off with RAD center elevations of ±143-ft and 141-ft above grade level.
  Coax Cable: Two (2) 7/8" ∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- SPRINT (Existing):
  Antennas: Three (3) RFS APXVSPP18C panel antennas, three (3) RRH2x50-800 radio heads and three (3) 1900MHz 4X45 Remote Radio Heads mounted to three (3) existing 6-ft x 12-ft ROHN boom gates with a RAD center elevation of ±126-ft above grade level.
  Cables: Three (3) 1-1/4" ∅ Hybriflex cables running on the face of the existing tower as specified in Section 3 of this report.

- SPRINT (Existing):
  Antenna: One (1) GPS antenna mounted on a 2-ft stand-off with a RAD center elevation of ±88-ft above grade level.
  Coax Cable: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.

- AT&T (Existing to Remain):
  Antennas: Three (3) CCI DMP65R-BU4D panel antennas, three (3) Ericsson B2/B66A 8843 and three (3) Ericsson B5/B12 4449 remote radio heads mounted to three (3) 12-ft V-Frames with a RAD center elevation of 78-ft above grade level.
  Surge Arrestor: One (1) Raycap DC6-48-60-18-8F Surge Arrestor mounted to the leg of the existing tower with a RAD center elevation of 72-ft above grade level.
  Coax Cables: One (1) 5/8" ∅ fiber optic cable and two (2) #8 DC control cables running on the face of the existing tower as specified in Section 3 of this report.

- **AT&T (Existing to Remove):**
  Antennas: Three (3) Commscope SBNHH-1D65A panel antennas mounted to three (3) 12-ft V-Frames with a RAD center elevation of 78-ft above grade level.

- **AT&T (Proposed):**
  Antennas: Three (3) CCI TPA-65R-BU4DA panel antennas, three (3) Ericsson AIR6449 panel antennas, three (3) Ericsson AIR6419 panel antennas and three (3) Ericsson 4478 B14 remote radio heads mounted to three (3) 12-ft V-Frames with a RAD center elevation of 78-ft above grade level.
  Surge Arrestor: One (1) Raycap DC9 Surge Arrestor mounted to the leg of the existing tower with a RAD center elevation of 72-ft above grade level.
  Coax Cables: One (1) 5/8" ∅ fiber optic cable and three (3) #8 DC control cables running on the face of the existing tower as specified in Section 3 of this report.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables routed as specified in Section 3 of this report.

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-H entitled "Structural Standard for Antenna Support Structures, Antennas and Small Wind Turbine Support Structures", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix N of the CSBC[1] and the wind speed data available in the TIA-222-H Standard.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-H, gravity loads of the tower structure and its components, and the application of 1.0" radial ice on the tower structure and its components.

Load Cases:	Load Case 1; 135 mph (Risk Cat III) wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	*[Appendix P of the 2022 CT Building Code]*
	Load Case 2; 50 mph wind speed w/ 1.00" radial ice plus gravity load – used in calculation of tower stresses.	*[Annex B of TIA-222-H]*

[1] The 2021 International Building Code as amended by the 2022 Connecticut State Building Code (CSBC).

Tower Capacity

- Calculated stresses were found to be within allowable limits.

Tower Section	Elevation (ATB)	Stress Ratio (percentage of capacity)	Result
Leg (T8)	20'-0"-40'-0"	67.3%	**PASS**
Diagonal (T2)	140'-0"-160'-0"	69.5%	**PASS**
Guy A @ 184-ft radius (T1)	127'-8"	49.6%	**PASS**

- The tower combined deflection is **0.3260 degrees**.

Deflection Criteria	Proposed (degrees)
Sway (Tilt)	0.1639
Twist	0.2818
Combined	0.3260

Note 1: *Tower deflection calculated utilizing the service wind load combination and nominal wind speed of 105 mph.*

Foundations and Anchorage

The existing guy anchorage foundation system consists of three (3) inner and three (3) outer reinforced concrete guy anchor foundations and one pad and pier type base foundation, located below existing grade. The properties used in the analysis of the existing anchor foundations were obtained from the aforementioned structural analysis report prepared by Centek Engineering, Inc.

- The worst case tower base and guy anchor reactions developed from the governing Load Case were used in the verification of the anchorage foundations:

Tower Guy Reactions		
Vector	**Proposed Reactions Guy Anchor A at Radius of 150-ft**	**Proposed Reactions Guy Anchor A at Radius of 184-ft**
Horizontal (In Plane of GW)	**12.0 kips**	**31.0 kips**
Horizontal (Out of Plane of GW)	**0.5 kips**	**1.0 kips**
Vertical	**5.0 kips**	**24.0 kips**
Resultant Force at end of Guy Wire	**13.0 kips**	**39.0 kips**
Tower Base Reactions		
Vector	**Proposed Reaction**	
Horizontal Shear	**1.0 kips**	
Axial Compression	**118.0 kips**	

Foundation	**Design Limit**	**TIA-222-H Section 9.4 FS**[1]	**Proposed Loading (FS)**[1]	**Result**
Reinf. Conc. Anchor Block (A) at 150-ft radius.	Uplift	1.0	7.9	**PASS**
	Sliding	1.0	4.1	**PASS**
Reinf. Conc. Anchor Block (A) at 184-ft radius.	Uplift	1.0	2.8	**PASS**
	Sliding	1.0	2.8	**PASS**
		Ultimate	**Proposed**	
Base Foundation	Bearing	16.0 ksf [2]	5.2 ksf	**PASS**

Note 1: FS denotes 'Factor of Safety'.
Note 2: Based on soil boring prepared by Clarence Welti dated 6/16/97 which indicated weathered rock.

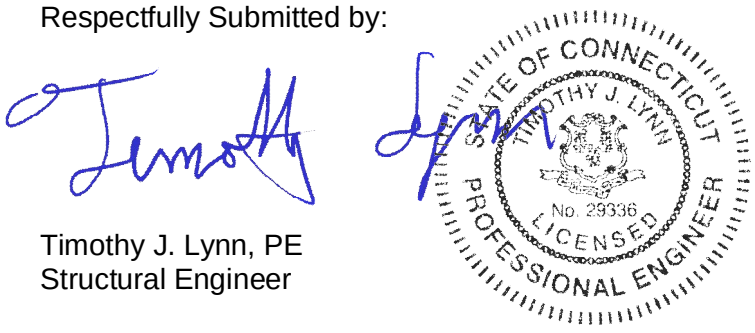
C o n c l u s i o n

This analysis shows that the subject tower **is adequate** to support the proposed equipment upgrade.

The analysis is based, in part on the information provided to this office by Eversource and AT&T. If the existing conditions are different than the information in this report, CENTEK engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

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

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

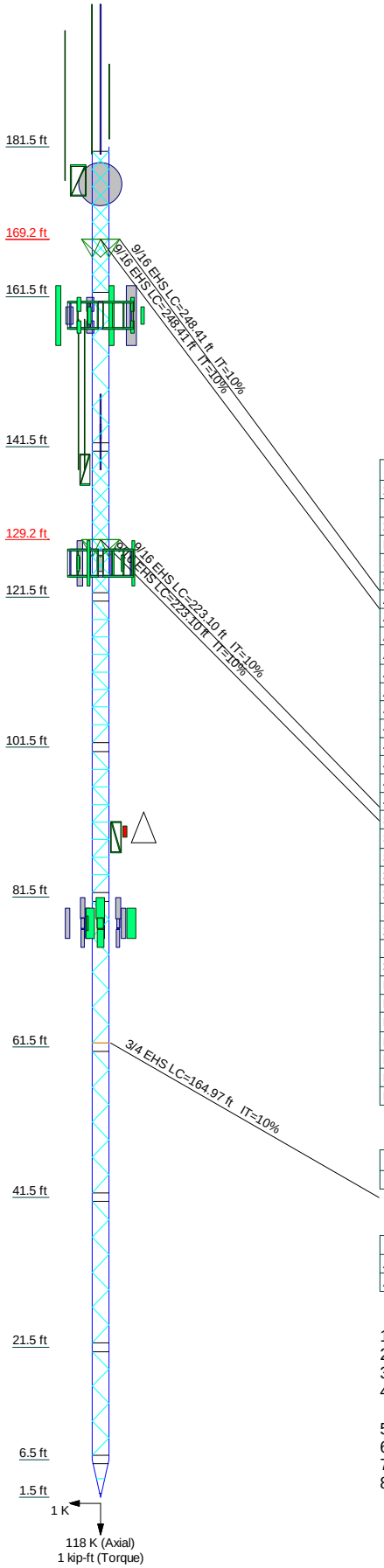
GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

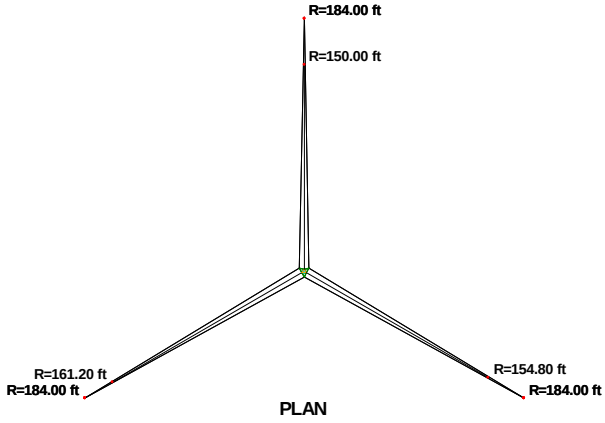
tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, RISATower, formerly ERITower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	
Legs		P2.5x.203										
Leg Grade		A572-50										
Diagonals	N.A.	L1 3/4x1 3/4x3/16	ROHN TS1.5x16 ga	L2x2x3/16	L2 1/2x2 1/2x1/2	ROHN TS1.5x16 ga	L2 1/2x2 1/2x1/2		ROHN TS1.5x16 ga	L2 1/2x2 1/2x1/2		13
Diagonal Grade	N.A.	A36	A53-B-35	A36		A53-B-35	A36		A53-B-35	A36		
Top Girts	A	L1 3/4x1 3/4x3/16	ROHN TS1.5x16 ga	L2x2x3/16	L2 1/2x2 1/2x1/2	ROHN TS1.5x16 ga	L2 1/2x2 1/2x1/2		ROHN TS1.5x16 ga	L2 1/2x2 1/2x1/2		0.5
Bottom Girts	A	L1 3/4x1 3/4x3/16	ROHN TS1.5x16 ga	L2x2x3/16	L2 1/2x2 1/2x1/2	ROHN TS1.5x16 ga	L2 1/2x2 1/2x1/2		ROHN TS1.5x16 ga	L2 1/2x2 1/2x1/2		
Horizontals	A	N.A.	N.A.	N.A.	L2 1/2x2 1/2x1/2				N.A.			
Top Guy Pull-Offs		N.A.		N.A.			4 1/2x3/8		N.A.			1.4
Face Width (ft)		3.41				72 @ 2.34635						1.8
# Panels @ (ft)	3 @ 2									7 @ 2.29514	0.4	
Weight (K)	10.3											1.0





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
20' x 2" Dia Omni (Eversource)	180.5	Rohn 6' x 12' Boom Gate (1) (Sprint)	126
14' x 3" Dia Omni (Eversource)	180.5	APXVSPP18-C-A20 (Sprint)	126
20' x 2" Dia Omni (Eversource)	180.5	APXVSPP18-C-A20 (Sprint)	126
DS2C03F36D-D (Eversource)	177	APXVSPP18-C-A20 (Sprint)	126
SitePro USF-4U (Eversource)	177	FD-RRH 2x50 800 (Sprint)	126
8.5 Dishw/radome (NU)	176.5	3' GPS Stand-off Mount (Sprint)	89.5
AIR6419 (T-Mobile)	159	GPS (Sprint)	89.5
APXVAALL24-43 (T-Mobile)	159	4478 B14 (AT⌶ - Proposed)	78
AIR6419 (T-Mobile)	159	4478 B14 (AT⌶ - Proposed)	78
APXVAALL24-43 (T-Mobile)	159	4478 B14 (AT⌶ - Proposed)	78
AIR6419 (T-Mobile)	159	DC6-48-60-18-8F Surge Arrestor (AT⌶)	78
APXVAALL24-43 (T-Mobile)	159	DC9 (AT⌶ - Proposed)	78
4480 B71+B85 (T-Mobile)	159	12' V-Frame (AT⌶)	78
4480 B71+B85 (T-Mobile)	159	12' V-Frame (AT⌶)	78
4480 B71+B85 (T-Mobile)	159	12' V-Frame (AT⌶)	78
4460 B25+B66 (T-Mobile)	159	DMP65R-BU4D (AT⌶)	78
4460 B25+B66 (T-Mobile)	159	DMP65R-BU4D (AT⌶)	78
4460 B25+B66 (T-Mobile)	159	AIR6449 (AT⌶ - Proposed)	78
SitePro VFA12-HD (T-Mobile)	159	AIR6419 (AT⌶ - Proposed)	78
SitePro VFA12-HD (T-Mobile)	159	AIR6449 (AT⌶ - Proposed)	78
SitePro VFA12-HD (T-Mobile)	159	AIR6419 (AT⌶ - Proposed)	78
3"x20-ft Omni (Eversource)	148.5	AIR6449 (AT⌶ - Proposed)	78
20-ft x 1.9in Support Pipe (Eversource)	148.5	AIR6419 (AT⌶ - Proposed)	78
1.5"x2'omni (Eversource)	144.5	TPA-65R-BU4D (AT⌶ - Proposed)	78
2-ft Stand Off (Eversource)	143.5	TPA-65R-BU4D (AT⌶ - Proposed)	78
1.5"x2'omni (Eversource)	142.5	TPA-65R-BU4D (AT⌶ - Proposed)	78
3-ft Side Arm (Eversource)	138.5	4449 B5/B12 (AT⌶)	78
FD-RRH 2x50 800 (Sprint)	126	DMP65R-BU4D (AT⌶)	78
FD-RRH 2x50 800 (Sprint)	126	8843 B2/B66A (AT⌶)	78
FD-RRH 4x45 1900 (Sprint)	126	4449 B5/B12 (AT⌶)	78
FD-RRH 4x45 1900 (Sprint)	126	8843 B2/B66A (AT⌶)	78
FD-RRH 4x45 1900 (Sprint)	126	8843 B2/B66A (AT⌶)	78
Rohn 6' x 12' Boom Gate (1) (Sprint)	126	4449 B5/B12 (AT⌶)	78
Rohn 6' x 12' Boom Gate (1) (Sprint)	126		

SYMBOL LIST

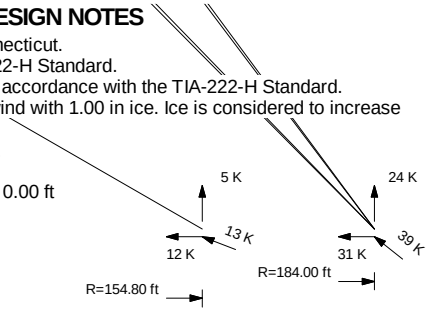
MARK	SIZE	MARK	SIZE
A	C12x20.7		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A53-B-35	35 ksi	63 ksi
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 135 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 105 mph wind.
6. Tower Risk Category III.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 69.5%



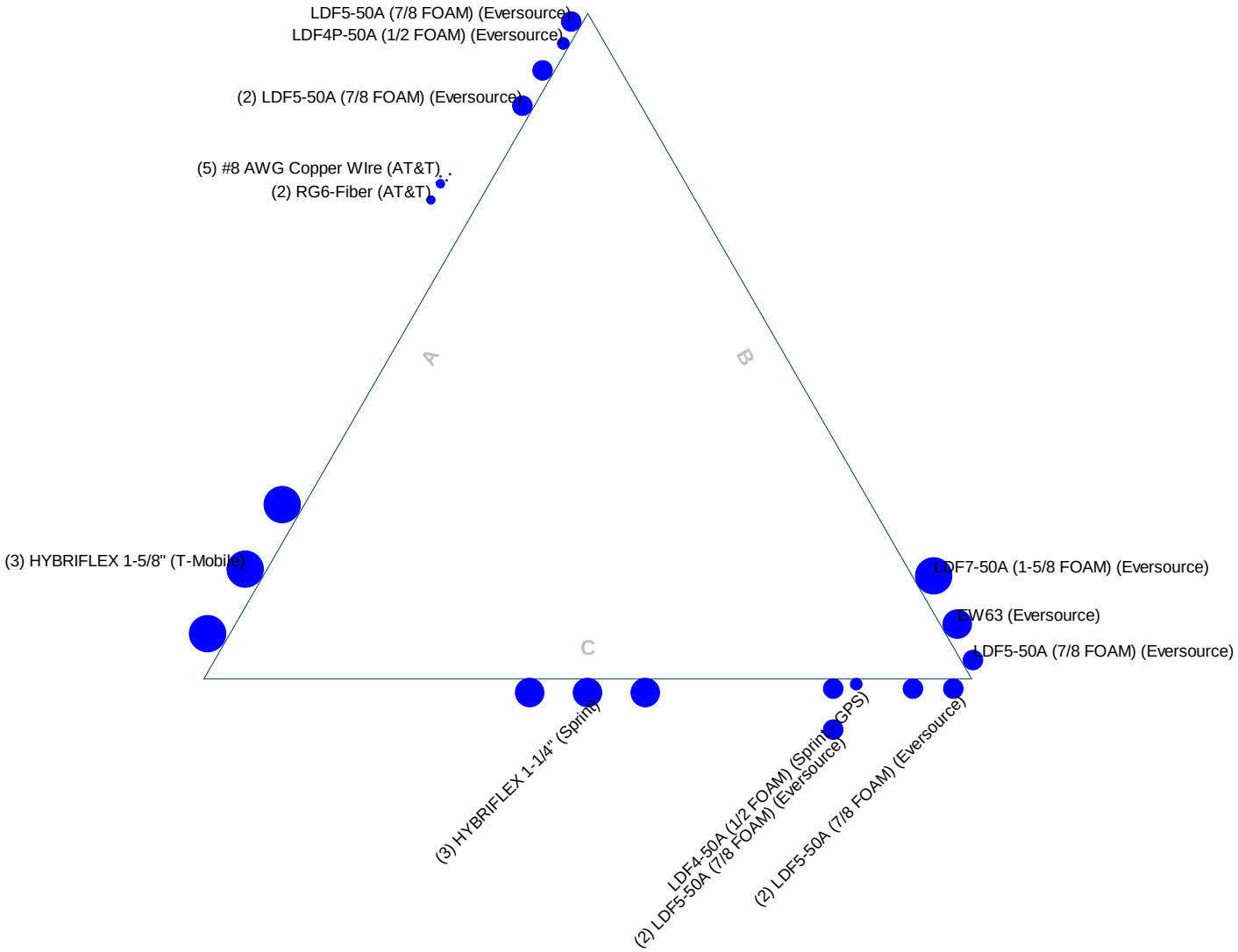
ALL REACTIONS ARE FACTORED

Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: **22007.10 - CT5206**		
Project: ***180' Guyed Lattice Tower - 125 New Rd., Madison, CT***		
Client: AT&T Mobility	Drawn by: TJL	App'd:
Code: TIA-222-H	Date: 02/22/23	Scale: NTS
Path: J:\Jobs\22007\00.WI\10_CT5206\05_Structural\Backup Documentation\[Rev (1)\ER\180-ft Guyed Lattice Tower_Madison_CT.eri]		Dwg No. E-1

Feed Line Plan

Round Flat App In Face App Out Face



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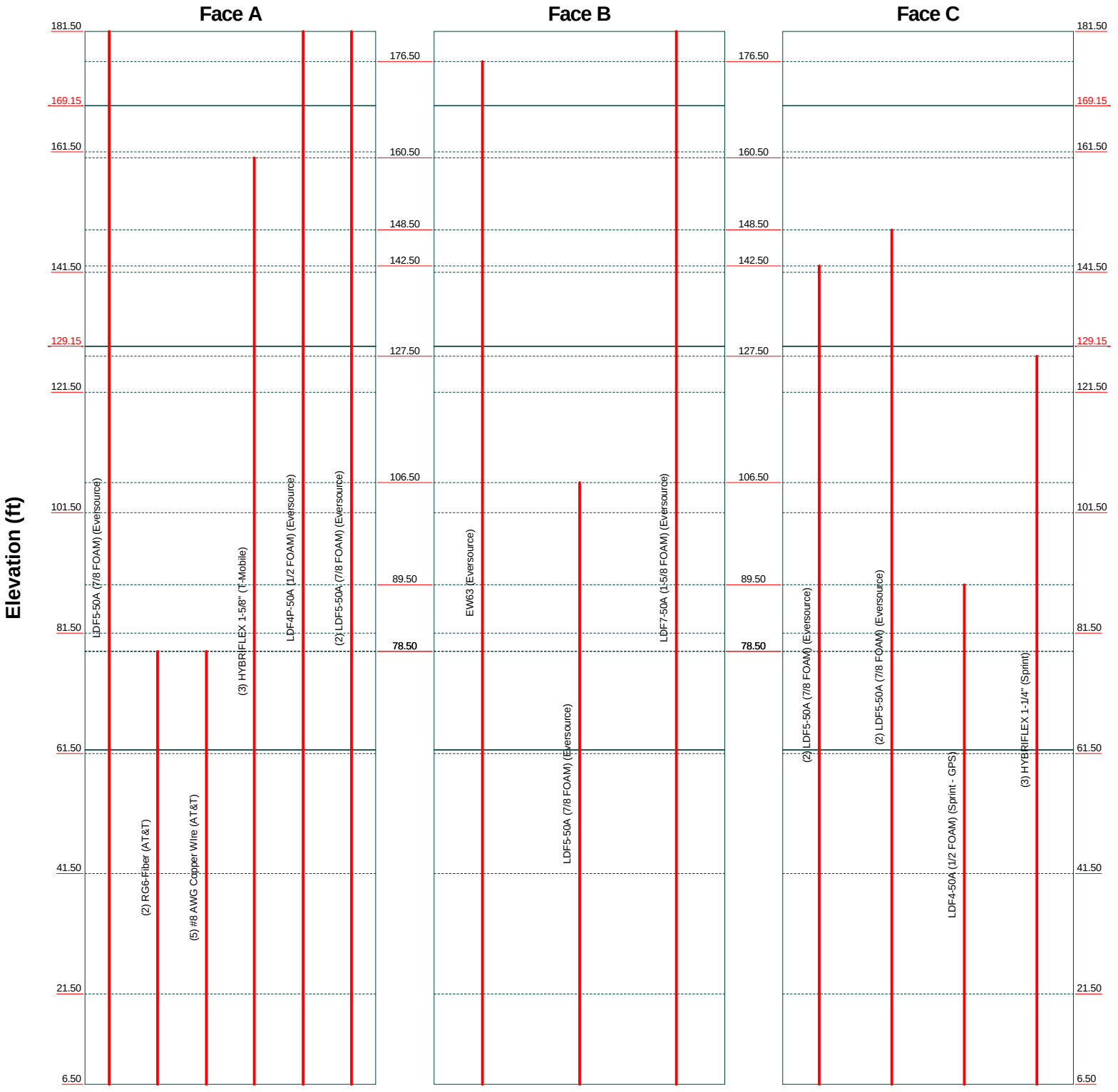
Code: TIA-222-H	Date: 02/22/23	Scale: NTS
Path: J:\Jobs\22007\00.Wk10_CT5206\05_Structural\Backup Documentation\[Rev (1)ER\180-ft Guyed Lattice Tower_Madison_CT.eri]		Dwg No. E-7

Feed Line Distribution Chart
6'6" - 181'6"

Round | Flat | App In Face | App Out Face | Truss Leg



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Path: J:\Jobs\22007\00.WI\10_CT5206\05_Structural\Backup Documentation\[Rev (1)ER\180-ft Guyed Lattice Tower_Madison_CT.eri]			Dwg No. E-7

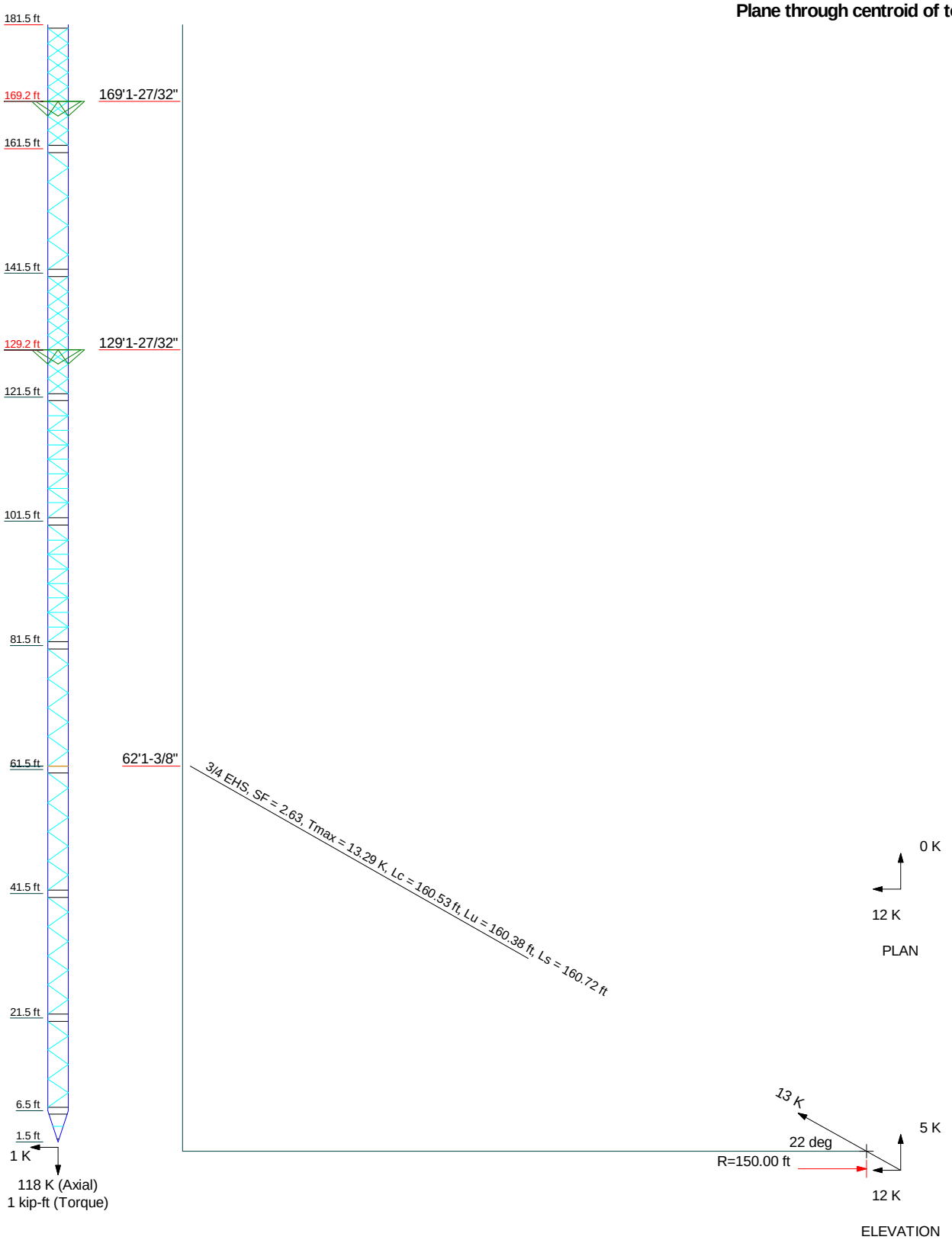
Guy Tensions and Tower Reactions

TIA-222-H - 135 mph/50 mph 1.0000 in Ice Exposure B

Maximum Values

Anchor 'A'@150 ft Azimuth 0 deg Elev 0 ft

Plane through centroid of tower



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Project: ***180' Guyed Lattice Tower - 125 New Rd., Madison, CT***			
Client: AT&T Mobility	Drawn by: TJL	App'd:	
Code: TIA-222-H	Date: 02/22/23	Scale: NTS	
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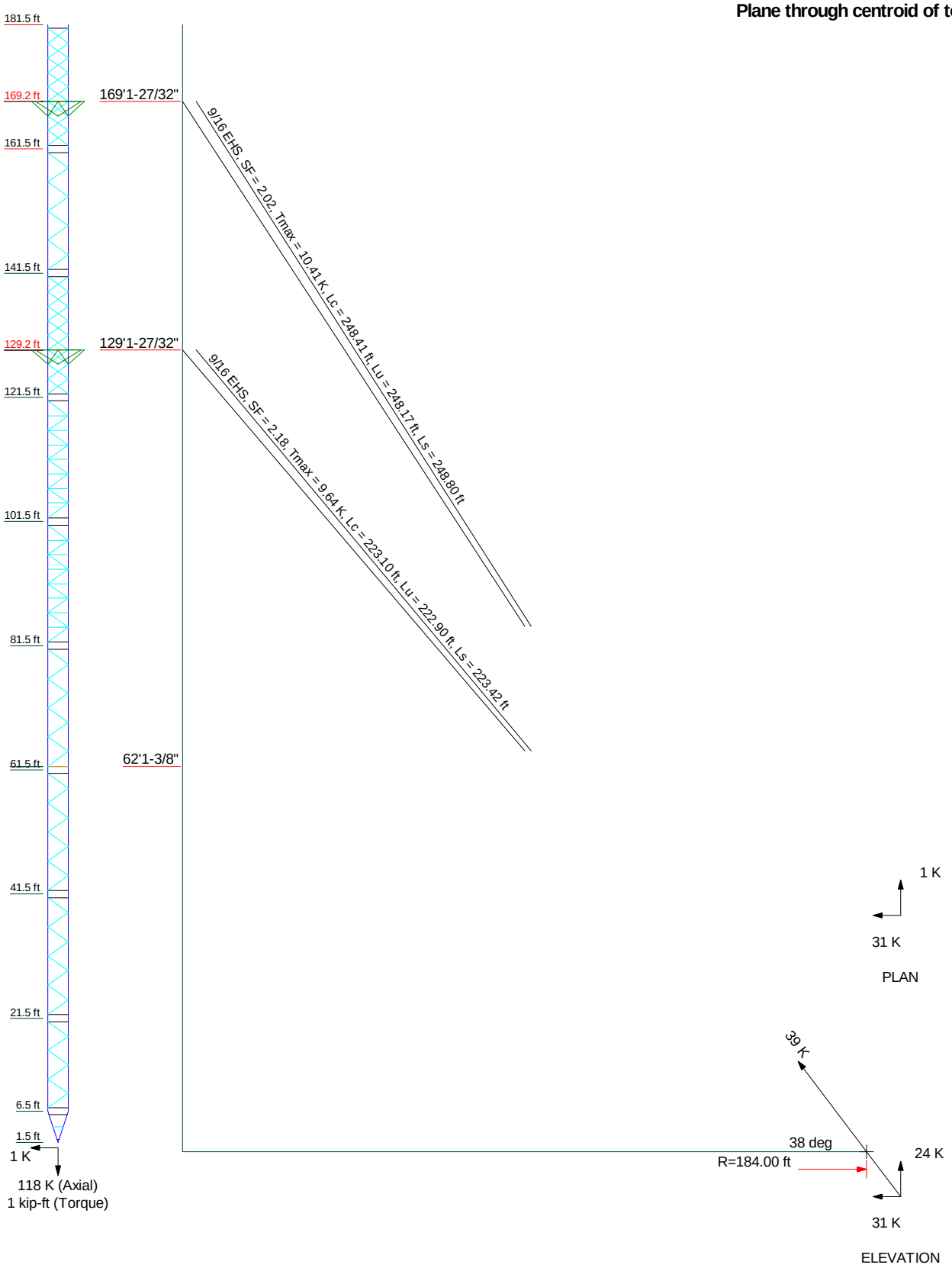
Guy Tensions and Tower Reactions

TIA-222-H - 135 mph/50 mph 1.0000 in Ice Exposure B

Maximum Values

Anchor 'A'@184 ft Azimuth 0 deg Elev 0 ft

Plane through centroid of tower



Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job: ***22007.10 - CT5206***		
	Project: ***180' Guyed Lattice Tower - 125 New Rd., Madison, CT***		
	Client: AT&T Mobility	Drawn by: TJL	App'd:
	Code: TIA-222-H	Date: 02/22/23	Scale: NTS
	Path: J:\Jobs\22007\00.WI\10_CT5206\05_Structural\Backup Documentation\Rev (1)\ER\180-ft Guyed Lattice Tower_Madison_CT.eri		Dwg No. E-6

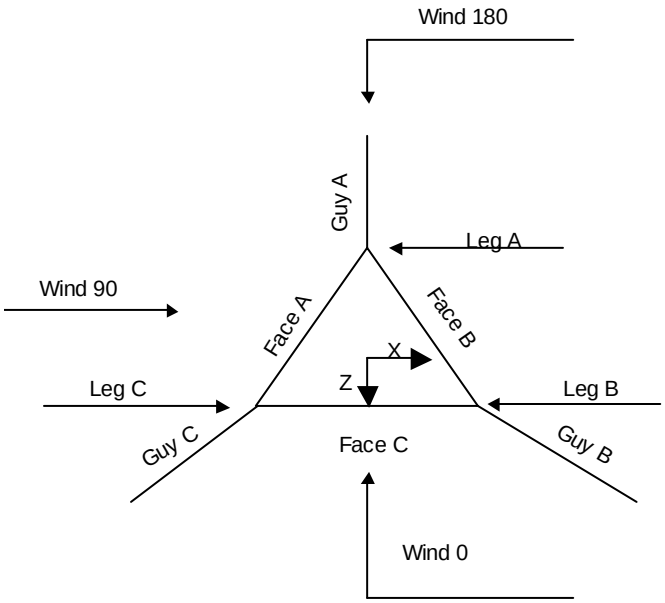
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 181.50 ft above the ground line.
The base of the tower is set at an elevation of 1.50 ft above the ground line.
The face width of the tower is 3.41 ft at the top and tapered at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

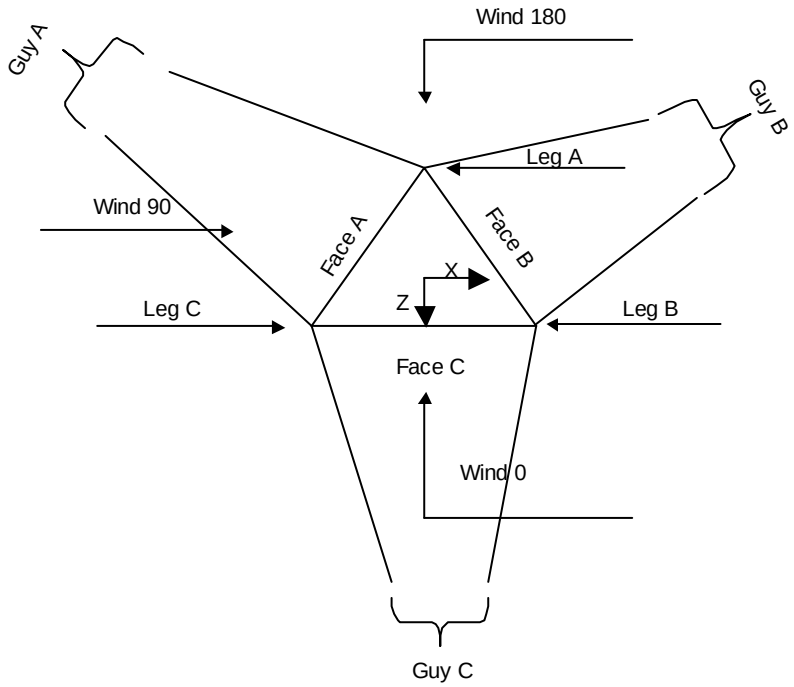
Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 1.50 ft.
Basic wind speed of 135 mph.
Risk Category III.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal 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 105 mph.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Safety factor used in guy design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	181.50-161.50			3.41	1	20.00
T2	161.50-141.50			3.41	1	20.00
T3	141.50-121.50			3.41	1	20.00
T4	121.50-101.50			3.41	1	20.00
T5	101.50-81.50			3.41	1	20.00
T6	81.50-61.50			3.41	1	20.00
T7	61.50-41.50			3.41	1	20.00
T8	41.50-21.50			3.41	1	20.00
T9	21.50-6.50			3.41	1	15.00
T10	6.50-1.50			3.41	1	5.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	181.50-161.50	2.35	X Brace	No	Yes	7.3750	7.3750
T2	161.50-141.50	2.35	K Brace Left	No	Yes	7.3750	7.3750
T3	141.50-121.50	2.35	X Brace	No	Yes	7.3750	7.3750
T4	121.50-101.50	2.35	K Brace Left	No	Yes	7.3750	7.3750
T5	101.50-81.50	2.35	K Brace Left	No	Yes	7.3750	7.3750
T6	81.50-61.50	2.35	K Brace Left	No	Yes	7.3750	7.3750
T7	61.50-41.50	2.35	K Brace Left	No	Yes	7.3750	7.3750
T8	41.50-21.50	2.35	K Brace Left	No	Yes	7.3750	7.3750
T9	21.50-6.50	2.30	K Brace Left	No	Yes	7.3750	7.3750
T10	6.50-1.50	2.00	X Brace	No	Yes	6.0000	6.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 181.50-161.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 161.50-141.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-35 (35 ksi)
T3 141.50-121.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 121.50-101.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)
T5 101.50-81.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-35 (35 ksi)
T6 81.50-61.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)
T7 61.50-41.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)
T8 41.50-21.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-35 (35 ksi)
T9 21.50-6.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)
T10 6.50-1.50	Pipe	P2.5x.203	A572-50 (50 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 181.50-161.50	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 161.50-141.50	Pipe	ROHN TS1.5x16 ga	A36 (36 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-35 (35 ksi)
T3 141.50-121.50	Equal Angle	L2x2x3/16	A36 (36 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 121.50-101.50	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)
T5 101.50-81.50	Pipe	ROHN TS1.5x16 ga	A36	Pipe	ROHN TS1.5x16 ga	A53-B-35

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
			(36 ksi)			(35 ksi)
T6 81.50-61.50	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)
T7 61.50-41.50	Pipe	ROHN TS1.5x16 ga	A36 (36 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-35 (35 ksi)
T8 41.50-21.50	Pipe	ROHN TS1.5x16 ga	A36 (36 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-35 (35 ksi)
T9 21.50-6.50	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A36 (36 ksi)
T10 6.50-1.50	Channel	C12x20.7	A36 (36 ksi)	Channel	C12x20.7	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T4 121.50-101.50	None	Flat Bar		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A572-50 (50 ksi)
T5 101.50-81.50	None	Flat Bar		A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x1/2	A572-50 (50 ksi)
T10 6.50-1.50	None	Channel		A36 (36 ksi)	Channel	C12x20.7	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	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
T1 181.50-161.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T2 161.50-141.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T3 141.50-121.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T4 121.50-101.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T5 101.50-81.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T6 81.50-61.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T7 61.50-41.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T8 41.50-21.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T9 21.50-6.50	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	36.0000	36.0000
T10 6.50-1.50	0.00	0.0000	A36	1	1	1	0.0000	36.0000	36.0000

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft^2	in					in	in	in
			(36 ksi)						

Tower Section Geometry *(cont'd)*

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
ft															
T1	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
181.50-161.50				1	1	1	1	1	1	1	1	1	1	1	1
T2	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
161.50-141.50				1	1	1	1	1	1	1	1	1	1	1	1
T3	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
141.50-121.50				1	1	1	1	1	1	1	1	1	1	1	1
T4	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
121.50-101.50				1	1	1	1	1	1	1	1	1	1	1	1
T5	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
101.50-81.50				1	1	1	1	1	1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
81.50-61.50				1	1	1	1	1	1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
61.50-41.50				1	1	1	1	1	1	1	1	1	1	1	1
T8	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
41.50-21.50				1	1	1	1	1	1	1	1	1	1	1	1
T9 21.50-6.50	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T10 6.50-1.50	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
181.50-161.50														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
161.50-141.50														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
141.50-121.50														
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
121.50-101.50														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T5 101.50-81.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 81.50-61.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 61.50-41.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 41.50-21.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 21.50-6.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 6.50-1.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 181.50-161.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 161.50-141.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 141.50-121.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 121.50-101.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 101.50-81.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 81.50-61.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 61.50-41.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 41.50-21.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 21.50-6.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 6.50-1.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 181.50-161.50	Flange	0.7500 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 161.50-141.50	Flange	0.7500 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 141.50-121.50	Flange	0.7500 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 121.50-101.50	Flange	0.7500 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	1	0.6250 A325N	0
T5 101.50-81.50	Flange	0.7500 A325N	4	0.5000 A325X	1	0.5000 A325N	1	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	1	0.6250 A325N	0
T6 81.50-61.50	Flange	0.7500 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T7 61.50-41.50	Flange	0.7500 A325N	4	0.6250 A325N	1	0.5000 A325N	1	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 41.50-21.50	Flange	0.7500 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.5000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 21.50-6.50	Flange	0.7500 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 6.50-1.50	Flange	0.7500 A325N	4	0.0000 A325N	0	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
169.154	EHS	A	9/16	3.50	10%	21000	0.671	248.21	184.00	0.0000	0.00	100%
		B	9/16	3.50	10%	21000	0.671	248.21	184.00	0.0000	0.00	100%
		C	9/16	3.50	10%	21000	0.671	248.21	184.00	0.0000	0.00	100%
129.154	EHS	A	9/16	3.50	10%	21000	0.671	222.92	184.00	0.0000	0.00	100%
		B	9/16	3.50	10%	21000	0.671	222.92	184.00	0.0000	0.00	100%
		C	9/16	3.50	10%	21000	0.671	222.92	184.00	0.0000	0.00	100%
62.1146	EHS	A	3/4	5.83	10%	19000	1.155	160.39	150.00	0.0000	0.00	100%
		B	3/4	5.83	10%	19000	1.155	164.83	154.80	0.0000	0.00	100%
		C	3/4	5.83	10%	19000	1.155	170.77	161.20	0.0000	0.00	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
169.154	Torque Arm	7.33	30.0000	Bat Ear	A53-B-35 (35 ksi)	Pipe	P4x.237
129.154	Torque Arm	7.33	30.0000	Bat Ear	A53-B-35 (35 ksi)	Pipe	P4x.237
62.1146	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
169.15	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	
129.15	A572-50	Solid Round				A36	Solid Round	

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
62.11	(50 ksi) A572-50 (50 ksi)	Solid Round			Yes	(36 ksi) A36 (36 ksi)	Flat Bar	4 1/2x3/8

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
169.154	0.17	0.17	0.17		5.82 4.2 sec/pulse	5.82 4.2 sec/pulse	5.82 4.2 sec/pulse	
129.154	0.15	0.15	0.15		4.71 3.7 sec/pulse	4.71 3.7 sec/pulse	4.71 3.7 sec/pulse	
62.1146	0.19	0.19	0.20		2.54 2.7 sec/pulse	2.68 2.8 sec/pulse	2.87 2.9 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
169.154	No	No	1	1	1	1	1	1
129.154	No	No	1	1	1	1	1	1
62.1146	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
169.154	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
129.154	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
62.1146	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	4	0.0000	1	0.0000 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
169.154	A	84.58	37	5	1.2635
	B	84.58	37	5	1.2635
	C	84.58	37	5	1.2635
129.154	A	64.58	35	5	1.2299
	B	64.58	35	5	1.2299
	C	64.58	35	5	1.2299
62.1146	A	31.06	28	4	1.1430
	B	31.06	28	4	1.1430
	C	31.06	28	4	1.1430

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top / Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
169.154	A	42.9174	3.61 / 3.50	-0.05	2.51	-2.60	-5.30	9.66	-9.19
	A	42.9174	3.61 / 3.50	0.05	2.51	-2.60	-5.30	-9.66	9.19
	B	42.9174	3.61 / 3.50	2.28	2.51	1.26	10.61	9.66	0.00
	B	42.9174	3.61 / 3.50	2.23	2.51	1.35	-5.30	-9.66	-9.19
	C	42.9174	3.61 / 3.50	-2.23	2.51	1.35	-5.30	9.66	9.19
	C	42.9174	3.61 / 3.50	-2.28	2.51	1.26	10.61	-9.66	0.00
			Sum:	0.00	15.03	0.00	-0.00	0.00	0.00
129.154	A	35.3728	3.59 / 3.50	-0.06	2.13	-2.89	-4.50	10.71	-7.79
	A	35.3728	3.59 / 3.50	0.06	2.13	-2.89	-4.50	-10.71	7.79
	B	35.3728	3.59 / 3.50	2.53	2.13	1.39	9.00	10.71	0.00
	B	35.3728	3.59 / 3.50	2.47	2.13	1.49	-4.50	-10.71	-7.79
	C	35.3728	3.59 / 3.50	-2.47	2.13	1.49	-4.50	10.71	7.79
	C	35.3728	3.59 / 3.50	-2.53	2.13	1.39	9.00	-10.71	0.00
			Sum:	0.00	12.76	0.00	-0.00	0.00	0.00
62.1146	A	22.7631	5.90 / 5.83	0.00	2.36	-5.41	-4.65	0.00	0.00
	B	22.1181	5.90 / 5.83	4.71	2.30	2.72	2.27	0.00	-3.93
	C	21.3103	5.90 / 5.83	-4.73	2.23	2.73	2.20	-0.00	3.80
			Sum:	**-0.03**	6.90	**0.04**	**-0.19**	0.00	**-0.13**

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
169.154	A	42.9174	6.67 6.08	-0.09	4.77	-4.66	-10.10	17.28	-17.50
	A	42.9174	6.67 6.08	0.09	4.77	-4.66	-10.10	-17.28	17.50
	B	42.9174	6.67 6.08	4.08	4.77	2.25	20.20	17.28	0.00
	B	42.9174	6.67 6.08	3.99	4.77	2.41	-10.10	-17.28	-17.50
	C	42.9174	6.67 6.08	-3.99	4.77	2.41	-10.10	17.28	17.50
	C	42.9174	6.67 6.08	-4.08	4.77	2.25	20.20	-17.28	0.00
			Sum:	0.00	28.63	0.00	-0.00	0.00	0.00
129.154	A	35.3728	6.50 6.07	-0.10	4.01	-5.12	-8.50	18.98	-14.72
	A	35.3728	6.50 6.07	0.10	4.01	-5.12	-8.50	-18.98	14.72
	B	35.3728	6.50 6.07	4.48	4.01	2.47	16.99	18.98	0.00
	B	35.3728	6.50 6.07	4.38	4.01	2.65	-8.50	-18.98	-14.72
	C	35.3728	6.50 6.07	-4.38	4.01	2.65	-8.50	18.98	14.72
	C	35.3728	6.50 6.07	-4.48	4.01	2.47	16.99	-18.98	0.00
			Sum:	0.00	24.08	0.00	-0.00	0.00	0.00
62.1146	A	22.7631	8.92 8.68	0.00	3.71	-8.11	-7.30	0.00	0.00
	B	22.1181	8.96 8.73	7.09	3.64	4.09	3.59	0.00	-6.21
	C	21.3103	9.02 8.79	-7.18	3.56	4.15	3.50	-0.00	6.07
			Sum:	**-0.09**	10.91	**0.13**	**-0.21**	0.00	**-0.14**

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
169.154	A	42.9174	3.61 3.50	-0.05	2.51	-2.60	-5.30	9.66	-9.19
	A	42.9174	3.61 3.50	0.05	2.51	-2.60	-5.30	-9.66	9.19
	B	42.9174	3.61 3.50	2.28	2.51	1.26	10.61	9.66	0.00
	B	42.9174	3.61 3.50	2.23	2.51	1.35	-5.30	-9.66	-9.19
	C	42.9174	3.61 3.50	-2.23	2.51	1.35	-5.30	9.66	9.19
	C	42.9174	3.61 3.50	-2.28	2.51	1.26	10.61	-9.66	0.00
			Sum:	0.00	15.03	0.00	-0.00	0.00	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
129.154	A	35.3728	3.59 3.50	-0.06	2.13	-2.89	-4.50	10.71	-7.79
	A	35.3728	3.59 3.50	0.06	2.13	-2.89	-4.50	-10.71	7.79
	B	35.3728	3.59 3.50	2.53	2.13	1.39	9.00	10.71	0.00
	B	35.3728	3.59 3.50	2.47	2.13	1.49	-4.50	-10.71	-7.79
	C	35.3728	3.59 3.50	-2.47	2.13	1.49	-4.50	10.71	7.79
	C	35.3728	3.59 3.50	-2.53	2.13	1.39	9.00	-10.71	0.00
			Sum:	0.00	12.76	0.00	-0.00	0.00	0.00
62.1146	A	22.7631	5.90 5.83	0.00	2.36	-5.41	-4.65	0.00	0.00
	B	22.1181	5.90 5.83	4.71	2.30	2.72	2.27	0.00	-3.93
	C	21.3103	5.90 5.83	-4.73	2.23	2.73	2.20	-0.00	3.80
			Sum:	**-0.03**	6.90	**0.04**	**-0.19**	0.00	**-0.13**

Guy-Tensioning Information

Guy Elevation		H	V	Temperature At Time Of Tensioning: 0 F Initial Tension	0 F Intercept	20 F Initial Tension	20 F Intercept	40 F Initial Tension	40 F Intercept	60 F Initial Tension	60 F Intercept	80 F Initial Tension	80 F Intercept	100 F Initial Tension	100 F Intercept	120 F Initial Tension	120 F Intercept
ft		ft	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft
169.154	A	181.92	169.15	4.289	4.76	4.022	5.07	3.759	5.42	3.500	5.82	3.247	6.26	3.001	6.77	2.764	7.34
	B	181.92	169.15	4.289	4.76	4.022	5.07	3.759	5.42	3.500	5.82	3.247	6.26	3.001	6.77	2.764	7.34
	C	181.92	169.15	4.289	4.76	4.022	5.07	3.759	5.42	3.500	5.82	3.247	6.26	3.001	6.77	2.764	7.34
129.154	A	181.92	129.15	4.481	3.69	4.149	3.98	3.821	4.32	3.500	4.71	3.188	5.17	2.887	5.70	2.602	6.31
	B	181.92	129.15	4.481	3.69	4.149	3.98	3.821	4.32	3.500	4.71	3.188	5.17	2.887	5.70	2.602	6.31
	C	181.92	129.15	4.481	3.69	4.149	3.98	3.821	4.32	3.500	4.71	3.188	5.17	2.887	5.70	2.602	6.31
62.1146	A	148.03	62.11	7.848	1.89	7.166	2.06	6.493	2.28	5.830	2.54	5.183	2.85	4.560	3.24	3.970	3.71
	B	152.83	62.11	7.861	1.99	7.174	2.18	6.496	2.40	5.830	2.68	5.181	3.01	4.557	3.42	3.968	3.92
	C	159.23	62.11	7.875	2.13	7.183	2.33	6.500	2.58	5.830	2.87	5.179	3.23	4.554	3.67	3.968	4.21

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF5-50A (7/8 FOAM) (Eversource)	C	No	No	Ar (CaAa)	142.50 - 6.50	0.0000	-0.32	2	1	1.0900	1.0900		0.33
LDF5-50A (7/8 FOAM) (Eversource)	C	No	No	Ar (CaAa)	148.50 - 6.50	0.0000	-0.45	2	2	1.0900	1.0900		0.33
LDF4-50A (1/2 FOAM)	C	No	No	Ar (CaAa)	89.50 - 6.50	0.0000	-0.35	1	1	0.6300	0.6300		0.15

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
(Sprint - GPS)													
EW63 (Eversource)	B	No	No	Ar (CaAa)	176.50 - 6.50	0.0000	0.43	1	1	1.5742	1.5742		0.51
LDF5-50A (7/8 FOAM) (Eversource)	B	No	No	Ar (CaAa)	106.50 - 6.50	0.0000	0.48	1	1	1.0900	1.0900		0.33
LDF7-50A (1-5/8 FOAM) (Eversource)	B	No	No	Ar (CaAa)	181.50 - 6.50	0.0000	0.36	1	1	1.9800	1.9800		0.82
LDF5-50A (7/8 FOAM) (Eversource)	A	No	No	Ar (CaAa)	181.50 - 6.50	0.0000	0.48	1	1	1.0900	1.0900		0.33
RG6-Fiber (AT&T)	A	No	No	Ar (CaAa)	78.50 - 6.50	2.0000	0.2	2	2	0.5000	0.5000		1.00
#8 AWG Copper WIre (AT&T)	A	No	No	Ar (CaAa)	78.50 - 6.50	2.0000	0.22	5	3	0.2500	0.1285		0.05
HYBRIFLEX 1-1/4" (Sprint)	C	No	No	Ar (CaAa)	127.50 - 6.50	0.0000	0	3	3	1.5400	1.5400		1.30
HYBRIFLEX 1-5/8" (T-Mobile)	A	No	No	Ar (CaAa)	160.50 - 6.50	0.0000	-0.35	3	3	1.9800	1.9800		1.90
LDF4P-50A (1/2 FOAM) (Eversource)	A	No	No	Ar (CaAa)	181.50 - 6.50	0.0000	0.45	1	1	0.6300	0.6300		0.15
LDF5-50A (7/8 FOAM) (Eversource)	A	No	No	Ar (CaAa)	181.50 - 6.50	0.0000	0.38	2	2	1.0900	1.0900		0.33

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	181.50-161.50	A	0.000	0.000	7.800	0.000	0.02
		B	0.000	0.000	6.321	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.00
T2	161.50-141.50	A	0.000	0.000	19.086	0.000	0.13
		B	0.000	0.000	7.108	0.000	0.03
		C	0.000	0.000	1.744	0.000	0.01
T3	141.50-121.50	A	0.000	0.000	19.680	0.000	0.14
		B	0.000	0.000	7.108	0.000	0.03
		C	0.000	0.000	11.492	0.000	0.05
T4	121.50-101.50	A	0.000	0.000	19.680	0.000	0.14
		B	0.000	0.000	7.653	0.000	0.03
		C	0.000	0.000	17.960	0.000	0.10
T5	101.50-81.50	A	0.000	0.000	19.680	0.000	0.14
		B	0.000	0.000	9.288	0.000	0.03
		C	0.000	0.000	18.464	0.000	0.11
T6	81.50-61.50	A	0.000	0.000	22.472	0.000	0.18
		B	0.000	0.000	9.288	0.000	0.03
		C	0.000	0.000	19.220	0.000	0.11
T7	61.50-41.50	A	0.000	0.000	22.965	0.000	0.18
		B	0.000	0.000	9.288	0.000	0.03
		C	0.000	0.000	19.220	0.000	0.11

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T8	41.50-21.50	A	0.000	0.000	22.965	0.000	0.18
		B	0.000	0.000	9.288	0.000	0.03
		C	0.000	0.000	19.220	0.000	0.11
T9	21.50-6.50	A	0.000	0.000	17.224	0.000	0.14
		B	0.000	0.000	6.966	0.000	0.02
		C	0.000	0.000	14.415	0.000	0.08
T10	6.50-1.50	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	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	181.50-161.50	A	1.356	0.000	0.000	32.009	0.000	0.31
		B		0.000	0.000	15.814	0.000	0.21
		C		0.000	0.000	0.000	0.000	0.00
T2	161.50-141.50	A	1.339	0.000	0.000	63.617	0.000	0.74
		B		0.000	0.000	17.823	0.000	0.23
		C		0.000	0.000	7.042	0.000	0.06
T3	141.50-121.50	A	1.321	0.000	0.000	64.892	0.000	0.75
		B		0.000	0.000	17.672	0.000	0.23
		C		0.000	0.000	43.316	0.000	0.42
T4	121.50-101.50	A	1.299	0.000	0.000	64.432	0.000	0.74
		B		0.000	0.000	19.343	0.000	0.24
		C		0.000	0.000	62.397	0.000	0.65
T5	101.50-81.50	A	1.273	0.000	0.000	63.890	0.000	0.73
		B		0.000	0.000	24.570	0.000	0.30
		C		0.000	0.000	64.423	0.000	0.66
T6	81.50-61.50	A	1.242	0.000	0.000	83.386	0.000	0.87
		B		0.000	0.000	24.198	0.000	0.29
		C		0.000	0.000	67.482	0.000	0.68
T7	61.50-41.50	A	1.202	0.000	0.000	85.527	0.000	0.87
		B		0.000	0.000	23.716	0.000	0.28
		C		0.000	0.000	66.510	0.000	0.66
T8	41.50-21.50	A	1.145	0.000	0.000	83.490	0.000	0.83
		B		0.000	0.000	23.024	0.000	0.26
		C		0.000	0.000	65.113	0.000	0.62
T9	21.50-6.50	A	1.056	0.000	0.000	60.260	0.000	0.58
		B		0.000	0.000	16.466	0.000	0.18
		C		0.000	0.000	47.219	0.000	0.43
T10	6.50-1.50	A	0.931	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	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	181.50-161.50	1.3590	-1.6786	1.2050	-2.9681
T2	161.50-141.50	-0.8852	-0.3324	-1.1625	-1.5953
T3	141.50-121.50	0.3772	1.1044	0.7571	0.8479

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T4	121.50-101.50	0.4417	1.8186	0.8383	1.7451
T5	101.50-81.50	0.9171	2.2637	1.4519	2.2151
T6	81.50-61.50	0.7291	1.8026	1.0032	1.2616
T7	61.50-41.50	0.7373	1.8240	0.9075	1.1298
T8	41.50-21.50	0.8751	2.0808	0.9258	1.2304
T9	21.50-6.50	0.7069	1.7626	0.7948	1.2245
T10	6.50-1.50	0.0000	0.0000	0.0000	0.0000

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	5	EW63	161.50 - 176.50	0.6000	0.4339
T1	7	LDF7-50A (1-5/8 FOAM)	161.50 - 181.50	0.6000	0.4339
T1	8	LDF5-50A (7/8 FOAM)	161.50 - 181.50	0.6000	0.4339
T1	14	LDF4P-50A (1/2 FOAM)	161.50 - 181.50	0.6000	0.4339
T1	15	LDF5-50A (7/8 FOAM)	161.50 - 181.50	0.6000	0.4339
T2	1	LDF5-50A (7/8 FOAM)	141.50 - 142.50	0.6000	0.5941
T2	2	LDF5-50A (7/8 FOAM)	141.50 - 148.50	0.6000	0.5941
T2	5	EW63	141.50 - 161.50	0.6000	0.5941
T2	7	LDF7-50A (1-5/8 FOAM)	141.50 - 161.50	0.6000	0.5941
T2	8	LDF5-50A (7/8 FOAM)	141.50 - 161.50	0.6000	0.5941
T2	12	HYBRIFLEX 1-5/8"	141.50 - 160.50	0.6000	0.5941
T2	14	LDF4P-50A (1/2 FOAM)	141.50 - 161.50	0.6000	0.5941
T2	15	LDF5-50A (7/8 FOAM)	141.50 - 161.50	0.6000	0.5941
T3	1	LDF5-50A (7/8 FOAM)	121.50 - 141.50	0.6000	0.4230
T3	2	LDF5-50A (7/8 FOAM)	121.50 - 141.50	0.6000	0.4230
T3	5	EW63	121.50 - 141.50	0.6000	0.4230
T3	7	LDF7-50A (1-5/8 FOAM)	121.50 - 141.50	0.6000	0.4230
T3	8	LDF5-50A (7/8 FOAM)	121.50 - 141.50	0.6000	0.4230
T3	11	HYBRIFLEX 1-1/4"	121.50 - 127.50	0.6000	0.4230
T3	12	HYBRIFLEX 1-5/8"	121.50 - 141.50	0.6000	0.4230
T3	14	LDF4P-50A (1/2 FOAM)	121.50 - 141.50	0.6000	0.4230
T3	15	LDF5-50A (7/8 FOAM)	121.50 -	0.6000	0.4230

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			141.50		
T4	1	LDF5-50A (7/8 FOAM)	101.50 - 121.50	0.6000	0.4381
T4	2	LDF5-50A (7/8 FOAM)	101.50 - 121.50	0.6000	0.4381
T4	5	EW63	101.50 - 121.50	0.6000	0.4381
T4	6	LDF5-50A (7/8 FOAM)	101.50 - 106.50	0.6000	0.4381
T4	7	LDF7-50A (1-5/8 FOAM)	101.50 - 121.50	0.6000	0.4381
T4	8	LDF5-50A (7/8 FOAM)	101.50 - 121.50	0.6000	0.4381
T4	11	HYBRIFLEX 1-1/4"	101.50 - 121.50	0.6000	0.4381
T4	12	HYBRIFLEX 1-5/8"	101.50 - 121.50	0.6000	0.4381
T4	14	LDF4P-50A (1/2 FOAM)	101.50 - 121.50	0.6000	0.4381
T4	15	LDF5-50A (7/8 FOAM)	101.50 - 121.50	0.6000	0.4381
T5	1	LDF5-50A (7/8 FOAM)	81.50 - 101.50	0.6000	0.4830
T5	2	LDF5-50A (7/8 FOAM)	81.50 - 101.50	0.6000	0.4830
T5	4	LDF4-50A (1/2 FOAM)	81.50 - 89.50	0.6000	0.4830
T5	5	EW63	81.50 - 101.50	0.6000	0.4830
T5	6	LDF5-50A (7/8 FOAM)	81.50 - 101.50	0.6000	0.4830
T5	7	LDF7-50A (1-5/8 FOAM)	81.50 - 101.50	0.6000	0.4830
T5	8	LDF5-50A (7/8 FOAM)	81.50 - 101.50	0.6000	0.4830
T5	11	HYBRIFLEX 1-1/4"	81.50 - 101.50	0.6000	0.4830
T5	12	HYBRIFLEX 1-5/8"	81.50 - 101.50	0.6000	0.4830
T5	14	LDF4P-50A (1/2 FOAM)	81.50 - 101.50	0.6000	0.4830
T5	15	LDF5-50A (7/8 FOAM)	81.50 - 101.50	0.6000	0.4830
T6	1	LDF5-50A (7/8 FOAM)	61.50 - 81.50	0.6000	0.5445
T6	2	LDF5-50A (7/8 FOAM)	61.50 - 81.50	0.6000	0.5445
T6	4	LDF4-50A (1/2 FOAM)	61.50 - 81.50	0.6000	0.5445
T6	5	EW63	61.50 - 81.50	0.6000	0.5445
T6	6	LDF5-50A (7/8 FOAM)	61.50 - 81.50	0.6000	0.5445
T6	7	LDF7-50A (1-5/8 FOAM)	61.50 - 81.50	0.6000	0.5445
T6	8	LDF5-50A (7/8 FOAM)	61.50 - 81.50	0.6000	0.5445
T6	9	RG6-Fiber	61.50 - 78.50	0.6000	0.5445
T6	10	#8 AWG Copper WIre	61.50 - 78.50	0.6000	0.5445
T6	11	HYBRIFLEX 1-1/4"	61.50 - 81.50	0.6000	0.5445
T6	12	HYBRIFLEX 1-5/8"	61.50 - 81.50	0.6000	0.5445
T6	14	LDF4P-50A (1/2 FOAM)	61.50 - 81.50	0.6000	0.5445
T6	15	LDF5-50A (7/8 FOAM)	61.50 - 81.50	0.6000	0.5445
T7	1	LDF5-50A (7/8 FOAM)	41.50 - 61.50	0.6000	0.5812
T7	2	LDF5-50A (7/8 FOAM)	41.50 - 61.50	0.6000	0.5812
T7	4	LDF4-50A (1/2 FOAM)	41.50 - 61.50	0.6000	0.5812
T7	5	EW63	41.50 - 61.50	0.6000	0.5812
T7	6	LDF5-50A (7/8 FOAM)	41.50 - 61.50	0.6000	0.5812
T7	7	LDF7-50A (1-5/8 FOAM)	41.50 - 61.50	0.6000	0.5812
T7	8	LDF5-50A (7/8 FOAM)	41.50 - 61.50	0.6000	0.5812
T7	9	RG6-Fiber	41.50 - 61.50	0.6000	0.5812
T7	10	#8 AWG Copper WIre	41.50 - 61.50	0.6000	0.5812
T7	11	HYBRIFLEX 1-1/4"	41.50 - 61.50	0.6000	0.5812
T7	12	HYBRIFLEX 1-5/8"	41.50 - 61.50	0.6000	0.5812
T7	14	LDF4P-50A (1/2 FOAM)	41.50 - 61.50	0.6000	0.5812
T7	15	LDF5-50A (7/8 FOAM)	41.50 - 61.50	0.6000	0.5812
T8	1	LDF5-50A (7/8 FOAM)	21.50 - 41.50	0.6000	0.6000
T8	2	LDF5-50A (7/8 FOAM)	21.50 - 41.50	0.6000	0.6000
T8	4	LDF4-50A (1/2 FOAM)	21.50 - 41.50	0.6000	0.6000
T8	5	EW63	21.50 - 41.50	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	6	LDF5-50A (7/8 FOAM)	21.50 - 41.50	0.6000	0.6000
T8	7	LDF7-50A (1-5/8 FOAM)	21.50 - 41.50	0.6000	0.6000
T8	8	LDF5-50A (7/8 FOAM)	21.50 - 41.50	0.6000	0.6000
T8	9	RG6-Fiber	21.50 - 41.50	0.6000	0.6000
T8	10	#8 AWG Copper WIre	21.50 - 41.50	0.6000	0.6000
T8	11	HYBRIFLEX 1-1/4"	21.50 - 41.50	0.6000	0.6000
T8	12	HYBRIFLEX 1-5/8"	21.50 - 41.50	0.6000	0.6000
T8	14	LDF4P-50A (1/2 FOAM)	21.50 - 41.50	0.6000	0.6000
T8	15	LDF5-50A (7/8 FOAM)	21.50 - 41.50	0.6000	0.6000
T9	1	LDF5-50A (7/8 FOAM)	6.50 - 21.50	0.6000	0.5868
T9	2	LDF5-50A (7/8 FOAM)	6.50 - 21.50	0.6000	0.5868
T9	4	LDF4-50A (1/2 FOAM)	6.50 - 21.50	0.6000	0.5868
T9	5	EW63	6.50 - 21.50	0.6000	0.5868
T9	6	LDF5-50A (7/8 FOAM)	6.50 - 21.50	0.6000	0.5868
T9	7	LDF7-50A (1-5/8 FOAM)	6.50 - 21.50	0.6000	0.5868
T9	8	LDF5-50A (7/8 FOAM)	6.50 - 21.50	0.6000	0.5868
T9	9	RG6-Fiber	6.50 - 21.50	0.6000	0.5868
T9	10	#8 AWG Copper WIre	6.50 - 21.50	0.6000	0.5868
T9	11	HYBRIFLEX 1-1/4"	6.50 - 21.50	0.6000	0.5868
T9	12	HYBRIFLEX 1-5/8"	6.50 - 21.50	0.6000	0.5868
T9	14	LDF4P-50A (1/2 FOAM)	6.50 - 21.50	0.6000	0.5868
T9	15	LDF5-50A (7/8 FOAM)	6.50 - 21.50	0.6000	0.5868

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
GPS	B	From Leg	3.50	0.0000	89.50	No Ice	1.00	1.00	0.01
(Sprint)			0.00			1/2" Ice	1.50	1.50	0.01
			0.00			1" Ice	2.00	2.00	0.02
3' GPS Stand-off Mount	B	From Leg	1.50	0.0000	89.50	No Ice	2.45	2.45	0.05
(Sprint)			0.00			1/2" Ice	3.98	3.98	0.07
			0.00			1" Ice	5.51	5.51	0.10
APXVSPP18-C-A20	A	From Leg	3.00	0.0000	126.00	No Ice	8.02	5.28	0.06
(Sprint)			-4.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVSPP18-C-A20	B	From Leg	3.00	0.0000	126.00	No Ice	8.02	5.28	0.06
(Sprint)			-4.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
APXVSPP18-C-A20	C	From Leg	3.00	0.0000	126.00	No Ice	8.02	5.28	0.06
(Sprint)			-4.00			1/2" Ice	8.48	5.74	0.11
			0.00			1" Ice	8.94	6.20	0.16
FD-RRH 2x50 800	A	From Leg	3.00	0.0000	126.00	No Ice	2.06	1.93	0.06
(Sprint)			0.00			1/2" Ice	2.24	2.11	0.09
			0.00			1" Ice	2.43	2.29	0.11
FD-RRH 2x50 800	B	From Leg	3.00	0.0000	126.00	No Ice	2.06	1.93	0.06
(Sprint)			0.00			1/2" Ice	2.24	2.11	0.09
			0.00			1" Ice	2.43	2.29	0.11
FD-RRH 2x50 800	C	From Leg	3.00	0.0000	126.00	No Ice	2.06	1.93	0.06
(Sprint)			0.00			1/2" Ice	2.24	2.11	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	2.43	2.29	0.11
FD-RRH 4x45 1900	A	From Leg	3.00	0.0000	126.00	No Ice	2.32	2.38	0.06
(Sprint)			0.00			1/2" Ice	2.52	2.59	0.08
			0.00			1" Ice	2.74	2.80	0.11
FD-RRH 4x45 1900	B	From Leg	3.00	0.0000	126.00	No Ice	2.32	2.38	0.06
(Sprint)			0.00			1/2" Ice	2.52	2.59	0.08
			0.00			1" Ice	2.74	2.80	0.11
FD-RRH 4x45 1900	C	From Leg	3.00	0.0000	126.00	No Ice	2.32	2.38	0.06
(Sprint)			0.00			1/2" Ice	2.52	2.59	0.08
			0.00			1" Ice	2.74	2.80	0.11
Rohn 6' x 12' Boom Gate (1)	A	From Leg	2.00	0.0000	126.00	No Ice	16.60	16.60	0.56
(Sprint)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84
Rohn 6' x 12' Boom Gate (1)	B	From Leg	2.00	0.0000	126.00	No Ice	16.60	16.60	0.56
(Sprint)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84
Rohn 6' x 12' Boom Gate (1)	C	From Leg	2.00	0.0000	126.00	No Ice	16.60	16.60	0.56
(Sprint)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84
1.5"x2'omni	A	From Leg	3.00	0.0000	144.50	No Ice	0.25	0.25	0.01
(Eversource)			0.00			1/2" Ice	0.38	0.38	0.01
			1.00			1" Ice	0.51	0.51	0.01
1.5"x2'omni	A	From Leg	3.00	0.0000	142.50	No Ice	0.25	0.25	0.01
(Eversource)			0.00			1/2" Ice	0.38	0.38	0.01
			-1.00			1" Ice	0.51	0.51	0.01
2-ft Stand Off	A	From Leg	1.00	0.0000	143.50	No Ice	1.07	1.07	0.02
(Eversource)			0.00			1/2" Ice	1.62	1.62	0.03
			0.00			1" Ice	2.17	2.17	0.04
3"x20-ft Omni	C	From Leg	3.00	0.0000	148.50	No Ice	3.56	3.56	0.02
(Eversource)			0.00			1/2" Ice	7.13	7.13	0.05
			0.00			1" Ice	10.70	10.70	0.07
3-ft Side Arm	C	From Leg	1.50	0.0000	138.50	No Ice	0.66	0.66	0.01
(Eversource)			0.00			1/2" Ice	1.14	1.14	0.03
			0.00			1" Ice	1.62	1.62	0.04
20-ft x 1.9in Support Pipe	C	From Leg	1.50	0.0000	148.50	No Ice	3.80	3.80	0.05
(Eversource)			0.00			1/2" Ice	5.82	5.82	0.08
			0.00			1" Ice	7.84	7.84	0.11
20' x 2" Dia Omni	A	From Leg	0.00	0.0000	180.50	No Ice	4.00	4.00	0.02
(Eversource)			0.00			1/2" Ice	6.03	6.03	0.05
			10.00			1" Ice	8.07	8.07	0.09
14' x 3" Dia Omni	B	From Leg	0.00	0.0000	180.50	No Ice	4.20	4.20	0.04
(Eversource)			0.00			1/2" Ice	5.63	5.63	0.07
			7.00			1" Ice	7.08	7.08	0.11
20' x 2" Dia Omni	C	From Leg	0.00	0.0000	180.50	No Ice	4.00	4.00	0.02
(Eversource)			0.00			1/2" Ice	6.03	6.03	0.05
			10.00			1" Ice	8.07	8.07	0.09
TPA-65R-BU4D	A	From Face	3.00	0.0000	78.00	No Ice	8.28	3.51	0.06
(AT&T - Proposed)			2.00			1/2" Ice	8.67	3.81	0.11
			0.00			1" Ice	9.06	4.12	0.16
TPA-65R-BU4D	B	From Face	3.00	0.0000	78.00	No Ice	8.28	3.51	0.06
(AT&T - Proposed)			2.00			1/2" Ice	8.67	3.81	0.11
			0.00			1" Ice	9.06	4.12	0.16
TPA-65R-BU4D	C	From Face	3.00	0.0000	78.00	No Ice	8.28	3.51	0.06
(AT&T - Proposed)			2.00			1/2" Ice	8.67	3.81	0.11
			0.00			1" Ice	9.06	4.12	0.16
DMP65R-BU4D	A	From Face	3.00	0.0000	78.00	No Ice	8.00	3.51	0.07
(AT&T)			-6.00			1/2" Ice	8.38	3.81	0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	8.77	4.12	0.17
DMP65R-BU4D	B	From Face	3.00	0.0000	78.00	No Ice	8.00	3.51	0.07
(AT&T)			-6.00			1/2" Ice	8.38	3.81	0.12
			0.00			1" Ice	8.77	4.12	0.17
DMP65R-BU4D	C	From Face	3.00	0.0000	78.00	No Ice	8.00	3.51	0.07
(AT&T)			-6.00			1/2" Ice	8.38	3.81	0.12
			0.00			1" Ice	8.77	4.12	0.17
AIR6449	A	From Face	3.00	0.0000	78.00	No Ice	5.65	2.42	0.10
(AT&T - Proposed)			0.00			1/2" Ice	5.96	2.64	0.14
			2.00			1" Ice	6.26	2.87	0.18
AIR6419	A	From Face	3.00	0.0000	78.00	No Ice	3.66	1.66	0.07
(AT&T - Proposed)			0.00			1/2" Ice	3.91	1.85	0.09
			-2.00			1" Ice	4.16	2.05	0.12
AIR6449	B	From Face	3.00	0.0000	78.00	No Ice	5.65	2.42	0.10
(AT&T - Proposed)			0.00			1/2" Ice	5.96	2.64	0.14
			2.00			1" Ice	6.26	2.87	0.18
AIR6419	B	From Face	3.00	0.0000	78.00	No Ice	3.66	1.66	0.07
(AT&T - Proposed)			0.00			1/2" Ice	3.91	1.85	0.09
			-2.00			1" Ice	4.16	2.05	0.12
AIR6449	C	From Face	3.00	0.0000	78.00	No Ice	5.65	2.42	0.10
(AT&T - Proposed)			0.00			1/2" Ice	5.96	2.64	0.14
			2.00			1" Ice	6.26	2.87	0.18
AIR6419	C	From Face	3.00	0.0000	78.00	No Ice	3.66	1.66	0.07
(AT&T - Proposed)			0.00			1/2" Ice	3.91	1.85	0.09
			-2.00			1" Ice	4.16	2.05	0.12
8843 B2/B66A	A	From Face	3.00	0.0000	78.00	No Ice	1.64	1.35	0.07
(AT&T)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
8843 B2/B66A	B	From Face	3.00	0.0000	78.00	No Ice	1.64	1.35	0.07
(AT&T)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
8843 B2/B66A	C	From Face	3.00	0.0000	78.00	No Ice	1.64	1.35	0.07
(AT&T)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
4449 B5/B12	A	From Face	3.00	0.0000	78.00	No Ice	1.97	1.41	0.07
(AT&T)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	B	From Face	3.00	0.0000	78.00	No Ice	1.97	1.41	0.07
(AT&T)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	C	From Face	3.00	0.0000	78.00	No Ice	1.97	1.41	0.07
(AT&T)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4478 B14	A	From Face	3.00	0.0000	78.00	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
4478 B14	B	From Face	3.00	0.0000	78.00	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
4478 B14	C	From Face	3.00	0.0000	78.00	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
DC6-48-60-18-8F Surge	C	From Leg	1.00	0.0000	78.00	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T)			0.00			1" Ice	2.29	2.29	0.06
DC9	C	From Leg	1.00	0.0000	78.00	No Ice	1.91	1.91	0.02
(AT&T - Proposed)			0.00			1/2" Ice	2.10	2.10	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	2.29	2.29	0.06
12' V-Frame	A	From Leg	2.00	0.0000	78.00	No Ice	9.22	12.97	0.30
(AT&T)			0.00			1/2" Ice	9.22	12.97	0.40
			0.00			1" Ice	9.22	12.97	0.50
12' V-Frame	B	From Leg	2.00	0.0000	78.00	No Ice	9.22	12.97	0.30
(AT&T)			0.00			1/2" Ice	9.22	12.97	0.40
			0.00			1" Ice	9.22	12.97	0.50
12' V-Frame	C	From Leg	2.00	0.0000	78.00	No Ice	9.22	12.97	0.30
(AT&T)			0.00			1/2" Ice	9.22	12.97	0.40
			0.00			1" Ice	9.22	12.97	0.50
AIR6419	A	From Leg	4.00	0.0000	159.00	No Ice	3.66	1.66	0.07
(T-Mobile)			-6.00			1/2" Ice	3.91	1.85	0.09
			0.00			1" Ice	4.16	2.05	0.12
APXVAALL24-43	A	From Leg	4.00	0.0000	159.00	No Ice	20.24	8.89	0.15
(T-Mobile)			6.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
AIR6419	B	From Leg	4.00	0.0000	159.00	No Ice	3.66	1.66	0.07
(T-Mobile)			-6.00			1/2" Ice	3.91	1.85	0.09
			0.00			1" Ice	4.16	2.05	0.12
APXVAALL24-43	B	From Leg	4.00	0.0000	159.00	No Ice	20.24	8.89	0.15
(T-Mobile)			6.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
AIR6419	C	From Leg	4.00	0.0000	159.00	No Ice	3.66	1.66	0.07
(T-Mobile)			-6.00			1/2" Ice	3.91	1.85	0.09
			0.00			1" Ice	4.16	2.05	0.12
APXVAALL24-43	C	From Leg	4.00	0.0000	159.00	No Ice	20.24	8.89	0.15
(T-Mobile)			6.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
4480 B71+B85	A	From Leg	4.00	0.0000	159.00	No Ice	2.85	1.38	0.08
(T-Mobile)			-2.00			1/2" Ice	3.06	1.54	0.11
			1.50			1" Ice	3.28	1.71	0.13
4480 B71+B85	B	From Leg	4.00	0.0000	159.00	No Ice	2.85	1.38	0.08
(T-Mobile)			-2.00			1/2" Ice	3.06	1.54	0.11
			1.50			1" Ice	3.28	1.71	0.13
4480 B71+B85	C	From Leg	4.00	0.0000	159.00	No Ice	2.85	1.38	0.08
(T-Mobile)			-2.00			1/2" Ice	3.06	1.54	0.11
			1.50			1" Ice	3.28	1.71	0.13
4460 B25+B66	A	From Leg	4.00	0.0000	159.00	No Ice	2.56	1.98	0.11
(T-Mobile)			-2.00			1/2" Ice	2.76	2.16	0.13
			-1.50			1" Ice	2.97	2.34	0.16
4460 B25+B66	B	From Leg	4.00	0.0000	159.00	No Ice	2.56	1.98	0.11
(T-Mobile)			-2.00			1/2" Ice	2.76	2.16	0.13
			-1.50			1" Ice	2.97	2.34	0.16
4460 B25+B66	C	From Leg	4.00	0.0000	159.00	No Ice	2.56	1.98	0.11
(T-Mobile)			-2.00			1/2" Ice	2.76	2.16	0.13
			-1.50			1" Ice	2.97	2.34	0.16
SitePro VFA12-HD	A	From Leg	2.00	0.0000	159.00	No Ice	21.00	21.00	0.75
(T-Mobile)			0.00			1/2" Ice	25.00	25.00	0.90
			0.00			1" Ice	29.00	29.00	1.05
SitePro VFA12-HD	B	From Leg	2.00	0.0000	159.00	No Ice	21.00	21.00	0.75
(T-Mobile)			0.00			1/2" Ice	25.00	25.00	0.90
			0.00			1" Ice	29.00	29.00	1.05
SitePro VFA12-HD	C	From Leg	2.00	0.0000	159.00	No Ice	21.00	21.00	0.75
(T-Mobile)			0.00			1/2" Ice	25.00	25.00	0.90
			0.00			1" Ice	29.00	29.00	1.05
DS2C03F36D-D	C	From Leg	6.00	0.0000	177.00	No Ice	7.30	7.30	0.08
(Eversource)			0.00			1/2" Ice	9.77	9.77	0.13

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
SitePro USF-4U (Eversource)	C	From Leg	10.00 3.00 0.00 0.00	0.0000	177.00	1" Ice No Ice 1/2" Ice 1" Ice	12.25 5.75 8.00 10.25	12.25 5.75 8.00 10.25	0.20 0.16 0.21 0.26

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
8.5 Dishw/radome (NU)	A	Paraboloid w/o Radome	From Leg	0.00 0.00 0.00	0.0000		176.50	8.50	No Ice 1/2" Ice 1" Ice	56.75 57.56 58.37	0.07 0.30 0.52

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	171.50	1.153	46	72.992	A	9.904	9.583	9.583	49.18	7.800	0.000
181.50-161.50					B	9.904	9.583		49.18	6.321	0.000
					C	9.904	9.583		49.18	0.000	0.000
T2	151.50	1.113	44	72.992	A	0.000	14.224	9.583	67.37	19.086	0.000
161.50-141.50					B	0.000	14.224		67.37	7.108	0.000
					C	0.000	14.224		67.37	1.744	0.000
T3	131.50	1.069	42	72.992	A	11.319	9.583	9.583	45.85	19.680	0.000
141.50-121.50					B	11.319	9.583		45.85	7.108	0.000
					C	11.319	9.583		45.85	11.492	0.000
T4	111.50	1.019	40	72.992	A	12.359	9.583	9.583	43.68	19.680	0.000
121.50-101.50					B	12.359	9.583		43.68	7.653	0.000
					C	12.359	9.583		43.68	17.960	0.000
T5	91.50	0.963	38	72.992	A	4.624	14.224	9.583	50.85	19.680	0.000
101.50-81.50					B	4.624	14.224		50.85	9.288	0.000
					C	4.624	14.224		50.85	18.464	0.000
T6 81.50-61.50	71.50	0.898	36	72.992	A	8.924	9.583	9.583	51.78	22.472	0.000
					B	8.924	9.583		51.78	9.288	0.000
					C	8.924	9.583		51.78	19.220	0.000
T7 61.50-41.50	51.50	0.818	32	72.992	A	6.414	10.376	9.583	57.08	22.965	0.000
					B	6.414	10.376		57.08	9.288	0.000
					C	6.414	10.376		57.08	19.220	0.000
T8 41.50-21.50	31.50	0.71	28	72.992	A	0.000	14.224	9.583	67.37	22.965	0.000
					B	0.000	14.224		67.37	9.288	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	14.224		67.37	19.220	0.000
T9 21.50-6.50	14.00	0.7	28	54.744	A	6.098	7.188	7.188	54.10	17.224	0.000
					B	6.098	7.188		54.10	6.966	0.000
					C	6.098	7.188		54.10	14.415	0.000
T10 6.50-1.50	4.00	0.7	28	9.791	A	4.396	2.575	2.575	36.94	0.000	0.000
					B	4.396	2.575		36.94	0.000	0.000
					C	4.396	2.575		36.94	0.000	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	171.50	1.153	6	1.3560	77.512	A	9.904	33.973	18.624	42.44	32.009	0.000
181.50-161.50						B	9.904	33.973		42.44	15.814	0.000
						C	9.904	33.973		42.44	0.000	0.000
T2	151.50	1.113	6	1.3393	77.456	A	0.000	31.441	18.512	58.88	63.617	0.000
161.50-141.50						B	0.000	31.441		58.88	17.823	0.000
						C	0.000	31.441		58.88	7.042	0.000
T3	131.50	1.069	6	1.3205	77.393	A	11.319	33.334	18.387	41.18	64.892	0.000
141.50-121.50						B	11.319	33.334		41.18	17.672	0.000
						C	11.319	33.334		41.18	43.316	0.000
T4	111.50	1.019	6	1.2989	77.321	A	12.359	31.085	18.243	41.99	64.432	0.000
121.50-101.50						B	12.359	31.085		41.99	19.343	0.000
						C	12.359	31.085		41.99	62.397	0.000
T5 101.50-81.50	91.50	0.963	5	1.2735	77.237	A	4.624	35.305	18.073	45.26	63.890	0.000
						B	4.624	35.305		45.26	24.570	0.000
						C	4.624	35.305		45.26	64.423	0.000
T6 81.50-61.50	71.50	0.898	5	1.2424	77.133	A	8.924	26.211	17.866	50.85	83.386	0.000
						B	8.924	26.211		50.85	24.198	0.000
						C	8.924	26.211		50.85	67.482	0.000
T7 61.50-41.50	51.50	0.818	4	1.2023	76.999	A	6.414	25.832	17.599	54.58	85.527	0.000
						B	6.414	25.832		54.58	23.716	0.000
						C	6.414	25.832		54.58	66.510	0.000
T8 41.50-21.50	31.50	0.71	4	1.1447	76.807	A	0.000	28.939	17.214	59.49	83.490	0.000
						B	0.000	28.939		59.49	23.024	0.000
						C	0.000	28.939		59.49	65.113	0.000
T9 21.50-6.50	14.00	0.7	4	1.0555	57.383	A	6.098	17.614	12.465	52.57	60.260	0.000
						B	6.098	17.614		52.57	16.466	0.000
						C	6.098	17.614		52.57	47.219	0.000
T10 6.50-1.50	4.00	0.7	4	0.9312	10.611	A	4.396	4.925	4.243	45.52	0.000	0.000
						B	4.396	4.925		45.52	0.000	0.000
						C	4.396	4.925		45.52	0.000	0.000

Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	171.50	1.153	28	72.992	A	9.904	9.583	9.583	49.18	7.800	0.000
181.50-161.50					B	9.904	9.583		49.18	6.321	0.000
					C	9.904	9.583		49.18	0.000	0.000
T2	151.50	1.113	27	72.992	A	0.000	14.224	9.583	67.37	19.086	0.000
161.50-141.50					B	0.000	14.224		67.37	7.108	0.000
					C	0.000	14.224		67.37	1.744	0.000
T3	131.50	1.069	26	72.992	A	11.319	9.583	9.583	45.85	19.680	0.000
141.50-121.50					B	11.319	9.583		45.85	7.108	0.000
					C	11.319	9.583		45.85	11.492	0.000
T4	111.50	1.019	24	72.992	A	12.359	9.583	9.583	43.68	19.680	0.000
121.50-101.50					B	12.359	9.583		43.68	7.653	0.000
					C	12.359	9.583		43.68	17.960	0.000
T5	91.50	0.963	23	72.992	A	4.624	14.224	9.583	50.85	19.680	0.000
101.50-81.50					B	4.624	14.224		50.85	9.288	0.000
					C	4.624	14.224		50.85	18.464	0.000
T6 81.50-61.50	71.50	0.898	22	72.992	A	8.924	9.583	9.583	51.78	22.472	0.000
					B	8.924	9.583		51.78	9.288	0.000
					C	8.924	9.583		51.78	19.220	0.000
T7 61.50-41.50	51.50	0.818	20	72.992	A	6.414	10.376	9.583	57.08	22.965	0.000
					B	6.414	10.376		57.08	9.288	0.000
					C	6.414	10.376		57.08	19.220	0.000
T8 41.50-21.50	31.50	0.71	17	72.992	A	0.000	14.224	9.583	67.37	22.965	0.000
					B	0.000	14.224		67.37	9.288	0.000
					C	0.000	14.224		67.37	19.220	0.000
T9 21.50-6.50	14.00	0.7	17	54.744	A	6.098	7.188	7.188	54.10	17.224	0.000
					B	6.098	7.188		54.10	6.966	0.000
					C	6.098	7.188		54.10	14.415	0.000
T10 6.50-1.50	4.00	0.7	17	9.791	A	4.396	2.575	2.575	36.94	0.000	0.000
					B	4.396	2.575		36.94	0.000	0.000
					C	4.396	2.575		36.94	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.05	0.81	A	0.267	2.388	46	1	1	15.552	1.77	88.62	C
181.50-161.50		TA 0.52	B	0.267	2.388		1	1	15.552			
			C	0.267	2.388		1	1	15.552			
T2	0.16	0.46	A	0.195	2.613	44	1	1	8.159	1.43	71.43	C
161.50-141.50			B	0.195	2.613		1	1	8.159			
			C	0.195	2.613		1	1	8.159			
T3	0.21	0.88	A	0.286	2.333	42	1	1	17.019	2.26	112.88	C
141.50-121.50		TA 0.52	B	0.286	2.333		1	1	17.019			
			C	0.286	2.333		1	1	17.019			
T4	0.27	1.81	A	0.301	2.294	40	1	1	18.100	2.36	118.05	C
121.50-101.50			B	0.301	2.294		1	1	18.100			
			C	0.301	2.294		1	1	18.100			
T5	0.28	1.00	A	0.258	2.413	38	1	1	12.974	1.94	97.05	C
101.50-81.50			B	0.258	2.413		1	1	12.974			
			C	0.258	2.413		1	1	12.974			
T6	0.32	1.32	A	0.254	2.427	36	1	1	14.539	1.99	99.69	C
81.50-61.50			B	0.254	2.427		1	1	14.539			
			C	0.254	2.427		1	1	14.539			
T7	0.32	1.13	A	0.23	2.499	32	1	1	12.436	1.71	85.38	C
61.50-41.50			B	0.23	2.499		1	1	12.436			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	0.23	2.499		1	1	12.436			
T8	0.32	0.46	A	0.195	2.613	28	1	1	8.159	1.25	62.51	C
41.50-21.50			B	0.195	2.613		1	1	8.159			
			C	0.195	2.613		1	1	8.159			
T9 21.50-6.50	0.24	0.98	A	0.243	2.46	28	1	1	10.290	1.14	76.25	C
			B	0.243	2.46		1	1	10.290			
			C	0.243	2.46		1	1	10.290			
T10 6.50-1.50	0.00	0.41	A	0.712	1.777	28	1	1	6.507	0.27	54.57	C
			B	0.712	1.777		1	1	6.507			
			C	0.712	1.777		1	1	6.507			
Sum Weight:	2.17	10.31								16.13		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.05	0.81	A	0.267	2.388	46	0.8	1	13.572	1.59	79.43	C
181.50-161.50		TA 0.52	B	0.267	2.388		0.8	1	13.572			
			C	0.267	2.388		0.8	1	13.572			
T2	0.16	0.46	A	0.195	2.613	44	0.8	1	8.159	1.43	71.43	C
161.50-141.50			B	0.195	2.613		0.8	1	8.159			
			C	0.195	2.613		0.8	1	8.159			
T3	0.21	0.88	A	0.286	2.333	42	0.8	1	14.756	2.07	103.37	C
141.50-121.50		TA 0.52	B	0.286	2.333		0.8	1	14.756			
			C	0.286	2.333		0.8	1	14.756			
T4	0.27	1.81	A	0.301	2.294	40	0.8	1	15.628	2.17	108.31	C
121.50-101.50			B	0.301	2.294		0.8	1	15.628			
			C	0.301	2.294		0.8	1	15.628			
T5	0.28	1.00	A	0.258	2.413	38	0.8	1	12.049	1.87	93.43	C
101.50-81.50			B	0.258	2.413		0.8	1	12.049			
			C	0.258	2.413		0.8	1	12.049			
T6	0.32	1.32	A	0.254	2.427	36	0.8	1	12.754	1.86	93.13	C
81.50-61.50			B	0.254	2.427		0.8	1	12.754			
			C	0.254	2.427		0.8	1	12.754			
T7	0.32	1.13	A	0.23	2.499	32	0.8	1	11.153	1.62	80.96	C
61.50-41.50			B	0.23	2.499		0.8	1	11.153			
			C	0.23	2.499		0.8	1	11.153			
T8	0.32	0.46	A	0.195	2.613	28	0.8	1	8.159	1.25	62.51	C
41.50-21.50			B	0.195	2.613		0.8	1	8.159			
			C	0.195	2.613		0.8	1	8.159			
T9 21.50-6.50	0.24	0.98	A	0.243	2.46	28	0.8	1	9.071	1.07	71.53	C
			B	0.243	2.46		0.8	1	9.071			
			C	0.243	2.46		0.8	1	9.071			
T10 6.50-1.50	0.00	0.41	A	0.712	1.777	28	0.8	1	5.628	0.24	47.20	C
			B	0.712	1.777		0.8	1	5.628			
			C	0.712	1.777		0.8	1	5.628			
Sum Weight:	2.17	10.31								15.16		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.05	0.81	A	0.267	2.388	46	0.85	1	14.067	1.63	81.72	C
181.50-161.50		TA 0.52	B	0.267	2.388		0.85	1	14.067			
			C	0.267	2.388		0.85	1	14.067			
T2	0.16	0.46	A	0.195	2.613	44	0.85	1	8.159	1.43	71.43	C
161.50-141.50			B	0.195	2.613		0.85	1	8.159			
			C	0.195	2.613		0.85	1	8.159			
T3	0.21	0.88	A	0.286	2.333	42	0.85	1	15.322	2.11	105.75	C
141.50-121.50		TA 0.52	B	0.286	2.333		0.85	1	15.322			
			C	0.286	2.333		0.85	1	15.322			
T4	0.27	1.81	A	0.301	2.294	40	0.85	1	16.246	2.21	110.74	C
121.50-101.50			B	0.301	2.294		0.85	1	16.246			
			C	0.301	2.294		0.85	1	16.246			
T5	0.28	1.00	A	0.258	2.413	38	0.85	1	12.281	1.89	94.34	C
101.50-81.50			B	0.258	2.413		0.85	1	12.281			
			C	0.258	2.413		0.85	1	12.281			
T6	0.32	1.32	A	0.254	2.427	36	0.85	1	13.200	1.90	94.77	C
81.50-61.50			B	0.254	2.427		0.85	1	13.200			
			C	0.254	2.427		0.85	1	13.200			
T7	0.32	1.13	A	0.23	2.499	32	0.85	1	11.474	1.64	82.06	C
61.50-41.50			B	0.23	2.499		0.85	1	11.474			
			C	0.23	2.499		0.85	1	11.474			
T8	0.32	0.46	A	0.195	2.613	28	0.85	1	8.159	1.25	62.51	C
41.50-21.50			B	0.195	2.613		0.85	1	8.159			
			C	0.195	2.613		0.85	1	8.159			
T9 21.50-6.50	0.24	0.98	A	0.243	2.46	28	0.85	1	9.375	1.09	72.71	C
			B	0.243	2.46		0.85	1	9.375			
			C	0.243	2.46		0.85	1	9.375			
T10 6.50-1.50	0.00	0.41	A	0.712	1.777	28	0.85	1	5.847	0.25	49.04	C
			B	0.712	1.777		0.85	1	5.847			
			C	0.712	1.777		0.85	1	5.847			
Sum Weight:	2.17	10.31								15.40		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.52	2.62	A	0.566	1.829	6	1	1	34.460	0.45	22.33	C
181.50-161.50		TA 0.99	B	0.566	1.829		1	1	34.460			
			C	0.566	1.829		1	1	34.460			
T2	1.03	1.43	A	0.406	2.052	6	1	1	20.085	0.48	24.13	C
161.50-141.50			B	0.406	2.052		1	1	20.085			
			C	0.406	2.052		1	1	20.085			
T3	1.40	2.75	A	0.577	1.82	6	1	1	35.633	0.58	29.18	C
141.50-121.50		TA 0.97	B	0.577	1.82		1	1	35.633			
			C	0.577	1.82		1	1	35.633			
T4	1.63	3.68	A	0.562	1.833	6	1	1	34.748	0.60	30.10	C
121.50-101.50			B	0.562	1.833		1	1	34.748			
			C	0.562	1.833		1	1	34.748			
T5	1.69	2.44	A	0.517	1.879	5	1	1	29.136	0.57	28.64	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
101.50-81.50			B	0.517	1.879		1	1	29.136			
			C	0.517	1.879		1	1	29.136			
T6	1.83	2.66	A	0.456	1.965	5	1	1	26.275	0.61	30.50	C
81.50-61.50			B	0.456	1.965		1	1	26.275			
			C	0.456	1.965		1	1	26.275			
T7	1.80	2.26	A	0.419	2.028	4	1	1	23.064	0.56	28.15	C
61.50-41.50			B	0.419	2.028		1	1	23.064			
			C	0.419	2.028		1	1	23.064			
T8	1.71	1.24	A	0.377	2.112	4	1	1	18.130	0.46	23.20	C
41.50-21.50			B	0.377	2.112		1	1	18.130			
			C	0.377	2.112		1	1	18.130			
T9 21.50-6.50	1.19	1.77	A	0.413	2.038	4	1	1	17.408	0.35	23.35	C
			B	0.413	2.038		1	1	17.408			
			C	0.413	2.038		1	1	17.408			
T10 6.50-1.50	0.00	0.71	A	0.879	1.895	4	1	1	9.065	0.06	11.12	C
			B	0.879	1.895		1	1	9.065			
			C	0.879	1.895		1	1	9.065			
Sum Weight:	12.80	23.52								4.73		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.52	2.62	A	0.566	1.829	6	0.8	1	32.479	0.43	21.36	C
181.50-161.50		TA 0.99	B	0.566	1.829		0.8	1	32.479			
			C	0.566	1.829		0.8	1	32.479			
T2	1.03	1.43	A	0.406	2.052	6	0.8	1	20.085	0.48	24.13	C
161.50-141.50			B	0.406	2.052		0.8	1	20.085			
			C	0.406	2.052		0.8	1	20.085			
T3	1.40	2.75	A	0.577	1.82	6	0.8	1	33.370	0.56	28.16	C
141.50-121.50		TA 0.97	B	0.577	1.82		0.8	1	33.370			
			C	0.577	1.82		0.8	1	33.370			
T4	1.63	3.68	A	0.562	1.833	6	0.8	1	32.276	0.58	29.04	C
121.50-101.50			B	0.562	1.833		0.8	1	32.276			
			C	0.562	1.833		0.8	1	32.276			
T5	1.69	2.44	A	0.517	1.879	5	0.8	1	28.211	0.57	28.26	C
101.50-81.50			B	0.517	1.879		0.8	1	28.211			
			C	0.517	1.879		0.8	1	28.211			
T6	1.83	2.66	A	0.456	1.965	5	0.8	1	24.491	0.60	29.78	C
81.50-61.50			B	0.456	1.965		0.8	1	24.491			
			C	0.456	1.965		0.8	1	24.491			
T7	1.80	2.26	A	0.419	2.028	4	0.8	1	21.782	0.55	27.66	C
61.50-41.50			B	0.419	2.028		0.8	1	21.782			
			C	0.419	2.028		0.8	1	21.782			
T8	1.71	1.24	A	0.377	2.112	4	0.8	1	18.130	0.46	23.20	C
41.50-21.50			B	0.377	2.112		0.8	1	18.130			
			C	0.377	2.112		0.8	1	18.130			
T9 21.50-6.50	1.19	1.77	A	0.413	2.038	4	0.8	1	16.188	0.34	22.81	C
			B	0.413	2.038		0.8	1	16.188			
			C	0.413	2.038		0.8	1	16.188			
T10 6.50-1.50	0.00	0.71	A	0.879	1.895	4	0.8	1	8.186	0.05	10.04	C
			B	0.879	1.895		0.8	1	8.186			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
Sum Weight:	12.80	23.52	C	0.879	1.895		0.8	1	8.186	4.62		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.52	2.62	A	0.566	1.829	6	0.85	1	32.974	0.43	21.61	C
181.50-161.50		TA 0.99	B	0.566	1.829		0.85	1	32.974			
			C	0.566	1.829		0.85	1	32.974			
T2	1.03	1.43	A	0.406	2.052	6	0.85	1	20.085	0.48	24.13	C
161.50-141.50			B	0.406	2.052		0.85	1	20.085			
			C	0.406	2.052		0.85	1	20.085			
T3	1.40	2.75	A	0.577	1.82	6	0.85	1	33.936	0.57	28.42	C
141.50-121.50		TA 0.97	B	0.577	1.82		0.85	1	33.936			
			C	0.577	1.82		0.85	1	33.936			
T4	1.63	3.68	A	0.562	1.833	6	0.85	1	32.894	0.59	29.30	C
121.50-101.50			B	0.562	1.833		0.85	1	32.894			
			C	0.562	1.833		0.85	1	32.894			
T5	1.69	2.44	A	0.517	1.879	5	0.85	1	28.442	0.57	28.35	C
101.50-81.50			B	0.517	1.879		0.85	1	28.442			
			C	0.517	1.879		0.85	1	28.442			
T6	1.83	2.66	A	0.456	1.965	5	0.85	1	24.937	0.60	29.96	C
81.50-61.50			B	0.456	1.965		0.85	1	24.937			
			C	0.456	1.965		0.85	1	24.937			
T7	1.80	2.26	A	0.419	2.028	4	0.85	1	22.102	0.56	27.78	C
61.50-41.50			B	0.419	2.028		0.85	1	22.102			
			C	0.419	2.028		0.85	1	22.102			
T8	1.71	1.24	A	0.377	2.112	4	0.85	1	18.130	0.46	23.20	C
41.50-21.50			B	0.377	2.112		0.85	1	18.130			
			C	0.377	2.112		0.85	1	18.130			
T9 21.50-6.50	1.19	1.77	A	0.413	2.038	4	0.85	1	16.493	0.34	22.95	C
			B	0.413	2.038		0.85	1	16.493			
			C	0.413	2.038		0.85	1	16.493			
T10 6.50-1.50	0.00	0.71	A	0.879	1.895	4	0.85	1	8.406	0.05	10.31	C
			B	0.879	1.895		0.85	1	8.406			
			C	0.879	1.895		0.85	1	8.406			
Sum Weight:	12.80	23.52								4.65		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.05	0.81	A	0.267	2.388	28	1	1	15.552	1.07	53.61	C
181.50-161.50		TA 0.52	B	0.267	2.388		1	1	15.552			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	0.267	2.388		1	1	15.552			
T2	0.16	0.46	A	0.195	2.613	27	1	1	8.159	0.86	43.21	C
161.50-141.50			B	0.195	2.613		1	1	8.159			
			C	0.195	2.613		1	1	8.159			
T3	0.21	0.88	A	0.286	2.333	26	1	1	17.019	1.37	68.29	C
141.50-121.50		TA 0.52	B	0.286	2.333		1	1	17.019			
			C	0.286	2.333		1	1	17.019			
T4	0.27	1.81	A	0.301	2.294	24	1	1	18.100	1.43	71.41	C
121.50-101.50			B	0.301	2.294		1	1	18.100			
			C	0.301	2.294		1	1	18.100			
T5	0.28	1.00	A	0.258	2.413	23	1	1	12.974	1.17	58.71	C
101.50-81.50			B	0.258	2.413		1	1	12.974			
			C	0.258	2.413		1	1	12.974			
T6	0.32	1.32	A	0.254	2.427	22	1	1	14.539	1.21	60.31	C
81.50-61.50			B	0.254	2.427		1	1	14.539			
			C	0.254	2.427		1	1	14.539			
T7	0.32	1.13	A	0.23	2.499	20	1	1	12.436	1.03	51.65	C
61.50-41.50			B	0.23	2.499		1	1	12.436			
			C	0.23	2.499		1	1	12.436			
T8	0.32	0.46	A	0.195	2.613	17	1	1	8.159	0.76	37.81	C
41.50-21.50			B	0.195	2.613		1	1	8.159			
			C	0.195	2.613		1	1	8.159			
T9 21.50-6.50	0.24	0.98	A	0.243	2.46	17	1	1	10.290	0.69	46.13	C
			B	0.243	2.46		1	1	10.290			
			C	0.243	2.46		1	1	10.290			
T10 6.50-1.50	0.00	0.41	A	0.712	1.777	17	1	1	6.507	0.17	33.01	C
			B	0.712	1.777		1	1	6.507			
			C	0.712	1.777		1	1	6.507			
Sum Weight:	2.17	10.31								9.76		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.05	0.81	A	0.267	2.388	28	0.8	1	13.572	0.96	48.05	C
181.50-161.50		TA 0.52	B	0.267	2.388		0.8	1	13.572			
			C	0.267	2.388		0.8	1	13.572			
T2	0.16	0.46	A	0.195	2.613	27	0.8	1	8.159	0.86	43.21	C
161.50-141.50			B	0.195	2.613		0.8	1	8.159			
			C	0.195	2.613		0.8	1	8.159			
T3	0.21	0.88	A	0.286	2.333	26	0.8	1	14.756	1.25	62.53	C
141.50-121.50		TA 0.52	B	0.286	2.333		0.8	1	14.756			
			C	0.286	2.333		0.8	1	14.756			
T4	0.27	1.81	A	0.301	2.294	24	0.8	1	15.628	1.31	65.52	C
121.50-101.50			B	0.301	2.294		0.8	1	15.628			
			C	0.301	2.294		0.8	1	15.628			
T5	0.28	1.00	A	0.258	2.413	23	0.8	1	12.049	1.13	56.52	C
101.50-81.50			B	0.258	2.413		0.8	1	12.049			
			C	0.258	2.413		0.8	1	12.049			
T6	0.32	1.32	A	0.254	2.427	22	0.8	1	12.754	1.13	56.34	C
81.50-61.50			B	0.254	2.427		0.8	1	12.754			
			C	0.254	2.427		0.8	1	12.754			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T7	0.32	1.13	A	0.23	2.499	20	0.8	1	11.153	0.98	48.98	C
61.50-41.50			B	0.23	2.499		0.8	1	11.153			
			C	0.23	2.499		0.8	1	11.153			
T8	0.32	0.46	A	0.195	2.613	17	0.8	1	8.159	0.76	37.81	C
41.50-21.50			B	0.195	2.613		0.8	1	8.159			
			C	0.195	2.613		0.8	1	8.159			
T9 21.50-6.50	0.24	0.98	A	0.243	2.46	17	0.8	1	9.071	0.65	43.27	C
			B	0.243	2.46		0.8	1	9.071			
			C	0.243	2.46		0.8	1	9.071			
T10 6.50-1.50	0.00	0.41	A	0.712	1.777	17	0.8	1	5.628	0.14	28.55	C
			B	0.712	1.777		0.8	1	5.628			
			C	0.712	1.777		0.8	1	5.628			
Sum Weight:	2.17	10.31								9.17		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.05	0.81	A	0.267	2.388	28	0.85	1	14.067	0.99	49.44	C
181.50-161.50		TA 0.52	B	0.267	2.388		0.85	1	14.067			
			C	0.267	2.388		0.85	1	14.067			
T2	0.16	0.46	A	0.195	2.613	27	0.85	1	8.159	0.86	43.21	C
161.50-141.50			B	0.195	2.613		0.85	1	8.159			
			C	0.195	2.613		0.85	1	8.159			
T3	0.21	0.88	A	0.286	2.333	26	0.85	1	15.322	1.28	63.97	C
141.50-121.50		TA 0.52	B	0.286	2.333		0.85	1	15.322			
			C	0.286	2.333		0.85	1	15.322			
T4	0.27	1.81	A	0.301	2.294	24	0.85	1	16.246	1.34	66.99	C
121.50-101.50			B	0.301	2.294		0.85	1	16.246			
			C	0.301	2.294		0.85	1	16.246			
T5	0.28	1.00	A	0.258	2.413	23	0.85	1	12.281	1.14	57.07	C
101.50-81.50			B	0.258	2.413		0.85	1	12.281			
			C	0.258	2.413		0.85	1	12.281			
T6	0.32	1.32	A	0.254	2.427	22	0.85	1	13.200	1.15	57.33	C
81.50-61.50			B	0.254	2.427		0.85	1	13.200			
			C	0.254	2.427		0.85	1	13.200			
T7	0.32	1.13	A	0.23	2.499	20	0.85	1	11.474	0.99	49.64	C
61.50-41.50			B	0.23	2.499		0.85	1	11.474			
			C	0.23	2.499		0.85	1	11.474			
T8	0.32	0.46	A	0.195	2.613	17	0.85	1	8.159	0.76	37.81	C
41.50-21.50			B	0.195	2.613		0.85	1	8.159			
			C	0.195	2.613		0.85	1	8.159			
T9 21.50-6.50	0.24	0.98	A	0.243	2.46	17	0.85	1	9.375	0.66	43.99	C
			B	0.243	2.46		0.85	1	9.375			
			C	0.243	2.46		0.85	1	9.375			
T10 6.50-1.50	0.00	0.41	A	0.712	1.777	17	0.85	1	5.847	0.15	29.67	C
			B	0.712	1.777		0.85	1	5.847			
			C	0.712	1.777		0.85	1	5.847			
Sum Weight:	2.17	10.31								9.32		

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Torque Arm Face C	180.0000	0.00	0.00	2.61	168.50	1.147	45	2.36	3.94
Torque Arm Face B	60.0000	0.00	2.26	-1.30	168.50	1.147	45	2.36	3.94
Torque Arm Face A	300.0000	0.00	-2.26	-1.30	168.50	1.147	45	2.36	3.94
Torque Arm Face C	180.0000	0.00	0.00	2.61	128.50	1.062	42	2.40	4.02
Torque Arm Face B	60.0000	0.00	2.26	-1.30	128.50	1.062	42	2.40	4.02
Torque Arm Face A	300.0000	0.00	-2.26	-1.30	128.50	1.062	42	2.40	4.02
GPS	120.0000	0.01	4.74	2.73	89.50	0.957	38	1.00	1.00
3' GPS Stand-off Mount	120.0000	0.05	3.00	1.73	89.50	0.957	38	2.45	2.45
APXVSPP18-C-A20	0.0000	0.06	-4.00	-4.97	126.00	1.056	42	8.02	5.28
APXVSPP18-C-A20	120.0000	0.06	6.30	-0.98	126.00	1.056	42	8.02	5.28
APXVSPP18-C-A20	240.0000	0.06	-2.30	5.95	126.00	1.056	42	8.02	5.28
FD-RRH 2x50 800	0.0000	0.06	0.00	-4.97	126.00	1.056	42	2.06	1.93
FD-RRH 2x50 800	120.0000	0.06	4.30	2.48	126.00	1.056	42	2.06	1.93
FD-RRH 2x50 800	240.0000	0.06	-4.30	2.48	126.00	1.056	42	2.06	1.93
FD-RRH 4x45 1900	0.0000	0.06	0.00	-4.97	126.00	1.056	42	2.32	2.38
FD-RRH 4x45 1900	120.0000	0.06	4.30	2.48	126.00	1.056	42	2.32	2.38
FD-RRH 4x45 1900	240.0000	0.06	-4.30	2.48	126.00	1.056	42	2.32	2.38
Rohn 6' x 12' Boom Gate (1)	0.0000	0.56	0.00	-3.97	126.00	1.056	42	16.60	16.60
Rohn 6' x 12' Boom Gate (1)	120.0000	0.56	3.44	1.98	126.00	1.056	42	16.60	16.60
Rohn 6' x 12' Boom Gate (1)	240.0000	0.56	-3.44	1.98	126.00	1.056	42	16.60	16.60
1.5"x2'omni	0.0000	0.01	0.00	-4.97	145.50	1.100	44	0.25	0.25
1.5"x2'omni	0.0000	0.01	0.00	-4.97	141.50	1.091	43	0.25	0.25
2-ft Stand Off	0.0000	0.02	0.00	-2.97	143.50	1.096	43	1.07	1.07
3"x20-ft Omni	240.0000	0.02	-4.30	2.48	148.50	1.106	44	3.56	3.56
3-ft Side Arm	240.0000	0.01	-3.00	1.73	138.50	1.085	43	0.66	0.66
20-ft x 1.9in Support Pipe	240.0000	0.05	-3.00	1.73	148.50	1.106	44	3.80	3.80
20' x 2" Dia Omni	0.0000	0.02	0.00	-1.97	190.50	1.188	47	4.00	4.00
14' x 3" Dia Omni	120.0000	0.04	1.71	0.98	187.50	1.183	47	4.20	4.20
20' x 2" Dia Omni	240.0000	0.02	-1.71	0.98	190.50	1.188	47	4.00	4.00
TPA-65R-BU4D	300.0000	0.06	-2.45	-3.72	78.00	0.921	37	8.28	3.51
TPA-65R-BU4D	60.0000	0.06	4.45	-0.26	78.00	0.921	37	8.28	3.51
TPA-65R-BU4D	180.0000	0.06	-2.00	3.98	78.00	0.921	37	8.28	3.51
DMP65R-BU4D	300.0000	0.07	-6.45	3.20	78.00	0.921	37	8.00	3.51
DMP65R-BU4D	60.0000	0.07	0.45	-7.19	78.00	0.921	37	8.00	3.51
DMP65R-BU4D	180.0000	0.07	6.00	3.98	78.00	0.921	37	8.00	3.51
AIR6449	300.0000	0.10	-3.45	-1.99	80.00	0.927	37	5.65	2.42
AIR6419	300.0000	0.07	-3.45	-1.99	76.00	0.914	36	3.66	1.66
AIR6449	60.0000	0.10	3.45	-1.99	80.00	0.927	37	5.65	2.42
AIR6419	60.0000	0.07	3.45	-1.99	76.00	0.914	36	3.66	1.66
AIR6449	180.0000	0.10	0.00	3.98	80.00	0.927	37	5.65	2.42
AIR6419	180.0000	0.07	0.00	3.98	76.00	0.914	36	3.66	1.66
8843 B2/B66A	300.0000	0.07	-3.45	-1.99	78.00	0.921	37	1.64	1.35
8843 B2/B66A	60.0000	0.07	3.45	-1.99	78.00	0.921	37	1.64	1.35
8843 B2/B66A	180.0000	0.07	0.00	3.98	78.00	0.921	37	1.64	1.35
4449 B5/B12	300.0000	0.07	-3.45	-1.99	78.00	0.921	37	1.97	1.41
4449 B5/B12	60.0000	0.07	3.45	-1.99	78.00	0.921	37	1.97	1.41
4449 B5/B12	180.0000	0.07	0.00	3.98	78.00	0.921	37	1.97	1.41
4478 B14	300.0000	0.06	-3.45	-1.99	78.00	0.921	37	1.84	1.06
4478 B14	60.0000	0.06	3.45	-1.99	78.00	0.921	37	1.84	1.06
4478 B14	180.0000	0.06	0.00	3.98	78.00	0.921	37	1.84	1.06
DC6-48-60-18-8F Surge	240.0000	0.02	-2.57	1.48	78.00	0.921	37	1.91	1.91

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Arrestor									
DC9	240.0000	0.02	-2.57	1.48	78.00	0.921	37	1.91	1.91
12' V-Frame	0.0000	0.30	0.00	-3.97	78.00	0.921	37	9.22	12.97
12' V-Frame	120.0000	0.30	3.44	1.98	78.00	0.921	37	9.22	12.97
12' V-Frame	240.0000	0.30	-3.44	1.98	78.00	0.921	37	9.22	12.97
AIR6419	0.0000	0.07	-6.00	-5.97	159.00	1.128	45	3.66	1.66
APXVAALL24-43	0.0000	0.15	6.00	-5.97	159.00	1.128	45	20.24	8.89
AIR6419	120.0000	0.07	8.17	-2.21	159.00	1.128	45	3.66	1.66
APXVAALL24-43	120.0000	0.15	2.17	8.18	159.00	1.128	45	20.24	8.89
AIR6419	240.0000	0.07	-2.17	8.18	159.00	1.128	45	3.66	1.66
APXVAALL24-43	240.0000	0.15	-8.17	-2.21	159.00	1.128	45	20.24	8.89
4480 B71+B85	0.0000	0.08	-2.00	-5.97	160.50	1.131	45	2.85	1.38
4480 B71+B85	120.0000	0.08	6.17	1.25	160.50	1.131	45	2.85	1.38
4480 B71+B85	240.0000	0.08	-4.17	4.72	160.50	1.131	45	2.85	1.38
4460 B25+B66	0.0000	0.11	-2.00	-5.97	157.50	1.125	45	2.56	1.98
4460 B25+B66	120.0000	0.11	6.17	1.25	157.50	1.125	45	2.56	1.98
4460 B25+B66	240.0000	0.11	-4.17	4.72	157.50	1.125	45	2.56	1.98
SitePro VFA12-HD	0.0000	0.75	0.00	-3.97	159.00	1.128	45	21.00	21.00
SitePro VFA12-HD	120.0000	0.75	3.44	1.98	159.00	1.128	45	21.00	21.00
SitePro VFA12-HD	240.0000	0.75	-3.44	1.98	159.00	1.128	45	21.00	21.00
DS2C03F36D-D	240.0000	0.08	-6.90	3.98	187.00	1.182	47	7.30	7.30
SitePro USF-4U	240.0000	0.16	-4.30	2.48	177.00	1.163	46	5.75	5.75
	Sum Weight:	8.65							

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Torque Arm Face C	180.0000	0.00	0.00	2.61	168.50	1.147	6	4.12	6.88	1.3560
Torque Arm Face B	60.0000	0.00	2.26	-1.30	168.50	1.147	6	4.12	6.88	1.3560
Torque Arm Face A	300.0000	0.00	-2.26	-1.30	168.50	1.147	6	4.12	6.88	1.3560
Torque Arm Face C	180.0000	0.00	0.00	2.61	128.50	1.062	6	4.08	6.82	1.3205
Torque Arm Face B	60.0000	0.00	2.26	-1.30	128.50	1.062	6	4.08	6.82	1.3205
Torque Arm Face A	300.0000	0.00	-2.26	-1.30	128.50	1.062	6	4.08	6.82	1.3205
GPS	120.0000	0.02	4.74	2.73	89.50	0.957	5	2.27	2.27	1.2707
3' GPS Stand-off Mount	120.0000	0.11	3.00	1.73	89.50	0.957	5	6.34	6.34	1.2707
APXVSPP18-C-A20	0.0000	0.20	-4.00	-4.97	126.00	1.056	6	9.24	6.49	1.3149
APXVSPP18-C-A20	120.0000	0.20	6.30	-0.98	126.00	1.056	6	9.24	6.49	1.3149
APXVSPP18-C-A20	240.0000	0.20	-2.30	5.95	126.00	1.056	6	9.24	6.49	1.3149
FD-RRH 2x50 800	0.0000	0.13	0.00	-4.97	126.00	1.056	6	2.55	2.42	1.3149
FD-RRH 2x50 800	120.0000	0.13	4.30	2.48	126.00	1.056	6	2.55	2.42	1.3149
FD-RRH 2x50 800	240.0000	0.13	-4.30	2.48	126.00	1.056	6	2.55	2.42	1.3149
FD-RRH 4x45 1900	0.0000	0.13	0.00	-4.97	126.00	1.056	6	2.88	2.95	1.3149
FD-RRH 4x45 1900	120.0000	0.13	4.30	2.48	126.00	1.056	6	2.88	2.95	1.3149
FD-RRH 4x45 1900	240.0000	0.13	-4.30	2.48	126.00	1.056	6	2.88	2.95	1.3149
Rohn 6' x 12' Boom Gate (1)	0.0000	0.93	0.00	-3.97	126.00	1.056	6	25.02	25.02	1.3149
Rohn 6' x 12' Boom Gate (1)	120.0000	0.93	3.44	1.98	126.00	1.056	6	25.02	25.02	1.3149
Rohn 6' x 12' Boom Gate (1)	240.0000	0.93	-3.44	1.98	126.00	1.056	6	25.02	25.02	1.3149
1.5"x2'omni	0.0000	0.01	0.00	-4.97	145.50	1.100	6	0.60	0.60	1.3339
1.5"x2'omni	0.0000	0.01	0.00	-4.97	141.50	1.091	6	0.60	0.60	1.3302
2-ft Stand Off	0.0000	0.04	0.00	-2.97	143.50	1.096	6	2.54	2.54	1.3321
3"x20-ft Omni	240.0000	0.08	-4.30	2.48	148.50	1.106	6	13.10	13.10	1.3367
3-ft Side Arm	240.0000	0.05	-3.00	1.73	138.50	1.085	6	1.93	1.93	1.3274

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
20-ft x 1.9in Support Pipe	240.0000	0.13	-3.00	1.73	148.50	1.106	6	9.20	9.20	1.3367
20' x 2" Dia Omni	0.0000	0.14	0.00	-1.97	190.50	1.188	6	9.60	9.60	1.3704
14' x 3" Dia Omni	120.0000	0.15	1.71	0.98	187.50	1.183	6	8.14	8.14	1.3682
20' x 2" Dia Omni	240.0000	0.14	-1.71	0.98	190.50	1.188	6	9.60	9.60	1.3704
TPA-65R-BU4D	300.0000	0.20	-2.45	-3.72	78.00	0.921	5	9.26	4.28	1.2533
TPA-65R-BU4D	60.0000	0.20	4.45	-0.26	78.00	0.921	5	9.26	4.28	1.2533
TPA-65R-BU4D	180.0000	0.20	-2.00	3.98	78.00	0.921	5	9.26	4.28	1.2533
DMP65R-BU4D	300.0000	0.21	-6.45	3.20	78.00	0.921	5	8.97	4.28	1.2533
DMP65R-BU4D	60.0000	0.21	0.45	-7.19	78.00	0.921	5	8.97	4.28	1.2533
DMP65R-BU4D	180.0000	0.21	6.00	3.98	78.00	0.921	5	8.97	4.28	1.2533
AIR6449	300.0000	0.21	-3.45	-1.99	80.00	0.927	5	6.43	3.00	1.2565
AIR6419	300.0000	0.14	-3.45	-1.99	76.00	0.914	5	4.30	2.15	1.2501
AIR6449	60.0000	0.21	3.45	-1.99	80.00	0.927	5	6.43	3.00	1.2565
AIR6419	60.0000	0.14	3.45	-1.99	76.00	0.914	5	4.30	2.15	1.2501
AIR6449	180.0000	0.21	0.00	3.98	80.00	0.927	5	6.43	3.00	1.2565
AIR6419	180.0000	0.14	0.00	3.98	76.00	0.914	5	4.30	2.15	1.2501
8843 B2/B66A	300.0000	0.12	-3.45	-1.99	78.00	0.921	5	2.06	1.74	1.2533
8843 B2/B66A	60.0000	0.12	3.45	-1.99	78.00	0.921	5	2.06	1.74	1.2533
8843 B2/B66A	180.0000	0.12	0.00	3.98	78.00	0.921	5	2.06	1.74	1.2533
4449 B5/B12	300.0000	0.12	-3.45	-1.99	78.00	0.921	5	2.43	1.81	1.2533
4449 B5/B12	60.0000	0.12	3.45	-1.99	78.00	0.921	5	2.43	1.81	1.2533
4449 B5/B12	180.0000	0.12	0.00	3.98	78.00	0.921	5	2.43	1.81	1.2533
4478 B14	300.0000	0.11	-3.45	-1.99	78.00	0.921	5	2.28	1.42	1.2533
4478 B14	60.0000	0.11	3.45	-1.99	78.00	0.921	5	2.28	1.42	1.2533
4478 B14	180.0000	0.11	0.00	3.98	78.00	0.921	5	2.28	1.42	1.2533
DC6-48-60-18-8F Surge Arrestor	240.0000	0.08	-2.57	1.48	78.00	0.921	5	2.40	2.40	1.2533
DC9	240.0000	0.08	-2.57	1.48	78.00	0.921	5	2.40	2.40	1.2533
12' V-Frame	0.0000	0.55	0.00	-3.97	78.00	0.921	5	9.22	12.97	1.2533
12' V-Frame	120.0000	0.55	3.44	1.98	78.00	0.921	5	9.22	12.97	1.2533
12' V-Frame	240.0000	0.55	-3.44	1.98	78.00	0.921	5	9.22	12.97	1.2533
AIR6419	0.0000	0.14	-6.00	-5.97	159.00	1.128	6	4.35	2.19	1.3458
APXVAALL24-43	0.0000	0.48	6.00	-5.97	159.00	1.128	6	22.00	10.52	1.3458
AIR6419	120.0000	0.14	8.17	-2.21	159.00	1.128	6	4.35	2.19	1.3458
APXVAALL24-43	120.0000	0.48	2.17	8.18	159.00	1.128	6	22.00	10.52	1.3458
AIR6419	240.0000	0.14	-2.17	8.18	159.00	1.128	6	4.35	2.19	1.3458
APXVAALL24-43	240.0000	0.48	-8.17	-2.21	159.00	1.128	6	22.00	10.52	1.3458
4480 B71+B85	0.0000	0.15	-2.00	-5.97	160.50	1.131	6	3.44	1.84	1.3471
4480 B71+B85	120.0000	0.15	6.17	1.25	160.50	1.131	6	3.44	1.84	1.3471
4480 B71+B85	240.0000	0.15	-4.17	4.72	160.50	1.131	6	3.44	1.84	1.3471
4460 B25+B66	0.0000	0.19	-2.00	-5.97	157.50	1.125	6	3.12	2.48	1.3445
4460 B25+B66	120.0000	0.19	6.17	1.25	157.50	1.125	6	3.12	2.48	1.3445
4460 B25+B66	240.0000	0.19	-4.17	4.72	157.50	1.125	6	3.12	2.48	1.3445
SitePro VFA12-HD	0.0000	1.15	0.00	-3.97	159.00	1.128	6	31.77	31.77	1.3458
SitePro VFA12-HD	120.0000	1.15	3.44	1.98	159.00	1.128	6	31.77	31.77	1.3458
SitePro VFA12-HD	240.0000	1.15	-3.44	1.98	159.00	1.128	6	31.77	31.77	1.3458
DS2C03F36D-D	240.0000	0.26	-6.90	3.98	187.00	1.182	6	14.10	14.10	1.3678
SitePro USF-4U	240.0000	0.29	-4.30	2.48	177.00	1.163	6	11.87	11.87	1.3603
	Sum Weight:	17.09								

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Torque Arm Face C	180.0000	0.00	0.00	2.61	168.50	1.147	28	2.36	3.94

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Torque Arm Face B	60.0000	0.00	2.26	-1.30	168.50	1.147	28	2.36	3.94
Torque Arm Face A	300.0000	0.00	-2.26	-1.30	168.50	1.147	28	2.36	3.94
Torque Arm Face C	180.0000	0.00	0.00	2.61	128.50	1.062	25	2.40	4.02
Torque Arm Face B	60.0000	0.00	2.26	-1.30	128.50	1.062	25	2.40	4.02
Torque Arm Face A	300.0000	0.00	-2.26	-1.30	128.50	1.062	25	2.40	4.02
GPS	120.0000	0.01	4.74	2.73	89.50	0.957	23	1.00	1.00
3' GPS Stand-off Mount	120.0000	0.05	3.00	1.73	89.50	0.957	23	2.45	2.45
APXVSPP18-C-A20	0.0000	0.06	-4.00	-4.97	126.00	1.056	25	8.02	5.28
APXVSPP18-C-A20	120.0000	0.06	6.30	-0.98	126.00	1.056	25	8.02	5.28
APXVSPP18-C-A20	240.0000	0.06	-2.30	5.95	126.00	1.056	25	8.02	5.28
FD-RRH 2x50 800	0.0000	0.06	0.00	-4.97	126.00	1.056	25	2.06	1.93
FD-RRH 2x50 800	120.0000	0.06	4.30	2.48	126.00	1.056	25	2.06	1.93
FD-RRH 2x50 800	240.0000	0.06	-4.30	2.48	126.00	1.056	25	2.06	1.93
FD-RRH 4x45 1900	0.0000	0.06	0.00	-4.97	126.00	1.056	25	2.32	2.38
FD-RRH 4x45 1900	120.0000	0.06	4.30	2.48	126.00	1.056	25	2.32	2.38
FD-RRH 4x45 1900	240.0000	0.06	-4.30	2.48	126.00	1.056	25	2.32	2.38
Rohn 6' x 12' Boom Gate (1)	0.0000	0.56	0.00	-3.97	126.00	1.056	25	16.60	16.60
Rohn 6' x 12' Boom Gate (1)	120.0000	0.56	3.44	1.98	126.00	1.056	25	16.60	16.60
Rohn 6' x 12' Boom Gate (1)	240.0000	0.56	-3.44	1.98	126.00	1.056	25	16.60	16.60
1.5"x2'omni	0.0000	0.01	0.00	-4.97	145.50	1.100	26	0.25	0.25
1.5"x2'omni	0.0000	0.01	0.00	-4.97	141.50	1.091	26	0.25	0.25
2-ft Stand Off	0.0000	0.02	0.00	-2.97	143.50	1.096	26	1.07	1.07
3"x20-ft Omni	240.0000	0.02	-4.30	2.48	148.50	1.106	27	3.56	3.56
3-ft Side Arm	240.0000	0.01	-3.00	1.73	138.50	1.085	26	0.66	0.66
20-ft x 1.9in Support Pipe	240.0000	0.05	-3.00	1.73	148.50	1.106	27	3.80	3.80
20' x 2" Dia Omni	0.0000	0.02	0.00	-1.97	190.50	1.188	29	4.00	4.00
14' x 3" Dia Omni	120.0000	0.04	1.71	0.98	187.50	1.183	28	4.20	4.20
20' x 2" Dia Omni	240.0000	0.02	-1.71	0.98	190.50	1.188	29	4.00	4.00
TPA-65R-BU4D	300.0000	0.06	-2.45	-3.72	78.00	0.921	22	8.28	3.51
TPA-65R-BU4D	60.0000	0.06	4.45	-0.26	78.00	0.921	22	8.28	3.51
TPA-65R-BU4D	180.0000	0.06	-2.00	3.98	78.00	0.921	22	8.28	3.51
DMP65R-BU4D	300.0000	0.07	-6.45	3.20	78.00	0.921	22	8.00	3.51
DMP65R-BU4D	60.0000	0.07	0.45	-7.19	78.00	0.921	22	8.00	3.51
DMP65R-BU4D	180.0000	0.07	6.00	3.98	78.00	0.921	22	8.00	3.51
AIR6449	300.0000	0.10	-3.45	-1.99	80.00	0.927	22	5.65	2.42
AIR6419	300.0000	0.07	-3.45	-1.99	76.00	0.914	22	3.66	1.66
AIR6449	60.0000	0.10	3.45	-1.99	80.00	0.927	22	5.65	2.42
AIR6419	60.0000	0.07	3.45	-1.99	76.00	0.914	22	3.66	1.66
AIR6449	180.0000	0.10	0.00	3.98	80.00	0.927	22	5.65	2.42
AIR6419	180.0000	0.07	0.00	3.98	76.00	0.914	22	3.66	1.66
8843 B2/B66A	300.0000	0.07	-3.45	-1.99	78.00	0.921	22	1.64	1.35
8843 B2/B66A	60.0000	0.07	3.45	-1.99	78.00	0.921	22	1.64	1.35
8843 B2/B66A	180.0000	0.07	0.00	3.98	78.00	0.921	22	1.64	1.35
4449 B5/B12	300.0000	0.07	-3.45	-1.99	78.00	0.921	22	1.97	1.41
4449 B5/B12	60.0000	0.07	3.45	-1.99	78.00	0.921	22	1.97	1.41
4449 B5/B12	180.0000	0.07	0.00	3.98	78.00	0.921	22	1.97	1.41
4478 B14	300.0000	0.06	-3.45	-1.99	78.00	0.921	22	1.84	1.06
4478 B14	60.0000	0.06	3.45	-1.99	78.00	0.921	22	1.84	1.06
4478 B14	180.0000	0.06	0.00	3.98	78.00	0.921	22	1.84	1.06
DC6-48-60-18-8F Surge Arrestor	240.0000	0.02	-2.57	1.48	78.00	0.921	22	1.91	1.91
DC9	240.0000	0.02	-2.57	1.48	78.00	0.921	22	1.91	1.91
12' V-Frame	0.0000	0.30	0.00	-3.97	78.00	0.921	22	9.22	12.97
12' V-Frame	120.0000	0.30	3.44	1.98	78.00	0.921	22	9.22	12.97
12' V-Frame	240.0000	0.30	-3.44	1.98	78.00	0.921	22	9.22	12.97
AIR6419	0.0000	0.07	-6.00	-5.97	159.00	1.128	27	3.66	1.66
APXVAALL24-43	0.0000	0.15	6.00	-5.97	159.00	1.128	27	20.24	8.89

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
AIR6419	120.0000	0.07	8.17	-2.21	159.00	1.128	27	3.66	1.66
APXVAALL24-43	120.0000	0.15	2.17	8.18	159.00	1.128	27	20.24	8.89
AIR6419	240.0000	0.07	-2.17	8.18	159.00	1.128	27	3.66	1.66
APXVAALL24-43	240.0000	0.15	-8.17	-2.21	159.00	1.128	27	20.24	8.89
4480 B71+B85	0.0000	0.08	-2.00	-5.97	160.50	1.131	27	2.85	1.38
4480 B71+B85	120.0000	0.08	6.17	1.25	160.50	1.131	27	2.85	1.38
4480 B71+B85	240.0000	0.08	-4.17	4.72	160.50	1.131	27	2.85	1.38
4460 B25+B66	0.0000	0.11	-2.00	-5.97	157.50	1.125	27	2.56	1.98
4460 B25+B66	120.0000	0.11	6.17	1.25	157.50	1.125	27	2.56	1.98
4460 B25+B66	240.0000	0.11	-4.17	4.72	157.50	1.125	27	2.56	1.98
SitePro VFA12-HD	0.0000	0.75	0.00	-3.97	159.00	1.128	27	21.00	21.00
SitePro VFA12-HD	120.0000	0.75	3.44	1.98	159.00	1.128	27	21.00	21.00
SitePro VFA12-HD	240.0000	0.75	-3.44	1.98	159.00	1.128	27	21.00	21.00
DS2C03F36D-D	240.0000	0.08	-6.90	3.98	187.00	1.182	28	7.30	7.30
SitePro USF-4U	240.0000	0.16	-4.30	2.48	177.00	1.163	28	5.75	5.75
	Sum Weight:	8.65							

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
176.50	8.5 Dishw/radome	0.0000	0.07	0.00	-1.97	1.162	56.75	46
		Sum Weight:	0.07					

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in
176.50	8.5 Dishw/radome	0.0000	0.60	0.00	-1.97	1.162	58.67	6	1.1826
		Sum Weight:	0.60						

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
176.50	8.5 Dishw/radome	0.0000	0.07	0.00	-1.97	1.162	56.75	28
		Sum Weight:	0.07					

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	3.14			
Bracing Weight	7.17			
Total Member Self-Weight	10.31			
Guy Weight	2.47			
Total Weight	23.67			
Wind 0 deg - No Ice		0.00	-30.58	-3.10
Wind 30 deg - No Ice		14.62	-25.54	-4.43
Wind 60 deg - No Ice		24.63	-14.65	-2.76
Wind 90 deg - No Ice		28.27	-0.03	0.04
Wind 120 deg - No Ice		24.99	17.78	5.63
Wind 150 deg - No Ice		13.68	27.28	5.64
Wind 180 deg - No Ice		0.00	30.71	3.10
Wind 210 deg - No Ice		-13.68	27.28	-0.26
Wind 240 deg - No Ice		-24.99	17.78	-2.53
Wind 270 deg - No Ice		-28.27	-0.03	-0.04
Wind 300 deg - No Ice		-24.63	-14.65	-0.34
Wind 330 deg - No Ice		-14.62	-25.54	-0.94
Member Ice	13.21			
Guy Ice	9.11			
Total Weight Ice	65.59			
Wind 0 deg - Ice		0.00	-7.47	-0.89
Wind 30 deg - Ice		3.65	-6.36	-0.80
Wind 60 deg - Ice		6.23	-3.66	-0.24
Wind 90 deg - Ice		7.17	-0.00	0.45
Wind 120 deg - Ice		6.26	4.09	1.40
Wind 150 deg - Ice		3.52	6.60	1.41
Wind 180 deg - Ice		0.00	7.52	0.89
Wind 210 deg - Ice		-3.52	6.60	0.13
Wind 240 deg - Ice		-6.26	4.09	-0.51
Wind 270 deg - Ice		-7.17	-0.00	-0.45
Wind 300 deg - Ice		-6.23	-3.66	-0.65
Wind 330 deg - Ice		-3.65	-6.36	-0.74
Total Weight	23.67			
Wind 0 deg - Service		0.00	-18.50	-1.88
Wind 30 deg - Service		8.84	-15.45	-2.68
Wind 60 deg - Service		14.90	-8.86	-1.67
Wind 90 deg - Service		17.10	-0.02	0.03
Wind 120 deg - Service		15.12	10.76	3.40
Wind 150 deg - Service		8.28	16.50	3.41
Wind 180 deg - Service		0.00	18.58	1.88
Wind 210 deg - Service		-8.28	16.50	-0.16
Wind 240 deg - Service		-15.12	10.76	-1.53
Wind 270 deg - Service		-17.10	-0.02	-0.03
Wind 300 deg - Service		-14.90	-8.86	-0.20
Wind 330 deg - Service		-8.84	-15.45	-0.57

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy

Comb. No.	Description
5	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

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
T1	181.5 - 161.5	Leg	Max Tension	8	16.65	0.03	-0.08
			Max. Compression	10	-15.13	0.32	-0.09
			Max. Mx	11	-3.86	1.43	0.01
			Max. My	2	-6.42	0.08	1.31
			Max. Vy	5	-1.85	-1.35	0.02
			Max. Vx	2	1.57	0.08	1.31
		Diagonal	Max Tension	9	2.97	0.00	0.00
			Max. Compression	7	-3.11	0.00	0.00
			Max. Mx	8	2.15	-0.04	-0.00
			Max. My	3	-2.25	-0.01	0.02
			Max. Vy	8	-0.02	0.00	0.00
			Max. Vx	3	-0.01	-0.01	0.02
		Top Girt	Max Tension	2	0.07	0.00	0.00
			Max. Compression	8	-0.13	0.00	0.00
			Max. Mx	25	-0.03	-0.01	0.00
			Max. My	7	0.05	0.00	-0.00
			Max. Vy	25	-0.02	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Bottom Girt	Max Tension	11	0.76	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	5	-0.75	0.00	0.00
			Max. Mx	25	-0.14	-0.01	0.00
			Max. My	7	0.71	0.00	-0.00
			Max. Vy	25	-0.02	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Guy A	Bottom Tension	8	10.30		
			Top Tension	8	10.41		
			Top Cable Vert	8	7.20		
			Top Cable Norm	8	7.52		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-6.88		
			Bot Cable Norm	8	7.66		
			Bot Cable Tan	8	0.00		
		Guy B	Bottom Tension	12	8.98		
			Top Tension	12	9.09		
			Top Cable Vert	12	6.30		
			Top Cable Norm	12	6.55		
			Top Cable Tan	12	0.00		
			Bot Cable Vert	12	-5.98		
			Bot Cable Norm	12	6.69		
			Bot Cable Tan	12	0.00		
		Guy C	Bottom Tension	4	9.15		
			Top Tension	4	9.26		
			Top Cable Vert	4	6.42		
			Top Cable Norm	4	6.68		
			Top Cable Tan	4	0.00		
			Bot Cable Vert	4	-6.10		
			Bot Cable Norm	4	6.82		
			Bot Cable Tan	4	0.00		
		Torque Arm Top	Max Tension	3	11.29	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	16	9.48	0.04	0.00
			Max. My	7	6.53	0.00	-0.00
			Max. Vy	16	-0.04	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	6	1.70	0.00	0.00
			Max. Compression	8	-15.55	0.00	0.00
			Max. Mx	19	-9.40	0.05	0.00
			Max. My	7	-4.30	0.00	-0.00
			Max. Vy	19	-0.04	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
T2	161.5 - 141.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-17.50	-0.60	0.12
			Max. Mx	5	-16.26	1.40	0.47
			Max. My	2	-11.53	-0.22	-1.48
			Max. Vy	5	-1.85	-0.22	0.01
			Max. Vx	2	1.56	-0.18	0.35
		Diagonal	Max Tension	3	2.89	0.00	0.00
			Max. Compression	3	-3.45	0.00	0.00
			Max. Mx	19	0.37	0.01	0.00
			Max. My	20	0.21	0.00	-0.00
			Max. Vy	19	-0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Top Girt	Max Tension	11	1.96	0.00	0.00
			Max. Compression	5	-2.00	0.00	0.00
			Max. Mx	25	0.01	0.01	0.00
			Max. My	7	-0.63	0.00	0.00
			Max. Vy	25	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Bottom Girt	Max Tension	3	1.48	0.00	0.00
			Max. Compression	8	-1.40	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	14	0.02	0.01	0.00
			Max. My	7	-1.24	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
T3	141.5 - 121.5	Leg	Max Tension	8	10.44	0.02	-0.08
			Max. Compression	10	-28.08	0.43	-0.22
			Max. Mx	4	-11.36	-0.83	0.50
			Max. My	2	-13.66	-0.28	0.85
			Max. Vy	11	1.25	0.73	-0.02
			Max. Vx	2	1.31	0.15	0.83
		Diagonal	Max Tension	3	3.07	0.00	0.00
			Max. Compression	9	-3.02	0.00	-0.01
			Max. Mx	8	1.95	-0.07	-0.00
			Max. My	3	-1.64	-0.01	0.02
			Max. Vy	19	-0.04	0.06	0.00
			Max. Vx	3	-0.01	-0.01	0.02
		Top Girt	Max Tension	2	0.69	0.00	0.00
			Max. Compression	4	-0.34	0.00	0.00
			Max. Mx	14	0.23	-0.01	0.00
			Max. My	7	0.55	0.00	-0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Bottom Girt	Max Tension	10	0.74	0.00	0.00
			Max. Compression	4	-0.22	0.00	0.00
			Max. Mx	14	0.38	-0.01	0.00
			Max. My	6	0.73	0.00	-0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Guy A	Bottom Tension	8	9.56		
			Top Tension	8	9.64		
			Top Cable Vert	8	5.67		
			Top Cable Norm	8	7.80		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-5.42		
			Bot Cable Norm	8	7.87		
			Bot Cable Tan	8	0.00		
		Guy B	Bottom Tension	12	9.40		
			Top Tension	12	9.49		
			Top Cable Vert	12	5.58		
			Top Cable Norm	12	7.67		
			Top Cable Tan	12	0.00		
			Bot Cable Vert	12	-5.33		
			Bot Cable Norm	12	7.74		
			Bot Cable Tan	12	0.00		
		Guy C	Bottom Tension	4	9.39		
			Top Tension	4	9.48		
			Top Cable Vert	4	5.58		
			Top Cable Norm	4	7.66		
			Top Cable Tan	4	0.00		
			Bot Cable Vert	4	-5.33		
			Bot Cable Norm	4	7.73		
			Bot Cable Tan	4	0.00		
		Torque Arm Top	Max Tension	6	10.16	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	24	7.95	0.04	0.00
			Max. My	6	4.91	0.00	-0.00
			Max. Vy	24	0.04	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	10	2.85	0.00	0.00
			Max. Compression	8	-13.50	0.00	0.00
			Max. Mx	19	-7.88	0.04	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	7	-3.66	0.00	-0.00
			Max. Vy	19	-0.04	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
T4	121.5 - 101.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-31.82	-0.08	-0.19
			Max. Mx	11	-12.14	-0.80	-0.14
			Max. My	8	-17.72	-0.04	0.82
			Max. Vy	11	1.24	-0.03	-0.08
			Max. Vx	2	1.30	0.08	0.03
		Diagonal	Max Tension	5	3.42	0.00	0.00
			Max. Compression	11	-4.08	0.00	0.00
			Max. Mx	19	0.27	-0.03	0.00
			Max. My	6	-0.99	0.00	0.00
			Max. Vy	19	0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Horizontal	Max Tension	8	1.05	0.00	0.00
			Max. Compression	2	-0.34	0.00	0.00
			Max. Mx	17	0.80	-0.02	0.00
			Max. My	7	0.24	0.00	0.00
			Max. Vy	17	0.03	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Top Girt	Max Tension	10	1.93	0.00	0.00
			Max. Compression	4	-1.67	0.00	0.00
			Max. Mx	24	-0.15	-0.02	0.00
			Max. My	6	-0.91	0.00	-0.00
			Max. Vy	24	0.03	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Bottom Girt	Max Tension	4	0.81	0.00	0.00
			Max. Compression	10	-0.46	0.00	0.00
			Max. Mx	14	0.28	-0.02	0.00
			Max. My	7	-0.18	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
T5	101.5 - 81.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-32.82	0.17	0.20
			Max. Mx	11	-4.47	-0.35	-0.06
			Max. My	9	-20.03	-0.09	0.41
			Max. Vy	11	-0.75	0.11	0.02
			Max. Vx	8	0.71	-0.06	-0.14
		Diagonal	Max Tension	13	1.08	0.00	0.00
			Max. Compression	3	-1.64	0.00	0.00
			Max. Mx	18	0.16	0.01	0.00
			Max. My	17	-0.55	0.00	-0.00
			Max. Vy	18	-0.01	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00
		Horizontal	Max Tension	9	0.60	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	23	0.54	-0.02	0.00
			Max. My	6	0.02	0.00	-0.00
			Max. Vy	23	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	10	0.56	0.00	0.00
			Max. Compression	4	-0.29	0.00	0.00
			Max. Mx	15	0.11	0.01	0.00
			Max. Vy	15	-0.01	0.00	0.00
		Bottom Girt	Max Tension	5	0.59	0.00	0.00
			Max. Compression	11	-0.45	0.00	0.00
			Max. Mx	23	-0.05	0.01	0.00
			Max. My	6	0.02	0.00	0.00
			Max. Vy	23	-0.01	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T6	81.5 - 61.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-39.13	0.10	0.12
			Max. Mx	5	-34.69	-0.91	0.00
			Max. My	2	-33.67	0.18	0.88
			Max. Vy	11	1.28	0.82	0.06
			Max. Vx	8	-1.25	-0.07	-0.83
		Diagonal	Max Tension	5	4.79	0.00	0.00
			Max. Compression	5	-4.78	0.00	0.00
			Max. Mx	18	1.08	-0.03	0.00
			Max. My	6	0.07	0.00	0.00
			Max. Vy	18	0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	10	0.86	0.00	0.00
			Max. Compression	5	-0.60	0.00	0.00
			Max. Mx	14	0.17	-0.02	0.00
			Max. My	6	0.04	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Bottom Girt	Max Tension	13	3.75	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	2.58	-0.02	0.00
			Max. My	10	2.51	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Guy A	Bottom Tension	8	13.22		
			Top Tension	8	13.29		
			Top Cable Vert	8	5.23		
			Top Cable Norm	8	12.22		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-5.01		
			Bot Cable Norm	8	12.23		
			Bot Cable Tan	8	0.00		
		Guy B	Bottom Tension	12	13.32		
			Top Tension	12	13.39		
			Top Cable Vert	12	5.14		
			Top Cable Norm	12	12.37		
			Top Cable Tan	12	0.00		
			Bot Cable Vert	12	-4.91		
			Bot Cable Norm	12	12.38		
			Bot Cable Tan	12	0.00		
		Guy C	Bottom Tension	4	13.16		
			Top Tension	4	13.23		
			Top Cable Vert	4	4.91		
			Top Cable Norm	4	12.29		
			Top Cable Tan	4	0.00		
			Bot Cable Vert	4	-4.67		
			Bot Cable Norm	4	12.30		
			Bot Cable Tan	4	0.00		
		Top Guy Pull-Off	Max Tension	13	2.82	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	1.94	0.02	0.00
			Max. My	10	1.88	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
T7	61.5 - 41.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-39.13	0.06	-0.12
			Max. Mx	11	-9.01	-0.74	-0.06
			Max. My	8	-8.56	0.13	0.70
			Max. Vy	11	1.27	0.04	-0.00
			Max. Vx	8	-1.25	0.03	-0.06
		Diagonal	Max Tension	13	2.87	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	7	-3.12	0.00	0.00
			Max. Mx	20	-1.09	-0.03	0.00
			Max. My	6	0.24	0.00	0.00
			Max. Vy	20	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	7	1.64	0.00	0.00
			Max. Compression	12	-1.37	0.00	0.00
			Max. Mx	14	0.10	0.01	0.00
			Max. My	10	1.53	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	12	0.80	0.00	0.00
			Max. Compression	7	-0.69	0.00	0.00
			Max. Mx	14	0.08	0.01	0.00
			Max. My	10	-0.49	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
T8	41.5 - 21.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-39.99	0.10	0.11
			Max. Mx	11	-22.29	-0.37	-0.06
			Max. My	8	-23.01	0.07	0.38
			Max. Vy	11	0.52	0.07	-0.08
			Max. Vx	8	-0.59	0.06	0.02
		Diagonal	Max Tension	9	1.36	0.00	0.00
			Max. Compression	7	-1.57	0.00	0.00
			Max. Mx	22	-0.13	0.01	0.00
			Max. My	17	-0.02	0.00	-0.00
			Max. Vy	22	-0.01	0.00	0.00
			Max. Vx	17	0.00	0.00	0.00
		Top Girt	Max Tension	7	0.72	0.00	0.00
			Max. Compression	12	-0.60	0.00	0.00
			Max. Mx	14	0.09	0.01	0.00
			Max. My	10	0.51	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	10	0.23	0.00	0.00
			Max. Compression	7	-0.11	0.00	0.00
			Max. Mx	14	0.06	0.01	0.00
			Max. Vy	14	-0.01	0.00	0.00
T9	21.5 - 6.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-40.16	-0.09	-0.00
			Max. Mx	18	-39.63	-2.18	1.07
			Max. My	22	-39.70	0.15	-2.43
			Max. Vy	24	-4.29	2.04	1.31
			Max. Vx	21	4.90	0.14	-2.43
		Diagonal	Max Tension	6	0.99	0.00	0.00
			Max. Compression	10	-1.36	0.00	0.00
			Max. Mx	22	0.08	-0.03	0.00
			Max. My	6	0.40	0.00	0.00
			Max. Vy	22	0.03	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	0.30	0.00	0.00
			Max. Compression	10	-0.13	0.00	0.00
			Max. Mx	14	0.12	-0.02	0.00
			Max. My	10	-0.13	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Bottom Girt	Max Tension	23	3.19	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	23	2.99	-0.02	0.00
			Max. My	10	2.43	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	23	-0.03	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
T10	6.5 - 1.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-42.79	-0.29	-0.06
			Max. Mx	23	-37.04	-3.05	0.10
			Max. My	6	-24.66	-1.83	0.37
			Max. Vy	23	10.08	-3.00	0.18
			Max. Vx	10	1.16	-0.67	-0.34
		Horizontal	Max Tension	4	0.02	-0.46	-0.03
			Max. Compression	7	-0.01	0.03	0.03
			Max. Mx	10	0.01	-0.63	-0.05
			Max. My	10	0.01	-0.63	-0.05
			Max. Vy	10	0.52	-0.61	-0.03
			Max. Vx	10	0.06	-0.59	-0.05
		Top Girt	Max Tension	23	6.20	-2.04	-0.04
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	16	6.15	-2.18	-0.06
			Max. My	6	4.06	-1.68	-0.07
			Max. Vy	6	-0.33	-1.54	-0.05
			Max. Vx	4	-0.04	-1.60	-0.06
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-2.38	-0.81	-0.01
			Max. Mx	10	-1.52	-1.04	0.04
			Max. My	10	-1.52	-0.09	0.09
			Max. Vy	10	3.44	-1.04	0.04
			Max. Vx	10	0.42	-0.83	-0.06

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	23	118.03	0.33	-0.17
	Max. H_x	11	71.04	0.97	0.01
	Max. H_z	2	72.67	-0.01	1.07
	Max. M_x	1	0.00	-0.00	0.00
	Max. M_z	1	0.00	-0.00	0.00
	Max. Torsion	10	0.83	0.90	-0.57
	Min. Vert	1	55.86	-0.00	0.00
	Min. H_x	5	70.76	-0.98	0.01
	Min. H_z	8	72.13	0.01	-0.97
	Min. M_x	1	0.00	-0.00	0.00
	Min. M_z	1	0.00	-0.00	0.00
	Min. Torsion	6	-0.72	-0.90	-0.57
Guy C @ 184 ft Elev 0 ft Azimuth 240 deg	Max. Vert	10	-0.72	-0.57	0.33
	Max. H_x	10	-0.72	-0.57	0.33
	Max. H_z	4	-22.46	-24.82	14.35
	Min. Vert	4	-22.46	-24.82	14.35
	Min. H_x	4	-22.46	-24.82	14.35
	Min. H_z	10	-0.72	-0.57	0.33
Guy B @ 184 ft Elev 0 ft Azimuth 120 deg	Max. Vert	6	-0.73	0.58	0.33
	Max. H_x	12	-22.47	24.83	14.34
	Max. H_z	12	-22.47	24.83	14.34

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. Vert	12	-22.47	24.83	14.34
	Min. H_x	6	-0.73	0.58	0.33
	Min. H_z	6	-0.73	0.58	0.33
Guy A @ 184 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-0.72	-0.00	-0.65
	Max. H_x	11	-11.74	0.85	-14.81
	Max. H_z	2	-0.72	-0.00	-0.65
	Min. Vert	8	-24.21	0.01	-30.60
	Min. H_x	5	-11.73	-0.85	-14.80
	Min. H_z	8	-24.21	0.01	-30.60
Guy C @ 161.2 ft Elev 0 ft Azimuth 240 deg	Max. Vert	10	-0.28	-0.78	0.45
	Max. H_x	10	-0.28	-0.78	0.45
	Max. H_z	4	-4.67	-10.65	6.15
	Min. Vert	4	-4.67	-10.65	6.15
	Min. H_x	4	-4.67	-10.65	6.15
	Min. H_z	10	-0.28	-0.78	0.45
Guy B @ 154.8 ft Elev 0 ft Azimuth 120 deg	Max. Vert	6	-0.26	0.71	0.41
	Max. H_x	12	-4.91	10.73	6.19
	Max. H_z	12	-4.91	10.73	6.19
	Min. Vert	12	-4.91	10.73	6.19
	Min. H_x	6	-0.26	0.71	0.41
	Min. H_z	6	-0.26	0.71	0.41
Guy A @ 150 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-0.26	-0.00	-0.77
	Max. H_x	11	-2.69	0.15	-6.64
	Max. H_z	2	-0.26	-0.00	-0.77
	Min. Vert	8	-5.01	0.00	-12.23
	Min. H_x	5	-2.67	-0.15	-6.58
	Min. H_z	8	-5.01	0.00	-12.23

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	55.86	0.00	-0.00	0.00	0.00	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	72.67	0.01	-1.07	0.00	0.00	0.09
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	71.75	0.50	-0.83	0.00	0.00	0.44
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	70.67	0.83	-0.48	0.00	0.00	0.58
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	70.76	0.98	-0.01	0.00	0.00	0.59
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	72.80	0.90	0.57	0.00	0.00	0.72
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	72.27	0.45	0.87	0.00	0.00	0.48
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	72.13	-0.01	0.97	0.00	0.00	-0.09
1.2 Dead+1.0 Wind 210 deg -	72.42	-0.46	0.87	0.00	0.00	-0.65

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
No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	73.07	-0.90	0.57	0.00	0.00	-0.83
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	71.04	-0.97	-0.01	0.00	0.00	-0.60
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	70.91	-0.82	-0.47	0.00	0.00	-0.51
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	71.85	-0.49	-0.83	0.00	0.00	-0.30
1.2 Dead+1.0 Ice+1.0 Temp+Guy	116.56	-0.01	-0.01	0.00	0.00	-0.02
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.87	-0.01	-0.38	0.00	0.00	0.05
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.39	0.15	-0.32	0.00	0.00	0.16
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	116.98	0.27	-0.18	0.00	0.00	0.16
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.43	0.33	0.00	0.00	0.00	0.12
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.95	0.30	0.17	0.00	0.00	0.12
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.55	0.17	0.28	0.00	0.00	0.07
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.16	-0.02	0.32	0.00	0.00	-0.08
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.59	-0.20	0.28	0.00	0.00	-0.21
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	118.03	-0.33	0.17	0.00	0.00	-0.22
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.52	-0.36	0.00	0.00	0.00	-0.15
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.07	-0.30	-0.18	0.00	0.00	-0.13
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	117.44	-0.17	-0.32	0.00	0.00	-0.08
Dead+Wind 0 deg - Service+Guy	57.63	0.00	-0.73	0.00	0.00	0.08
Dead+Wind 30 deg - Service+Guy	58.65	0.32	-0.58	0.00	0.00	0.30
Dead+Wind 60 deg - Service+Guy	59.38	0.54	-0.31	0.00	0.00	0.37
Dead+Wind 90 deg - Service+Guy	58.59	0.66	0.02	0.00	0.00	0.36
Dead+Wind 120 deg - Service+Guy	57.84	0.63	0.39	0.00	0.00	0.38
Dead+Wind 150 deg - Service+Guy	59.11	0.34	0.58	0.00	0.00	0.25
Dead+Wind 180 deg - Service+Guy	60.01	-0.00	0.64	0.00	0.00	-0.07
Dead+Wind 210 deg - Service+Guy	59.18	-0.34	0.58	0.00	0.00	-0.39
Dead+Wind 240 deg - Service+Guy	57.99	-0.63	0.39	0.00	0.00	-0.47
Dead+Wind 270 deg - Service+Guy	58.77	-0.66	0.02	0.00	0.00	-0.37
Dead+Wind 300 deg - Service+Guy	59.54	-0.54	-0.31	0.00	0.00	-0.31
Dead+Wind 330 deg - Service+Guy	58.73	-0.31	-0.58	0.00	0.00	-0.18

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-23.67	0.00	0.00	23.67	-0.00	0.002%
2	-0.00	-28.19	-33.98	0.00	28.19	33.98	0.004%
3	16.31	-27.91	-28.47	-16.31	27.91	28.47	0.005%
4	27.56	-27.63	-16.35	-27.56	27.63	16.35	0.003%
5	31.65	-27.91	-0.02	-31.65	27.91	0.02	0.004%
6	27.93	-28.19	19.49	-27.93	28.19	-19.49	0.004%
7	15.38	-27.91	30.22	-15.38	27.91	-30.22	0.005%
8	0.00	-27.63	34.12	-0.00	27.63	-34.12	0.002%
9	-15.37	-27.91	30.21	15.37	27.91	-30.21	0.005%
10	-27.92	-28.19	19.48	27.92	28.19	-19.48	0.004%
11	-31.65	-27.91	-0.03	31.65	27.91	0.03	0.003%
12	-27.57	-27.63	-16.36	27.57	27.63	16.35	0.003%
13	-16.32	-27.91	-28.48	16.32	27.91	28.48	0.005%
14	0.00	-69.83	0.00	-0.00	69.83	0.00	0.001%
15	-0.00	-70.03	-9.93	0.00	70.03	9.93	0.004%
16	4.87	-69.83	-8.48	-4.87	69.83	8.48	0.003%
17	8.36	-69.63	-4.89	-8.36	69.63	4.89	0.002%
18	9.61	-69.83	-0.00	-9.61	69.83	0.00	0.003%
19	8.38	-70.03	5.32	-8.38	70.03	-5.32	0.004%
20	4.75	-69.83	8.73	-4.74	69.83	-8.73	0.003%
21	0.00	-69.63	9.98	-0.00	69.63	-9.98	0.002%
22	-4.74	-69.83	8.72	4.74	69.83	-8.72	0.003%
23	-8.38	-70.03	5.32	8.38	70.03	-5.32	0.004%
24	-9.61	-69.83	-0.01	9.61	69.83	0.01	0.003%
25	-8.36	-69.63	-4.89	8.36	69.63	4.89	0.002%
26	-4.88	-69.83	-8.48	4.88	69.83	8.48	0.003%
27	-0.00	-23.84	-20.56	0.00	23.84	20.56	0.002%
28	9.87	-23.67	-17.23	-9.87	23.67	17.22	0.002%
29	16.67	-23.50	-9.89	-16.67	23.50	9.89	0.004%
30	19.14	-23.67	-0.01	-19.14	23.67	0.01	0.002%
31	16.90	-23.84	11.79	-16.89	23.84	-11.79	0.002%
32	9.30	-23.67	18.28	-9.30	23.67	-18.28	0.002%
33	0.00	-23.50	20.64	-0.00	23.50	-20.64	0.003%
34	-9.30	-23.67	18.28	9.30	23.67	-18.28	0.002%
35	-16.89	-23.84	11.78	16.89	23.84	-11.78	0.002%
36	-19.14	-23.67	-0.02	19.14	23.67	0.02	0.002%
37	-16.68	-23.50	-9.89	16.68	23.50	9.89	0.004%
38	-9.87	-23.67	-17.23	9.87	23.67	17.23	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	8	0.00000001	0.00004797
2	Yes	16	0.00000001	0.00007138
3	Yes	15	0.00000001	0.00007138
4	Yes	12	0.00000001	0.00005055
5	Yes	15	0.00000001	0.00005650
6	Yes	16	0.00000001	0.00006982
7	Yes	15	0.00000001	0.00006524
8	Yes	11	0.00000001	0.00004769
9	Yes	15	0.00000001	0.00006791

10	Yes	16	0.00000001	0.00007021
11	Yes	15	0.00000001	0.00005476
12	Yes	12	0.00000001	0.00004606
13	Yes	15	0.00000001	0.00007045
14	Yes	8	0.00000001	0.00006078
15	Yes	11	0.00000001	0.00008065
16	Yes	11	0.00000001	0.00005833
17	Yes	11	0.00000001	0.00004292
18	Yes	11	0.00000001	0.00006825
19	Yes	11	0.00000001	0.00009070
20	Yes	11	0.00000001	0.00006832
21	Yes	11	0.00000001	0.00004109
22	Yes	11	0.00000001	0.00006199
23	Yes	11	0.00000001	0.00008462
24	Yes	11	0.00000001	0.00006415
25	Yes	11	0.00000001	0.00004024
26	Yes	11	0.00000001	0.00005888
27	Yes	12	0.00000001	0.00005748
28	Yes	12	0.00000001	0.00003875
29	Yes	10	0.00000001	0.00007070
30	Yes	12	0.00000001	0.00004032
31	Yes	12	0.00000001	0.00005946
32	Yes	12	0.00000001	0.00003864
33	Yes	10	0.00000001	0.00004777
34	Yes	12	0.00000001	0.00003781
35	Yes	12	0.00000001	0.00005865
36	Yes	12	0.00000001	0.00004011
37	Yes	10	0.00000001	0.00006610
38	Yes	12	0.00000001	0.00003866

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	181.5 - 161.5	3.984	33	0.1639	0.2818
T2	161.5 - 141.5	3.434	33	0.1324	0.2470
T3	141.5 - 121.5	2.937	33	0.1050	0.1359
T4	121.5 - 101.5	2.700	29	0.0690	0.1126
T5	101.5 - 81.5	2.657	29	0.0637	0.1127
T6	81.5 - 61.5	2.291	35	0.1595	0.1335
T7	61.5 - 41.5	1.613	35	0.1520	0.1330
T8	41.5 - 21.5	1.146	35	0.1101	0.1257
T9	21.5 - 6.5	0.662	35	0.1400	0.0745
T10	6.5 - 1.5	0.177	35	0.1638	0.0622

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.50	20' x 2" Dia Omni	33	3.957	0.1616	0.2814	94793
177.00	DS2C03F36D-D	33	3.860	0.1558	0.2796	94793
176.50	8.5 Dishw/radome	33	3.846	0.1552	0.2793	94793
169.15	Guy	33	3.644	0.1461	0.2703	38389
159.00	AIR6419	33	3.366	0.1267	0.2350	29783

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.50	3"x20-ft Omni	33	3.093	0.1129	0.1721	22983
144.50	1.5"x2'omni	33	3.000	0.1107	0.1497	18867
143.50	2-ft Stand Off	33	2.979	0.1092	0.1447	18168
142.50	1.5"x2'omni	33	2.958	0.1074	0.1401	17627
138.50	3-ft Side Arm	33	2.881	0.0950	0.1257	17046
129.15	Guy	33	2.744	0.0806	0.1123	17848
126.00	APXVSPP18-C-A20	33	2.711	0.0777	0.1118	18134
89.50	GPS	35	2.489	0.1244	0.1202	8978
78.00	TPA-65R-BU4D	35	2.180	0.1676	0.1371	15334
62.11	Guy	35	1.632	0.1537	0.1330	10609

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	181.5 - 161.5	7.527	10	0.2995	0.5655
T2	161.5 - 141.5	6.790	10	0.2317	0.5042
T3	141.5 - 121.5	6.208	2	0.2032	0.2826
T4	121.5 - 101.5	5.942	6	0.0717	0.2351
T5	101.5 - 81.5	5.800	6	0.1330	0.2401
T6	81.5 - 61.5	4.907	6	0.3032	0.2455
T7	61.5 - 41.5	3.471	6	0.3110	0.2397
T8	41.5 - 21.5	2.417	10	0.2471	0.2254
T9	21.5 - 6.5	1.354	10	0.2938	0.1316
T10	6.5 - 1.5	0.357	10	0.3328	0.1096

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.50	20' x 2" Dia Omni	10	7.489	0.2956	0.5651	58668
177.00	DS2C03F36D-D	10	7.358	0.2820	0.5633	58668
176.50	8.5 Dishw/radome	10	7.340	0.2801	0.5629	58668
169.15	Guy	10	7.067	0.2537	0.5484	23759
159.00	AIR6419	10	6.702	0.2262	0.4806	17921
148.50	3"x20-ft Omni	2	6.382	0.2163	0.3553	15342
144.50	1.5"x2'omni	2	6.278	0.2127	0.3103	11840
143.50	2-ft Stand Off	2	6.254	0.2103	0.3003	11278
142.50	1.5"x2'omni	2	6.231	0.2072	0.2911	10841
138.50	3-ft Side Arm	2	6.146	0.1867	0.2621	10232
129.15	Guy	2	6.003	0.1117	0.2349	10674
126.00	APXVSPP18-C-A20	2	5.972	0.0908	0.2339	10845
89.50	GPS	6	5.369	0.2464	0.2459	5566
78.00	TPA-65R-BU4D	6	4.667	0.3198	0.2479	9712
62.11	Guy	6	3.511	0.3128	0.2398	6207

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	181.5	Leg	A325N	0.7500	4	0.00	30.10	0.000 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	1	2.97	6.20	0.480 ✓	1	Member Bearing
		Top Girt	A325N	0.5000	1	0.13	8.84	0.015 ✓	1	Bolt Shear
T2	161.5	Leg	A325N	0.7500	4	1.24	30.10	0.041 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	1	2.89	4.17	0.695 ✓	1	Member Bearing
		Top Girt	A325N	0.5000	1	1.96	3.83	0.512 ✓	1	Member Bearing
T3	141.5	Leg	A325N	0.7500	4	1.32	30.10	0.044 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	1	3.07	6.20	0.495 ✓	1	Member Bearing
		Top Girt	A325N	0.5000	1	0.69	6.20	0.111 ✓	1	Member Bearing
T4	121.5	Leg	A325N	0.7500	4	2.27	30.10	0.075 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	4.08	13.81	0.295 ✓	1	Bolt Shear
		Horizontal	A325N	0.6250	1	1.05	13.81	0.076 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	1	1.93	13.81	0.140 ✓	1	Bolt Shear
T5	101.5	Leg	A325N	0.7500	4	2.65	30.10	0.088 ✓	1	Bolt Tension
		Diagonal	A325X	0.5000	1	1.08	4.17	0.259 ✓	1	Member Bearing
		Horizontal	A325N	0.6250	1	0.60	13.81	0.043 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	1	0.57	3.83	0.148 ✓	1	Member Bearing
T6	81.5	Leg	A325N	0.7500	4	2.62	30.10	0.087 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	4.79	13.81	0.347 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	1	0.86	13.81	0.062 ✓	1	Bolt Shear
		Top Guy Pull-Off@62.1146	A325N	0.6250	4	0.70	13.81	0.051 ✓	1	Bolt Shear
T7	61.5	Leg	A325N	0.7500	4	3.26	30.10	0.108 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	3.12	13.81	0.226 ✓	1	Bolt Shear
		Top Girt	A325N	0.5000	1	1.64	3.83	0.429 ✓	1	Member Bearing
T8	41.5	Leg	A325N	0.7500	4	3.16	30.10	0.105 ✓	1	Bolt Tension
		Diagonal	A325N	0.5000	1	1.36	4.17	0.327 ✓	1	Member Bearing
		Top Girt	A325N	0.5000	1	0.72	3.83	0.189 ✓	1	Member Bearing
T9	21.5	Leg	A325N	0.7500	4	3.33	30.10	0.111 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	1.36	13.81	0.099 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	1	0.70	13.81	0.050 ✓	1	Bolt Shear
T10	6.5	Leg	A325N	0.7500	4	3.23	30.10	0.107 ✓	1	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	169.15 (A) (406)	9/16 EHS	3.50	35.00	9.97	21.00	1.000	2.105 ✔
	169.15 (A) (407)	9/16 EHS	3.50	35.00	10.41	21.00	1.000	2.017 ✔
	169.15 (B) (400)	9/16 EHS	3.50	35.00	8.96	21.00	1.000	2.343 ✔
	169.15 (B) (401)	9/16 EHS	3.50	35.00	9.09	21.00	1.000	2.310 ✔
	169.15 (C) (394)	9/16 EHS	3.50	35.00	9.26	21.00	1.000	2.268 ✔
	169.15 (C) (395)	9/16 EHS	3.50	35.00	8.72	21.00	1.000	2.408 ✔
T3	129.15 (A) (424)	9/16 EHS	3.50	35.00	9.47	21.00	1.000	2.217 ✔
	129.15 (A) (425)	9/16 EHS	3.50	35.00	9.64	21.00	1.000	2.178 ✔
	129.15 (B) (418)	9/16 EHS	3.50	35.00	9.49	21.00	1.000	2.214 ✔
	129.15 (B) (419)	9/16 EHS	3.50	35.00	9.36	21.00	1.000	2.243 ✔
	129.15 (C) (412)	9/16 EHS	3.50	35.00	9.48	21.00	1.000	2.216 ✔
	129.15 (C) (413)	9/16 EHS	3.50	35.00	9.43	21.00	1.000	2.226 ✔
T6	62.11 (A) (435)	3/4 EHS	5.83	58.30	13.29	34.98	1.000	2.632 ✔
	62.11 (B) (434)	3/4 EHS	5.83	58.30	13.39	34.98	1.000	2.612 ✔
	62.11 (C) (430)	3/4 EHS	5.83	58.30	13.23	34.98	1.000	2.644 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	P2.5x.203	20.00	2.35	29.7 K=1.00	1.7040	-15.13	71.89	0.210 [1] ✔
T2	161.5 - 141.5	P2.5x.203	20.00	2.35	59.4 K=2.00	1.7040	-17.50	59.23	0.296 [1] ✔
T3	141.5 - 121.5	P2.5x.203	20.00	2.35	29.7 K=1.00	1.7040	-28.08	71.89	0.391 [1] ✔
T4	121.5 - 101.5	P2.5x.203	20.00	2.35	29.7 K=1.00	1.7040	-31.00	71.89	0.431 [1] ✔
T5	101.5 - 81.5	P2.5x.203	20.00	2.35	29.7 K=1.00	1.7040	-32.82	71.89	0.457 [1] ✔
T6	81.5 - 61.5	P2.5x.203	20.00	2.35	59.4 K=2.00	1.7040	-35.55	59.23	0.600 [1] ✔
T7	61.5 - 41.5	P2.5x.203	20.00	2.35	59.4 K=2.00	1.7040	-38.72	59.23	0.654 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T8	41.5 - 21.5	P2.5x.203	20.00	2.35	59.4 K=2.00	1.7040	-39.87	59.23	0.673 [1] ✔
T9	21.5 - 6.5	P2.5x.203	15.00	2.30	58.1 K=2.00	1.7040	-40.16	59.89	0.670 [1] ✔
T10	6.5 - 1.5	P2.5x.203	5.37	2.15	27.2 K=1.00	1.7040	-42.79	72.64	0.589 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	L1 3/4x1 3/4x3/16	4.14	1.82	77.7 K=1.22	0.6211	-3.11	18.12	0.172 [1] ✔
T2	161.5 - 141.5	ROHN TS1.5x16 ga	4.14	3.85	90.5 K=1.00	0.2627	-3.45	5.44	0.634 [1] ✔
T3	141.5 - 121.5	L2x2x3/16	4.14	1.82	71.6 K=1.29	0.7150	-3.02	21.59	0.140 [1] ✔
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	4.14	3.61	104.5 K=1.17	2.2500	-4.08	53.21	0.077 [1] ✔
T5	101.5 - 81.5	ROHN TS1.5x16 ga	4.14	3.85	90.5 K=1.00	0.2627	-1.64	5.44	0.302 [1] ✔
T6	81.5 - 61.5	L2 1/2x2 1/2x1/2	4.14	3.61	104.5 K=1.17	2.2500	-4.78	53.21	0.090 [1] ✔
T7	61.5 - 41.5	L2 1/2x2 1/2x1/2	4.14	3.61	104.5 K=1.17	2.2500	-3.12	53.21	0.059 [1] ✔
T8	41.5 - 21.5	ROHN TS1.5x16 ga	4.14	3.85	90.5 K=1.00	0.2627	-1.57	5.44	0.288 [1] ✔
T9	21.5 - 6.5	L2 1/2x2 1/2x1/2	4.11	3.58	104.1 K=1.18	2.2500	-1.36	53.38	0.026 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	3.41	2.93	96.1 K=1.33	2.2500	-0.55	67.12	0.008 [1] ✔
T5	101.5 - 81.5	L2 1/2x2 1/2x1/2	3.41	2.93	96.1 K=1.33	2.2500	-0.57	67.12	0.008 [1] ✔
T10	6.5 - 1.5	C12x20.7	1.70	1.47	22.0 K=1.00	6.0900	-0.78	192.35	0.004 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	L1 3/4x1 3/4x3/16	3.41	2.96	111.7 K=1.08	0.6211	-0.13	13.58	0.010 [1] ✔
T2	161.5 - 141.5	ROHN TS1.5x16 ga	3.41	3.17	74.6 K=1.00	0.2627	-2.00	6.35	0.315 [1] ✔
T3	141.5 - 121.5	L2x2x3/16	3.41	2.96	105.1 K=1.17	0.7150	-0.49	16.80	0.029 [1] ✔
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	3.41	2.93	96.1 K=1.33	2.2500	-1.67	57.47	0.029 [1] ✔
T5	101.5 - 81.5	ROHN TS1.5x16 ga	3.41	3.17	74.6 K=1.00	0.2627	-0.57	6.35	0.089 [1] ✔
T6	81.5 - 61.5	L2 1/2x2 1/2x1/2	3.41	2.93	96.1 K=1.33	2.2500	-0.68	57.47	0.012 [1] ✔
T7	61.5 - 41.5	ROHN TS1.5x16 ga	3.41	3.17	74.6 K=1.00	0.2627	-1.37	6.35	0.216 [1] ✔
T8	41.5 - 21.5	ROHN TS1.5x16 ga	3.41	3.17	74.6 K=1.00	0.2627	-0.69	6.35	0.109 [1] ✔
T9	21.5 - 6.5	L2 1/2x2 1/2x1/2	3.41	2.93	96.1 K=1.33	2.2500	-0.70	57.47	0.012 [1] ✔
T10	6.5 - 1.5	C12x20.7	3.07	2.83	42.5 K=1.00	6.0900	-0.78	179.42	0.004 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	L1 3/4x1 3/4x3/16	3.41	3.17	115.4 K=1.04	0.6211	-0.75	13.00	0.058 [1] ✔
T2	161.5 - 141.5	ROHN TS1.5x16 ga	3.41	3.17	74.6 K=1.00	0.2627	-1.40	6.23	0.225 [1] ✔
T3	141.5 - 121.5	L2x2x3/16	3.41	3.17	108.3 K=1.12	0.7150	-0.49	16.25	0.030 [1] ✔
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	3.41	3.17	99.1 K=1.27	2.2500	-0.55	56.01	0.010 [1] ✔
T5	101.5 - 81.5	ROHN TS1.5x16 ga	3.41	3.17	74.6 K=1.00	0.2627	-0.57	6.23	0.091 [1] ✔
T6	81.5 - 61.5	L2 1/2x2 1/2x1/2	3.41	3.17	99.1	2.2500	-0.68	56.01	0.012 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T7	61.5 - 41.5	ROHN TS1.5x16 ga	3.41	3.17	K=1.27 74.6 K=1.00	0.2627	-0.69	6.23	✔ 0.111 [1] ✔
T8	41.5 - 21.5	ROHN TS1.5x16 ga	3.41	3.17	74.6 K=1.00	0.2627	-0.69	6.23	0.111 [1] ✔
T9	21.5 - 6.5	L2 1/2x2 1/2x1/2	3.41	3.17	99.1 K=1.27	2.2500	-0.70	56.01	0.012 [1] ✔
T10	6.5 - 1.5	C12x20.7	0.34	0.10	1.5 K=1.00	6.0900	-2.38	197.29	0.012 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5 (398)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.71	94.40	0.145 [1] ✔
T1	181.5 - 161.5 (399)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-15.48	94.40	0.164 [1] ✔
T1	181.5 - 161.5 (404)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.69	94.40	0.145 [1] ✔
T1	181.5 - 161.5 (405)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.68	94.40	0.145 [1] ✔
T1	181.5 - 161.5 (410)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.64	94.40	0.145 [1] ✔
T1	181.5 - 161.5 (411)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-15.55	94.40	0.165 [1] ✔
T3	141.5 - 121.5 (416)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.22	94.40	0.140 [1] ✔
T3	141.5 - 121.5 (417)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.39	94.40	0.142 [1] ✔
T3	141.5 - 121.5 (422)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.35	94.40	0.141 [1] ✔
T3	141.5 - 121.5 (423)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.47	94.40	0.143 [1] ✔
T3	141.5 - 121.5 (428)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.20	94.40	0.140 [1] ✔
T3	141.5 - 121.5 (429)	P4x.237	4.36	4.21	33.5 K=1.00	3.1741	-13.50	94.40	0.143 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	P2.5x.203	20.00	2.35	29.7	1.7040	16.65	76.68	0.217 [1] ✔
T3	141.5 - 121.5	P2.5x.203	20.00	2.35	29.7	1.7040	10.45	76.68	0.136 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	L1 3/4x1 3/4x3/16	4.14	1.82	43.0	0.3779	2.97	16.44	0.181 [1] ✔
T2	161.5 - 141.5	ROHN TS1.5x16 ga	4.14	3.85	90.5	0.2627	2.89	8.28	0.350 [1] ✔
T3	141.5 - 121.5	L2x2x3/16	4.14	1.82	37.4	0.4484	3.07	19.50	0.157 [1] ✔
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	4.14	3.61	62.5	1.4063	3.42	61.17	0.056 [1] ✔
T5	101.5 - 81.5	ROHN TS1.5x16 ga	4.14	3.85	90.5	0.2627	1.08	8.28	0.130 [1] ✔
T6	81.5 - 61.5	L2 1/2x2 1/2x1/2	4.14	3.61	62.5	1.4063	4.79	61.17	0.078 [1] ✔
T7	61.5 - 41.5	L2 1/2x2 1/2x1/2	4.14	3.61	62.5	1.4063	2.87	61.17	0.047 [1] ✔
T8	41.5 - 21.5	ROHN TS1.5x16 ga	4.14	3.85	90.5	0.2627	1.36	8.28	0.165 [1] ✔
T9	21.5 - 6.5	L2 1/2x2 1/2x1/2	4.11	3.58	62.1	1.4063	0.99	61.17	0.016 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	3.41	2.93	51.5	1.4063	1.05	68.55	0.015 [1] ✔
T5	101.5 - 81.5	L2 1/2x2 1/2x1/2	3.41	2.93	51.5	1.4063	0.60	68.55	0.009 [1] ✔
T10	6.5 - 1.5	C12x20.7	1.70	1.47	22.0	6.0900	0.78	197.32	0.004 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	L1 3/4x1 3/4x3/16	3.41	2.96	70.9	0.3779	0.07	16.44	0.004 [1]
T2	161.5 - 141.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	1.96	8.51	0.231 [1]
T3	141.5 - 121.5	L2x2x3/16	3.41	2.96	61.7	0.4484	0.69	19.50	0.035 [1]
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	3.41	2.93	51.5	1.4063	1.93	61.17	0.032 [1]
T5	101.5 - 81.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	0.57	8.51	0.067 [1]
T6	81.5 - 61.5	L2 1/2x2 1/2x1/2	3.41	2.93	51.5	1.4063	0.86	61.17	0.014 [1]
T7	61.5 - 41.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	1.64	8.51	0.193 [1]
T8	41.5 - 21.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	0.72	8.51	0.085 [1]
T9	21.5 - 6.5	L2 1/2x2 1/2x1/2	3.41	2.93	51.5	1.4063	0.70	61.17	0.011 [1]
T10	6.5 - 1.5	C12x20.7	3.07	2.83	42.5	6.0900	6.20	197.32	0.031 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5	L1 3/4x1 3/4x3/16	3.41	3.17	70.9	0.6211	0.76	20.12	0.038 [1]
T2	161.5 - 141.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	1.48	8.28	0.179 [1]
T3	141.5 - 121.5	L2x2x3/16	3.41	3.17	61.7	0.7150	0.74	23.17	0.032 [1]
T4	121.5 - 101.5	L2 1/2x2 1/2x1/2	3.41	3.17	51.5	2.2500	0.81	72.90	0.011 [1]
T5	101.5 - 81.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	0.59	8.28	0.071 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	81.5 - 61.5	L2 1/2x2 1/2x1/2	3.41	3.17	51.5	2.2500	3.75	72.90	0.051 [1]
T7	61.5 - 41.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	0.80	8.28	0.096 [1]
T8	41.5 - 21.5	ROHN TS1.5x16 ga	3.41	3.17	74.6	0.2627	0.69	8.28	0.084 [1]
T9	21.5 - 6.5	L2 1/2x2 1/2x1/2	3.41	3.17	51.5	2.2500	3.19	72.90	0.044 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	81.5 - 61.5	4 1/2x3/8	3.41	3.17	351.4	1.6875	2.82	54.67	0.051 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off 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 $\frac{M_{uy}}{\phi M_{ny}}$
T6	81.5 - 61.5	4 1/2x3/8	0.00	5.13	0.000	0.00	0.43	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T6	81.5 - 61.5	4 1/2x3/8	0.051	0.000	0.000	0.051 [1]	1.000	4.8.1

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5 (396)	P4x.237	3.67	3.55	28.2	3.1741	10.97	99.98	0.110 [1] ✔
T1	181.5 - 161.5 (397)	P4x.237	3.67	3.55	28.2	3.1741	10.36	99.98	0.104 [1] ✔
T1	181.5 - 161.5 (402)	P4x.237	3.67	3.55	28.2	3.1741	10.65	99.98	0.106 [1] ✔
T1	181.5 - 161.5 (403)	P4x.237	3.67	3.55	28.2	3.1741	11.29	99.98	0.113 [1] ✔
T1	181.5 - 161.5 (408)	P4x.237	3.67	3.55	28.2	3.1741	10.55	99.98	0.106 [1] ✔
T1	181.5 - 161.5 (409)	P4x.237	3.67	3.55	28.2	3.1741	10.98	99.98	0.110 [1] ✔
T3	141.5 - 121.5 (414)	P4x.237	3.67	3.55	28.2	3.1741	10.16	99.98	0.102 [1] ✔
T3	141.5 - 121.5 (415)	P4x.237	3.67	3.55	28.2	3.1741	9.42	99.98	0.094 [1] ✔
T3	141.5 - 121.5 (420)	P4x.237	3.67	3.55	28.2	3.1741	9.58	99.98	0.096 [1] ✔
T3	141.5 - 121.5 (421)	P4x.237	3.67	3.55	28.2	3.1741	10.03	99.98	0.100 [1] ✔
T3	141.5 - 121.5 (426)	P4x.237	3.67	3.55	28.2	3.1741	9.95	99.98	0.099 [1] ✔
T3	141.5 - 121.5 (427)	P4x.237	3.67	3.55	28.2	3.1741	9.61	99.98	0.096 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	181.5 - 161.5 (398)	P4x.237	4.36	4.21	33.5	3.1741	1.59	99.98	0.016 [1] ✔
T1	181.5 - 161.5 (399)	P4x.237	4.36	4.21	33.5	3.1741	1.21	99.98	0.012 [1] ✔
T1	181.5 - 161.5 (404)	P4x.237	4.36	4.21	33.5	3.1741	0.92	99.98	0.009 [1] ✔
T1	181.5 - 161.5 (405)	P4x.237	4.36	4.21	33.5	3.1741	0.99	99.98	0.010 [1] ✔
T1	181.5 - 161.5 (410)	P4x.237	4.36	4.21	33.5	3.1741	1.70	99.98	0.017 [1] ✔
T1	181.5 - 161.5 (411)	P4x.237	4.36	4.21	33.5	3.1741	1.40	99.98	0.014 [1] ✔
T3	141.5 - 121.5 (416)	P4x.237	4.36	4.21	33.5	3.1741	2.62	99.98	0.026 [1] ✔
T3	141.5 - 121.5 (417)	P4x.237	4.36	4.21	33.5	3.1741	2.67	99.98	0.027 [1] ✔
T3	141.5 - 121.5 (422)	P4x.237	4.36	4.21	33.5	3.1741	2.78	99.98	0.028 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	141.5 - 121.5 (423)	P4x.237	4.36	4.21	33.5	3.1741	2.85	99.98	0.028 [1]
T3	141.5 - 121.5 (428)	P4x.237	4.36	4.21	33.5	3.1741	2.71	99.98	0.027 [1]
T3	141.5 - 121.5 (429)	P4x.237	4.36	4.21	33.5	3.1741	2.81	99.98	0.028 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	181.5 - 161.5	Leg	P2.5x.203	3	16.65	76.68	21.7	Pass
T2	161.5 - 141.5	Leg	P2.5x.203	58	-17.50	59.23	29.6	Pass
T3	141.5 - 121.5	Leg	P2.5x.203	91	-28.08	71.89	39.1	Pass
T4	121.5 - 101.5	Leg	P2.5x.203	149	-31.00	71.89	43.1	Pass
T5	101.5 - 81.5	Leg	P2.5x.203	202	-32.82	71.89	45.7	Pass
T6	81.5 - 61.5	Leg	P2.5x.203	257	-35.55	59.23	60.0	Pass
T7	61.5 - 41.5	Leg	P2.5x.203	291	-38.72	59.23	65.4	Pass
T8	41.5 - 21.5	Leg	P2.5x.203	324	-39.87	59.23	67.3	Pass
T9	21.5 - 6.5	Leg	P2.5x.203	356	-40.16	59.89	67.0	Pass
T10	6.5 - 1.5	Leg	P2.5x.203	383	-42.79	72.64	58.9	Pass
T1	181.5 - 161.5	Diagonal	L1 3/4x1 3/4x3/16	22	2.97	16.44	18.1 48.0 (b)	Pass
T2	161.5 - 141.5	Diagonal	ROHN TS1.5x16 ga	69	-3.45	5.44	63.4 69.5 (b)	Pass
T3	141.5 - 121.5	Diagonal	L2x2x3/16	115	3.07	19.50	15.7 49.5 (b)	Pass
T4	121.5 - 101.5	Diagonal	L2 1/2x2 1/2x1/2	199	-4.08	53.21	7.7 29.5 (b)	Pass
T5	101.5 - 81.5	Diagonal	ROHN TS1.5x16 ga	213	-1.64	5.44	30.2	Pass
T6	81.5 - 61.5	Diagonal	L2 1/2x2 1/2x1/2	268	-4.78	53.21	9.0 34.7 (b)	Pass
T7	61.5 - 41.5	Diagonal	L2 1/2x2 1/2x1/2	320	-3.12	53.21	5.9 22.6 (b)	Pass
T8	41.5 - 21.5	Diagonal	ROHN TS1.5x16 ga	353	-1.57	5.44	28.8 32.7 (b)	Pass
T9	21.5 - 6.5	Diagonal	L2 1/2x2 1/2x1/2	364	-1.36	53.38	2.6 9.9 (b)	Pass
T4	121.5 - 101.5	Horizontal	L2 1/2x2 1/2x1/2	197	1.05	68.55	1.5 7.6 (b)	Pass
T5	101.5 - 81.5	Horizontal	L2 1/2x2 1/2x1/2	251	0.60	68.55	0.9 4.3 (b)	Pass
T10	6.5 - 1.5	Horizontal	C12x20.7	391	-0.78	192.35	0.8	Pass
T1	181.5 - 161.5	Top Girt	L1 3/4x1 3/4x3/16	4	-0.13	13.58	1.0 1.5 (b)	Pass
T2	161.5 - 141.5	Top Girt	ROHN TS1.5x16 ga	61	-2.00	6.35	31.5 51.2 (b)	Pass
T3	141.5 - 121.5	Top Girt	L2x2x3/16	94	0.69	19.50	3.5 11.1 (b)	Pass
T4	121.5 - 101.5	Top Girt	L2 1/2x2 1/2x1/2	151	1.93	61.17	3.2 14.0 (b)	Pass
T5	101.5 - 81.5	Top Girt	ROHN TS1.5x16 ga	207	-0.57	6.35	8.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							14.8 (b)	
T6	81.5 - 61.5	Top Girt	L2 1/2x2 1/2x1/2	260	0.86	61.17	1.4	Pass
							6.2 (b)	
T7	61.5 - 41.5	Top Girt	ROHN TS1.5x16 ga	293	-1.37	6.35	21.6	Pass
							42.9 (b)	
T8	41.5 - 21.5	Top Girt	ROHN TS1.5x16 ga	326	-0.69	6.35	10.9	Pass
							18.9 (b)	
T9	21.5 - 6.5	Top Girt	L2 1/2x2 1/2x1/2	358	-0.70	57.47	1.2	Pass
							5.0 (b)	
T10	6.5 - 1.5	Top Girt	C12x20.7	386	6.20	197.32	3.1	Pass
T1	181.5 - 161.5	Bottom Girt	L1 3/4x1 3/4x3/16	8	-0.75	13.00	5.8	Pass
T2	161.5 - 141.5	Bottom Girt	ROHN TS1.5x16 ga	66	-1.40	6.23	22.5	Pass
T3	141.5 - 121.5	Bottom Girt	L2x2x3/16	98	0.74	23.17	3.2	Pass
T4	121.5 - 101.5	Bottom Girt	L2 1/2x2 1/2x1/2	154	0.81	72.90	1.1	Pass
T5	101.5 - 81.5	Bottom Girt	ROHN TS1.5x16 ga	210	-0.57	6.23	9.1	Pass
T6	81.5 - 61.5	Bottom Girt	L2 1/2x2 1/2x1/2	262	3.75	72.90	5.1	Pass
T7	61.5 - 41.5	Bottom Girt	ROHN TS1.5x16 ga	296	-0.69	6.23	11.1	Pass
T8	41.5 - 21.5	Bottom Girt	ROHN TS1.5x16 ga	329	-0.69	6.23	11.1	Pass
T9	21.5 - 6.5	Bottom Girt	L2 1/2x2 1/2x1/2	361	3.19	72.90	4.4	Pass
T10	6.5 - 1.5	Bottom Girt	C12x20.7	388	-2.38	197.29	5.2	Pass
T1	181.5 - 161.5	Guy A@169.154	9/16	407	10.41	21.00	49.6	Pass
T3	141.5 - 121.5	Guy A@129.154	9/16	425	9.64	21.00	45.9	Pass
T6	81.5 - 61.5	Guy A@62.1146	3/4	435	13.29	34.98	38.0	Pass
T1	181.5 - 161.5	Guy B@169.154	9/16	401	9.09	21.00	43.3	Pass
T3	141.5 - 121.5	Guy B@129.154	9/16	418	9.49	21.00	45.2	Pass
T6	81.5 - 61.5	Guy B@62.1146	3/4	434	13.39	34.98	38.3	Pass
T1	181.5 - 161.5	Guy C@169.154	9/16	394	9.26	21.00	44.1	Pass
T3	141.5 - 121.5	Guy C@129.154	9/16	412	9.48	21.00	45.1	Pass
T6	81.5 - 61.5	Guy C@62.1146	3/4	430	13.23	34.98	37.8	Pass
T6	81.5 - 61.5	Top Guy Pull-Off@62.1146	4 1/2x3/8	431	2.82	54.67	5.1	Pass
T1	181.5 - 161.5	Torque Arm Top@169.154	P4x.237	403	11.29	99.98	11.3	Pass
T3	141.5 - 121.5	Torque Arm Top@129.154	P4x.237	414	10.16	99.98	10.2	Pass
T1	181.5 - 161.5	Torque Arm Bottom@169.154	P4x.237	411	-15.55	94.40	16.5	Pass
T3	141.5 - 121.5	Torque Arm Bottom@129.154	P4x.237	429	-13.50	94.40	14.3	Pass

Summary		
Leg (T8)	67.3	Pass
Diagonal (T2)	69.5	Pass
Horizontal (T4)	7.6	Pass
Top Girt (T2)	51.2	Pass
Bottom Girt (T2)	22.5	Pass
Guy A (T1)	49.6	Pass
Guy B (T3)	45.2	Pass
Guy C (T3)	45.1	Pass
Top Guy Pull-Off (T6)	5.1	Pass
Torque Arm Top (T1)	11.3	Pass
Torque Arm Bottom (T1)	16.5	Pass
Bolt Checks	69.5	Pass
RATING =	**69.5**	**Pass**

Element Map

Section No.	Section Elevation ft	Component Type	Element List
T1	181.50-161.50	Leg	1-3
		Diagonal	10-57
		Top Girt	4-6
		Bottom Girt	7-9
		Guy A	406-407
		Guy B	400-401
		Guy C	394-395
		Torque Arm Top	396-397,402-403,408-409
		Torque Arm Bottom	398-399,404-405,410-411
T2	161.50-141.50	Leg	58-60
		Diagonal	67-90
		Top Girt	61-63
		Bottom Girt	64-66
T3	141.50-121.50	Leg	91-93
		Diagonal	100-147
		Top Girt	94-96
		Bottom Girt	97-99
		Guy A	424-425
		Guy B	418-419
		Guy C	412-413
		Torque Arm Top	414-415,420-421,426-427
		Torque Arm Bottom	416-417,422-423,428-429
T4	121.50-101.50	Leg	148-150
		Diagonal	157-159,163-165,169-171,175-177,181-183,187-189,193-195,199-201
		Horizontal	160-162,166-168,172-174,178-180,184-186,190-192,196-198
		Top Girt	151-153
		Bottom Girt	154-156
T5	101.50-81.50	Leg	202-204
		Diagonal	211-213,217-219,223-225,229-231,235-237,241-243,247-249,253-255
		Horizontal	214-216,220-222,226-228,232-234,238-240,244-246,250-252
		Top Girt	205-207
		Bottom Girt	208-210
T6	81.50-61.50	Leg	256-258
		Diagonal	265-288
		Top Girt	259-261
		Bottom Girt	262-264
		Guy A	435
		Guy B	434
		Guy C	430
		Top Guy Pull-Off	431-433
T7	61.50-41.50	Leg	289-291
		Diagonal	298-321
		Top Girt	292-294
		Bottom Girt	295-297
T8	41.50-21.50	Leg	322-324
		Diagonal	331-354
		Top Girt	325-327
		Bottom Girt	328-330
T9	21.50-6.50	Leg	355-357
		Diagonal	364-381
		Top Girt	358-360
		Bottom Girt	361-363

Section No.	Section Elevation ft	Component Type	Element List
T10	6.50-1.50	Leg Horizontal Top Girt Bottom Girt	382-384 391-393 385-387 388-390
			Total number of elements: 435

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Branford, CT 06405 F: (203) 488-8587

Job :	AT&T ~ CT5206: 180-ft Guyed Lattice Tower	Project No.	22007.10	Sheet	1	of	2
Address:	125 New Road Madison, CT	Computed by	TJL	Date		2/22/23	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

CHECK UPLIFT RESISTANCE

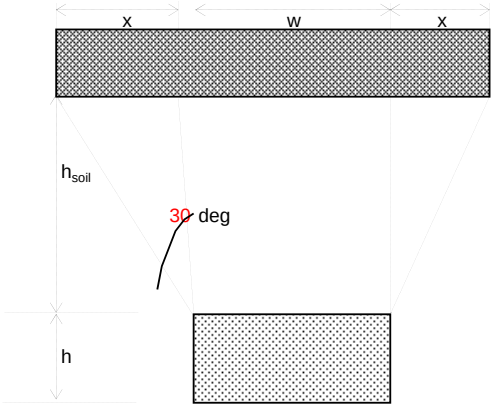
ANCHOR (A) AT 184.0 ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	24	kips
Sliding =	31	kips
Wdepth =	50	ft

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
$\gamma_{conc.sub}$ =	87.6	pcf
w =	4.5	ft
h =	3	ft
d =	9.5	ft
Vol. =	128.25	ft^3
Vol.sub =	0.00	ft^3
Wc =	*19.24*	kips
Ø =	*0.90*	
	17.31	



Foundation Section

SOIL PARAMETERS:

γ_{soil} =	110	pcf
$\gamma_{soil.sub}$ =	47.6	pcf
h_{soil} =	5.8	ft
x =	*3.35*	ft

Soil Weight (Wr):

B1 =	42.75
B2 =	42.75
B3 =	181.37

W.soil =	66.39	kips
W.soil.sub =	0.00	kips
Total =	*66.39*	kips
Ø =	*0.75*	
	49.79	

SF AGAINST SLIDING

2.80 **>** *1* ***OK***

GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE

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Job :	AT&T ~ CT5206: 180-ft Guyed Lattice Tower	Project No.	22007.10	Sheet	1	of	2
Address:	125 New Road Madison, CT	Computed by	TJL	Date		2/22/23	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

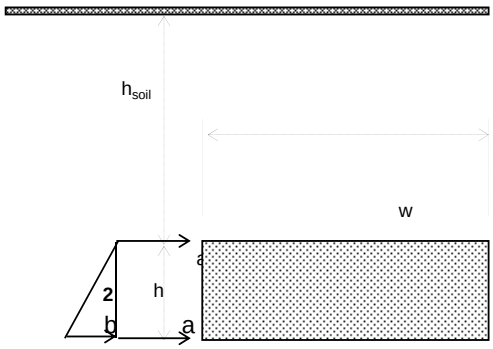
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	110	pcf
$\gamma soil$ =	47.6	pcf
h_{soil} =	5.8	ft
h =	3	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.5	ft
h =	3.0	ft
d =	9.5	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

		1.91	ksf
		2.90	ksf
RESIST TO SLIDING =		68.66	k
SOIL & CONCRETE WEIGHT =	Wr + Wc =	67.10	k
UPLIFT REACTIONS =		-24	k
SUM =		43.10	k
COEF. OF FRICTION, (0.45) =		19.40	k
RESIST TO SLIDING =		68.66	k
SUM =		88.05	k

SF AGAINST SLIDING

SF = 2.8 > 1 OK

GUY ANCHORS AGAINST SLIDING ARE ADEQUATE

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Job :	AT&T ~ CT5206: 180-ft Guyed Lattice Tower	Project No.	22007.10	Sheet	1	of	2
Address:	125 New Road Madison, CT	Computed by	TJL	Date		2/22/23	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

CHECK UPLIFT RESISTANCE

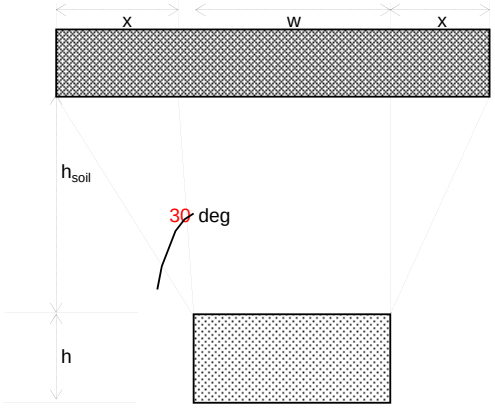
ANCHOR (A) AT 150.0 ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	5	kips
Sliding =	12	kips
Wdepth =	50	ft

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
$\gamma_{conc.sub}$ =	87.6	pcf
w =	4.5	ft
h =	2.5	ft
d =	6.5	ft
Vol. =	73.13	ft^3
Vol.sub =	0.00	ft^3
Wc =	*10.97*	kips
Ø =	*0.90*	
	9.87	



Foundation Section

SOIL PARAMETERS:

γ_{soil} =	110	pcf
$\gamma_{soil.sub}$ =	47.6	pcf
h_{soil} =	5	ft
x =	*2.89*	ft

Soil Weight (Wr):

B1 =	29.25
B2 =	29.25
B3 =	126.09

W.soil =	39.61	kips
W.soil.sub =	0.00	kips
Total =	*39.61*	kips
Ø =	*0.75*	
	29.71	

SF AGAINST SLIDING

7.92 **>** *1* ***OK***

GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE

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Job :	AT&T ~ CT5206: 180-ft Guyed Lattice Tower	Project No.	22007.10	Sheet	1	of	2
Address:	125 New Road Madison, CT	Computed by	TJL	Date		2/22/23	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

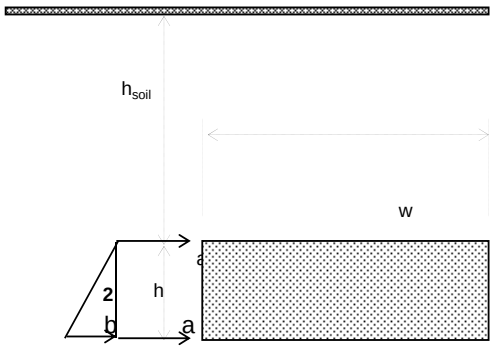
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	110	pcf
$\gamma soil$ =	47.6	pcf
h_{soil} =	5	ft
h =	2.5	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.5	ft
h =	2.5	ft
d =	6.5	ft



Foundation Elevation View

κ_p = 3.00

HORIZONTAL FORCES

		1.65	ksf
		2.48	ksf
RESIST TO SLIDING =		33.52	k
SOIL & CONCRETE WEIGHT =	Wr + Wc =	39.58	k
UPLIFT REACTIONS =		-5	k
SUM =		34.58	k
COEF. OF FRICTION, (0.45) =		15.56	k
RESIST TO SLIDING =		33.52	k
SUM =		49.08	k

SF AGAINST SLIDING

SF = 4.1 > 1 OK

GUY ANCHORS AGAINST SLIDING ARE ADEQUATE

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Subject:	Base Foundation Analysis
Location:	180-ft Guyed Lattice Tower Madison, CT
Rev. 1: 2/22/23	Prepared by: T.J.L. Checked by: C.F.C. Job No. 22007.10

Guyed Tower Base Foundation:

Input Data:

Tower Data

Shear Force =	$Shear := 1 \cdot kip$	(User Input from tnxTower)	
Axial Force =	$Axial := 118 \cdot kip$	(User Input from tnxTower)	
Tower Height =	$H_t := 180 \cdot ft$	(User Input)	

Footing Data:

Overall Depth of Footing =	$D_f := 7.7 \cdot ft$	(User Input)	
Length of Pier =	$L_p := 5.7 \cdot ft$	(User Input)	
Extension of Pier Above Grade =	$L_{pag} := 1.5 \cdot ft$	(User Input)	
Diameter of Pier =	$D_p := 2.0 \cdot ft$	(User Input)	
Width of Pad =	$W_{pad} := 4.7 \cdot ft$	(User Input)	
Length of Pad =	$L_{pad} := 5.3 \cdot ft$	(User Input)	
Thickness of Pad =	$t_{pad} := 2.0 \cdot ft$	(User Input)	

Material Properties:

Concrete Compressive Strength =	$f_c := 3000 \cdot psi$	(User Input)	
Steel Reinforcment Yield Strength =	$f_y := 60000 \cdot psi$	(User Input)	
Internal Friction Angle of Soil =	$\Phi_s := 30 \cdot deg$	(User Input)	
Ultimate Soil Bearing Capacity =	$q_s := 16000 \cdot psf$	(User Input)	Weathered Bedrock
Unit Weight of Soil =	$\gamma_{soil} := 120 \cdot pcf$	(User Input)	
Unit Weight of Concrete =	$\gamma_{conc} := 150 \cdot pcf$	(User Input)	
Foundation Bouyancy =	$Bouyancy := 0$	(User Input)	(Yes=1 / No=0)
Depth to Neglect =	$n := 0 \cdot ft$	(User Input)	
Cohesion of Clay Type Soil =	$c := 0 \cdot ksf$	(User Input)	(Use 0 for Sandy Soil)
Seismic Zone Factor =	$Z := 2$	(User Input)	
Coefficient of Friction Between Concrete =	$\mu := 0.45$	(User Input)	

Calculated Factors:

Coefficient of Lateral Soil Pressure = $K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$

Stability of Footing:

Adjusted Concrete Unit Weight = $\gamma_c := if\left(Bouyancy = 1, \gamma_{conc} - 62.4pcf, \gamma_{conc}\right) = 150 \cdot pcf$

Adjusted Soil Unit Weight = $\gamma_s := if\left(Bouyancy = 1, \gamma_{soil} - 62.4pcf, \gamma_{soil}\right) = 120 \cdot pcf$

Passive Pressure = $P_{top} := 0$

$P_{bot} := K_p \cdot \gamma_s \cdot D_f + c \cdot 2 \cdot \sqrt{K_p} = 2.772 \cdot ksf$

$P_{ave} := \frac{P_{top} + P_{bot}}{2} = 1.386 \cdot ksf$

$A_p := D_p \cdot L_p = 11.4$

Soil Shear Resistance = $Sl_1 := P_{ave} \cdot A_p = 15.8 \cdot kip$

Weight of Concrete = $WT_c := \left(D_p^2 \cdot L_p + W_{pad} \cdot L_{pad} \cdot t_{pad}\right) \cdot \gamma_c = 10.89 \cdot kip$

Total Weight = $WT_{tot} := WT_c + Axial = 128.89 \cdot kip$

Soil/Concrete Friction Resistance = $Sl_2 := \mu \cdot WT_{tot} = 58 \cdot kips$

Total Sliding Resistance = $Sl_{tot} := Sl_1 + Sl_2 = 73.8 \cdot kips$

Sliding Resistance Ratio = $Sliding\_Resistance_{ratio} := \frac{0.75Sl_{tot}}{Shear} = 55.35$

$Sliding\_Resistance\_Check := if\left[\left(\frac{Shear}{0.75Sl_{tot}} < 1.0\right), "Okay", "No\ Good"\right]$

Sliding_Resistance_Check = "Okay"

Bearing Pressure Caused by Footing:

Maximum Pressure in Mat = $P_{max} := \frac{WT_{tot}}{W_{pad} \cdot L_{pad}} = 5.17 \cdot ksf$

$Max\_Pressure\_Check := if\left(P_{max} < 0.6q_s, "Okay", "No\ Good"\right)$

Max_Pressure_Check = "Okay"

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTL05206	DATE:	7/3/2018	RF DESIGN ENG:	Md Mateen	RF PERF ENG:		RFDS PROGRAM TYPE:	2022 5G NR Radio
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	8602586382	RF PERF PHONE:		RFDS TECHNOLOGY:	5G NR 1SR CBAND
REVISION:	Preliminary	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	MM093Q@ATT.COM	RF PERF EMAIL:		STATE/STATUS:	Final/Approved
						ADDITIONAL WORKFLOW NOTIFICATIONS:		RFDS ID:	4877956
						RFDS VERSION:	2.00	Created By:	mm093q
						UMTS FREQUENCY:		Created:	11/22/2021
						LTE FREQUENCY:	700,1900,AWS,WCS	Estimated SQIN:	11.983
						5G FREQUENCY:	CBAND,DoD,850,1900,AWS	RER Initiative:	
INITIATIVE PROJECT	CBAND + DoD					IPLAN JOB # 1:	ER_-RCTB-21-02625	PRD || SUB GRP #1	LTE Next Carrier || LTE 5C
						IPLAN JOB # 2:	ER_-RCTB-21-04037	PRD || SUB GRP #2	Cell Site RF Modifications || BBU reconfiguration with new IDs
						IPLAN JOB # 3:	ER_-RCTB-21-05638	PRD || SUB GRP #3	5G NR Radio || 5G NR 1SR CBand
						IPLAN JOB # 4:	ER_-RCTB-21-05640	PRD || SUB GRP #4	5G NR Radio || 5G NR 1SR CBand
						IPLAN JOB # 5:		PRD || SUB GRP #5	
						IPLAN JOB # 6:		PRD || SUB GRP #6	
						IPLAN JOB # 7:		PRD || SUB GRP #7	
						IPLAN JOB # 8:		PRD || SUB GRP #8	
						IPLAN JOB # 9:		PRD || SUB GRP #9	
						IPLAN JOB #10:		PRD || SUB GRP #10	
						IPLAN JOB # 11:		PRD || SUB GRP #11	
						IPLAN JOB # 12:		PRD || SUB GRP #12	
						IPLAN JOB # 13:		PRD || SUB GRP #13	
						IPLAN JOB # 14:		PRD || SUB GRP #14	
						IPLAN JOB # 15:		PRD || SUB GRP #15	
						IPLAN JOB # 16:		PRD || SUB GRP #16	

Section 2 - LOCATION INFORMATION

USID:	25893	FA LOCATION CODE:	10071098	LOCATION NAME:	MADISON EAST	ORACLE PRJT # 1:	2051A11PAY	PACE JOB #1:	MRCTB054291
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT	ORACLE PRJT # 2:	2051A11N8K	PACE JOB #2:	MRCTB056013
ADDRESS:	135 NEW ROAD	CITY:	MADISON	STATE:	CT	ORACLE PRJT # 3:	2051A11MF0	PACE JOB #3:	MRCTB056510
ZIP CODE:	06443	COUNTY:	NEW HAVEN	LONG (DEC. DEG.):	-72.5783989	ORACLE PRJT # 4:	2051A11MF1	PACE JOB #4:	MRCTB056033
LATITUDE (D-M-S):	41d 17m 35.13084s	LONGITUDE (D-M-S):	-72d -34m -42.23604s	LAT (DEC. DEG.):	41.2930919	ORACLE PRJT # 5:		PACE JOB #5:	
						ORACLE PRJT # 6:		PACE JOB #6:	
						ORACLE PRJT # 7:		PACE JOB #7:	
						ORACLE PRJT # 8:		PACE JOB #8:	
						ORACLE PRJT # 9:		PACE JOB #9:	
						ORACLE PRJT # 10:		PACE JOB #10:	
						ORACLE PRJT # 11:		PACE JOB #11:	
						ORACLE PRJT # 12:		PACE JOB #12:	
						ORACLE PRJT # 13:		PACE JOB #13:	
						ORACLE PRJT # 14:		PACE JOB #14:	
						ORACLE PRJT # 15:		PACE JOB #15:	
						ORACLE PRJT # 16:		PACE JOB #16:	
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	CT5206 MADISONEAST I95N TO EXIT 62 AT TOP OF RAMP MAKE LEFT AND CROSS OVER HIGHWAY AT NEXT INTERSECTION MAKE LEFT ONTO NEW ROAD AFTER MAKING TURN LOOK FOR ARAMARK SIGN AT 135 NEW ROAD ON YOUR RIGHT AND ENTER HERE AFTER PASSING ARAMARK SIGN TAKE DRIVEWAY ON YOUR RIGHT AND HEAD STRAIGHT TO EVERSOURCE GATE PROCEED THROUGH GATE AND DRIVE TOWARD REAR OF COMPLEX WHERE TOWER IS LOCATED DIAL 002 FOR GARAGE AT GATE FOR ACCESSDEMARC LOCATED IN HOFFMAN BOX LTE RADIOS ON TOWERMETER: # 89196454POWER CABINET COMBO0043						BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:	
						AM STUDY REQ'D (Y/N):	No	SEARCH RING ID:	
						FREQ COORD:		BTA:	MSA / RSA:
								LAC(UMTS):	05996
						RF DISTRICT:	TBD		
						RF ZONE:	TBD	RNC(UMTS):	MIDDLETOWN RNC02
								MME POOL ID(LTE):	FF01
						PARENT NAME(UMTS):	MDTWCTNIRNC002		

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	No	CGSA LOSS:		PCS REDUCED - UPS ZIP:		CGSA CALL SIGNS:	KNKA241,z_KNLB312,z_KNLB312,z_KNLB312,KNKA241,z_KNLB312,z_KNLB312,z_KNLB312,KNKA241,z_KNLB312,z_KNLB312,z_KNLB312
CGSA - MINOR FILING NEEDED (Yes/No):	No	CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:			
CGSA - MAJOR FILING NEEDED (Yes/No):	Yes	CGSA SCORECARD UPDATED:					

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	No	GROUND ELEVATION (ft):		STRUCTURE TYPE:	GUYED	MARKET LOCATION 700 MHz Band:	
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	0.00	FCC ASR NUMBER:		MARKET LOCATION 850 MHz Band:	
SUB-LEASE RIGHTS?:	No	STRUCTURE HEIGHT (ft):	181.00			MARKET LOCATION 1900 MHz Band:	
LIGHTING TYPE:	NOT REQUIRED					MARKET LOCATION AWS Band:	
						MARKET LOCATION WCS Band:	
						MARKET LOCATION Future Band:	

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 6/7 - BBU INFORMATION - existing

	BBU 1	BBU 2	BBU 3	BBU 4
BBU ID:	330155	197241	350928	828252
TECHNOLOGY:	UMTS	UMTS	LTE	5G
BBU NAME:	CTU5206	CTV5206	CTL05206	CTCN005206
BBU USID:	25893	25893	25893	25893
CELL ID / BCF:	CTV5206	CTV5206	CTL05206	CTCN005206
BTA/TID:	318W	318U	318L	318N
4-9 DIGIT SITE ID:	5206	5206	5206	14005206
COW OR TOY?:	No	No	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	GROUND	GROUND	INTERNAL	INTERNAL
BASE STATION TYPE:	OVERLAY	OVERLAY	BASE	BASE
EQUIPMENT NAME:	MADISON EAST	MADISON EAST	MADISON EAST	MADISON EAST
DISASTER PRIORITY:	3	0	3	3
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):			6601 RADIONODE 5216	BASEBAND 6630
BASEBAND CONFIGURATION :				xxxxx / 1x6630 / xxxxx
MARKET STATE CODE:			CT	CTC
NODE B NUMBER:	0	0	5206	5206
SIDEHAUL SWITCH VENDOR:				
SIDEHAUL SWITCH MODEL:				
SIDEHAUL SWITCH NAME:				
CSS - CTS COMMON ID:	CTU5206	CTV5206	CTL05206	CTCN005206
CSS - SECONDARY FUNCTION ID:				

Section 6/7 - BBU INFORMATION - final

	BBU 1	BBU 2	BBU 3
BBU ID:	350928	0	828252
TECHNOLOGY:	LTE	5G	LTE,5G
BBU NAME:	CTL05206	CTCN035206	CTL04206R,CTCN005206
BBU USID:	25893	25893	25893
CELL ID / BCF:	CTL05206	CTCN035206	CTCN005206
BTA/TID:	318L		318N
4-9 DIGIT SITE ID:	5206	14035206	14005206
COW OR TOY?:	No	No	No
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL
BASE STATION TYPE:	BASE	OVERLAY	BASE
EQUIPMENT NAME:	MADISON EAST	CTCN035206	MADISON EAST
DISASTER PRIORITY:	3	0	3
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON
EQUIPMENT TYPE (Model):	6601 RADIONODE 5216	BASEBAND 6648	BASEBAND 6630
BASEBAND CONFIGURATION :	1x6601 / 1x5216 / 1xXMU03	xxxxx / 1x6648 / xxxxx	xxxxx / 1x6630 / xxxxx
MARKET STATE CODE:	CT	CTC	CT,CTC
NODE B NUMBER:	5206	35206	4206,5206
SIDEHAUL SWITCH VENDOR:			
SIDEHAUL SWITCH MODEL:			
SIDEHAUL SWITCH NAME:			
CSS - CTS COMMON ID:	CTL05206		CTCN005206
CSS - SECONDARY FUNCTION ID:			

Section 7b - Radio INFORMATION - existing

Section 7b - Radio INFORMATION - final

Section 8 - RBS/SECTOR ASSOCIATION - existing

	BBU 1	BBU 2	BBU 3	BBU 4
CTS Common ID	CTU5206	CTV5206	CTL05206	CTCN005206
Soft Sector IDs:	CTU52067	CTV52061	CTL05206_2A_2	CTCN005206_N005A_1
	CTU52068	CTV52062	CTL05206_2B_2	CTCN005206_N005B_1
	CTU52069	CTV52063	CTL05206_2C_2	CTCN005206_N005C_1
			CTL05206_7A_1	
			CTL05206_7B_1	
			CTL05206_7C_1	
			CTL05206_8A_1	
			CTL05206_8B_1	
			CTL05206_8C_1	
			CTL05206_9A_1	
			CTL05206_9A_2	
			CTL05206_9B_1	
			CTL05206_9B_2	
			CTL05206_9C_1	
			CTL05206_9C_2	

Section 8 - RBS/SECTOR ASSOCIATION - final

	BBU 1	BBU 2	BBU 3
CTS Common ID	CTL05206	CTCN035206	CTL04206R,CTCN005206
Soft Sector IDs	CTL05206_7A_1	CTCN035206_N077A_1	CTCN005206_N002A_1
	CTL05206_7A_3_F	CTCN035206_N077A_2	CTCN005206_N002B_1
	CTL05206_7B_1	CTCN035206_N077B_1	CTCN005206_N002C_1
	CTL05206_7B_3_F	CTCN035206_N077B_2	CTCN005206_N005A_1
	CTL05206_7C_1	CTCN035206_N077C_1	CTCN005206_N005B_1
	CTL05206_7C_3_F	CTCN035206_N077C_2	CTCN005206_N005C_1
			CTCN005206_N066A_1
			CTCN005206_N066B_1
			CTCN005206_N066C_1
			CTL04206_2A_2
			CTL04206_2B_2
			CTL04206_2C_2
			CTL04206_9A_1
			CTL04206_9A_2
			CTL04206_9B_1
			CTL04206_9B_2
			CTL04206_9C_1
			CTL04206_9C_2

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850	5G 1ST 1900	5G 1ST AWS	5G 1ST CBAND	5G 2ND CBAND
USEID (excluding Hard Sector)	25893.850.3G.1	25893.1900.3G.2													
SECTOR A SOFT SECTOR ID	CTV52061	CTU52067	CTL05206_7A_1	CTL05206_8A_1	CTL05206_9A_1	CTL05206_2A_2	CTL05206_9A_2				CTCN005206_N005A_1				
SECTOR B	CTV52062	CTU52068	CTL05206_7B_1	CTL05206_8B_1	CTL05206_9B_1	CTL05206_2B_2	CTL05206_9B_2				CTCN005206_N005B_1				
SECTOR C	CTV52063	CTU52069	CTL05206_7C_1	CTL05206_8C_1	CTL05206_9C_1	CTL05206_2C_2	CTL05206_9C_2				CTCN005206_N005C_1				
SECTOR D															
SECTOR E															
SECTOR F															
OMNI															

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850	5G 1ST 1900	5G 1ST AWS	5G 1ST CBAND	5G 2ND CBAND
USEID (excluding Hard Sector)															
SECTOR A SOFT SECTOR ID			CTL05206_7A_1		CTL04206_9A_1			CTL04206_9A_2	CTL04206_2A_2	CTL05206_7A_3_F	CTCN005206_N005A	CTCN005206_N002	CTCN005206_N066	CTCN035206_N077A_1	CTCN035206_N077A_2
SECTOR B			CTL05206_7B_1		CTL04206_9B_1			CTL04206_9B_2	CTL04206_2B_2	CTL05206_7B_3_F	CTCN005206_N005B	CTCN005206_N002	CTCN005206_N066	CTCN035206_N077B_1	CTCN035206_N077B_2
SECTOR C			CTL05206_7C_1		CTL04206_9C_1			CTL04206_9C_2	CTL04206_2C_2	CTL05206_7C_3_F	CTCN005206_N005C	CTCN005206_N002	CTCN005206_N066	CTCN035206_N077C_1	CTCN035206_N077C_2
SECTOR D															
SECTOR E															
SECTOR F															
OMNI															

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850	5G 1ST 1900	5G 1ST AWS	5G 1ST CBAND	5G 2ND CBAND
USEID (excluding Hard Sector)	25893.850.3G.1	25893.1900.3G.2													
SECTOR A CELL NUMBER			15	1	8	192	178				25				
SECTOR B			16	2	9	193	179				49				
SECTOR C			17	3	10	194	180				73				
SECTOR D															
SECTOR E															
SECTOR F															
OMNI															

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850	5G 1ST 1900	5G 1ST AWS	5G 1ST CBAND	5G 2ND CBAND
USEID (excluding Hard Sector)															
SECTOR A CELL NUMBER			15		8			178	192	171	25	26	27	36	37
SECTOR B			16		9			179	193	172	49	50	51	60	61
SECTOR C			17		10			180	194	173	73	74	75	84	85
SECTOR D															
SECTOR E															
SECTOR F															
OMNI															

Section 10 - CID/SAC - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850	5G 1ST 1900	5G 1ST AWS	5G 1ST CBAND	5G 2ND CBAND
SECTOR A CID/SAC	52061	52067													
SECTOR B	52062	52068													
SECTOR C	52063	52069													
SECTOR D															
SECTOR E															
SECTOR F															
OMNI															

Section 10 - CID/SAC - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 2ND 1900	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850	5G 1ST 1900	5G 1ST AWS	5G 1ST CBAND	5G 2ND CBAND
SECTOR A CID/SAC															
SECTOR B															
SECTOR C															
SECTOR D															
SECTOR E															
SECTOR F															
OMNI															

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL		SBNHH-1D65A		DMP65R-BU4DA			
ANTENNA VENDOR		Andrew		CCI			
ANTENNA SIZE (H x W x D)		55X11.9X7.1		48X20.7X7.7			
ANTENNA WEIGHT		33.5		67.9			
AZIMUTH		0		0			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78		78			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0		0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in		Built in			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED		RRH CONTROLLED			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)				1 DC6-48-60-18-8F			
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)		1 8843 B2/B66A					
RRH - AWS band (QTY/MODEL)				1 with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)		1 Y-Cable		1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 3		25893.A.1900.4G.1	CTL05206_9A_1	CTL05206_9A_1		LTE 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
	PORT 4		25893.A.1900.4G.4	CTL05206_9A_2	CTL05206_9A_2		LTE 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2		25893.A.850.5G.1	CTCN005206_N005A_1	CTCN005206_N005A_1		5G 850	BU4DA_849MHz_02DT	14.4	0	2	TOP	FIBER	0						1000			
	PORT 4		25893.A.AWS.4G.4	CTL05206_2A_2	CTL05206_2A_2		LTE AWS	BU4DA_2170MHz_05DT	17	0	5	TOP	FIBER	0						5070.2572			
	PORT 5		25893.A.700.4G.1	CTL05206_7A_1	CTL05206_7A_1		LTE 700	BU4DA_716MHz_02DT	13.3	0	2	TOP	FIBER	0						1475.7065			

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL		SBNHH-1D65A		DMP65R-BU4DA			
ANTENNA VENDOR		Andrew		CCI			
ANTENNA SIZE (H x W x D)		55X11.9X7.1		48X20.7X7.7			
ANTENNA WEIGHT		33.5		67.9			
AZIMUTH		120		120			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78		78			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0		0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in		Built in			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED		RRH CONTROLLED			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)		1 8843 B2/B66A					
RRH - AWS band (QTY/MODEL)				1 with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)		1 Y-Cable		1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 3		25893.B.1900.4G.1	CTL05206_9B_1	CTL05206_9B_1		LTE 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
	PORT 4		25893.B.1900.4G.4	CTL05206_9B_2	CTL05206_9B_2		LTE 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2		25893.B.850.5G.1	CTCN005206_N005B_1	CTCN005206_N005B_1		5G 850	BU4DA_849MHz_02DT	14.4	120	2	TOP	FIBER	0						1000			
	PORT 4		25893.B.AWS.4G.4	CTL05206_2B_2	CTL05206_2B_2		LTE AWS	BU4DA_2170MHz_06DT	17	120	6	TOP	FIBER	0						5070.2572			
	PORT 5		25893.B.700.4G.1	CTL05206_7B_1	CTL05206_7B_1		LTE 700	BU4DA_716MHz_02DT	13.3	120	2	TOP	FIBER	0						1475.7065			

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL		SBNHH-1D65A		DMP65R-BU4DA			
ANTENNA VENDOR		Andrew		CCI			
ANTENNA SIZE (H x W x D)		55X11.9X7.1		48X20.7X7.7			
ANTENNA WEIGHT		33.5		67.9			
AZIMUTH		240		240			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78		78			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0		0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in		Built in			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED		RRH CONTROLLED			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)		1 8843 B2/B66A					
RRH - AWS band (QTY/MODEL)				1 with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)		1 Y-Cable		1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 3		25893.C.1900.4G.1	CTL05206_9C_1	CTL05206_9C_1		LTE 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
	PORT 4		25893.C.1900.4G.4	CTL05206_9C_2	CTL05206_9C_2		LTE 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2		25893.C.850.5G.1	CTCN005206_N005C_1	CTCN005206_N005C_1		5G 850	BU4DA_849MHz_02DT	14.4	240	2	TOP	FIBER	0						1000			
	PORT 4		25893.C.AWS.4G.4	CTL05206_2C_2	CTL05206_2C_2		LTE AWS	BU4DA_2170MHz_06DT	17	240	6	TOP	FIBER	0						5070.2572			
	PORT 5		25893.C.700.4G.1	CTL05206_7C_1	CTL05206_7C_1		LTE 700	BU4DA_716MHz_02DT	13.3	240	2	TOP	FIBER	0						1475.7065			

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?				Yes			
ANTENNA MAKE - MODEL		TPA-65R-BU4DA-K	AIR6449 B77D+AIR6419 B77G STACKED				
ANTENNA VENDOR		CCI	Ericsson				
ANTENNA SIZE (H x W x D)		48X20.7X7.7	30.4X15.9X8.1				
ANTENNA WEIGHT		52.6	81.6				
AZIMUTH		0	0				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78	78				
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0	0				
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in	Built in				
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED	RRH CONTROLLED				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)	1	DC9-48-60-24-8C-EV					
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1	4478 B14					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)			1 integrated within: AIR6449 B77D				
Additional RRH #2 - any band (QTY/MODEL)			1 integrated within: AIR6419 B77G				
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)			1 IDLe Xcede				
Additional Component 3 (QTY/MODEL)			1 6648				
Local Market Note 1	- Follow Antenna/RRHs positions as per PDs. -Keep Pos-1 Empty for future SOW.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x5216 / 1x4MU03 || xxxx / 1x6630 Mixed-Mode / xxxx + //1x6648+IDLe Xcede.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 1		25893.A.1900.4G.1	CTL05206_7A_3_F	CTL05206_7A_3_F		LTE 700	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
	PORT 3		25893.A.1900.4G.1	CTL04206_9A_1	CTL04206_9A_1		LTE 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
	PORT 4		25893.A.1900.4G.1	CTL04206_9A_2	CTL04206_9A_2		LTE 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
	PORT 11		25893.A.1900.4G.1	CTCN005206_N002A_1	CTCN005206_N002A_1		5G 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
ANTENNA POSITION 3	PORT 1			CTCN035206_N077A_1	CTCN035206_N077A_1		5G CBAND	B77D+AIR6419 B77G STACKED		0	0	TOP	FIBER	0						4842.058			
	PORT 2			CTCN035206_N077A_2	CTCN035206_N077A_2		5G DoD	B77D+AIR6419 B77G STACKED		0	0	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2		25893.A.850.5G.1	CTCN005206_N005A_1	CTCN005206_N005A_1		5G 850	BU4DA_849MHz_02DT	14.4	0	2	TOP	FIBER	0						1000			
	PORT 4		25893.A.AWS.4G.4	CTL04206_2A_2	CTL04206_2A_2		LTE AWS	BU4DA_2170MHz_05DT	17	0	5	TOP	FIBER	0						5070.2572			
	PORT 5		25893.A.700.4G.1	CTL05206_7A_1	CTL05206_7A_1		LTE 700	BU4DA_716MHz_02DT	13.3	0	2	TOP	FIBER	0						1475.7065			
	PORT 12		25893.A.AWS.4G.4	CTCN005206_N066A_1	CTCN005206_N066A_1		5G AWS	BU4DA_2170MHz_05DT	17	0	5	TOP	FIBER	0						5070.2572			

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?				Yes			
ANTENNA MAKE - MODEL		TPA-65R-BU4DA-K	AIR6449 B77D+AIR6419 B77G STACKED				
ANTENNA VENDOR		CCI	Ericsson				
ANTENNA SIZE (H x W x D)		48X20.7X7.7	30.4X15.9X8.1				
ANTENNA WEIGHT		52.6	81.6				
AZIMUTH		120	120				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78	78				
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0	0				
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in	Built in				
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED	RRH CONTROLLED				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1 4478 B14					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)			1 integrated within: AIR6449 B77D				
Additional RRH #2 - any band (QTY/MODEL)			1 integrated within: AIR6419 B77G				
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Follow Antenna/RRHs positions as per PDs. -Keep Pos-1 Empty for future SOW.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x5216 / 1x0MU03 || xxxx / 1x6630 Mixed-Mode / xxxx + //1x6648+IDLe Xcede.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 1		25893.B.1900.4G.1	CTL05206_7B_3_F	CTL05206_7B_3_F		LTE 700	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
	PORT 3		25893.B.1900.4G.4	CTL04206_9B_1	CTL04206_9B_1		LTE 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
	PORT 4		25893.B.1900.4G.4	CTL04206_9B_2	CTL04206_9B_2		LTE 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
	PORT 11		25893.B.1900.4G.4	CTCN005206_N_002B_1	CTCN005206_N_002B_1		5G 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
ANTENNA POSITION 3	PORT 1			CTCN035206_N_077B_1	CTCN035206_N_077B_1		5G CBAND	B77D+AIR6419 B77G STACKED		120	0	TOP	FIBER	0						4842.058			
	PORT 2			CTCN035206_N_077B_2	CTCN035206_N_077B_2		5G DoD	B77D+AIR6419 B77G STACKED		120	0	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2		25893.B.850.5G.1	CTCN005206_N_005B_1	CTCN005206_N_005B_1		5G 850	BU4DA_849MHz_02DT	14.4	120	2	TOP	FIBER	0						1000			
	PORT 4		25893.B.AWS.4G.4	CTL04206_2B_2	CTL04206_2B_2		LTE AWS	BU4DA_2170MHz_06DT	17	120	6	TOP	FIBER	0						5070.2572			
	PORT 5		25893.B.700.4G.1	CTL05206_7B_1	CTL05206_7B_1		LTE 700	BU4DA_716MHz_02DT	13.3	120	2	TOP	FIBER	0						1475.7065			
	PORT 12		25893.B.AWS.4G.4	CTCN005206_N_066B_1	CTCN005206_N_066B_1		5G AWS	BU4DA_2170MHz_06DT	17	120	6	TOP	FIBER	0						5070.2572			

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?				Yes			
ANTENNA MAKE - MODEL		TPA-65R-BU4DA-K	AIR6449 B77D+AIR6419 B77G STACKED				
ANTENNA VENDOR		CCI	Ericsson				
ANTENNA SIZE (H x W x D)		48X20.7X7.7	30.4X15.9X8.1				
ANTENNA WEIGHT		52.6	81.6				
AZIMUTH		240	240				
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78	78				
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0	0				
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in	Built in				
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED	RRH CONTROLLED				
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1 4478 B14					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)			1 integrated within: AIR6449 B77D				
Additional RRH #2 - any band (QTY/MODEL)			1 integrated within: AIR6419 B77G				
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Follow Antenna/RRHs positions as per PDs. -Keep Pos-1 Empty for future SOW.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x5216 / 1x0MU03 || xxxx / 1x6630 Mixed-Mode / xxxx + //1x6648+IDLe Xcede.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 1		25893.C.1900.4G.1	CTL05206_7C_3_F	CTL05206_7C_3_F		LTE 700	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
	PORT 3		25893.C.1900.4G.4	CTL04206_9C_1	CTL04206_9C_1		LTE 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
	PORT 4		25893.C.1900.4G.4	CTL04206_9C_2	CTL04206_9C_2		LTE 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
	PORT 11		25893.C.1900.4	CTCN005206_N002C_1	CTCN005206_N002C_1		5G 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
ANTENNA POSITION 3	PORT 1			CTCN035206_N077C_1	CTCN035206_N077C_1		5G CBAND	B77D+AIR6419 B77G STACKED		240	0	TOP	FIBER	0						4842.058			
	PORT 2			CTCN035206_N077C_2	CTCN035206_N077C_2		5G DoD	B77D+AIR6419 B77G STACKED		240	0	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2		25893.C.850.5G.1	CTCN005206_N005C_1	CTCN005206_N005C_1		5G 850	BU4DA_849MHz_02DT	14.4	240	2	TOP	FIBER	0						1000			
	PORT 4		25893.C.AWS.4G.4	CTL04206_2C_2	CTL04206_2C_2		LTE AWS	BU4DA_2170MHz_06DT	17	240	6	TOP	FIBER	0						5070.2572			
	PORT 5		25893.C.700.4G.1	CTL05206_7C_1	CTL05206_7C_1		LTE 700	BU4DA_716MHz_02DT	13.3	240	2	TOP	FIBER	0						1475.7065			
	PORT 12		25893.C.AWS.4G.4	CTCN005206_N066C_1	CTCN005206_N066C_1		5G AWS	BU4DA_2170MHz_06DT	17	240	6	TOP	FIBER	0						5070.2572			

Section 16.5A - SCOPING TOWER CONFIGURATION - SECTOR A (OR OMNI)

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL		TPA-65R-BU4DA-K	AIR6449 B77D+AIR6419 B77G STACKED	DMP65R-BU4DA			
ANTENNA VENDOR		CCI	Ericsson	CCI			
ANTENNA SIZE (H x W x D)		48X20.7X7.7	30.4X15.9X8.1	48X20.7X7.7			
ANTENNA WEIGHT		52.6	81.6	67.9			
AZIMUTH		0	0	0			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78	78	78			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0	0	0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in	Built in	Built in			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED	RRH CONTROLLED	RRH CONTROLLED			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)	1	DC9-48-60-24-8C-EV		1	DC6-48-60-18-8F		
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1	4478 B14		1	4449 B5/B12		
RRH - 850 band (QTY/MODEL)					with another band		
RRH - 1900 band (QTY/MODEL)	1	8843 B2/B66A					
RRH - AWS band (QTY/MODEL)				1	with another band		
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)			1 integrated within: AIR6449 B77D				
Additional RRH #2 - any band (QTY/MODEL)			1 integrated within: AIR6419 B77G				
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	1	Y-Cable		1	Y-Cable		
Additional Component 2 (QTY/MODEL)			1 IDLe Xcede				
Additional Component 3 (QTY/MODEL)			1 6648				
Local Market Note 1	- Follow Antenna/RRHs positions as per PDs. -Keep Pos-1 Empty for future SOW.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x5216 / 1xXMU03 || xxxx / 1x6630 Mixed-Mode / xxxx + //1x6648+IDLe Xcede.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 3	mp5, 25893.A.1900.4G.1	25893.A.1900.4G.1	CTL05206_7A_3_F	CTL05206_7A_3_F		LTE 700	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
	PORT 3	25893.A.1900.4G.tmp1	25893.A.1900.4G.1	CTL04206_9A_1	CTL04206_9A_1		LTE 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
	PORT 4	G.tmp1, 25893.A.1900.4	25893.A.1900.4G.1	CTL04206_9A_2	CTL04206_9A_2		LTE 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
	PORT 11	G.tmp1, 25893.A.1900.5	25893.A.1900.4G.1	CTCN005206_N 002A_1	CTCN005206_N 002A_1		5G 1900	1D65A_1930MHz_05DT	17.1	0	5	TOP	FIBER	0						4842.058			
ANTENNA POSITION 3	PORT 1	25893.A.CBAND.5G.tmp1		CTCN035206_N 077A_1	CTCN035206_N 077A_1		5G CBAND	B77D+AIR6419 B77G STACKED		0	0	TOP	FIBER	0						4842.058			
	PORT 2	25893.A.CBAND.5G.tmp2		CTCN035206_N 077A_2	CTCN035206_N 077A_2		5G DoD	B77D+AIR6419 B77G STACKED		0	0	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2	25893.A.850.5G.1	25893.A.850.5G.1	CTCN005206_N 005A_1	CTCN005206_N 005A_1		5G 850	BU4DA_849MHz_02DT	14.4	0	2	TOP	FIBER	0						1000			
	PORT 4	25893.A.AWS.4G.tmp4	25893.A.AWS.4G.4	CTL04206_2A_2	CTL04206_2A_2		LTE AWS	BU4DA_2170MHz_05DT	17	0	5	TOP	FIBER	0						5070.2572			
	PORT 5	25893.A.700.4G.1	25893.A.700.4G.1	CTL05206_7A_1	CTL05206_7A_1		LTE 700	BU4DA_716MHz_02DT	13.3	0	2	TOP	FIBER	0						1475.7065			
	PORT 12	.tmp1, 25893.A.AWS.4G	25893.A.AWS.4G.4	CTCN005206_N 066A_1	CTCN005206_N 066A_1		5G AWS	BU4DA_2170MHz_05DT	17	0	5	TOP	FIBER	0						5070.2572			

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL		TPA-65R-BU4DA-K	AIR6449 B77D+AIR6419 B77G STACKED	DMP65R-BU4DA			
ANTENNA VENDOR		CCI	Ericsson	CCI			
ANTENNA SIZE (H x W x D)		48X20.7X7.7	30.4X15.9X8.1	48X20.7X7.7			
ANTENNA WEIGHT		52.6	81.6	67.9			
AZIMUTH		120	120	120			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78	78	78			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0	0	0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in	Built in	Built in			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED	RRH CONTROLLED	RRH CONTROLLED			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1 4478 B14		1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)		1 8843 B2/B66A					
RRH - AWS band (QTY/MODEL)				1 with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)			1 integrated within: AIR6449 B77D				
Additional RRH #2 - any band (QTY/MODEL)			1 integrated within: AIR6419 B77G				
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)		1 Y-Cable		1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Follow Antenna/RRHs positions as per PDs.						
Local Market Note 2	-Keep Pos-1 Empty for future SOW.						
Local Market Note 3	1x6601 / 1x5216 / 1xXMU03 || xxxxx / 1x6630 Mixed-Mode / xxxxx + //1x6648+IDLe Xcede.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 1	tmp5, 25893.B.1900.4G.1	25893.B.1900.4F	CTL05206_7B_3F	CTL05206_7B_3F		LTE 700	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
	PORT 3	G.tmp1, 25893.B.1900.4G.4	25893.B.1900.4G.4	CTL04206_9B_1	CTL04206_9B_1		LTE 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
	PORT 4	25893.B.1900.4G.tmp4	25893.B.1900.4G.4	CTL04206_9B_2	CTL04206_9B_2		LTE 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
	PORT 11	G.tmp1, 25893.B.1900.4	25893.B.1900.4G.4	CTCN005206_N002B_1	CTCN005206_N002B_1		5G 1900	1D65A_1930MHz_06DT	17.2	120	6	TOP	FIBER	0						4842.058			
ANTENNA POSITION 3	PORT 1	25893.B.CBAND.5G.tmp1		CTCN035206_N077B_1	CTCN035206_N077B_1		5G CBAND	B77D+AIR6419 B77G STACKED		120	0	TOP	FIBER	0						4842.058			
	PORT 2	25893.B.CBAND.5G.tmp2		CTCN035206_N077B_2	CTCN035206_N077B_2		5G DoD	B77D+AIR6419 B77G STACKED		120	0	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2	25893.B.850.5G.2	25893.B.850.5G.1	CTCN005206_N005B_1	CTCN005206_N005B_1		5G 850	BU4DA_849MHz_02DT	14.4	120	2	TOP	FIBER	0						1000			
	PORT 4	25893.B.AWS.4G.tmp4	25893.B.AWS.4G.4	CTL04206_2B_2	CTL04206_2B_2		LTE AWS	BU4DA_2170MHz_06DT	17	120	6	TOP	FIBER	0						5070.2572			
	PORT 5	25893.B.700.4G.1	25893.B.700.4G.1	CTL05206_7B_1	CTL05206_7B_1		LTE 700	BU4DA_716MHz_02DT	13.3	120	2	TOP	FIBER	0						1475.7065			
	PORT 12	tmp1, 25893.B.AWS.4G	25893.B.AWS.4G.4	CTCN005206_N066B_1	CTCN005206_N066B_1		5G AWS	BU4DA_2170MHz_06DT	17	120	6	TOP	FIBER	0						5070.2572			

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL		TPA-65R-BU4DA-K	AIR6449 B77D+AIR6419 B77G STACKED	DMP65R-BU4DA			
ANTENNA VENDOR		CCI	Ericsson	CCI			
ANTENNA SIZE (H x W x D)		48X20.7X7.7	30.4X15.9X8.1	48X20.7X7.7			
ANTENNA WEIGHT		52.6	81.6	67.9			
AZIMUTH		240	240	240			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)		78	78	78			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT		0	0	0			
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)		Built in	Built in	Built in			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)		RRH CONTROLLED	RRH CONTROLLED	RRH CONTROLLED			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)		1 4478 B14		1 4449 B5/B12			
RRH - 850 band (QTY/MODEL)				with another band			
RRH - 1900 band (QTY/MODEL)		1 8843 B2/B66A					
RRH - AWS band (QTY/MODEL)				1 with another band			
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)			1 integrated within: AIR6449 B77D				
Additional RRH #2 - any band (QTY/MODEL)			1 integrated within: AIR6419 B77G				
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)		1 Y-Cable		1 Y-Cable			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	- Follow Antenna/RRHs positions as per PDs. -Keep Pos-1 Empty for future SOW.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x5216 / 1xXMU03 || xxxxx / 1x6630 Mixed-Mode / xxxxx + //1x6648+IDLe Xcede.						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 2	PORT 1	tmp5, 25893.C.1900.4G.1	25893.C.1900.4 3_F	CTL05206_7C_3_F	CTL05206_7C_3_F		LTE 700	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
	PORT 3	G.tmp1, 25893.C.1900.4G.4	25893.C.1900.4 1	CTL04206_9C_1	CTL04206_9C_1		LTE 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
	PORT 4	25893.C.1900.4G.tmp4	25893.C.1900.4 2	CTL04206_9C_2	CTL04206_9C_2		LTE 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
	PORT 11	G.tmp1, 25893.C.1900.4	25893.C.1900.4 G.4	CTCN005206_N002C_1	CTCN005206_N002C_1		5G 1900	1D65A_1930MHz_06DT	17.2	240	6	TOP	FIBER	0						4842.058			
ANTENNA POSITION 3	PORT 1	25893.C.CBAND_5G.tmp1		CTCN035206_N077C_1	CTCN035206_N077C_1		5G CBAND	B77D+AIR6419 B77G STACKED		240	0	TOP	FIBER	0						4842.058			
	PORT 2	25893.C.CBAND_5G.tmp2		CTCN035206_N077C_2	CTCN035206_N077C_2		5G DoD	B77D+AIR6419 B77G STACKED		240	0	TOP	FIBER	0						4842.058			
ANTENNA POSITION 4	PORT 2	25893.C.850.5G.3	25893.C.850.5G.1	CTCN005206_N005C_1	CTCN005206_N005C_1		5G 850	BU4DA_849MHz_02DT	14.4	240	2	TOP	FIBER	0						1000			
	PORT 4	25893.C.AWS.4G.tmp4	25893.C.AWS.4 2	CTL04206_2C_2	CTL04206_2C_2		LTE AWS	BU4DA_2170MHz_06DT	17	240	6	TOP	FIBER	0						5070.2572			
	PORT 5	25893.C.700.4G.1	25893.C.700.4G.1	CTL05206_7C_1	CTL05206_7C_1		LTE 700	BU4DA_716MHz_02DT	13.3	240	2	TOP	FIBER	0						1475.7065			
	PORT 12	G.tmp1, 25893.C.AWS.4	25893.C.AWS.4 G.4	CTCN005206_N066C_1	CTCN005206_N066C_1		5G AWS	BU4DA_2170MHz_06DT	17	240	6	TOP	FIBER	0						5070.2572			

May 13, 2022
February 22, 2023 (Rev.1)

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	AT&T Site Number:	CT5206
	FA Number:	10071098
	PACE Number:	MRCTB056510
	PT Number:	2051A11MF0
	TEP Site Number:	388944
	AT&T Site Name:	MADISON EAST
	Site Address:	135 New Road Madison, CT 06443

To Whom It May Concern:

TEP Northeast (TEP NE) has been authorized by SAI Communications to perform a mount analysis on the existing AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (3) DMP65R-BU4DA Antennas (48.0"x20.7"x7.7" – Wt. = 68 lbs. /each)
- (3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)
- (3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)
- (1) DC6-48-60-18-8F Surge Arrestor (31.4"x10.2" Ø – Wt. = 29 lbs.) (tower mounted)
- **(3) TPA-65R-BU4DA-K Antennas (48.0"x20.7"x7.7" – Wt. = 53 lbs. /each)**
- **(3) AIR6419 Antennas (31.1"X16.1"X7.3"– Wt. = 66 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"X15.9"X10.6" – Wt. = 82 lbs. /each)**
- **(3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(1) DC9-48-60-24-8C-EV Surge Arrestor (31.4"x10.2" Ø – Wt. = 29 lbs.)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. TEP NE conducted a survey climb and mapping of the existing AT&T antenna mounts on March 27, 2019. TEP NE conducted a ground audit of the existing antenna mounts on November 10, 2021.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2021 with 2022 Connecticut State Building Code, and AT&T Mount Technical Directive – R22.
- TEP NE considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix P of the Connecticut State Building Code, the max basic wind speed for this site is equal to 135 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.25 in was used for this analysis.
- TEP NE considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- TEP NE considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- TEP NE considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.206 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.054.
- The mounts have been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mounts have been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mounts are secured to the existing guyed tower with threaded rods and steel plates tightened around the tower leg. TEP NE considers the threaded rods as the governing connection members.

Based on our evaluation, we have determined that the existing mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	15	LC53	64%	**PASS**

Reference Documents:

- Mount mapping report prepared by TEP NE.

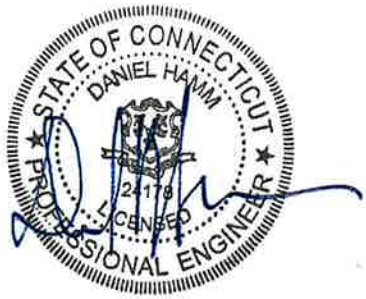
This determination was based on the following limitations and assumptions:

1. TEP NE is not responsible for any modifications completed prior to and hereafter which TEP NE was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mounts have been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. TEP NE performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

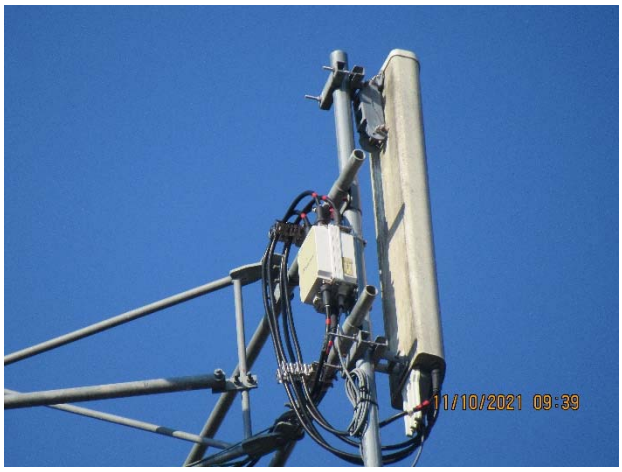
Respectfully Submitted,
TEP Northeast

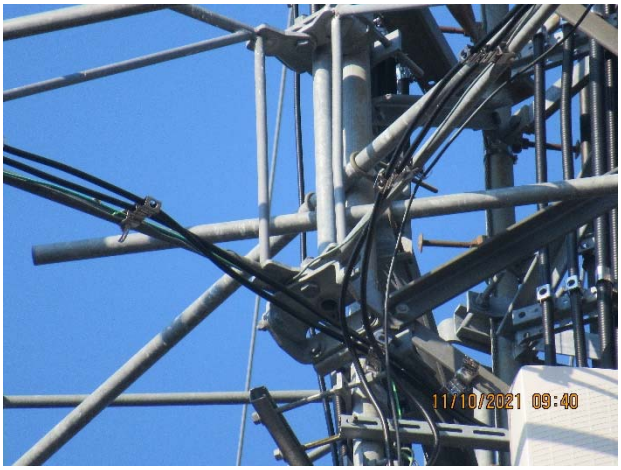
Michael Cabral
Director



Daniel P. Hamm, PE
Vice President

FIELD PHOTOS:





FIELD PHOTOS (CONT.):

Wind & Ice
Calculations

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Designed By: KSBM **Checked By:** MSC

TEP NORTHEAST

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\ (z/z_g)^{2/\alpha}$

z=	78.0	(ft)
z_g=	1200	(ft)
α=	7	

K_z= 0.921

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}= 1

(If Category 1 then K_{zt} =1.0)

Category= 1

K_h=	1	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	78.0	
z_s=	57	(Mean elevation of base of structure above sea level)
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	1.00	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness = t_i =	1.00	in
Importance Factor = I=	1.15	(from Table 2-3)
K_{iz} =	1.09	(from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$

t_{iz} = 1.25 in

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2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	180.0	G_h=	0.85
2.6.9.2 Guyed Masts		G_h=	0.85
2.6.9.3 Pole Structures		G_h=	1.1
2.6.9 Appurtenances		G_h=	1.0

2.6.9.4 Structures Supported on Other Structures
(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

		K_z=	0.921	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**36.43**	K_e=	1.00	(from 2.6.8)
$q_{z\ (ice)}$=	**5.00**	K_d=	0.85	(from Table 2-2)
$q_{z\ (30)}$=	**1.80**	V_{max}=	135	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

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Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		**Aspect Ratio ≤ 2.5**	**Aspect Ratio = 7**	**Aspect Ratio ≥ 25**
		Ca	**Ca**	**Ca**
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r_s) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	**C < 39** (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.25** in | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.32	1.20	**302**	**49**	**15**
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.93	1.20	**152**	**26**	**8**
AIR6449 Antenna	30.6	15.9	10.6	3.38	1.92	1.20	**148**	**25**	**7**
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.32	1.20	**302**	**49**	**15**
4478 B14 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**74**	**14**	**4**
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	**60**	**11**	**3**
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.36	1.20	**72**	**13**	**4**
DC6-48-60-18-8F Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	**57**	**10**	**3**
DC9-48-60-24-8C-EV Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	**57**	**10**	**3**
1" RoundBar	1.0	12.0		0.08	0.08	1.20	**4**		
1" Pipe	1.3	12.0		0.11	0.11	1.20	**5**		
1-1/2" Pipe	1.9	12.0		0.16	0.16	1.20	**7**		
2" Pipe	2.4	12.0		0.20	0.20	1.20	**9**		

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WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.25	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	258
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	152	73	132
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	148	100	136
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	258
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	74	46	67
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	60	49	57
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	72	51	67

WIND LOADS WITH ICE:

TPA65R-BU4DA-K Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	42
AIR6419 Antenna	33.6	18.6	9.8	4.34	2.29	1.81	3.43	1.20	1.24	26	14	23
AIR6449 Antenna	33.1	18.4	13.1	4.23	3.01	1.80	2.53	1.20	1.20	25	18	24
DMP65R-BU4DA Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	42
4478 B14 RRH	20.6	15.9	10.8	2.28	1.55	1.30	1.91	1.20	1.20	14	9	13
8843 B2/B66A RRH	17.4	15.7	13.4	1.90	1.62	1.11	1.30	1.20	1.20	11	10	11
4449 B5/B12 RRH	20.4	15.7	11.9	2.23	1.69	1.30	1.71	1.20	1.20	13	10	13

WIND LOADS AT 30 MPH:

TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	13
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	8	4	7
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	7	5	7
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	13
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	3	2	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

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TEP NORTHEAST

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.25	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	171
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	152	73	93
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	148	100	112
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	171
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	74	46	53
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	60	49	52
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	72	51	56

WIND LOADS WITH ICE:

TPA65R-BU4DA-K Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	30
AIR6419 Antenna	33.6	18.6	9.8	4.34	2.29	1.81	3.43	1.20	1.24	26	14	17
AIR6449 Antenna	33.1	18.4	13.1	4.23	3.01	1.80	2.53	1.20	1.20	25	18	20
DMP65R-BU4DA Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	30
4478 B14 RRH	20.6	15.9	10.8	2.28	1.55	1.30	1.91	1.20	1.20	14	9	10
8843 B2/B66A RRH	17.4	15.7	13.4	1.90	1.62	1.11	1.30	1.20	1.20	11	10	10
4449 B5/B12 RRH	20.4	15.7	11.9	2.23	1.69	1.30	1.71	1.20	1.20	13	10	11

WIND LOADS AT 30 MPH:

TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	8
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	8	4	5
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	7	5	6
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	8
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	3	2	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

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WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.25	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	128
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	152	73	73
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	148	100	100
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	128
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	74	46	46
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	60	49	49
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	72	51	51

WIND LOADS WITH ICE:

TPA65R-BU4DA-K Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	23
AIR6419 Antenna	33.6	18.6	9.8	4.34	2.29	1.81	3.43	1.20	1.24	26	14	14
AIR6449 Antenna	33.1	18.4	13.1	4.23	3.01	1.80	2.53	1.20	1.20	25	18	18
DMP65R-BU4DA Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	23
4478 B14 RRH	20.6	15.9	10.8	2.28	1.55	1.30	1.91	1.20	1.20	14	9	9
8843 B2/B66A RRH	17.4	15.7	13.4	1.90	1.62	1.11	1.30	1.20	1.20	11	10	10
4449 B5/B12 RRH	20.4	15.7	11.9	2.23	1.69	1.30	1.71	1.20	1.20	13	10	10

WIND LOADS AT 30 MPH:

TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	6
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	8	4	4
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	7	5	5
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	6
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	2
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	3	2	2
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

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Project No.: CT5206
Designed By: KSBM Checked By: MSC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.25	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	171
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	152	73	93
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	148	100	112
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	171
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	74	46	53
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	60	49	52
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	72	51	56

WIND LOADS WITH ICE:

TPA65R-BU4DA-K Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	30
AIR6419 Antenna	33.6	18.6	9.8	4.34	2.29	1.81	3.43	1.20	1.24	26	14	17
AIR6449 Antenna	33.1	18.4	13.1	4.23	3.01	1.80	2.53	1.20	1.20	25	18	20
DMP65R-BU4DA Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	30
4478 B14 RRH	20.6	15.9	10.8	2.28	1.55	1.30	1.91	1.20	1.20	14	9	10
8843 B2/B66A RRH	17.4	15.7	13.4	1.90	1.62	1.11	1.30	1.20	1.20	11	10	10
4449 B5/B12 RRH	20.4	15.7	11.9	2.23	1.69	1.30	1.71	1.20	1.20	13	10	11

WIND LOADS AT 30 MPH:

TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	8
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	8	4	5
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	7	5	6
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	8
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	3	2	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

Date: 2/22/2023
Project Name: MADISON EAST
Project No.: CT5206
Designed By: KSBM Checked By: MSC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.25	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	258
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	152	73	132
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	148	100	136
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	302	128	258
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	74	46	67
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	60	49	57
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	72	51	67

WIND LOADS WITH ICE:

TPA65R-BU4DA-K Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	42
AIR6419 Antenna	33.6	18.6	9.8	4.34	2.29	1.81	3.43	1.20	1.24	26	14	23
AIR6449 Antenna	33.1	18.4	13.1	4.23	3.01	1.80	2.53	1.20	1.20	25	18	24
DMP65R-BU4DA Antenna	50.5	23.2	10.2	8.14	3.58	2.18	4.95	1.20	1.31	49	23	42
4478 B14 RRH	20.6	15.9	10.8	2.28	1.55	1.30	1.91	1.20	1.20	14	9	13
8843 B2/B66A RRH	17.4	15.7	13.4	1.90	1.62	1.11	1.30	1.20	1.20	11	10	11
4449 B5/B12 RRH	20.4	15.7	11.9	2.23	1.69	1.30	1.71	1.20	1.20	13	10	13

WIND LOADS AT 30 MPH:

TPA65R-BU4DA-K Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	13
AIR6419 Antenna	31.1	16.1	7.3	3.48	1.58	1.93	4.26	1.20	1.28	8	4	7
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	7	5	7
DMP65R-BU4DA Antenna	48.0	20.7	7.7	6.90	2.57	2.32	6.23	1.20	1.37	15	6	13
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	3	2	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3

Date: 2/22/2023
Project Name: MADISON EAST
Project No.: CT5206
Designed By: KSBM **Checked By:** MSC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.25 in.
Density of ice: 56 pcf

TPA65R-BU4DA-K Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		143 lbs
Weight of object:	53.0 lbs	
Combined weight of ice and object:		196 lbs

AIR6419 Antenna

Weight of ice based on total radial SF area:

Height (in):	31.1	
Width (in):	16.1	
Depth (in):	7.3	
Total weight of ice on object:		75 lbs
Weight of object:	66.0 lbs	
Combined weight of ice and object:		141 lbs

AIR6449 Antenna

Weight of ice based on total radial SF area:

Height (in):	30.6	
Width (in):	15.9	
Depth (in):	10.6	
Total weight of ice on object:		79 lbs
Weight of object:	82.0 lbs	
Combined weight of ice and object:		161 lbs

DMP65R-BU4DA Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		143 lbs
Weight of object:	68.0 lbs	
Combined weight of ice and object:		211 lbs

4478 B14 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		39 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		99 lbs

8843 B2/B66A RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		35 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		107 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:

Height (in):	17.9	
Width (in):	13.2	
Depth (in):	9.4	
Total weight of ice on object:		40 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		113 lbs

DC6-48-60-18-8F Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	31.4	
Diameter(in):	10.2	
Total weight of ice on object:		46 lbs
Weight of object:	29 lbs	
Combined weight of ice and object:		75 lbs

DC9-48-60-24-8C-EV Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	31.4	
Diameter(in):	10.2	
Total weight of ice on object:		46 lbs
Weight of object:	29 lbs	
Combined weight of ice and object:		75 lbs

1" Round Bar

Per foot weight of ice:

diameter (in):	1.00	
Per foot weight of ice on object:		3 plf

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		6 plf

1" Pipe

Per foot weight of ice:

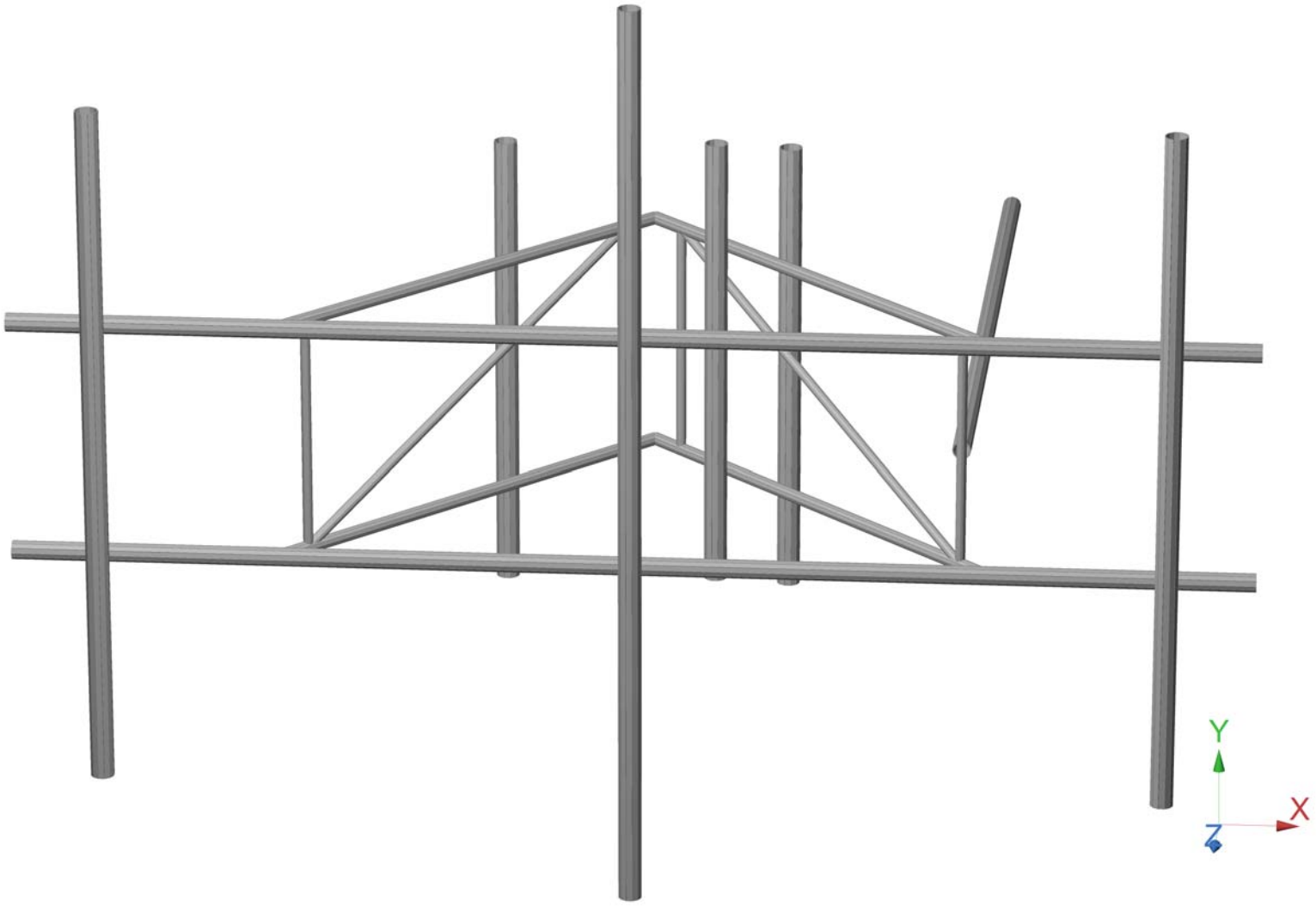
diameter (in):	1.32	
Per foot weight of ice on object:		4 plf

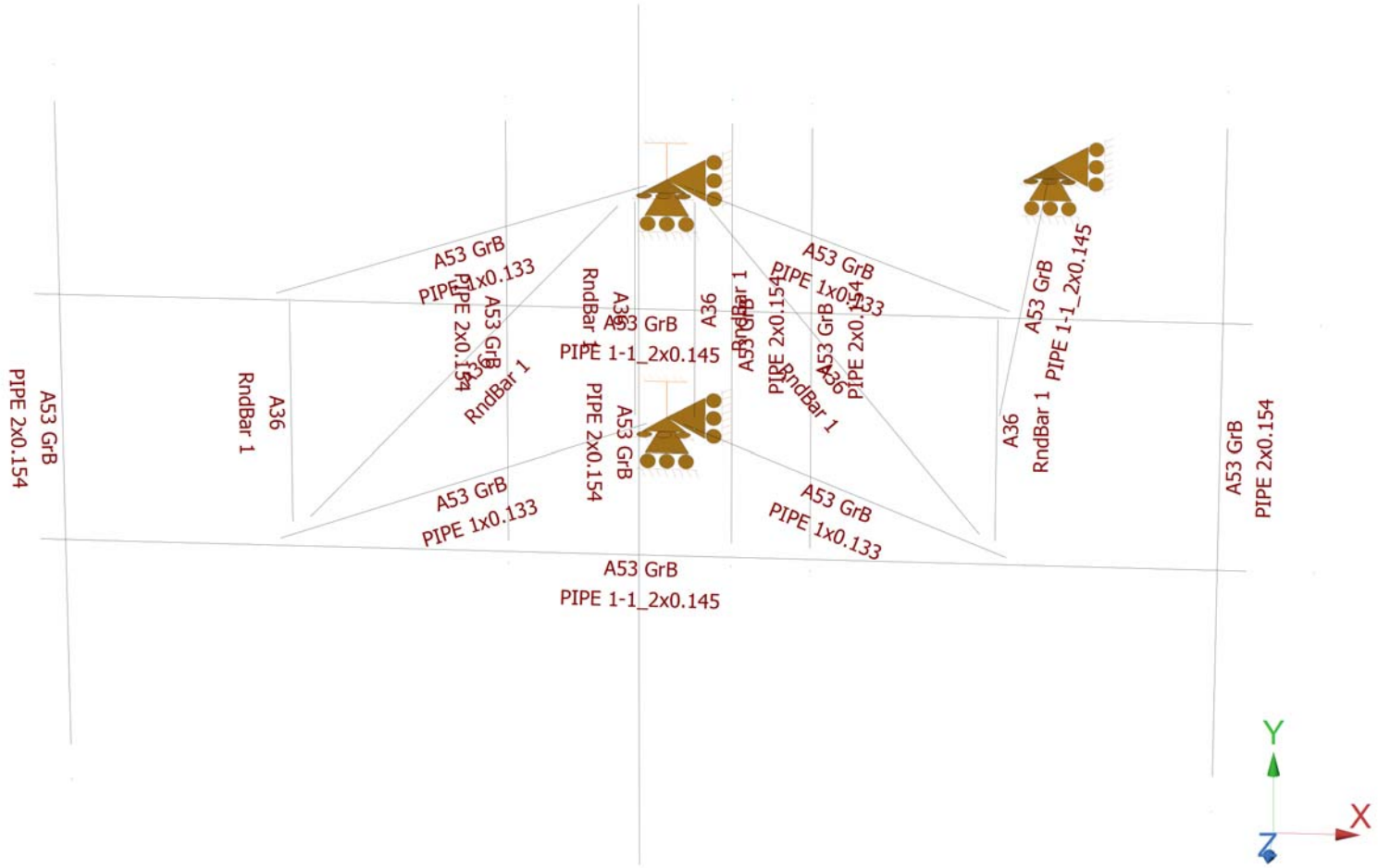
1-1/2" Pipe

Per foot weight of ice:

diameter (in):	1.9	
Per foot weight of ice on object:		5 plf

Mount Calculations
(Existing Conditions)


Y
X
Z


A53 GrB
PIPE 1x0.133
A53 GrB
PIPE 2x0.154
A36
RndBar 1
A53 GrB
PIPE 1-1_2x0.145
A53 GrB
PIPE 1x0.133
A53 GrB
PIPE 2x0.154
A36
RndBar 1
A53 GrB
PIPE 1-1_2x0.145
A53 GrB
PIPE 2x0.154
A36
RndBar 1
A53 GrB
PIPE 1x0.133
A53 GrB
PIPE 2x0.154
A36
RndBar 1
A53 GrB
PIPE 1x0.133
A53 GrB
PIPE 1-1_2x0.145
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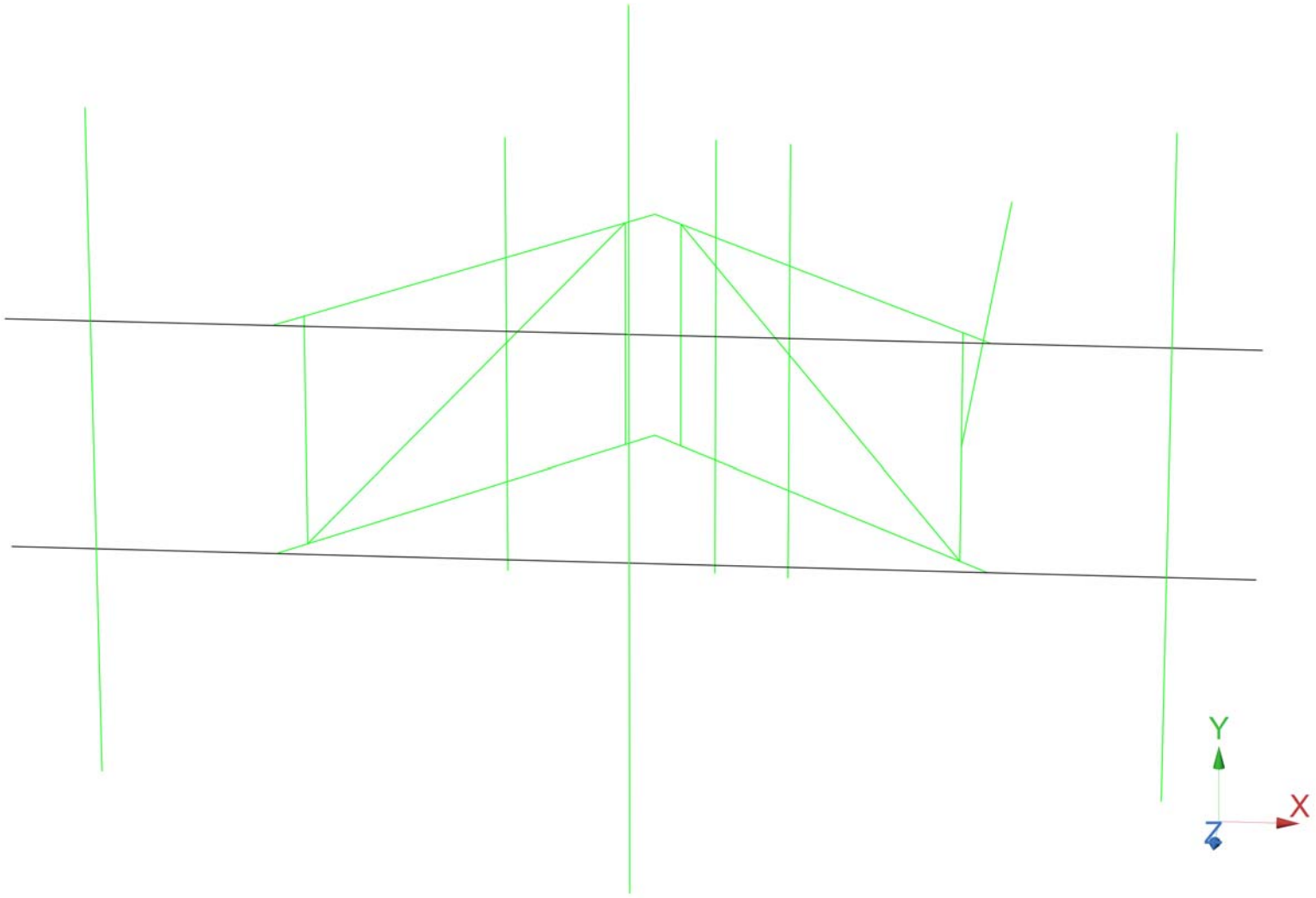
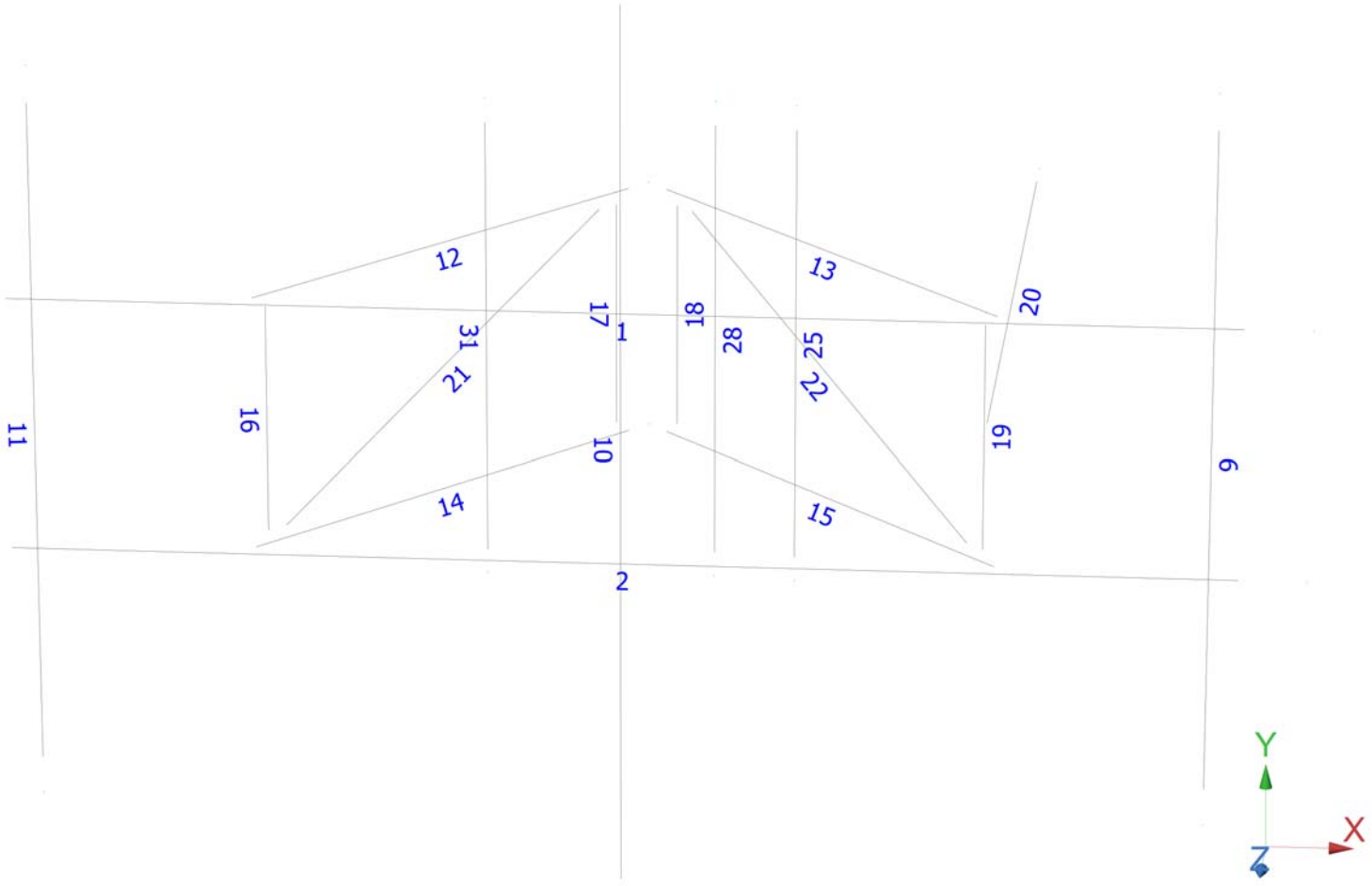
PIPE 2x0.154
A36
RndBar 1
A53 GrB
PIPE 2x0.154
Y
X
Z


Y
X
Z


12
13
20
17
1
18
28
25
31
21
22
16
11
10
19
9
14
15
2
Y
X
Z

RAM® Elements
CONNECT Edition

Current Date: 2/22/2023 11:20 AM
Units system: English

Load data

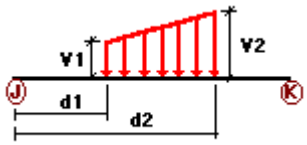
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load Right End of Mount	No	LL
LL3	250 lb Live Load Left End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL
LLa4	500 lb Live Load Antenna 4	No	LL

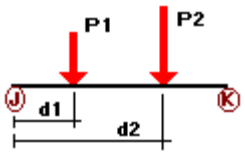
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.007	-0.007	0.00	No	100.00	Yes
	2	z	-0.007	-0.007	0.00	No	100.00	Yes
	12	z	-0.005	-0.005	0.00	No	100.00	Yes
	13	z	-0.005	-0.005	0.00	No	100.00	Yes
	14	z	-0.005	-0.005	0.00	No	100.00	Yes
	15	z	-0.005	-0.005	0.00	No	100.00	Yes
	16	z	-0.004	-0.004	0.00	No	100.00	Yes
	17	z	-0.004	-0.004	0.00	No	100.00	Yes
	18	z	-0.004	-0.004	0.00	No	100.00	Yes
	19	z	-0.004	-0.004	0.00	No	100.00	Yes
	21	z	-0.004	-0.004	0.00	No	100.00	Yes
	22	z	-0.004	-0.004	0.00	No	100.00	Yes
	25	z	-0.009	-0.009	0.00	No	100.00	Yes
	28	z	-0.009	-0.009	0.00	No	100.00	Yes
	31	z	-0.009	-0.009	0.00	No	100.00	Yes
W30	1	z	-0.007	-0.007	0.00	No	100.00	Yes
	2	z	-0.007	-0.007	0.00	No	100.00	Yes
	12	z	-0.005	-0.005	0.00	No	100.00	Yes
	13	z	-0.005	-0.005	0.00	No	100.00	Yes
	14	z	-0.005	-0.005	0.00	No	100.00	Yes
	15	z	-0.005	-0.005	0.00	No	100.00	Yes
	16	z	-0.004	-0.004	0.00	No	100.00	Yes
	17	z	-0.004	-0.004	0.00	No	100.00	Yes
	18	z	-0.004	-0.004	0.00	No	100.00	Yes
	19	z	-0.004	-0.004	0.00	No	100.00	Yes
	21	z	-0.004	-0.004	0.00	No	100.00	Yes
	22	z	-0.004	-0.004	0.00	No	100.00	Yes
	25	z	-0.009	-0.009	0.00	No	100.00	Yes
	28	z	-0.009	-0.009	0.00	No	100.00	Yes
	31	z	-0.009	-0.009	0.00	No	100.00	Yes
W60	10	x	-0.009	-0.009	0.00	No	100.00	Yes
	9	x	-0.009	-0.009	0.00	No	100.00	Yes
	11	x	-0.009	-0.009	0.00	No	100.00	Yes
	12	x	-0.005	-0.005	0.00	No	100.00	Yes
	13	x	-0.005	-0.005	0.00	No	100.00	Yes
	14	x	-0.005	-0.005	0.00	No	100.00	Yes
	15	x	-0.005	-0.005	0.00	No	100.00	Yes
	16	x	-0.004	-0.004	0.00	No	100.00	Yes
	17	x	-0.004	-0.004	0.00	No	100.00	Yes
	18	x	-0.004	-0.004	0.00	No	100.00	Yes
	19	x	-0.004	-0.004	0.00	No	100.00	Yes
	20	x	-0.007	-0.007	0.00	No	100.00	Yes
	21	x	-0.004	-0.004	0.00	No	100.00	Yes
	22	x	-0.004	-0.004	0.00	No	100.00	Yes
	25	x	-0.009	-0.009	0.00	No	100.00	Yes
	28	x	-0.009	-0.009	0.00	No	100.00	Yes
	31	x	-0.009	-0.009	0.00	No	100.00	Yes
W90	10	x	-0.009	-0.009	0.00	No	100.00	Yes
	9	x	-0.009	-0.009	0.00	No	100.00	Yes
	11	x	-0.009	-0.009	0.00	No	100.00	Yes
	12	x	-0.005	-0.005	0.00	No	100.00	Yes
	13	x	-0.005	-0.005	0.00	No	100.00	Yes
	14	x	-0.005	-0.005	0.00	No	100.00	Yes
	15	x	-0.005	-0.005	0.00	No	100.00	Yes
	16	x	-0.004	-0.004	0.00	No	100.00	Yes
	17	x	-0.004	-0.004	0.00	No	100.00	Yes
	18	x	-0.004	-0.004	0.00	No	100.00	Yes
	19	x	-0.004	-0.004	0.00	No	100.00	Yes
	20	x	-0.007	-0.007	0.00	No	100.00	Yes
	21	x	-0.004	-0.004	0.00	No	100.00	Yes

	22	x	-0.004	-0.004	0.00	No	100.00	Yes
	25	x	-0.009	-0.009	0.00	No	100.00	Yes
	28	x	-0.009	-0.009	0.00	No	100.00	Yes
	31	x	-0.009	-0.009	0.00	No	100.00	Yes
W120	10	x	-0.009	-0.009	0.00	No	100.00	Yes
	9	x	-0.009	-0.009	0.00	No	100.00	Yes
	11	x	-0.009	-0.009	0.00	No	100.00	Yes
	12	x	-0.005	-0.005	0.00	No	100.00	Yes
	13	x	-0.005	-0.005	0.00	No	100.00	Yes
	14	x	-0.005	-0.005	0.00	No	100.00	Yes
	15	x	-0.005	-0.005	0.00	No	100.00	Yes
	16	x	-0.004	-0.004	0.00	No	100.00	Yes
	17	x	-0.004	-0.004	0.00	No	100.00	Yes
	18	x	-0.004	-0.004	0.00	No	100.00	Yes
	19	x	-0.004	-0.004	0.00	No	100.00	Yes
	20	x	-0.007	-0.007	0.00	No	100.00	Yes
	21	x	-0.004	-0.004	0.00	No	100.00	Yes
	22	x	-0.004	-0.004	0.00	No	100.00	Yes
	25	x	-0.009	-0.009	0.00	No	100.00	Yes
	28	x	-0.009	-0.009	0.00	No	100.00	Yes
	31	x	-0.009	-0.009	0.00	No	100.00	Yes
W150	10	z	0.009	0.009	0.00	No	100.00	Yes
	1	z	0.007	0.007	0.00	No	100.00	Yes
	2	z	0.007	0.007	0.00	No	100.00	Yes
	9	z	0.009	0.009	0.00	No	100.00	Yes
	11	z	0.009	0.009	0.00	No	100.00	Yes
	12	z	0.005	0.005	0.00	No	100.00	Yes
	13	z	0.005	0.005	0.00	No	100.00	Yes
	14	z	0.005	0.005	0.00	No	100.00	Yes
	15	z	0.005	0.005	0.00	No	100.00	Yes
	16	z	0.004	0.004	0.00	No	100.00	Yes
	17	z	0.004	0.004	0.00	No	100.00	Yes
	18	z	0.004	0.004	0.00	No	100.00	Yes
	19	z	0.004	0.004	0.00	No	100.00	Yes
	21	z	0.004	0.004	0.00	No	100.00	Yes
	22	z	0.004	0.004	0.00	No	100.00	Yes
	25	z	0.009	0.009	0.00	No	100.00	Yes
	28	z	0.009	0.009	0.00	No	100.00	Yes
	31	z	0.009	0.009	0.00	No	100.00	Yes
Di	10	y	-0.006	0.00	0.00	No	0.00	No
	1	y	-0.005	0.00	0.00	No	0.00	No
	2	y	-0.005	0.00	0.00	No	0.00	No
	9	y	-0.006	0.00	0.00	No	0.00	No
	11	y	-0.006	0.00	0.00	No	0.00	No
	12	y	-0.004	0.00	0.00	No	0.00	No
	13	y	-0.004	0.00	0.00	No	0.00	No
	14	y	-0.004	0.00	0.00	No	0.00	No
	15	y	-0.004	0.00	0.00	No	0.00	No
	16	y	-0.003	0.00	0.00	No	0.00	No
	17	y	-0.003	0.00	0.00	No	0.00	No
	18	y	-0.003	0.00	0.00	No	0.00	No
	19	y	-0.003	0.00	0.00	No	0.00	No
	20	y	-0.005	0.00	0.00	No	0.00	No
	21	y	-0.003	0.00	0.00	No	0.00	No
	22	y	-0.003	0.00	0.00	No	0.00	No
	25	y	-0.006	0.00	0.00	No	0.00	No
	28	y	-0.006	0.00	0.00	No	0.00	No
	31	y	-0.006	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	10	y	-0.033	1.25	No
		y	-0.033	3.00	No
		y	-0.041	5.00	No
		y	-0.041	6.75	No
	9	y	-0.027	1.50	No
		y	-0.027	4.50	No
	11	y	-0.034	1.50	No
		y	-0.034	4.50	No
	25	y	-0.06	2.00	No
	28	y	-0.072	2.00	No
	31	y	-0.073	2.00	No
Wo	10	z	-0.077	1.25	No
		z	-0.077	3.00	No
		z	-0.074	5.00	No
		z	-0.074	6.75	No
	9	z	-0.151	1.50	No
		z	-0.151	4.50	No
	11	z	-0.151	1.50	No
		z	-0.151	4.50	No
	25	z	-0.074	2.00	No
	28	z	-0.06	2.00	No
	31	z	-0.072	2.00	No
W30	10	3	-0.067	1.25	No
		3	-0.067	3.00	No
		3	-0.068	5.00	No
		3	-0.068	6.75	No
	9	3	-0.13	1.50	No
		3	-0.13	4.50	No
	11	3	-0.13	1.50	No
		3	-0.13	4.50	No
	25	3	-0.067	2.00	No
	28	3	-0.057	2.00	No
	31	3	-0.067	2.00	No
W60	10	3	-0.047	1.25	No
		3	-0.047	3.00	No
		3	-0.056	5.00	No
		3	-0.056	6.75	No
	9	3	-0.086	1.50	No
		3	-0.086	4.50	No
	11	3	-0.086	1.50	No
		3	-0.086	4.50	No
	25	3	-0.053	2.00	No
	28	3	-0.052	2.00	No
	31	3	-0.056	2.00	No
W90	10	x	-0.037	1.25	No
		x	-0.037	3.00	No
		x	-0.05	5.00	No
		x	-0.05	6.75	No
	9	x	-0.064	1.50	No
		x	-0.064	4.50	No
	11	x	-0.064	1.50	No
		x	-0.064	4.50	No
	25	x	-0.046	2.00	No

	28	x	-0.049	2.00	No
	31	x	-0.051	2.00	No
W120	10	2	-0.047	1.25	No
		2	-0.047	3.00	No
		2	-0.056	5.00	No
		2	-0.056	6.75	No
	9	2	-0.086	1.50	No
		2	-0.086	4.50	No
	11	2	-0.086	1.50	No
		2	-0.086	4.50	No
	25	2	-0.053	2.00	No
	28	2	-0.052	2.00	No
	31	2	-0.056	2.00	No
W150	10	2	-0.067	1.25	No
		2	-0.067	3.00	No
		2	-0.068	5.00	No
		2	-0.068	6.75	No
	9	2	-0.13	1.50	No
		2	-0.13	4.50	No
	11	2	-0.13	1.50	No
		2	-0.13	4.50	No
	25	2	-0.067	2.00	No
	28	2	-0.057	2.00	No
	31	2	-0.067	2.00	No
Di	10	y	-0.038	1.25	No
		y	-0.038	3.00	No
		y	-0.04	5.00	No
		y	-0.04	6.75	No
	9	y	-0.072	1.50	No
		y	-0.072	4.50	No
	11	y	-0.072	1.50	No
		y	-0.072	4.50	No
	25	y	-0.039	2.00	No
	28	y	-0.035	2.00	No
	31	y	-0.04	2.00	No
WI0	10	z	-0.014	1.25	No
		z	-0.014	3.00	No
		z	-0.013	5.00	No
		z	-0.013	6.75	No
	9	z	-0.025	1.50	No
		z	-0.025	4.50	No
	11	z	-0.025	1.50	No
		z	-0.025	4.50	No
	25	z	-0.014	2.00	No
	28	z	-0.011	2.00	No
	31	z	-0.013	2.00	No
WI30	10	3	-0.012	1.25	No
		3	-0.012	3.00	No
		3	-0.012	5.00	No
		3	-0.012	6.75	No
	9	3	-0.022	1.50	No
		3	-0.022	4.50	No
	11	3	-0.022	1.50	No
		3	-0.022	4.50	No
	25	3	-0.013	2.00	No
	28	3	-0.011	2.00	No
	31	3	-0.013	2.00	No
WI60	10	3	-0.009	1.25	No
		3	-0.009	3.00	No
		3	-0.01	5.00	No

		3	-0.01	6.75	No
	9	3	-0.015	1.50	No
		3	-0.015	4.50	No
	11	3	-0.015	1.50	No
		3	-0.015	4.50	No
	25	3	-0.01	2.00	No
	28	3	-0.01	2.00	No
	31	3	-0.011	2.00	No
WI90	10	x	-0.008	1.25	No
		x	-0.008	3.00	No
		x	-0.01	5.00	No
		x	-0.01	6.75	No
	9	x	-0.012	1.50	No
		x	-0.012	4.50	No
	11	x	-0.012	1.50	No
		x	-0.012	4.50	No
	25	x	-0.009	2.00	No
	28	x	-0.01	2.00	No
	31	x	-0.01	2.00	No
WI120	10	2	-0.009	1.25	No
		2	-0.009	3.00	No
		2	-0.01	5.00	No
		2	-0.01	6.75	No
	9	2	-0.015	1.50	No
		2	-0.015	4.50	No
	11	2	-0.015	1.50	No
		2	-0.015	4.50	No
	25	2	-0.01	2.00	No
	28	2	-0.01	2.00	No
	31	2	-0.011	2.00	No
WI150	10	2	-0.012	1.25	No
		2	-0.012	3.00	No
		2	-0.012	5.00	No
		2	-0.012	6.75	No
	9	2	-0.022	1.50	No
		2	-0.022	4.50	No
	11	2	-0.022	1.50	No
		2	-0.022	4.50	No
	25	2	-0.013	2.00	No
	28	2	-0.011	2.00	No
	31	2	-0.013	2.00	No
WL0	10	z	-0.004	1.25	No
		z	-0.004	3.00	No
		z	-0.004	5.00	No
		z	-0.004	6.75	No
	9	z	-0.008	1.50	No
		z	-0.008	4.50	No
	11	z	-0.008	1.50	No
		z	-0.008	4.50	No
	25	z	-0.004	2.00	No
	28	z	-0.003	2.00	No
	31	z	-0.004	2.00	No
WL30	10	3	-0.004	1.25	No
		3	-0.004	3.00	No
		3	-0.004	5.00	No
		3	-0.004	6.75	No
	9	3	-0.007	1.50	No
		3	-0.007	4.50	No
	11	3	-0.007	1.50	No
		3	-0.007	4.50	No

	25	3	-0.003	2.00	No
	28	3	-0.003	2.00	No
	31	3	-0.003	2.00	No
WL60	10	3	-0.003	1.25	No
		3	-0.003	3.00	No
		3	-0.003	5.00	No
		3	-0.003	6.75	No
	9	3	-0.005	1.50	No
		3	-0.005	4.50	No
	11	3	-0.005	1.50	No
		3	-0.005	4.50	No
	25	3	-0.003	2.00	No
	28	3	-0.003	2.00	No
	31	3	-0.003	2.00	No
WL90	10	x	-0.002	1.25	No
		x	-0.002	3.00	No
		x	-0.003	5.00	No
		x	-0.003	6.75	No
	9	x	-0.004	1.50	No
		x	-0.004	4.50	No
	11	x	-0.004	1.50	No
		x	-0.004	4.50	No
	25	x	-0.002	2.00	No
	28	x	-0.002	2.00	No
	31	x	-0.003	2.00	No
WL120	10	2	-0.003	1.25	No
		2	-0.003	3.00	No
		2	-0.003	5.00	No
		2	-0.003	6.75	No
	9	2	-0.005	1.50	No
		2	-0.005	4.50	No
	11	2	-0.005	1.50	No
		2	-0.005	4.50	No
	25	2	-0.003	2.00	No
	28	2	-0.003	2.00	No
	31	2	-0.003	2.00	No
WL150	10	2	-0.004	1.25	No
		2	-0.004	3.00	No
		2	-0.004	5.00	No
		2	-0.004	6.75	No
	9	2	-0.007	1.50	No
		2	-0.007	4.50	No
	11	2	-0.007	1.50	No
		2	-0.007	4.50	No
	25	2	-0.003	2.00	No
	28	2	-0.003	2.00	No
	31	2	-0.003	2.00	No
LL1	2	y	-0.25	50.00	Yes
LL2	2	y	-0.25	100.00	Yes
LL3	2	y	-0.25	0.00	Yes
LLa2	9	y	-0.50	50.00	Yes
LLa3	10	y	-0.50	50.00	Yes
LLa4	11	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load Right End of Mount	No	0.00	0.00	0.00
LL3	250 lb Live Load Left End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	0.00	0.00	0.00
Di	0.00	0.00	0.00
WI0	0.00	0.00	0.00
WI30	0.00	0.00	0.00
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	0.00	0.00	0.00

LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

RAM® Elements
CONNECT Edition

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=1.2D+1.6LL1
LC38=1.2D+1.6LL2
LC39=1.2D+1.6LL3
LC40=1.2D+WL0+1.6LLa1
LC41=1.2D+WL30+1.6LLa1
LC42=1.2D+WL60+1.6LLa1
LC43=1.2D+WL90+1.6LLa1
LC44=1.2D+WL120+1.6LLa1
LC45=1.2D+WL150+1.6LLa1
LC46=1.2D-WL0+1.6LLa1
LC47=1.2D-WL30+1.6LLa1
LC48=1.2D-WL60+1.6LLa1
LC49=1.2D-WL90+1.6LLa1
LC50=1.2D-WL120+1.6LLa1
LC51=1.2D-WL150+1.6LLa1
LC52=1.2D+WL0+1.6LLa2
LC53=1.2D+WL30+1.6LLa2
LC54=1.2D+WL60+1.6LLa2

LC55=1.2D+WL90+1.6LLa2
LC56=1.2D+WL120+1.6LLa2
LC57=1.2D+WL150+1.6LLa2
LC58=1.2D-WL0+1.6LLa2
LC59=1.2D-WL30+1.6LLa2
LC60=1.2D-WL60+1.6LLa2
LC61=1.2D-WL90+1.6LLa2
LC62=1.2D-WL120+1.6LLa2
LC63=1.2D-WL150+1.6LLa2
LC64=1.2D+WL0+1.6LLa3
LC65=1.2D+WL30+1.6LLa3
LC66=1.2D+WL60+1.6LLa3
LC67=1.2D+WL90+1.6LLa3
LC68=1.2D+WL120+1.6LLa3
LC69=1.2D+WL150+1.6LLa3
LC70=1.2D-WL0+1.6LLa3
LC71=1.2D-WL30+1.6LLa3
LC72=1.2D-WL60+1.6LLa3
LC73=1.2D-WL90+1.6LLa3
LC74=1.2D-WL120+1.6LLa3
LC75=1.2D-WL150+1.6LLa3
LC76=1.2D+WL0+1.6LLa4
LC77=1.2D+WL30+1.6LLa4
LC78=1.2D+WL60+1.6LLa4
LC79=1.2D+WL90+1.6LLa4
LC80=1.2D+WL120+1.6LLa4
LC81=1.2D+WL150+1.6LLa4
LC82=1.2D-WL0+1.6LLa4
LC83=1.2D-WL30+1.6LLa4
LC84=1.2D-WL60+1.6LLa4
LC85=1.2D-WL90+1.6LLa4
LC86=1.2D-WL120+1.6LLa4
LC87=1.2D-WL150+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	PIPE 1-1_2x0.145	**1**	LC71 at 50.00%	**0.52**	**With warnings**	
		2	LC65 at 50.00%	0.49	With warnings	
		20	LC10 at 50.00%	0.07	OK	
	PIPE 1x0.133	**12**	LC81 at 92.19%	0.46	OK	
		13	LC59 at 7.50%	0.45	OK	
		14	LC87 at 92.19%	0.63	OK	
		15	LC53 at 7.50%	**0.64**	**OK**	
	PIPE 2x0.154	**9**	LC57 at 66.67%	0.29	OK	
		10	LC6 at 37.50%	0.11	OK	
		11	LC83 at 66.67%	**0.30**	**OK**	
		25	LC7 at 50.00%	0.03	OK	
		28	LC31 at 25.00%	0.06	OK	
		31	LC7 at 50.00%	0.03	OK	
	RndBar 1	**16**	LC83 at 100.00%	0.30	OK	
		17	LC85 at 0.00%	0.32	OK	
		18	LC55 at 0.00%	0.34	OK	
		19	LC4 at 50.00%	**0.58**	**OK**	
		21	LC82 at 0.00%	0.16	OK	
		22	LC57 at 100.00%	0.17	OK	

RAM® Elements
CONNECT Edition

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Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
2	-5.25	2.06	0.00	0
3	5.25	2.06	0.00	0
5	-5.25	0.00	0.00	0
6	5.25	0.00	0.00	0
17	0.00	5.03	0.20	0
18	4.50	4.03	0.20	0
19	-4.50	4.03	0.20	0
20	-4.50	-1.97	0.20	0
21	0.00	-2.97	0.20	0
22	4.50	-1.97	0.20	0
23	3.00	2.06	0.00	0
24	3.00	0.00	0.00	0
25	-3.00	2.06	0.00	0
26	-3.00	0.00	0.00	0
27	0.00	2.06	-2.90	0
28	0.00	0.00	-2.90	0
29	-0.2411	2.06	-2.667	0
30	-2.7589	2.06	-0.233	0
31	-0.2411	0.00	-2.667	0
32	-2.7589	0.00	-0.233	0
33	0.2411	2.06	-2.667	0
34	0.2411	0.00	-2.667	0
35	2.7589	2.06	-0.233	0

36	2.7589	0.00	-0.233	0
37	2.7589	1.03	-0.233	0
39	3.00	1.03	-6.233	0
44	0.58	3.06	-2.0612	0
45	0.58	-0.94	-2.0612	0
50	1.2175	3.06	-2.0013	0
51	1.2175	-0.94	-2.0013	0
56	-1.2175	3.06	-2.0013	0
57	-1.2175	-0.94	-2.0013	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
27	1	1	1	0	1	0
28	1	1	1	0	1	0
39	1	1	1	0	0	0

Members

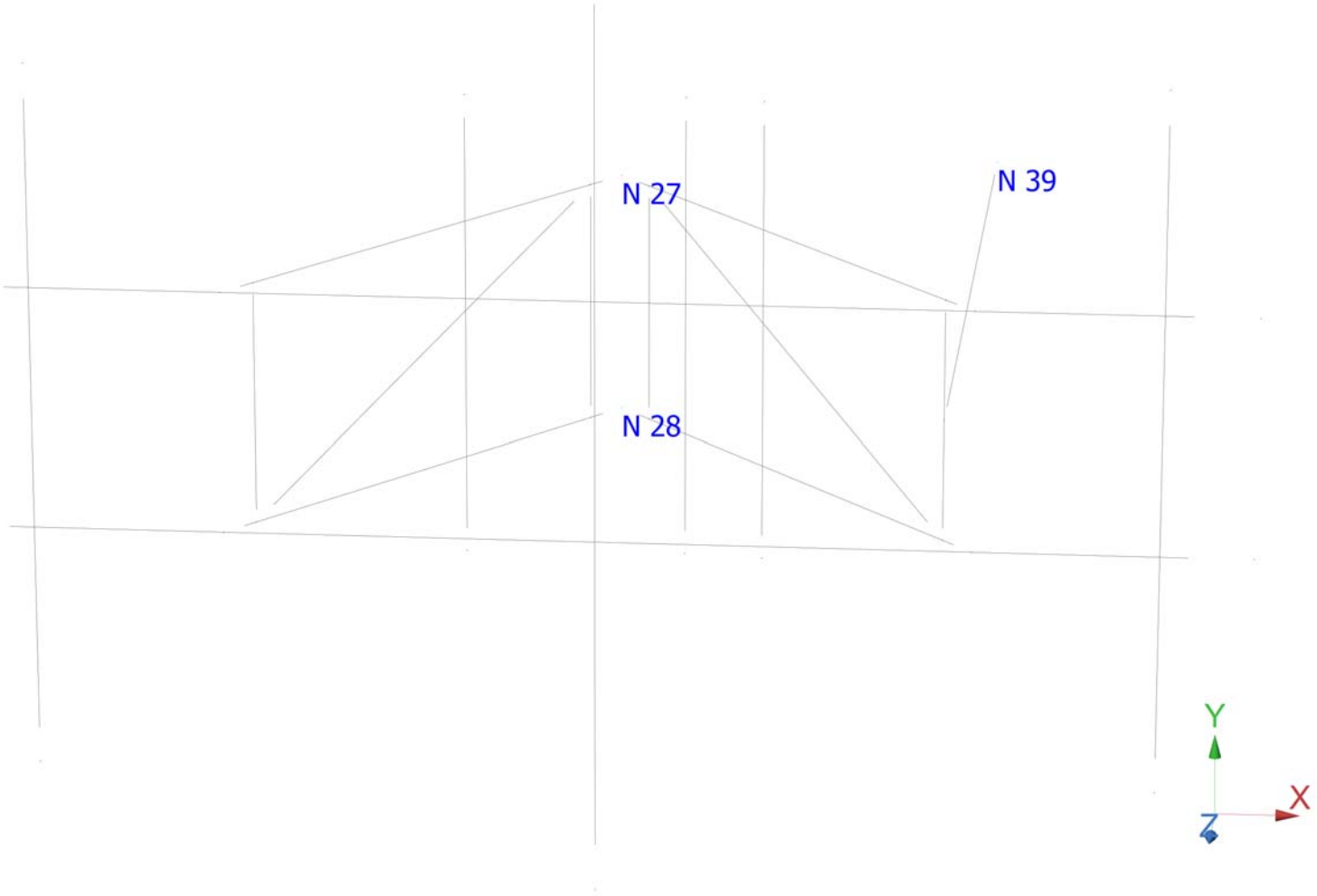
Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
10	17	21		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
1	2	3		PIPE 1-1_2x0.145	A53 GrB	0.00	0.00	0.00
2	5	6		PIPE 1-1_2x0.145	A53 GrB	0.00	0.00	0.00
9	18	22		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	19	20		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	25	27		PIPE 1x0.133	A53 GrB	0.00	0.00	0.00
13	27	23		PIPE 1x0.133	A53 GrB	0.00	0.00	0.00
14	26	28		PIPE 1x0.133	A53 GrB	0.00	0.00	0.00
15	28	24		PIPE 1x0.133	A53 GrB	0.00	0.00	0.00
16	32	30		RndBar 1	A36	0.00	0.00	0.00
17	31	29		RndBar 1	A36	0.00	0.00	0.00
18	34	33		RndBar 1	A36	0.00	0.00	0.00
19	36	35		RndBar 1	A36	0.00	0.00	0.00
20	37	39		PIPE 1-1_2x0.145	A53 GrB	0.00	0.00	0.00
21	32	29		RndBar 1	A36	0.00	0.00	0.00
22	33	36		RndBar 1	A36	0.00	0.00	0.00
25	50	51		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	44	45		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	56	57		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
10	315.00	0	0.00	0.00	0.00
9	315.00	0	0.00	0.00	0.00
11	315.00	0	0.00	0.00	0.00
25	315.00	0	0.00	0.00	0.00
28	315.00	0	0.00	0.00	0.00
31	315.00	0	0.00	0.00	0.00

Hinges

	Node-J				Node-K						
Member	M33	M22	V3	V2	M33	M22	V3	V2	TOR	AXL	Axial rigidity
20	1	1	0	0	0	0	0	0	0	0	Full


N 27
N 39
N 28
Y
X
Z

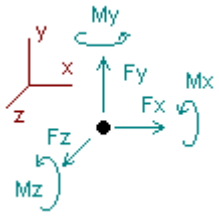
RAM® Elements
CONNECT Edition

Current Date: 2/22/2023 11:22 AM
Units system: English

Analysis result

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=1.2D+1.6LL1
LC38=1.2D+1.6LL2
LC39=1.2D+1.6LL3
LC40=1.2D+WL0+1.6LLa1
LC41=1.2D+WL30+1.6LLa1
LC42=1.2D+WL60+1.6LLa1

LC43=1.2D+WL90+1.6LLa1
LC44=1.2D+WL120+1.6LLa1
LC45=1.2D+WL150+1.6LLa1
LC46=1.2D-WL0+1.6LLa1
LC47=1.2D-WL30+1.6LLa1
LC48=1.2D-WL60+1.6LLa1
LC49=1.2D-WL90+1.6LLa1
LC50=1.2D-WL120+1.6LLa1
LC51=1.2D-WL150+1.6LLa1
LC52=1.2D+WL0+1.6LLa2
LC53=1.2D+WL30+1.6LLa2
LC54=1.2D+WL60+1.6LLa2
LC55=1.2D+WL90+1.6LLa2
LC56=1.2D+WL120+1.6LLa2
LC57=1.2D+WL150+1.6LLa2
LC58=1.2D-WL0+1.6LLa2
LC59=1.2D-WL30+1.6LLa2
LC60=1.2D-WL60+1.6LLa2
LC61=1.2D-WL90+1.6LLa2
LC62=1.2D-WL120+1.6LLa2
LC63=1.2D-WL150+1.6LLa2
LC64=1.2D+WL0+1.6LLa3
LC65=1.2D+WL30+1.6LLa3
LC66=1.2D+WL60+1.6LLa3
LC67=1.2D+WL90+1.6LLa3
LC68=1.2D+WL120+1.6LLa3
LC69=1.2D+WL150+1.6LLa3
LC70=1.2D-WL0+1.6LLa3
LC71=1.2D-WL30+1.6LLa3
LC72=1.2D-WL60+1.6LLa3
LC73=1.2D-WL90+1.6LLa3
LC74=1.2D-WL120+1.6LLa3
LC75=1.2D-WL150+1.6LLa3
LC76=1.2D+WL0+1.6LLa4
LC77=1.2D+WL30+1.6LLa4
LC78=1.2D+WL60+1.6LLa4
LC79=1.2D+WL90+1.6LLa4
LC80=1.2D+WL120+1.6LLa4
LC81=1.2D+WL150+1.6LLa4
LC82=1.2D-WL0+1.6LLa4
LC83=1.2D-WL30+1.6LLa4
LC84=1.2D-WL60+1.6LLa4
LC85=1.2D-WL90+1.6LLa4
LC86=1.2D-WL120+1.6LLa4
LC87=1.2D-WL150+1.6LLa4

		Forces						Moments					
Node		**Fx** [Kip]	**lc**	**Fy** [Kip]	**lc**	**Fz** [Kip]	**lc**	**Mx** [Kip*ft]	**lc**	**My** [Kip*ft]	**lc**	**Mz** [Kip*ft]	**lc**
27	Max	1.770	LC81	0.923	LC63	0.147	LC14	0.00000	LC1	0.12985	LC4	0.00000	LC1
	Min	-1.762	LC59	0.331	LC14	-2.153	LC59	0.00000	LC1	-0.12061	LC22	0.00000	LC1
28	Max	1.761	LC53	0.775	LC69	2.150	LC77	0.00000	LC1	0.11942	LC16	0.00000	LC1
	Min	-1.769	LC83	0.284	LC20	-0.142	LC20	0.00000	LC1	-0.12552	LC10	0.00000	LC1
39	Max	0.051	LC16	0.024	LC26	0.730	LC10	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.050	LC10	0.007	LC24	-0.731	LC16	0.00000	LC1	0.00000	LC1	0.00000	LC1

Connection Check

Date: 2/22/2023
Project Name: MADISON EAST
Project No.: CT5206
Designed By: KSBM **Checked By:** MSC

CHECK CONNECTION CAPACITY (Worst Case)

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 3/4" (Threaded Rod)

Allowable Tensile Load =

F_{Tall} = 9609 lbs.

Allowable Shear Load =

F_{Vall} = 5765 lbs.

TENSILE FORCES

Reaction **F =** 2153 lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 1770 lbs. (See Bentley Output)
Reactions in Y direction: 923 lbs. (See Bentley Output)

Resultant: 1996 lbs.

No. of Supports = 1
No. of Bolts / Support = 2

Tension Design Load /Bolts =

f_t = 1076.50 lbs. < 9609 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

f_v = 998.10 lbs. < 5765 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.112	+	0.173	=	0.285	<	1.0	**Therefore, OK !**

135 NEW RD

Location	135 NEW RD	**MBLU**	60/ 8/ / /
Unique ID#	00379700	**Owner**	CONNECTICUT LIGHT AND POWER CO
Assessment	$5,273,820	**Appraisal**	$8,461,700
PID	3932	**Building Count**	3
Dev. Map	1754 &1773		

Current Value

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2022	$5,970,400	$37,500	$1,054,700	$1,399,100	$8,461,700

Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2022	$4,179,320	$26,300	$738,300	$329,900	$5,273,820

Owner of Record

Owner	CONNECTICUT LIGHT AND POWER CO	**Sale Price**	$0
Co-Owner		**Book & Page**	0139/0397
Care Of		**Sale Date**	08/24/1971

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
CONNECTICUT LIGHT AND POWER CO	$0	0139/0397	08/24/1971

Building Information

Building 1 : Section 1

Year Built: 1978
Living Area: 29,609

Building Attributes	
Field	**Description**

Style:	Office Bldg
Model	Commercial
Grade	Good -
Stories:	2
Occupancy	2.00
Exterior Wall 1	Stone/Masonry
Exterior Wall 2	Concr/Cinder
Roof Structure	Flat
Roof Cover	T+G/Rubber
Interior Wall 1	Minim/Masonry
Interior Wall 2	Drywall
Interior Floor 1	Concr-Finished
Interior Floor 2	Carpet
Heating Fuel	Electric
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Office Building
Total Rooms	
Total Bedrms	00
Total Baths	0
Fireplace	
Xtra Fireplaces	
1st Floor Use:	3400
Heat/AC	Heat A/C Split
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceil and Wall
Rooms/Prtns	Average
Wall Height	14.00
% Comn Wall	0.00

Building Photo

(https://images.vgsi.com/photos/MadisonCTPhotos//\01\01\80\17.jpg)

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	21,599	21,599
SPA	Service Production Area	16,020	8,010
CAN	Canopy	21,868	0
FCP	Carport	2,551	0
FLL	Finished Lower Level	19,048	0
		81,086	29,609

Building 2 : Section 1

Year Built: 1978
Living Area: 7,042

Building Attributes : Bldg 2 of 3	
Field	**Description**
Style:	Service Shop
Model	Commercial
Grade	Average
Stories:	1

Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T+G/Rubber
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	None
Struct Class	
Bldg Use	Office Building
Total Rooms	
Total Bedrms	00
Total Baths	0
Fireplace	
Xtra Fireplaces	
1st Floor Use:	340I
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	None
Ceiling/Wall	None
Rooms/Prtns	LIght
Wall Height	24.00
% Comn Wall	0.00

Building Photo

(https://images.vgsi.com/photos/MadisonCTPhotos//\01\01\34\91.jpg)

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	7,042	7,042
SLB	Slab	7,042	0
		14,084	7,042

Building 3 : Section 1

Year Built: 2021
Living Area: 2,728

Building Attributes : Bldg 3 of 3	
Field	**Description**
Style:	Warehouse
Model	Commercial
Grade	Good
Stories:	1
Occupancy	
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Steel Frm/Trus

Building Photo

(https://images.vgsi.com/photos/MadisonCTPhotos///0027/135%20A_2705

Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	Industrial Whse
Total Rooms	
Total Bedrms	
Total Baths	
Fireplace	
Xtra Fireplaces	
1st Floor Use:	
Heat/AC	None
Frame Type	Steel
Baths/Plumbing	None
Ceiling/Wall	None
Rooms/Prtns	LIght
Wall Height	21.00
% Comn Wall	

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,728	2,728
SLB	Slab	2,728	0
		5,456	2,728

Extra Features

Extra Features				
Code	**Description**	**Size**	**Value**	**Bldg #**
LDL1	Load Levelers	1.00 UNITS	$2,500	1
MEZ1	Mezzanine Unf	3960.00 S.F.	$27,600	1
MEZ1	Mezzanine Unf	1600.00 S.F.	$7,400	2

Land

Land Use

Use Code 3400
Description Office Building
Zone RU-2

Land Line Valuation

Size (Acres) 37.98

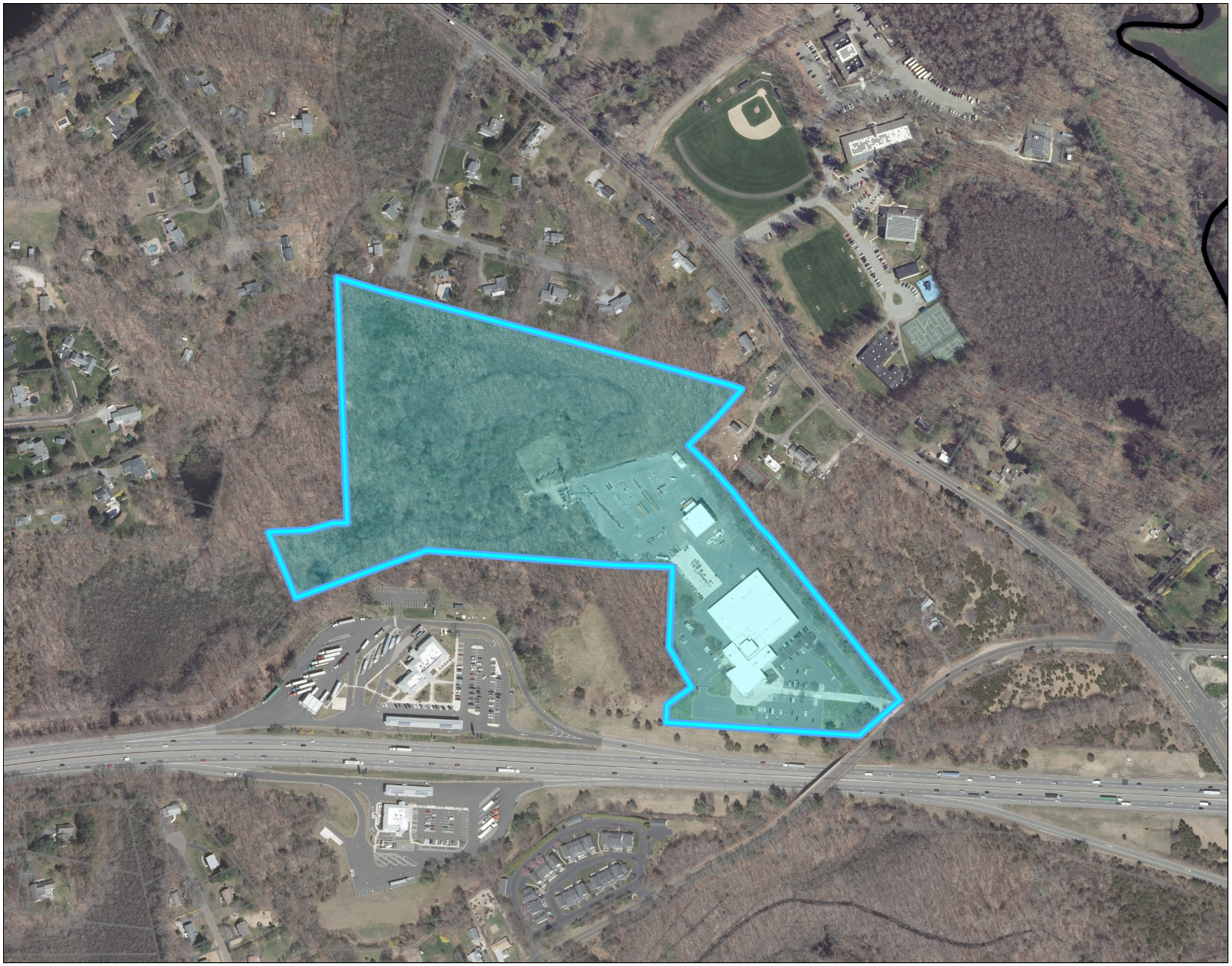
lbllndfront

Outbuildings

Outbuildings

Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving Asphalt			400000.00 S.F.	$280,000	1
LT12	Lights(4)			26.00 UNITS	$52,000	1
LT10	Lights (2)			3.00 UNITS	$3,000	1
LT9	Lights			18.00 UNITS	$12,600	1
FN3	Fence 6'			6000.00 L.F.	$36,000	1
SHD1	Shed			96.00 S.F.	$600	1
SHD1	Shed			120.00 S.F.	$800	1
SHD6	Pump Sta.			192.00 S.F.	$14,400	1
SHD1	Shed			96.00 S.F.	$600	1
SHD1	Shed			80.00 S.F.	$300	1
CEL	Cell Tower			4.00 UNITS	$654,400	1

South Central Regional COG



Legend

Location

Notes

956 0 478 956

Feet

1: 5,736

N

Hollis Redding

From: Pettola, Maria <pettolam@madisonct.org>
Sent: Wednesday, September 7, 2022 2:10 PM
To: Hollis Redding
Cc: Mannix, Erin
Subject: RE: Zoning approval 135 New Road

I looked for this information for someone else recently and could not find the original approval.

Maria Pettola, CZET
Planning & Zoning Department
Town of Madison
8 Campus Drive
Madison, CT 06443
(203) 245-5631
Telecommunication device for the deaf: 203.245.5638

From: Hollis Redding <HRedding@saigrp.com>
Sent: Wednesday, September 7, 2022 1:59 PM
To: Pettola, Maria <pettolam@madisonct.org>
Subject: Zoning approval 135 New Road

Hello Maria-

I'm looking to track down the CT Light & Power zoning approval for the tower located at 135 New Road. Do you know if CL&P would have gone through zoning since they are a utility? The first time I see anything on the CT Siting Council web page is 2015, so that would be the earliest the tower would have been approved. I'm not sure how to go about getting a copy of the approval. Hopefully, you can steer me in the right direction. Thank you for your time. I appreciate it. Hollis

Hollis M. Redding
Site Acquisition Specialist
860-834-6964
hredding@saigrp.com

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

October 8, 2002

Christopher B. Fisher, Esq.
Cuddy & Feder & Worby LLP
90 Maple Avenue
White Plains, NY 10601-5196

RE: **EM-AT&T-076-020927** - AT&T Wireless notice of intent to modify an existing telecommunications facility located at 135 New Road, Madison, Connecticut.

Dear Attorney Fisher:

At a public meeting held on October 7, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the tower be reinforced according to the recommendations of H.E. Bergeron Engineers and that a professional engineer certify the successful completion of these reinforcements to the Council.

The proposed modifications are to be implemented as specified here and in your notice received in our office on September 27, 2002. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/laf

c: Honorable Thomas S. Scarpati, First Selectman, Town of Madison
Marilyn M. Ozols, Planning & Zoning Administrator, Town of Madison
Salvatore Giuliano, Manager of Real Estate and Planning, The Connecticut Light & Power Co.
Julie Donaldson Kohler, Esq., Hurwitz & Sagarin LLC
Stephen J. Humes, Esq., LeBoeuf, Lamb, Greene & MacRae

I:\siting\em\cing\at&t\dc100702.doc

Steven Florio
Telecom Engineering
Construction Manager

107 Selden St
Berlin, CT 06037
Office: (860) 728-5611
Steven Florio@Eversource.com

Mr. Tim Burks
Agent for AT&T
SAI Communications
12 Industrial Way
Salem, New Hampshire, 03079

April 12,2023

RE: Letter of Authorization

Project: AT&T Wireless Site Ref.# CTL05206
135 New Road
Madison, CT. 06443

Owner: Eversource Energy

Dear Mr. Burks,
Eversource Energy, owner of the tower facility located at the address identified above, do hereby authorize AT&T Wireless, and/ or it's agent to use this authorization letter for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for the Licensee's telecommunication's installation.

Sincerely,
Steven Florio
Steven J. Florio
Eversource Energy

AT&T Project: 5G Upgrade.
Construction Drawings, Dated 02/27/2023.
Centek Engineering SA, Project # 22007.10, Dated 02/22/2023.
TEP Northeast Mount Analysis, Dated 02/22/2023.

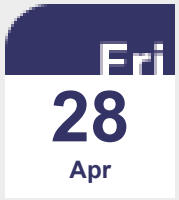
From: auto-reply@usps.com
Sent: Thursday, April 27, 2023 12:22 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Friday, April 28, 2023 arriving by 9:00pm 9405503699300532728006

Hello **HOLLIS M REDDING**,

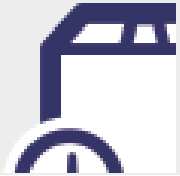
USPS is now in possession of your item as of 11:56 am on April 27, 2023 in MERIDEN, CT 06450.

Tracking Number: **9405503699300532728006**

Expected Delivery By



By 9:00pm



From: auto-reply@usps.com
Sent: Thursday, April 27, 2023 12:22 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Friday, April 28, 2023 arriving by 9:00pm 9405503699300532728013

Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 11:56 am on April 27, 2023 in MERIDEN, CT 06450.

Tracking Number: **9405503699300532728013**

Expected Delivery By

Fri
28
Apr

By 9:00pm

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

P

usps.com
$9.95
US POSTAGE
Legal Flat Rt Env

9405 5036 9930 0532 7280 06 0099 5000 0020 6443

U.S. POSTAGE PAID
Click-N-Ship®

04/27/2023 Mailed from 03079 986758811854047

PRIORITY MAIL®

HOLLIS M REDDING
SAI GROUP
12 INDUSTRIAL WAY
SALEM NH 03079-2837

Expected Delivery Date: 04/29/23
Ref#: CT5206
0000

R027

PEGGY LYONS 1ST SELECTWOMAN ERIN
TOWN OF MADISON
8 CAMPUS DR
MADISON CT 06443-2562

USPS TRACKING #

9405 5036 9930 0532 7280 06

Electronic Rate Approved #038555749

Cut on dotted line.

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

P

usps.com
$9.65
US POSTAGE
Flat Rate Env

9405 5036 9930 0532 7280 13 0096 5000 0020 6037

U.S. POSTAGE PAID
Click-N-Ship®

04/27/2023 Mailed from 03079 986758811853218

PRIORITY MAIL®

HOLLIS M REDDING
SAI GROUP
12 INDUSTRIAL WAY
SALEM NH 03079-2837

Expected Delivery Date: 04/29/23
Ref#: CT5206
0000

C015

CHRIS GELINAS
EVERSOURCE
107 SELDEN ST
BERLIN CT 06037-1616

USPS TRACKING #

9405 5036 9930 0532 7280 13

Electronic Rate Approved #038555749

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

P

usps.com
$9.95
US POSTAGE
Legal Flat Rt Env

9405 5036 9930 0532 7280 20 0099 5000 0020 6051

U.S. POSTAGE PAID
Click-N-Ship®

04/27/2023 Mailed from 03079 986758811852367

PRIORITY MAIL®

HOLLIS M REDDING
SAI GROUP
12 INDUSTRIAL WAY
SALEM NH 03079-2837

Expected Delivery Date: 04/29/23

0000

C006

MELANIE BACHMAN EXECUTIVE DIRECTOR
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

USPS TRACKING #

9405 5036 9930 0532 7280 20

Electronic Rate Approved #038555749

Cut on dotted line.