June 3, 2022

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 CT2359
1 Deerfield Lane, Ansonia, CT 06401 (the "Property")
Latitude: 41.3505556 N Longitude: 73.0492500 W

Dear Ms. Bachman:

AT&T currently maintains (12) antennas at the 148-foot level on the existing 170-foot monopole tower ("Tower") at 1 Deerfield Lane, Ansonia, CT. The property is owned by Macabee Properties LLC and the tower is owned by SBA Towers, Inc. ("SBA"). AT&T intends to modify its Facility removing all (12) antennas and replacing them with (3) AIR6449 B77 at the 147' 2" level, adding (2) QD8616-7, (1) QD6616-7, (2) OPA65R-BU8DA & (1) OPA65R-BU6DA antennas at the 148' level and adding (3) AIR6419 B77G at the 150'8" level of the tower. The AIR6649 B77 & AIR6419 B77G antennas are stacked one on top of the other. AT&T also intends to replace (9) RRUs with (3) 4478 B14, (3) 8843 B2/B66A & (3) 4449 B5/B12 RRUs at 148'. The height of AT&Ts existing antennas & RRUs is 148'and proposed antennas is 147'2", 148' & 150'8" and proposed RRUs is 148' 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 Tower was approved by the CT Siting Council ("Council") under Docket 340 on November 29, 2007, which was later amended on March 26, 2008. This approval included a tower height limitation of 170 feet and a requirement that antennas be mounted to the tower using T-Arms. AT&T received Council approval with TS-CING-002-080424 on May 8, 2008. AT&Ts modification complies with the above-mentioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent to the Honorable David S. Cassetti, Mayor, City of Ansonia, Ms. Ronda Porrini, Land Use Administrator, City of Ansonia, Macabee Properties LLC, the property owner and SBA Towers, Inc., the tower 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: The Honorable David S. Cassetti, Mayor, City of Ansonia
Ms. Ronda Porrini, Land Use Administrator, City of Ansonia
Macabee Properties LLC, as property owner
SBA Towers, Inc. as tower owner

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
603-644-2800
support@csquaredsystems.com

Calculated Radio Frequency Exposure

CT2359

1 Deerfield Lane, Ansonia, CT

May 10, 2022

Table of Contents

List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of the AT&T antenna arrays on an existing water tower located at 1 Deerfield Lane in Ansonia, CT. The coordinates of the proposed tower are 41° 21' 02 N, 73° 02' 57" W.

AT&T is proposing the following:

1) Install twelve (12) multi-band antennas (four (4) per sector) to support its commercial LTE network and the FirstNet National Public Safety Broadband Network ("NPSBN").

This report considers the planned antenna configuration for AT&T[1] to derive the resulting % Maximum Permissible Exposure of its proposed installation.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

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

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

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

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

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

[1] As referenced to AT&T's Radio Frequency Design Sheet dated 05/17/2021.

3. RF Exposure Calculation Methods

The power density calculation results were generated using the following formula as outlined in FCC bulletin OET 65, and Connecticut Siting Council recommendations:

$$\text{Power Density} = \left(\frac{1.6^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2}\right) \text{X Off Beam Loss}$$

Where:

ERP = Effective Radiated Power

R = Radial Distance = $\sqrt{\left(H^2 + V^2\right)}$

H = Horizontal Distance from antenna

V = Vertical Distance from radiation center of antenna

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

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

4. Calculation Results

Table 1 below outlines the cumulative power density information for the AT&T modification on the existing tower at the site. The proposed antennas are directional in nature; therefore, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	% MPE
DISH	117	1900	2	1469	0.0858	1.0000	0.86%
DISH	117	2020	2	1469	0.0858	1.0000	0.86%
T-Mobile	167	1900	4	1028	0.0570	1.0000	0.57%
T-Mobile	167	1900	2	1028	0.0285	1.0000	0.29%
T-Mobile	167	2100	2	1028	0.0285	1.0000	0.29%
T-Mobile	167	600	2	592	0.0164	0.4000	0.41%
T-Mobile	167	600	1	1578	0.0219	0.4000	0.55%
T-Mobile	167	700	2	649	0.0180	0.4667	0.39%
T-Mobile	167	1900	2	2204	0.0612	1.0000	0.61%
T-Mobile	167	1900	2	2057	0.0571	1.0000	0.57%
T-Mobile	167	2100	2	2308	0.0640	1.0000	0.64%
T-Mobile	167	2500	2	6413	0.1779	1.0000	1.78%
T-Mobile	167	2500	2	6413	0.1779	1.0000	1.78%
Sprint	127	850	1	432	0.0106	0.5667	0.19%
Sprint	127	850	2	432	0.0212	0.5667	0.37%
Sprint	127	1900	5	536	0.0658	1.0000	0.66%
Sprint	127	1900	2	1340	0.0658	1.0000	0.66%
Sprint	127	2500	8	640	0.1258	1.0000	1.26%
Clearwire	127	11 GHz	1	211	0.0052	1.0000	0.05%
Verizon	157	751	4	638	0.0403	0.5007	0.80%
Verizon	157	877	2	499	0.0157	0.5847	0.27%
Verizon	157	874	4	653	0.0412	0.5827	0.71%
Verizon	157	1975	4	1496	0.0944	1.0000	0.94%
Verizon	157	2120	4	1603	0.1011	1.0000	1.01%
Verizon	157	3730	2	21627	0.6822	1.0000	6.82%
Pocket (now MetroPCS)	137	2130	3	631	0.0397	1.0000	0.40%
AT&T	148	739	1	2625	0.0047	0.4927	0.95%
AT&T	148	763	2	2565	0.0092	0.5087	1.80%
AT&T	148	885	1	3229	0.0058	0.5900	0.98%
AT&T	148	1900	3	5118	0.0274	1.0000	2.74%
AT&T	148	2100	2	8614	0.0307	1.0000	3.07%
AT&T	148	2300	1	6443	0.0115	1.0000	1.15%
AT&T	150.66	3500	1	24286	0.0417	1.0000	4.17%
AT&T	147.16	3500	1	24286	0.0438	1.0000	4.38%
						Total	**42.97%**

Table 1: Carrier Information[2]

[2] The existing record in the CSC Power Density Table for AT&T should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for Sprint, Clearwire, Pocket, DISH, Verizon and T-Mobile was taken directly from the CSC database dated 01/21/2022. Please note that % MPE values listed are rounded to two decimal points and the total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not identically match the total value reflected in the table.

5. Conclusion

The above analysis concludes that RF exposure at ground level from the proposed site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using conservative calculation methods, the highest expected percent of Maximum Permissible Exposure at ground level is **42.97% of the FCC General Population/Uncontrolled limit**.

As noted previously, the calculated % MPE levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

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

May 10, 2022
Date

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

Attachment A: References

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

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

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

(A) Limits for Occupational/Controlled Exposure[3]

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

(B) Limits for General Population/Uncontrolled Exposure[4]

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

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

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

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

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

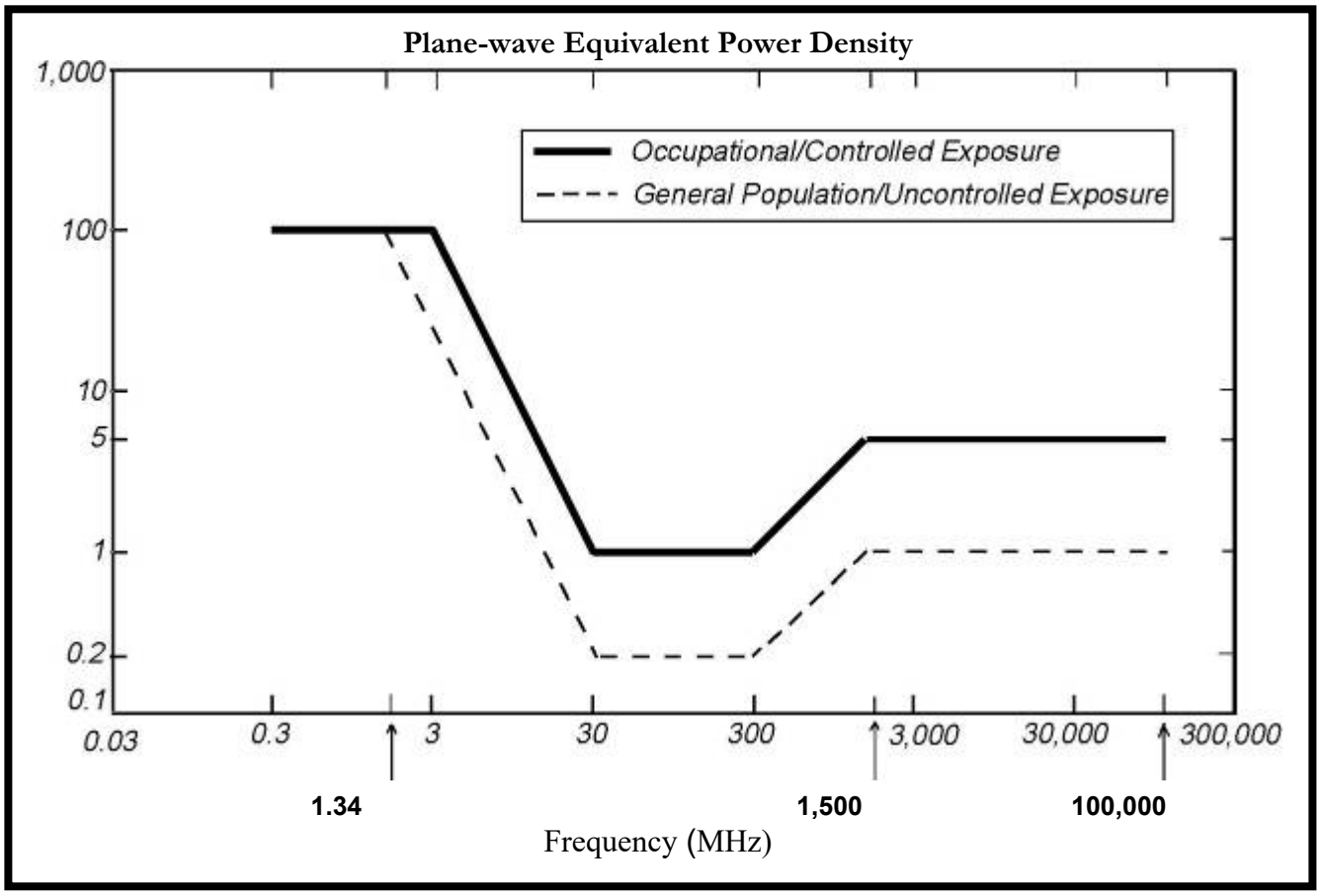
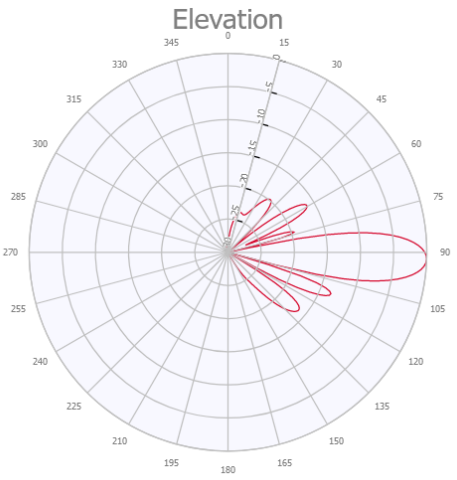


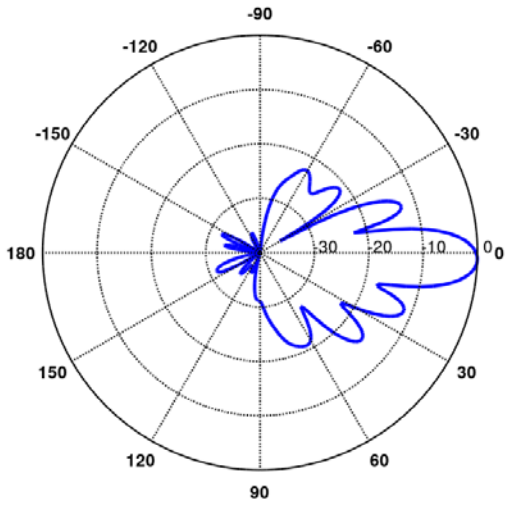
Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

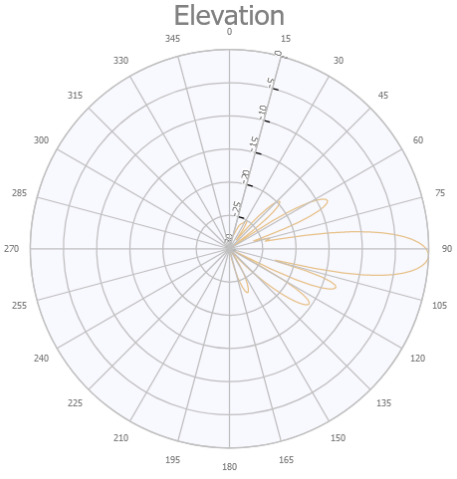
739 MHz	
Manufacturer:	CCI Products
Model #:	OPA-65R-BU6
Frequency Band:	698-798 MHz
Gain:	14.3 dBi
Vertical Beamwidth:	12.9°
Horizontal Beamwidth:	73°
Polarization:	Dual Linear 45°
Size L x W x D:	71.2” x 20.7” x 7.7”

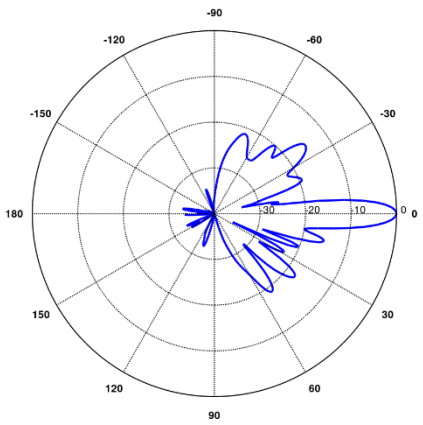
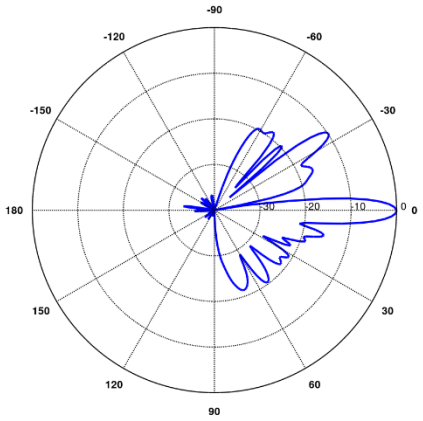
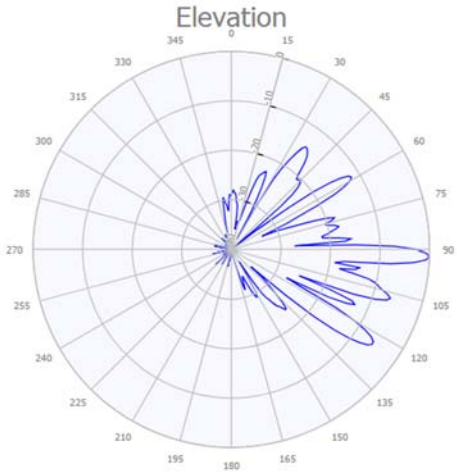


763 MHz	
Manufacturer:	Quintel
Model #:	QD6616-7
Frequency Band:	698 - 806MHz
Gain:	14.2 dBi
Vertical Beamwidth:	12.5°
Horizontal Beamwidth:	71°
Polarization:	Dual Linear 45°
Size L x W x D:	72.0” x 22.0” x 9.6”



885 MHz	
Manufacturer:	CCI Products
Model #:	OPA-65R-BU6
Frequency Band:	824 - 896 MHz
Gain:	15.2 dBi
Vertical Beamwidth:	11.1°
Horizontal Beamwidth:	64°
Polarization:	Dual Linear 45°
Size L x W x D:	71.2” x 20.7” x 7.7”



1900 MHz		
Manufacturer:	Quintel	
Model #:	QD6616-7	
Frequency Band:	1920-1990 MHz	
Gain:	17.2 dBi	
Vertical Beamwidth:	6.5°	
Horizontal Beamwidth:	67°	
Polarization:	Dual Linear 45°	
Size L x W x D:	72.0” x 22.0” x 9.6”	
2100 MHz		
Manufacturer:	Quintel	
Model #:	QD6616-7	
Frequency Band:	1920-2180 MHz	
Gain:	17.7 dBi	
Vertical Beamwidth:	5.7°	
Horizontal Beamwidth:	62°	
Polarization:	Dual Linear 45°	
Size L x W x D:	72.0” x 22.0” x 9.6”	
2300 MHz		
Manufacturer:	CCI	
Model #:	OPA-65R-BU6	
Frequency Band:	2300-2400 MHz	
Gain:	18.2 dBi	
Vertical Beamwidth:	4.1°	
Horizontal Beamwidth:	55°	
Polarization:	Dual Linear 45°	
Size L x W x D:	71.2” x 20.7” x 7.7”	

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:
- 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 ANTENNAS: QD6616-7 (ALPHA SECTOR, TOTAL OF 1).
- NEW AT&T ANTENNAS: QD8616-7 (TYP. OF 1 PER BETA & GAMMA SECTOR, TOTAL OF 2).
- NEW AT&T ANTENNAS: OPA65R-BU6DA (ALPHA SECTOR, TOTAL OF 1).
- NEW AT&T ANTENNAS: OPA65R-BU8DA (TYP. OF 1 PER BETA & GAMMA SECTOR, TOTAL OF 2)
- NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66A (AWS/PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4449 B5/B12 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE ARRESTOR: DC9-48-60-24-8C-EV (TOTAL OF 2).
- NEW AT&T (2) 6AWG DC TRUNK
- NEW AT&T (2) 24 PAIR FIBER.
- NEW AT&T (6) Y-CABLES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- ADD (1) 6648 + XCEDE CABLE.
- ADD (1) 6630 + IDLE CABLE.
- NEW AT&T RRUS: 2012 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE ARRESTOR: APTDC-BDFDM-DB (TYP. OF 2 PER SECTOR, TOTAL OF 6).

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNA: 7770 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNA: OPA-65R-LCUU-H6 (ALPHA SECTOR,TOTAL OF 1).
- EXISTING AT&T ANTENNA: HPA-65R-BUU-H6 (ALPHA SECTOR,TOTAL OF 2).
- EXISTING AT&T ANTENNA: OPA-65R-LCUU-H8 (TYP. OF 1 PER BETA & GAMMA SECTOR, TOTAL OF 2).
- EXISTING AT&T ANTENNA: HPA-65R-BUU-H8 (TYP. OF 2 PER BETA & GAMMA SECTOR, TOTAL OF 4).
- EXISTING AT&T RRUS: RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-32 B66A (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T SURGE ARRESTOR: DC6-48-60-18 (TOTAL OF 2).
- EXISTING AT&T TMA'S: LGP21401 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T DIPLEXERS: LGP13519 (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- EXISTING AT&T (6) 1 5/8" COAX CABLES.
- EXISTING AT&T (2) FIBER.

ITEMS TO REMAIN:
- (3) RRU'S, (6) COAX CABLE, (4) DC POWER.

SITE ADDRESS:	1 DEERFIELD LANE ANSONIA, CT 06401
LATITUDE:	41.3505556° N, 41° 21' 2.0" N
LONGITUDE:	73.0492500° W, 73° 2' 57.3" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	170'-0"±
RAD CENTER:	148'-0"± (LTE), 150'-8"± (DOD), 147'-2" (C-BAND)
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

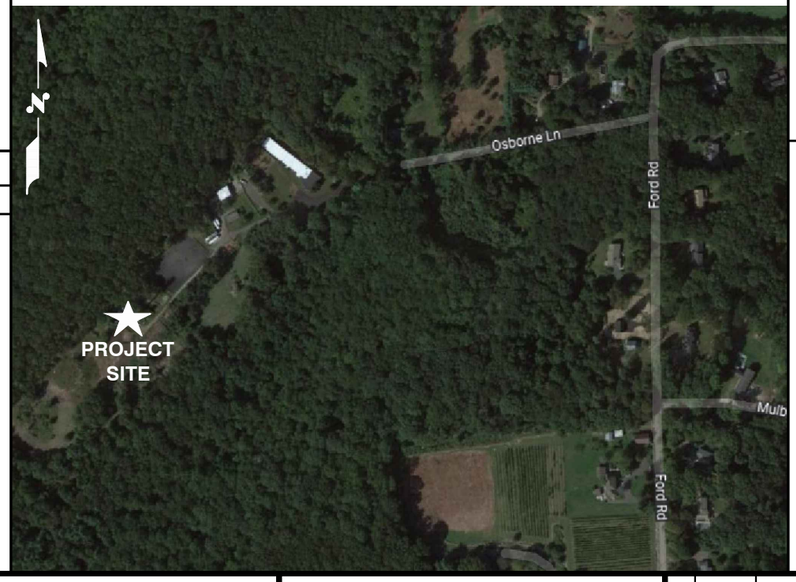
DRAWING INDEX

SITE NUMBER: CTL02359
SITE NAME: ANSONIA CT DEERFIELD LN
FA CODE: 10126685
PACE ID: MRCTB056574, MRCTB055978, MRCTB056577, MRCTB053491, MRCTB056771, MRCTB055252, MRCTB055224, MRCTB054127
PROJECT: 5G NR RADIO, 5G NR 1SR CBAND, CELL SITE RF MODIFICATIONS, BBU ADD, LTE NEXT CARRIER, LTE 5C 6C, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RADIO, 5G NR RADIO, 5G NR 1DR-1 UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING EAST ON ENTERPRISE DR TOWARD CAPITAL BLVD.TURN LEFT ONTO CAPITAL BLVD.TURN LEFT ONTO WEST ST.MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN.MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST.TAKE THE CT-69 EXIT, EXIT 59, TOWARD WOODBRIDGE/NEW HAVEN/CT-63.TURN LEFT ONTO WHALLEY AVE/CT-69. CONTINUE TO FOLLOW CT-69.TURN LEFT ONTO BRADLEY RD.TURN RIGHT ONTO AMITY RD/CT-63.TURN LEFT ONTO CENTER RD/CT-114. CONTINUE TO FOLLOW CT-114.TURN RIGHT ONTO RIMMON RD/CT-313.TURN LEFT ONTO NORTHROP RD.STAY STRAIGHT TO GO ONTO FORD RD.TURN RIGHT ONTO OSBORNE LN.1 DEERFIELD LN, ANSONIA, CT 06401-2629, 1 DEERFIELD LN.



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.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02359
SITE NAME: ANSONIA CT DEERFIELD LN

1 DEERFIELD LANE
ANSONIA, CT 06401
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK'D
1	05/02/22	ISSUED FOR CONSTRUCTION	MB	HC DPH
A	04/15/22	ISSUED FOR REVIEW	JP	HC DPH

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

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

AT&T
TITLE SHEET
5G NR RADIO, 5G NR 1SR CBAND, CELL SITE RF MODIFICATIONS, BBU ADD, LTE NEXT CARRIER, LTE 5C 6C, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RADIO, 5G NR RADIO, 5G NR 1DR-1

SITE NUMBER	DRAWING NUMBER	REV
CTL02359	T-1	1

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 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

    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		

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12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02359
SITE NAME: ANSONIA CT DEERFIELD LN

1 DEERFIELD LANE
ANSONIA, CT 06401
NEW HAVEN COUNTY

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

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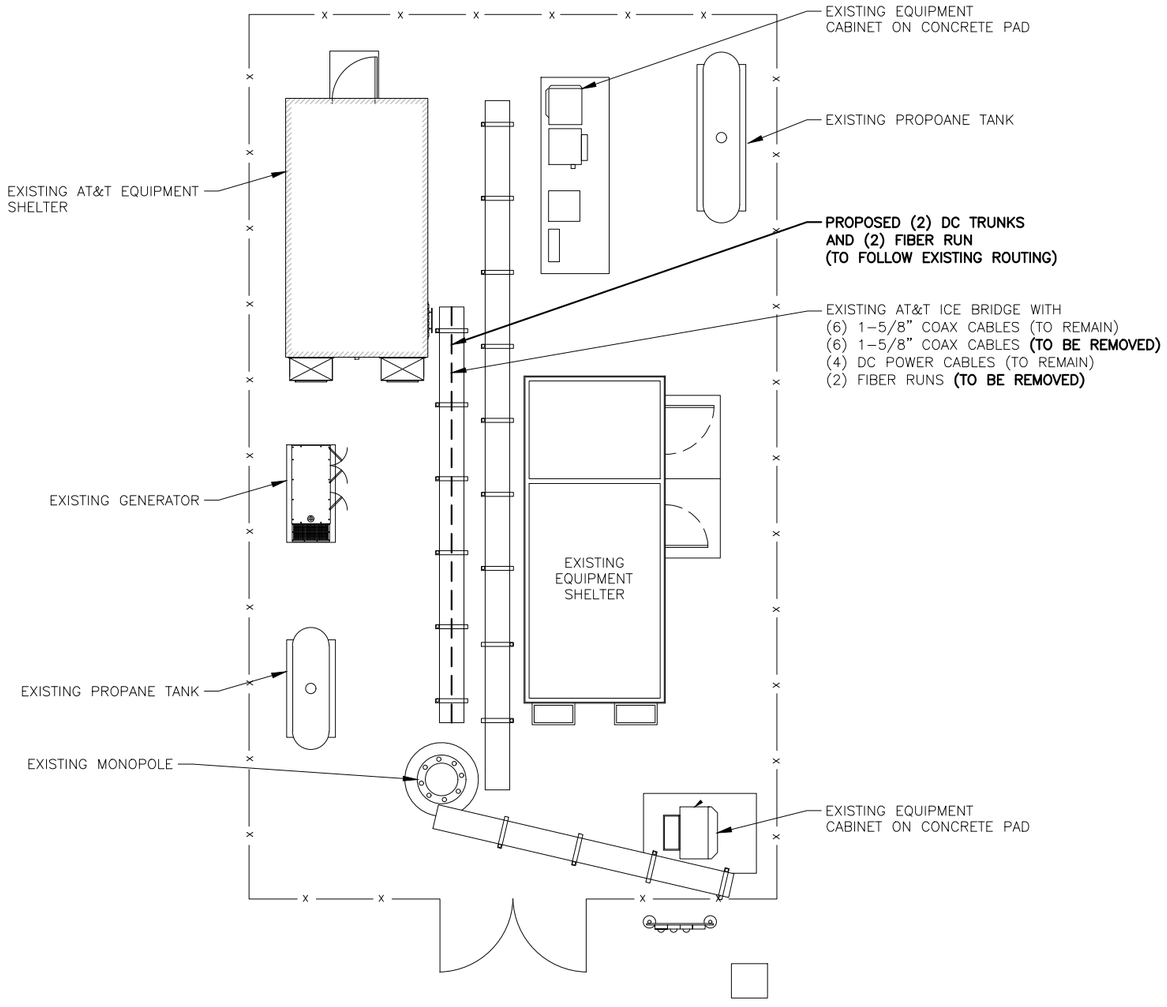
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 21178
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES

5G NR RADIO, 5G NR 1SR CBAND, CELL SITE RF MODIFICATIONS, BBU ADD, LTE NEXT CARRIER, LTE 3C 6C, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RADIO, 5G NR RADIO, 5G NR 1DR-1

SITE NUMBER	DRAWING NUMBER	REV
CTL02359	GN-1	1



MAGNETIC NORTH 13°13' TRUE NORTH

COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

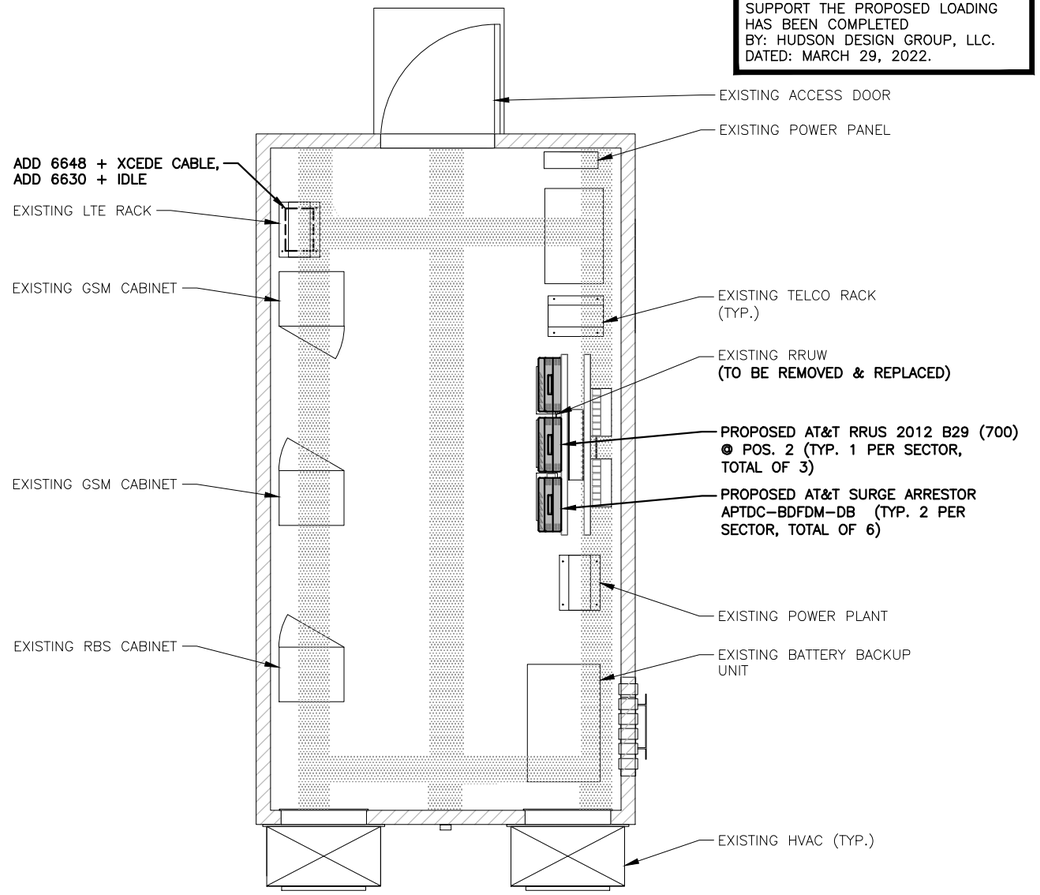
0 2'-8" 5'-4" 10'-8" 16'-0"

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: HUDSON DESIGN GROUP, LLC.
DATED: MARCH 29, 2022.



MAGNETIC NORTH 13°13' TRUE NORTH

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

AT&T

COMPOUND & EQUIPMENT PLANS
5G NR RADIO, 5G NR TSR CBAND, CELL SITE RF MODIFICATIONS, BBU ADD, LTE NEXT CARRIER, LTE 5C 6C, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RADIO, 5G NR RADIO, 5G NR 1DR-1

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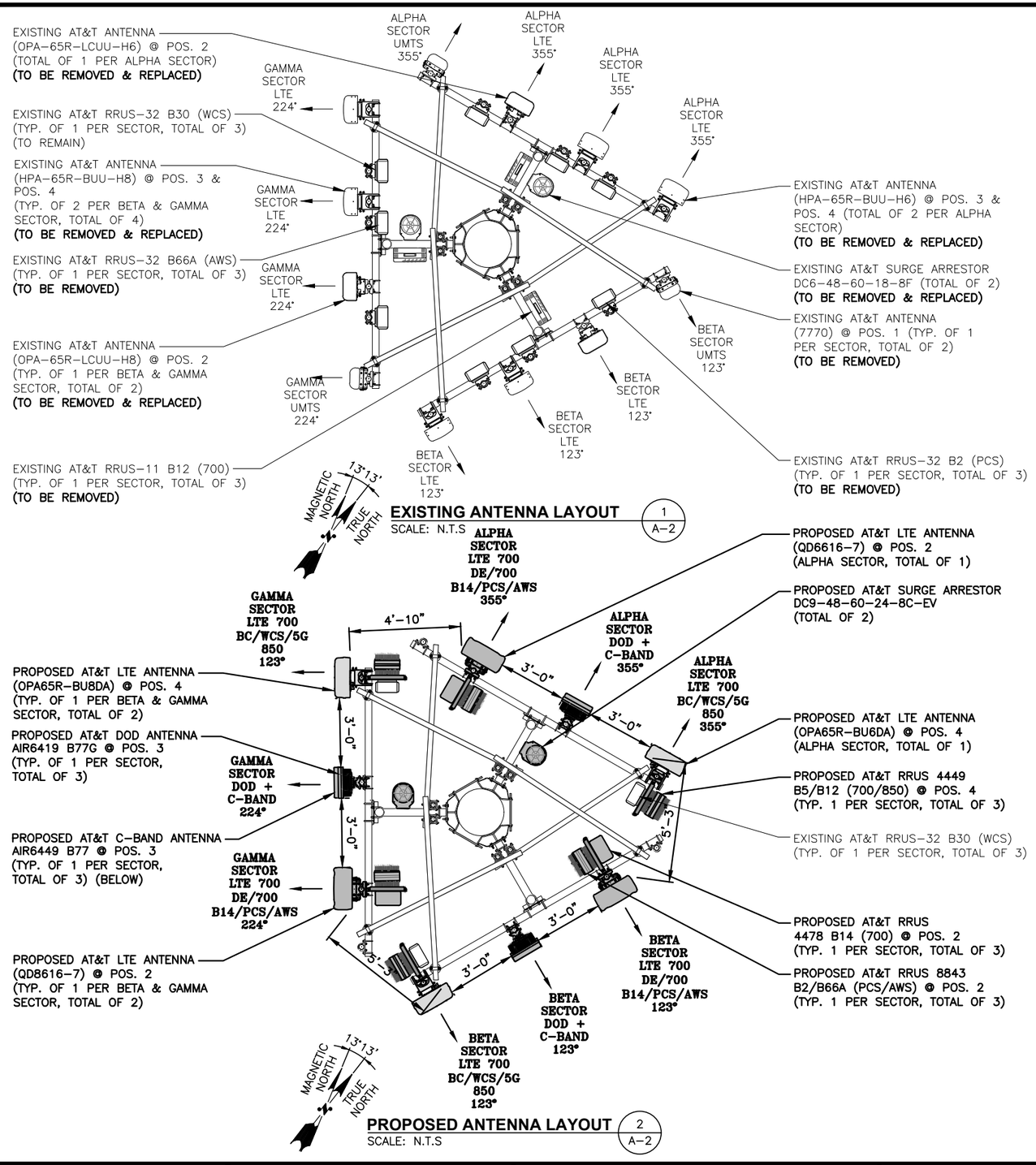

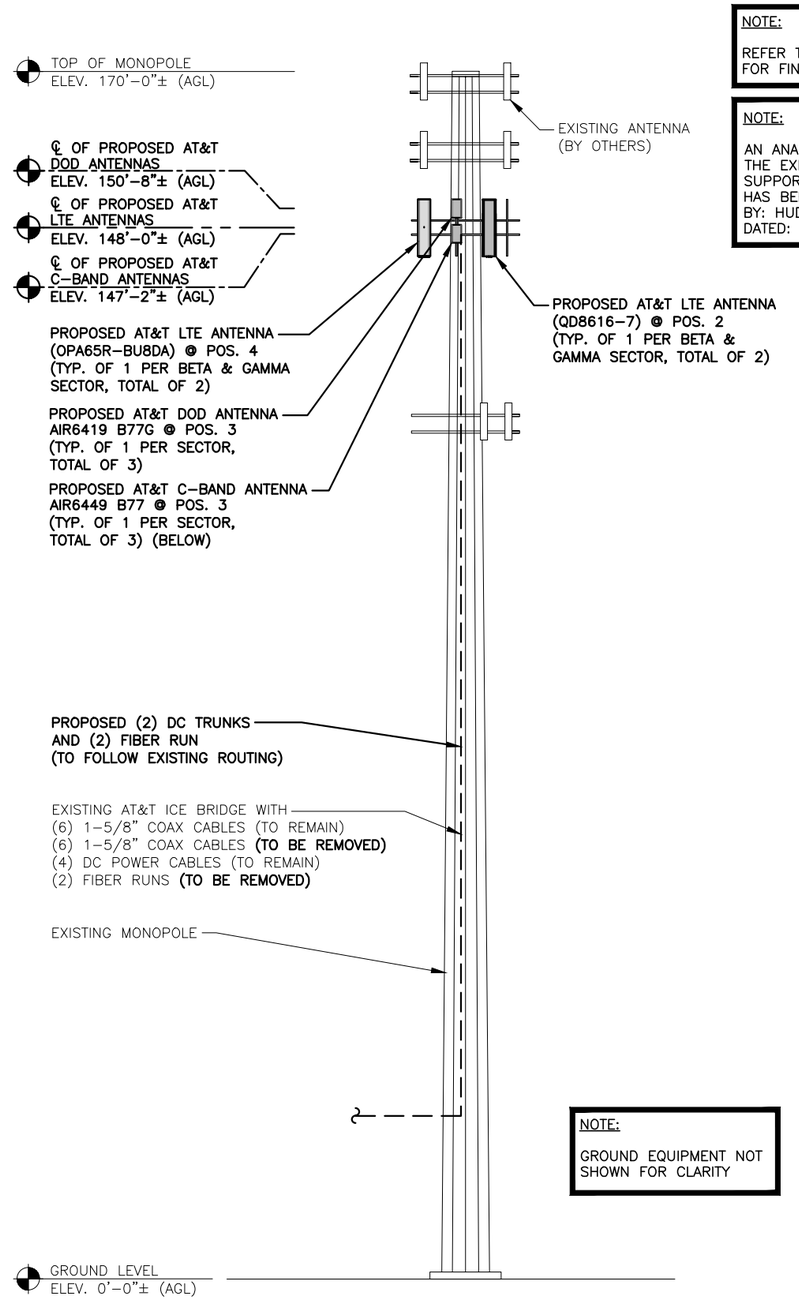

NOTE:

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NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MARCH 29, 2022.

NOTE:

GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"

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LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION

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SITE NUMBER	DRAWING NUMBER	REV
CTL02359	A-2	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	–	–	–	–	–	– –	–	–	–	–	(2)1-5/8 COAX	(P) (1) RAYCAP DC9-48-60-24-8C-EV
A2	PROPOSED	LTE 700 DE/700 B14/PCS/AWS	QD6616-7	72x22x9.6	148'-0"±	151'-0"	355°	–	(P)(1) 4478 B14 (700) (P)(1) 8843 B2/B66A (PCS/AWS) (G)(P)(1) 2012 B29 (700)	18.1x13.4x8.3 14.9x13.2x10.9 17x13.2x5	(E)(2) DC POWER (P)(1) DC POWER (P) (1) FIBER	
A3	PROPOSED	DOD + C-BAND	AIR6419 B77G AIR6449 B77 (STACKED)	31.1X16.1X7.3 30.6X15.9X10.6	150'-0"± 147'-2"±	151'-0" 148'-5"	355°	–	–	– –	–	
A4	PROPOSED	LTE 700 BC/WCS/5G 850	OPA65R-BU6DA	71.2X21X7.8	148'-0"±	151'-0"	355°	–	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9x13.2x10.4 –	–	
B1	–	–	–	–	–	–	–	–	–	–	(2)1-5/8 COAX	(P) (1) RAYCAP DC9-48-60-24-8C-EV
B2	PROPOSED	LTE 700 DE/700 B14/PCS/AWS	QD8616-7	96X22X9.6	148'-0"±	152'-0"	123°	–	(P)(1) 4478 B14 (700) (P)(1) 8843 B2/B66A (PCS/AWS) (G)(P)(1) 2012 B29 (700)	18.1X13.4X8.3 14.9X13.2X10.9 17X13.2X5	(E)(2) DC POWER (P)(1) DC POWER (P) (1) FIBER	
B3	PROPOSED	DOD + C-BAND	AIR6419 B77G AIR6449 B77 (STACKED)	31.1X16.1X7.3 30.6X15.9X10.6	150'-0"± 147'-2"±	151'-0" 148'-5"	123°	–	–	– –	–	
B4	PROPOSED	LTE 700 BC/WCS/5G 850	OPA65R-BU8DA	96X21X7.8	148'-0"±	152'-0"	123°	–	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9X13.2X10.4 –	–	
C1	–	–	–	–	–	–	–	–	–	–	(2)1-5/8 COAX	I
C2	PROPOSED	LTE 700 DE/700 B14/PCS/AWS	QD8616-7	96X22X9.6	148'-0"±	152'-0"	224°	–	(P)(1) 4478 B14 (700) (P)(1) 8843 B2/B66A (PCS/AWS) (G)(P)(1) 2012 B29 (700)	18.1X13.4X8.3 14.9X13.2X10.9 17X13.2X5	–	
C3	PROPOSED	DOD + C-BAND	AIR6419 B77G AIR6449 B77 (STACKED)	31.1X16.1X7.3 30.6X15.9X10.6	150'-0"± 147'-2"±	151'-0" 148'-5"	224°	–	–	– –	–	
C4	PROPOSED	LTE 700 BC/WCS/5G 850	OPA65R-BU8DA	96X21X7.8	148'-0"±	152'-0"	224°	–	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9x13.2x10.4 –	–	

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

NOTE:

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

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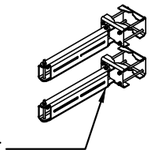
DATED: MARCH 29, 2022.



DUAL RRU MOUNT
(ROSENBERGER PART# D220RRUDSM) (TYP. OF 2 PER SECTOR, TOTAL OF 6)

DUAL RRU MOUNT DETAIL (6 / A-3)
SCALE: N.T.S

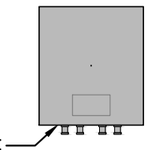
RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
P(3)	4449 (850/700)	17.9"x13.2"x10.4"
P(3)	8843 (PCS/AWS)	14.9"x13.2"x10.9"
P(3)	4478 B14 (700)	18.1"x13.4"x8.3"
P(3)	2012 B29	17"x13"x5"
E(3)	RRUS-32 (WCS)	27.2"x12.1"x7.0"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

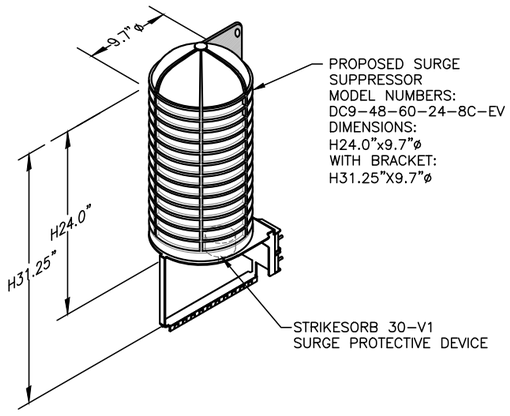
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

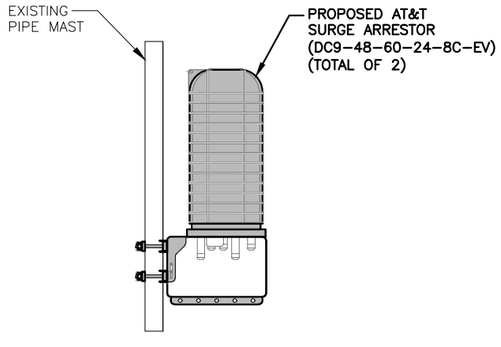
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (2 / A-3)
SCALE: N.T.S

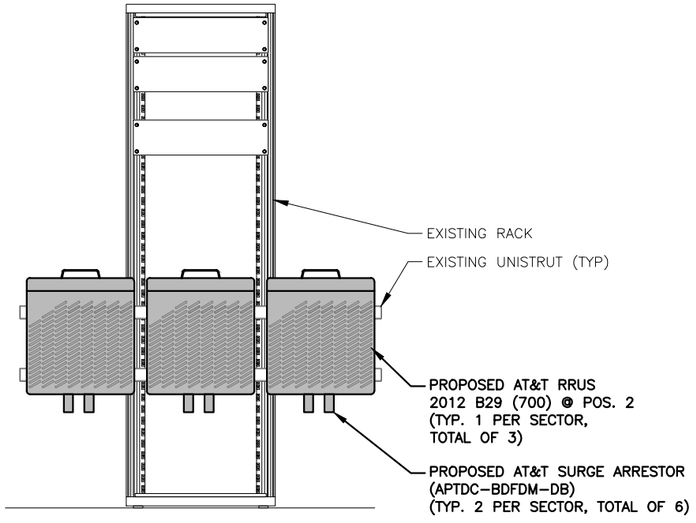


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (3 / A-3)
SCALE: N.T.S



DC SURGE MOUNTING DETAIL (4 / A-3)
SCALE: N.T.S



PROPOSED RRUS MOUNTING DETAIL (5 / A-3)
SCALE: N.T.S

HUDSON Design Group LLC
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NORTH ANDOVER, MA 01845
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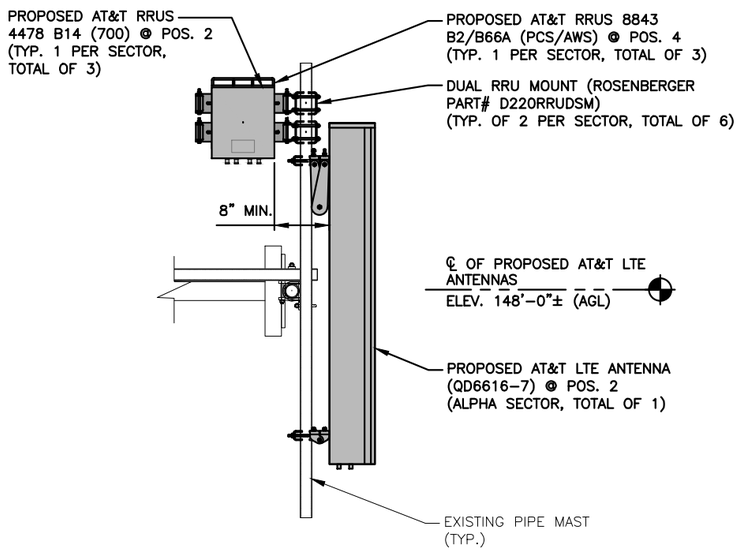
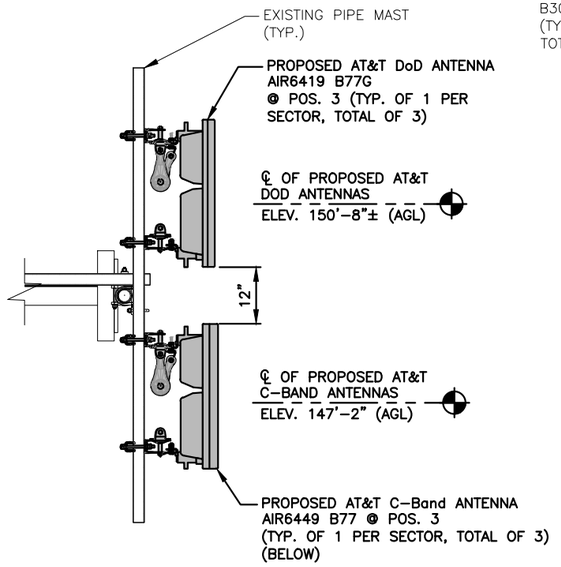
AT&T
DETAILS
5G NR RADIO, 5G NR 1SR CBAND, CELL SITE RF MODIFICATIONS, BBU ADD, LTE NEXT CARRIER, LTE 5C 6C, 5G NR SOFTWARE RADIO, 5G NR ACTIVATION, ANTENNA MODIFICATIONS, 4TX4RX SOFTWARE RADIO, 5G NR RADIO, 5G NR 1DR-1

SITE NUMBER	DRAWING NUMBER	REV
CTL02359	A-3	1



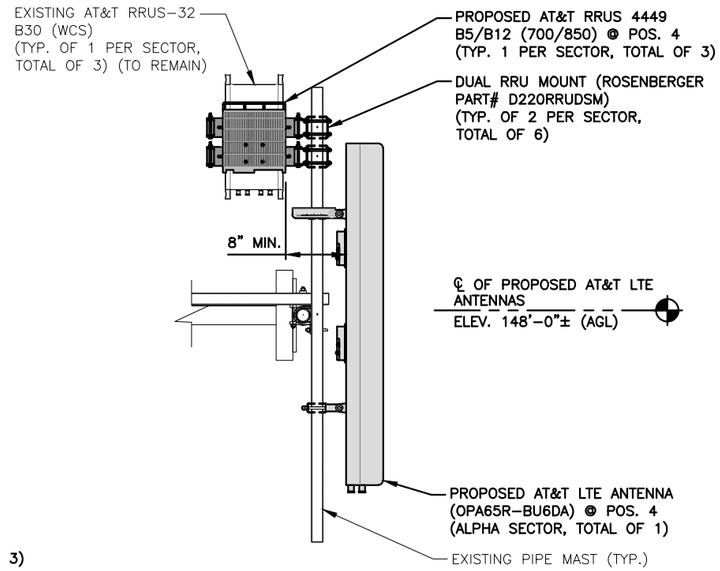
PROPOSED LTE ANTENNA MOUNTING DETAIL (ALPHA SECTOR) — 1 / A-4

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED DOD + C-BAND ANTENNA MOUNTING DETAIL — 2 / A-4

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED LTE ANTENNA MOUNTING DETAIL (ALPHA SECTOR) — 3 / A-4

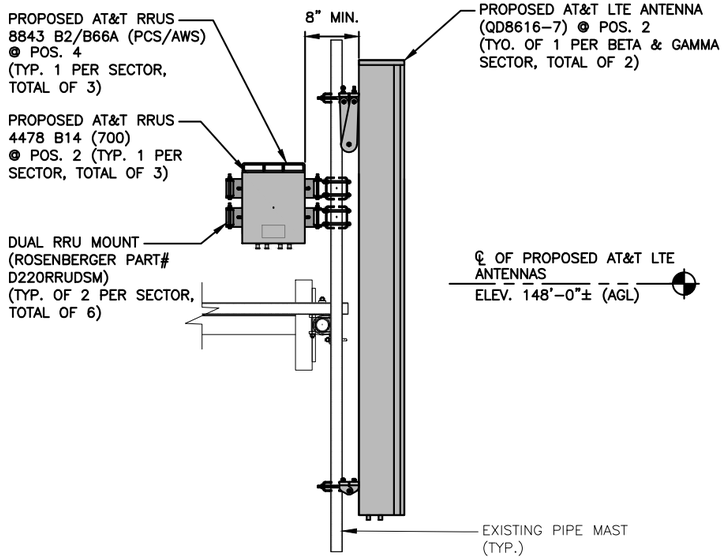
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

NOTE:

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

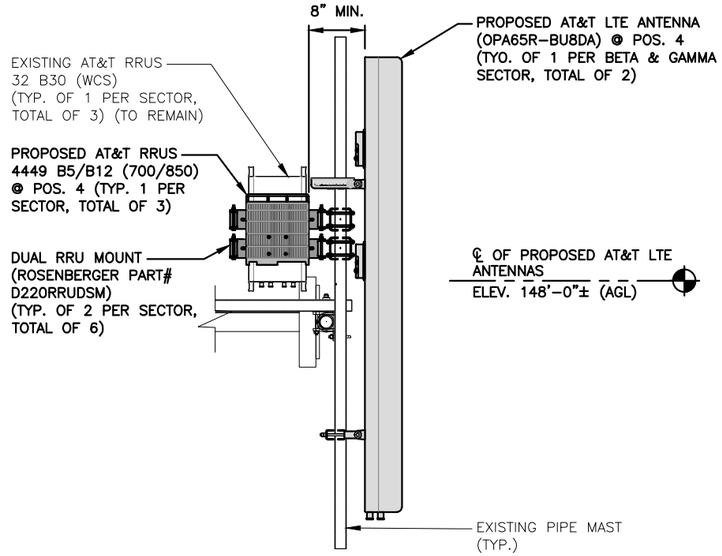
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MARCH 29, 2022.



PROPOSED LTE ANTENNA MOUNTING DETAIL (BETA SECTOR) — 4 / A-4

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED LTE ANTENNA MOUNTING DETAIL (BETA SECTOR) — 5 / A-4

22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02359
SITE NAME: ANSONIA CT DEERFIELD LN

1 DEERFIELD LANE
ANSONIA, CT 06401
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at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	04/15/22	ISSUED FOR REVIEW	JP	HC	DPH

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

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

AT&T
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SITE NUMBER	DRAWING NUMBER	REV
CTL02359	A-4	1

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:	

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02359
SITE NAME: ANSONIA CT DEERFIELD LN

1 DEERFIELD LANE
ANSONIA, CT 06401
NEW HAVEN COUNTY

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

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

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

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STRUCTURAL NOTES

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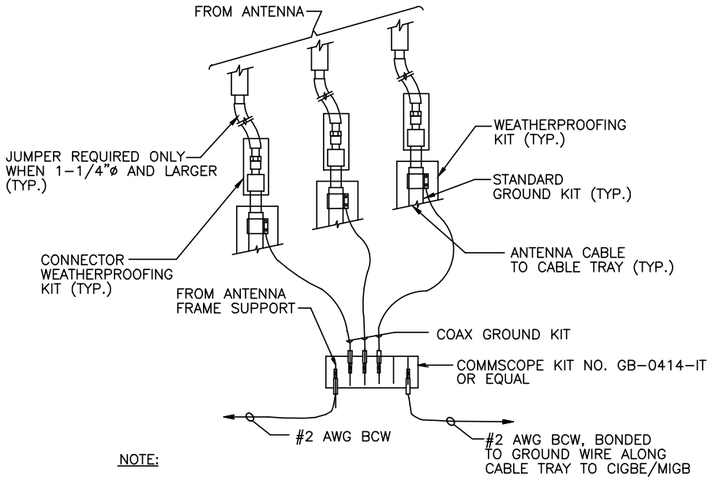
SITE NUMBER	DRAWING NUMBER	REV
CTL02359	SN-1	1

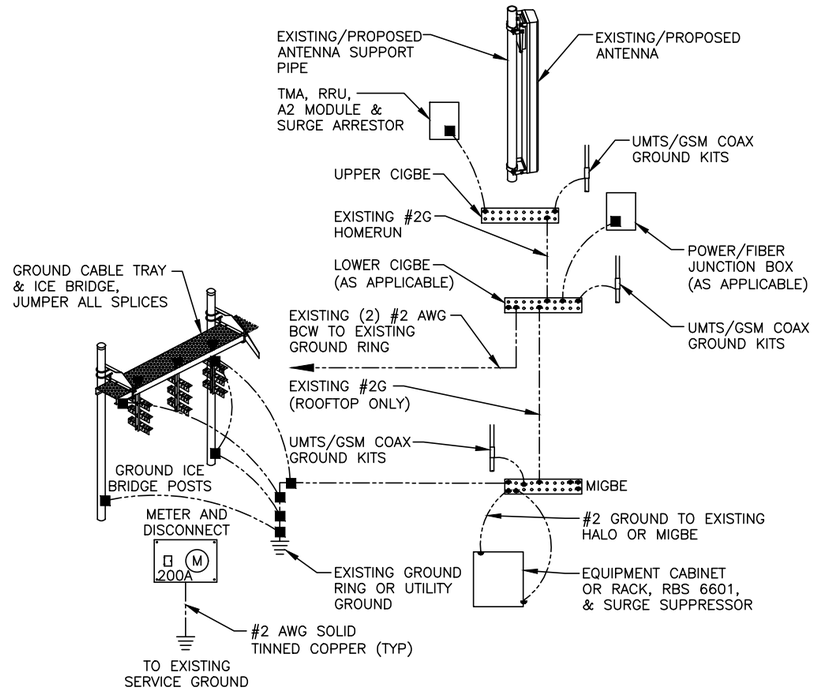


NOTE:

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

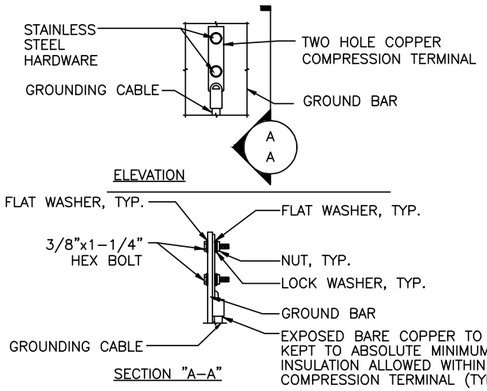
GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S



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 (3 / G-1)

SCALE: N.T.S

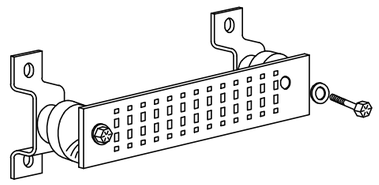
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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) (4)

SCALE: N.T.S

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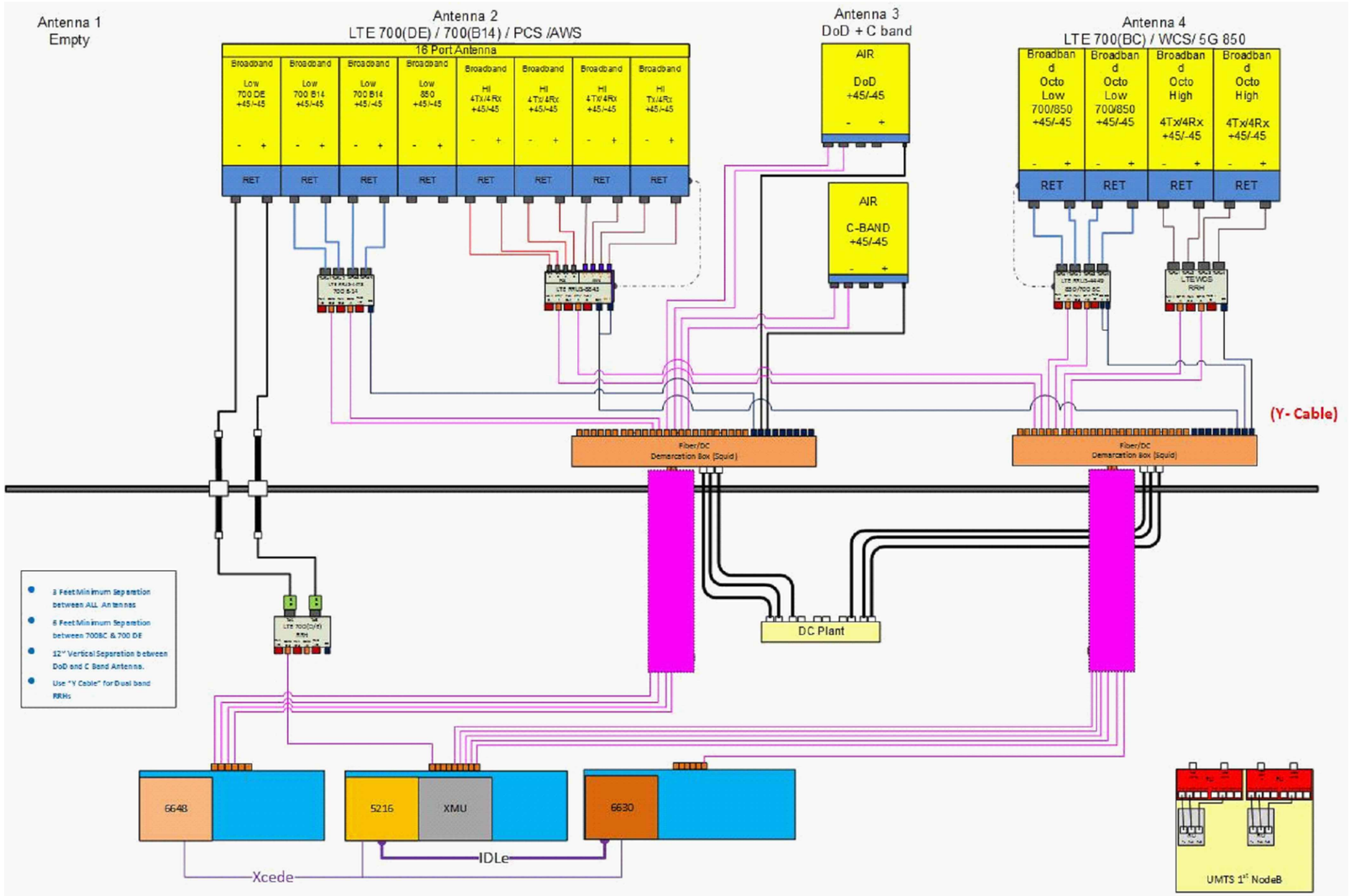
SITE NUMBER	DRAWING NUMBER	REV
CTL02359	G-1	1

NOTE:

REV: 3
DATED: 03/08/2022
RFDS ID: 4541454



RF PLUMBING DIAGRAM 1
SCALE: N.T.S RF-1

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.
3. RFDS USED FOR REFERENCE.

NOTE:

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

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RF PLUMBING DIAGRAM
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SITE NUMBER	DRAWING NUMBER	REV
CTL02359	RF-1	1

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 169 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13071-A

Customer Site Name: Woodbridge

Carrier Name: AT&T (App#: 194389-2)

Carrier Site ID / Name: CT2359 / ANSONIA CT DEERFIELD LN

Site Location: 1 Deerfield Lane

Ansonia, Connecticut

New Haven County

Latitude: 41.350750

Longitude: -73.049250

Analysis Result:

Max Structural Usage: 78.9% [Pass]

Max Foundation Usage: 77.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Kevin Azisllari

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Report Prepared By: Kevin Azisllari

Introduction

The purpose of this report is to summarize the analysis results on the 169 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Sabre, DWG # 08-01016-PE, dated 1/7/2008
Foundation Drawing	Sabre, DWG # 08-01016, dated 1/30/2008
Geotechnical Report	JGI Eastern, Inc., Project # J2085109, dated 1/29/2008
Modification Drawings	TES, Project # 17022, dated 9/1/2015 TES, Project # 19194, dated 12/9/2015 TES, Project # 22848 dated 6/23/2016
Mount Analysis	HUDSON Design Group, FA Number: 10126685, dated 03/29/2022

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.063

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	167.0	3	RFS - APXVAA24_43-U-A20 - Panel	(3) T-Arms/Commscope VSR-MS-B	(10) 1-5/8" Coax (3) 1-5/8" Fiber (1) 1-1/4" Fiber	T-Mobile
2		3	Air 32 KRD901146-1_B66A_B2A - Panel			
3		3	Ericsson AIR 21 B2A/B4P - Panel			
4		3	Ericsson AIR6449 B41 - Panel			
5		3	Ericsson - KRY 112 144/1			
6		3	Ericsson - Radio 4449 B71+B85			
7		3	Ericsson Radio 4415 B25			
8	157.0	6	JMA Wireless MX06FRO660-03 - Panel	(3) T-Arms w/ (3) JMA Wireless 91900314-02 Brackets	(16) 1 5/8" (1) 1 5/8" Hybrid (1) 1/2"	Verizon
9		3	Samsung MT6407-77A - Panel			
10		3	Samsung RF4439d-25A			
11		3	Samsung RF4440d-13A			
12		1	Raycap DB-C1-12C-24AB-0Z			
13		4	Andrew DB846F65ZAXY - Panel			
14		2	Andrew DB846H80E-SX - Panel			
-	148.0	3	Powerwave 7770 - Panel	(3) T-Arms w/ (6) 2" STD Steel Pipe Brace Secured Existing Mount & Tower	(12) 1 5/8" (1) 1/2" Fiber (2) 3/4" DC Power	AT&T
-		1	Cci OPA-65R-LCUU-H6 - Panel			
-		2	Cci OPA-65R-LCUU-H8 - Panel			
-		2	CCI HPA-65R-BUU-H6 - Panel			
-		4	CCI HPA-65R-BUU-H8 - Panel			
-		6	Powerwave LGP21401 TMA			
-		6	Powerwave LGP13519 Diplexer			
-		3	Ericsson RRUS-11 (17.8x17.3x7.2) - RRU			
-		9	Ericsson RRUS 32 - RRU			
-		3	Powerwave 1001940 - Bias-T			
-		2	Raycap DC6-48-60-18-8F - Surge			
-		1	Commscope - WCS-IMFQ-AMT - Filter			
27	127.0	3	Nokia AAHC - Panel	(1) SitePro Low Profile Platform w/ handrail (RMQP-4096-HK)	(4) 1/2" Coax (1) 1-5/8" Fiber (4) 1-1/4 Fiber	Sprint Nextel
28		3	Commscope NNVV-65B-R4 - Panel			
29		4	Dragonwave Horizon Duo			
30		3	ALU 1900 Mhz - RRU			
31		6	ALU 800 Mhz - RRU			
32		3	ALU TD-RRH8x20-25 - RRU			
33		3	Andrew VHLP2-11 - Dish			
34		1	Andrew VHLP800-11 - Dish			
35	117.0	2	Ericsson 4415 RRU	Standoff Sector Frame (3) Commscope SF-SU7-2-96	(1) 1-1/4" Hybrid	Dish Network
36		3	Ericsson 0208 RRU			
37		3	Comba ODI2-065R18K-GQ - Panel			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
15	150.0	3	Ericsson Air6419 B77G - Panel	(3) T-Arms w/ (6) 2" STD Steel Pipe Brace Secured Existing Mount & Tower	(7) 1 5/8" (4) 1" DC (2) 1/2" Fiber (2) 3/4" DC	AT&T
16	148.0	1	Quintel QD6616-7 - Panel			
17		2	Quintel QD8616-7 - Panel			
18		2	CCI DMP65R-BU8DA - Panel			
19		1	CCi DMP65R-BU6DA - Panel			
20		6	Powerwave LGP13519 Diplexer			
21		3	Ericsson RRUS 8843 B2 B66A			
22		3	Ericsson RRUS 32			
23		3	Ericsson RRUS 4449 B5/B12			
24		3	Ericsson RRUS 4478 B14			
25		2	Raycap DC9-48-60-24-8C-EV			
26		3	Powerwave 1001940			
27		1	Commscope WCS-IMGQ-AMT			
28		6	Powerwave 21401			
29	146.0	3	Ericsson Air6449 B77D - Panel			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**78.9%**	**71.9%**	**59.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4354.8	34.0	59.2

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.5830 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 78.93% at 105.0ft

Structure:	CT13071-A-SBA	**Code:**	EIA/TIA-222-G	4/21/2022
Site Name:	Woodbridge	**Exposure:**	B	
Height:	169.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

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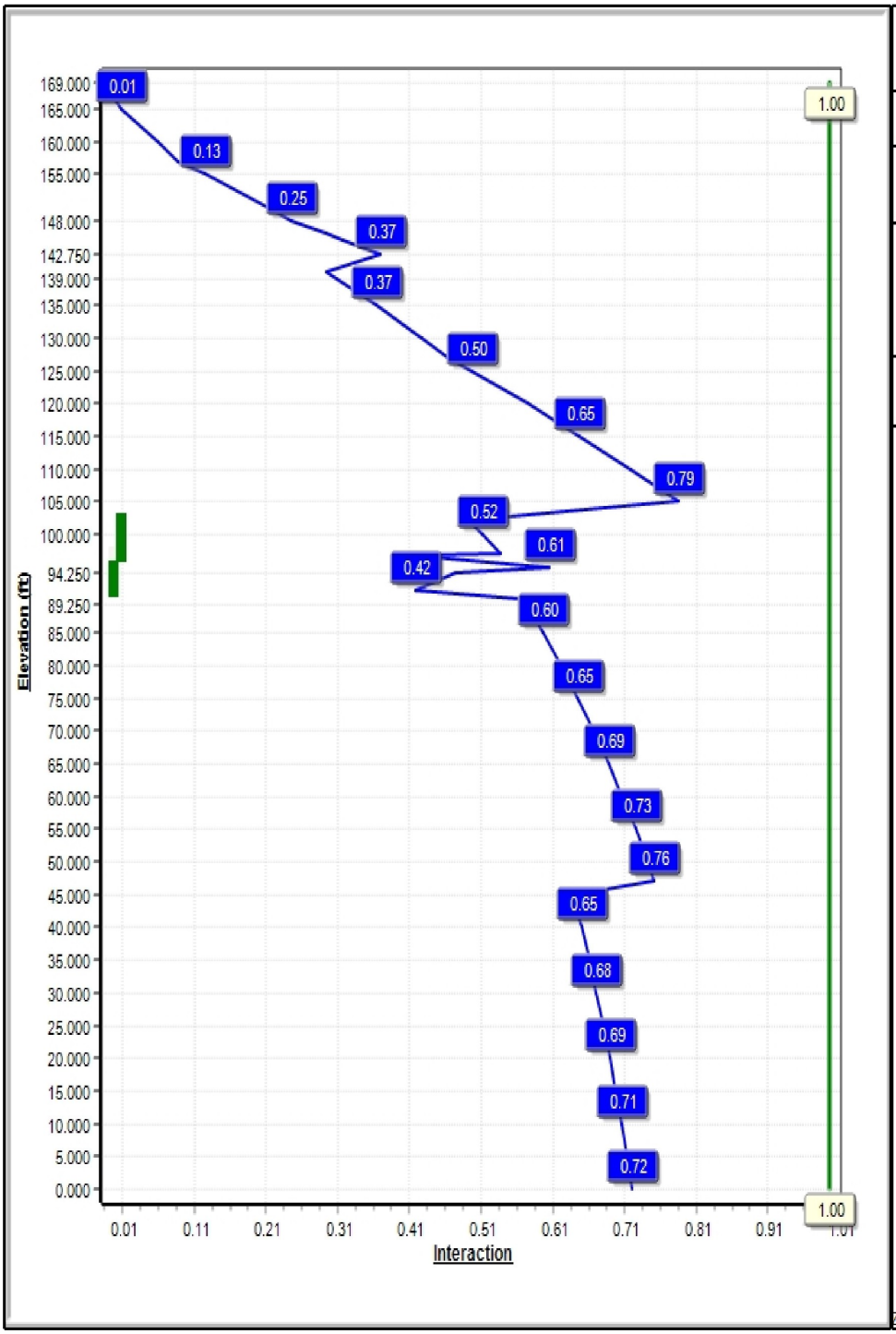
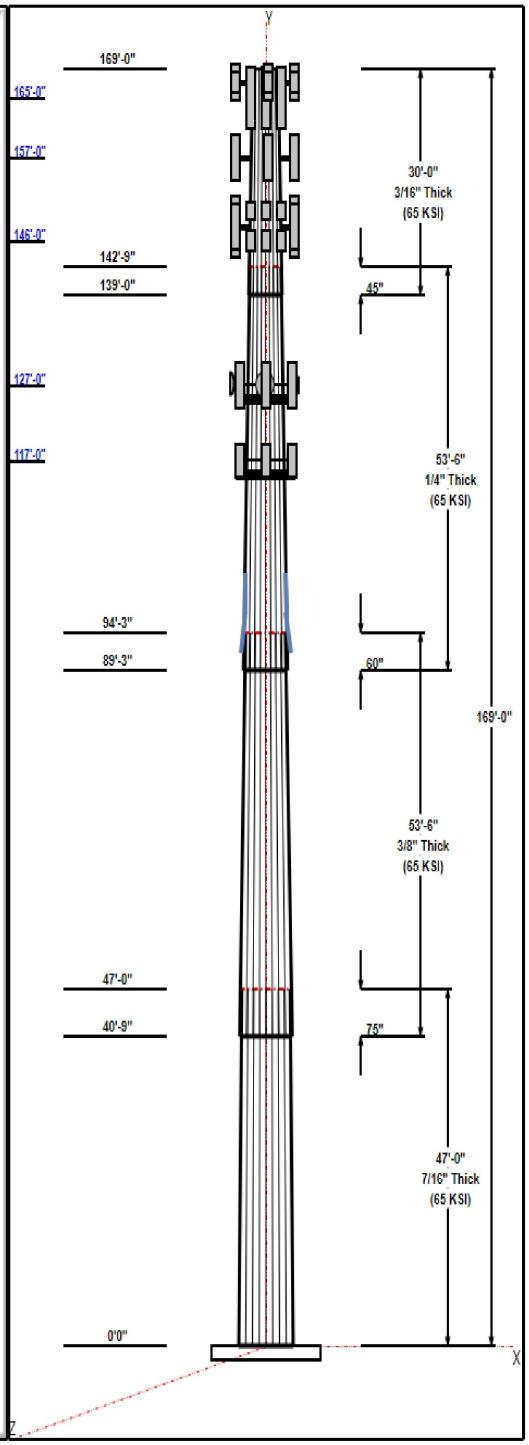
Dead Load Factor:	1.20	**Iterations:**	27
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT13071-A-SBA

Type: Tapered
Site Name: Woodbridge
Height: 169.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.20003

4/21/2022

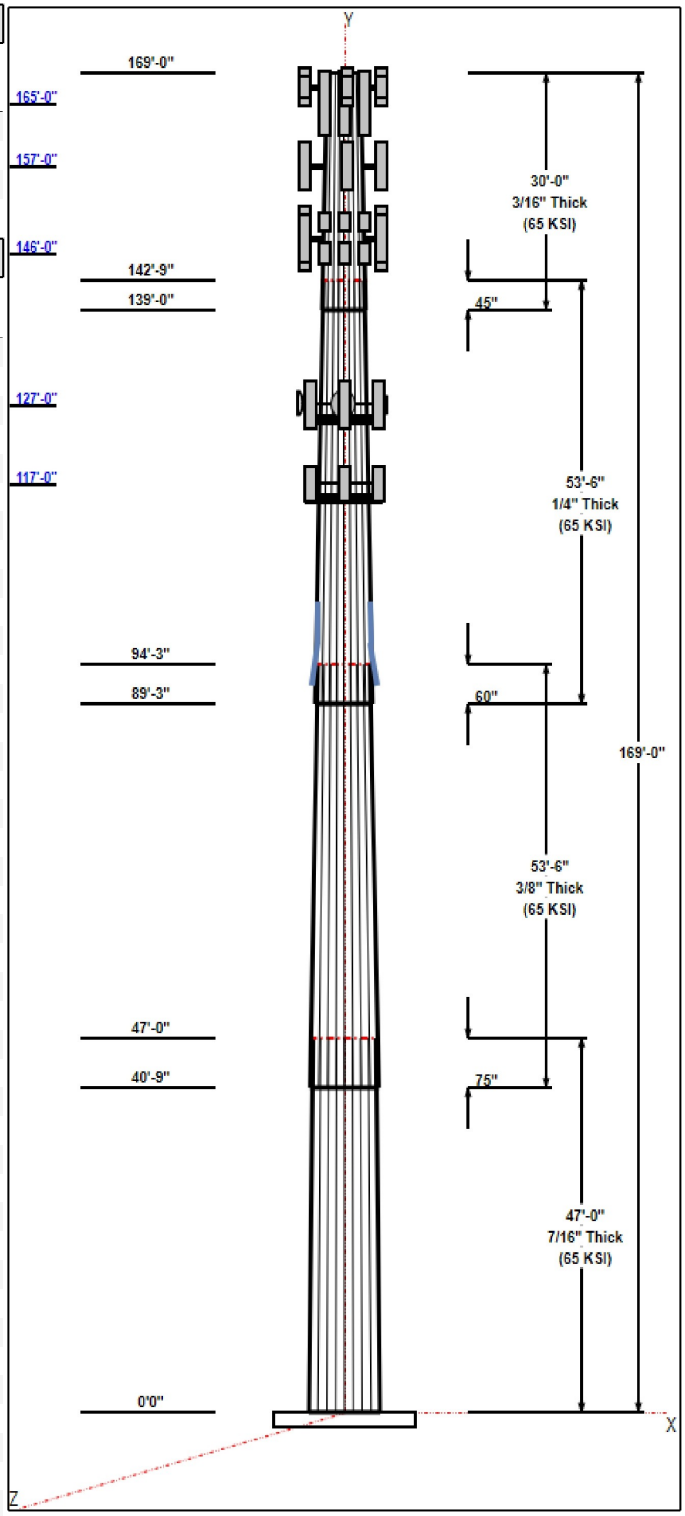
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	47.00	46.78	56.18	0.438		0.20003	65
2	53.50	38.08	48.78	0.375	Slip	0.20003	65
3	53.50	28.88	39.58	0.250	Slip	0.20003	65
4	30.00	24.00	30.00	0.188	Slip	0.20003	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
167.00	167.00	3	AIR 6449 B41	T-Mobile
167.00	167.50	3	T-Arms/Commscope	T-Mobile
167.00	167.00	3	AIR 21 B2A/B4P	T-Mobile
167.00	167.00	3	Ericsson - KRY 112 144/2	T-Mobile
167.00	167.00	3	Ericsson - Radio 4449	T-Mobile
167.00	167.00	3	RRUS 4415 B25	T-Mobile
165.00	165.00	3	APXVAA24_43-U-A20	T-Mobile
165.00	165.00	3	Air 32	T-Mobile
157.00	157.00	6	MX06FRO660-02	Verizon
157.00	157.00	3	MT6407-77A	Verizon
157.00	157.00	3	T-Arms	Verizon
157.00	157.00	4	DB846F65ZAXY	Verizon
157.00	157.00	2	DB846H80E-SX	Verizon
157.00	157.00	3	RF4439d-25A	Verizon
157.00	157.00	3	RF4440d-13A	Verizon
157.00	157.00	1	DB-C1-12C-24AB-0Z	Verizon
150.00	150.00	3	Ericsson Air6419 B77G	AT&T
150.00	150.00	1	Collar Mount	AT&T
148.00	148.00	3	T-Arms w/ Modifications	AT&T
148.00	148.00	1	Quintel QD6616-7	AT&T
148.00	148.00	2	Quintel QD8616-7	AT&T
148.00	148.00	2	CCI DMP65R-BU8DA	AT&T
148.00	148.00	1	CCi DMP65R-BU6DA	AT&T
148.00	148.00	6	Powerwave LGP13519	AT&T
148.00	148.00	3	Ericsson RRUS 8843 B2	AT&T
148.00	148.00	3	Ericsson RRUS 32	AT&T
148.00	148.00	3	Ericsson RRUS 4449	AT&T
148.00	148.00	3	Ericsson RRUS 4478 B14	AT&T
148.00	148.00	2	Raycap	AT&T
148.00	148.00	3	Powerwave 1001940	AT&T
148.00	148.00	1	Commscope	AT&T
148.00	148.00	6	Powerwave 21401	AT&T
146.00	146.00	3	Ericsson Air6449 B77D	AT&T
127.00	127.00	3	VHLP2-11	Sprint Nextel
127.00	127.00	1	VHLP800-11	Sprint Nextel
127.00	127.00	4	Horizon Duo	Sprint Nextel
127.00	127.00	3	1900MHz RRH	Sprint Nextel
127.00	127.00	3	TD-RRH8x20-25	Sprint Nextel
127.00	127.00	3	AAHC	Sprint Nextel
127.00	127.00	3	NNVV-65B-R4	Sprint Nextel
127.00	127.00	1	RMQP-4096-HK	Sprint Nextel
117.00	117.00	3	Standoff Sector Frame	Dish Network
117.00	117.00	2	Ericsson 4415 RRU	Dish Network
117.00	117.00	3	Ericsson 0208 RRU	Dish Network
117.00	117.00	3	Comba	Dish Network



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	167.00	Inside	1 5/8" Coax	T-Mobile
0.00	167.00	Inside	1 5/8" Fiber	T-Mobile
0.00	167.00	Inside	1-1/4" Fiber	T-Mobile
0.00	157.00	Inside	1 5/8" Coax	Verizon
0.00	157.00	Outside	1 5/8" Coax	Verizon
0.00	157.00	Inside	1 5/8" Hybrid	Verizon
0.00	157.00	Inside	1/2" Coax	Verizon
0.00	148.00	Inside	1 5/8" Coax	AT&T
0.00	148.00	Inside	1" DC	AT&T
0.00	148.00	Inside	1/2" Fiber	AT&T
0.00	148.00	Inside	3/4" DC	AT&T
0.00	137.00	Inside	1 5/8" Coax	Metro PCS
0.00	127.00	Inside	1 5/8" Fiber	Sprint Nextel
0.00	127.00	Inside	1-1/4" Fiber	Sprint Nextel
0.00	127.00	Inside	1/2" Coax	Sprint Nextel
0.00	117.00	Inside	1-1/4" Hybrid	Dish Network
99.25	104.50	Outside	1" Reinforcing plate	
89.25	99.25	Outside	1" Reinforcing plate	44 Farms

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	61.3	60.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	4354.8	34.0	59.2
0.9D + 1.6W 97 mph Wind	4291.2	34.0	44.4
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1176.9	9.2	92.0
1.2D + 1.0E	258.2	2.0	59.2
0.9D + 1.0E	254.2	2.0	44.4
1.0D + 1.0W 60 mph Wind	1033.1	8.1	49.3

Structure: CT13071-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Woodbridge
Height: 169.00 (ft)

4/21/2022

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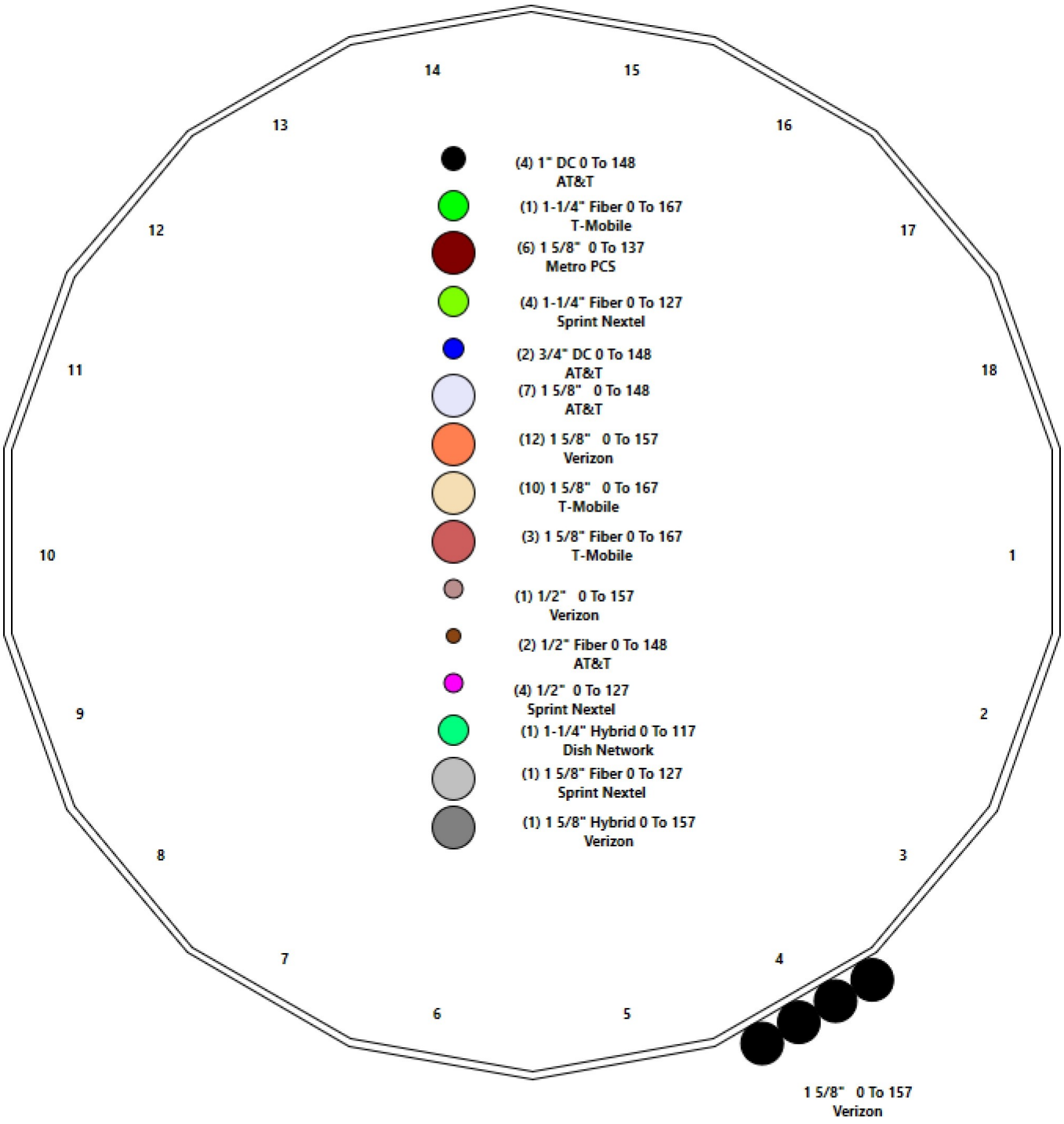

Shaft Properties

Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	47.000	0.4375	65		0.00	11,335
2	18	53.500	0.3750	65	Slip	75.00	9,329
3	18	53.500	0.2500	65	Slip	60.00	4,908
4	18	30.000	0.1875	65	Slip	45.00	1,629
					Total Shaft Weight:		**27,200**

	Bottom						Top						
Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	56.18	0.00	77.40	30386.58	21.23	128.41	46.78	47.00	64.35	17459.0	17.44	106.9	0.200030
2	48.78	40.75	57.61	17053.51	21.53	130.08	38.08	94.25	44.87	8058.91	16.49	101.5	0.200030
3	39.58	89.25	31.21	6097.74	26.50	158.31	28.88	142.75	22.71	2351.56	18.96	115.5	0.200030
4	30.00	139.0	17.74	1992.41	26.80	160.00	24.00	169.00	14.17	1015.22	21.16	128.0	0.200030

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
91.50	97.00	3	LNP LP6X100-G-10TT	65	80	0.00	5/8" Hollo Bolt	23.00	5/8" Hollo Bolt		9	9
96.75	102.2	3	LNP LP6X100-G-10TT	65	80	0.00	5/8" Hollo Bolt	23.00	5/8" Hollo Bolt		9	9

Load Summary

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	167.00	AIR 6449 B41	3	103.00	5.65	0.70	257.84	6.634	0.70	0.00	0.00
2	167.00	T-Arms/Commscope VSR-MS-B	3	340.00	6.75	0.75	579.91	12.704	0.75	0.00	0.50
3	167.00	AIR 21 B2A/B4P	3	92.00	6.09	0.86	263.11	7.155	0.86	0.00	0.00
4	167.00	Ericsson - KRY 112 144/2	3	11.00	0.41	0.75	21.90	0.890	0.75	0.00	0.00
5	167.00	Ericsson - Radio 4449 B71+B12	3	74.00	1.65	0.75	142.20	2.167	0.75	0.00	0.00
6	167.00	RRUS 4415 B25	3	46.00	1.64	0.67	87.55	2.161	0.67	0.00	0.00
7	165.00	APXVAA24_43-U-A20	3	128.00	20.24	0.73	560.73	22.184	0.73	0.00	0.00
8	165.00	Air 32 KRD901146-1_B66A_B2A	3	105.80	6.51	0.87	292.27	7.702	0.87	0.00	0.00
9	157.00	MX06FRO660-02	6	60.00	9.87	0.87	330.39	11.252	0.87	0.00	0.00
10	157.00	MT6407-77A	3	79.40	4.69	0.70	199.60	5.642	0.70	0.00	0.00
11	157.00	T-Arms	3	350.00	8.00	0.75	595.45	15.013	0.75	0.00	0.00
12	157.00	DB846F65ZAXY	4	21.00	7.05	0.92	219.47	8.287	0.93	0.00	0.00
13	157.00	DB846H80E-SX	2	16.00	5.01	1.10	176.40	6.231	1.10	0.00	0.00
14	157.00	RF4439d-25A	3	84.40	1.88	0.83	135.89	2.434	0.83	0.00	0.00
15	157.00	RF4440d-13A	3	84.40	1.88	0.83	135.89	2.434	0.83	0.00	0.00
16	157.00	DB-C1-12C-24AB-0Z	1	32.00	4.06	1.00	146.45	4.886	1.00	0.00	0.00
17	150.00	Ericsson Air6419 B77G	3	66.10	3.80	0.76	162.31	4.596	0.76	0.00	0.00
18	150.00	Collar Mount	1	100.00	3.50	1.00	183.77	5.943	1.00	0.00	0.00
19	148.00	T-Arms w/ Modifications	3	450.00	12.00	0.75	763.72	22.457	0.75	0.00	0.00
20	148.00	Quintel QD6616-7	1	111.00	8.13	0.92	337.92	9.427	0.92	0.00	0.00
21	148.00	Quintel QD8616-7	2	111.00	8.13	0.92	337.92	9.427	0.92	0.00	0.00
22	148.00	CCI DMP65R-BU8DA	2	95.70	17.87	0.73	492.33	19.664	0.73	0.00	0.00
23	148.00	CCi DMP65R-BU6DA	1	79.40	12.71	0.72	373.55	14.172	0.72	0.00	0.00
24	148.00	Powerwave LGP13519 Diplexer	6	14.10	1.29	1.00	39.07	2.125	1.00	0.00	0.00
25	148.00	Ericsson RRUS 8843 B2 B66A	3	75.00	1.65	0.67	149.57	2.187	0.67	0.00	0.00
26	148.00	Ericsson RRUS 32	3	77.00	1.65	0.67	125.40	2.229	0.67	0.00	0.00
27	148.00	Ericsson RRUS 4449 B5/B12	3	71.00	1.97	0.67	124.31	2.517	0.67	0.00	0.00
28	148.00	Ericsson RRUS 4478 B14	3	59.40	1.65	0.67	100.81	2.168	0.67	0.00	0.00
29	148.00	Raycap DC9-48-60-24-8C-EV	2	26.20	1.14	1.00	132.05	2.725	1.00	0.00	0.00
30	148.00	Powerwave 1001940	3	2.20	0.25	0.67	10.03	0.670	0.67	0.00	0.00
31	148.00	Commscope WCS-IMGQ-AMT	1	34.50	0.99	0.67	77.58	1.418	0.67	0.00	0.00
32	148.00	Powerwave 21401	6	14.10	1.29	0.67	39.07	2.125	0.67	0.00	0.00
33	146.00	Ericsson Air6449 B77D	3	88.00	4.13	0.85	225.11	4.985	0.85	0.00	0.00
34	127.00	VHLP2-11	3	27.00	4.68	1.00	123.25	5.933	1.00	0.10	0.00
35	127.00	VHLP800-11	1	48.00	8.43	1.00	219.27	10.108	1.00	0.10	0.00
36	127.00	Horizon Duo	4	7.00	0.59	0.75	22.26	1.143	0.75	0.00	0.00
37	127.00	1900MHz RRH	3	60.00	2.77	0.99	142.06	4.018	0.99	0.00	0.00
38	127.00	TD-RRH8x20-25	3	70.00	4.05	0.69	178.26	4.849	0.71	0.00	0.00
39	127.00	AAHC	3	103.60	4.21	0.75	207.38	5.008	0.75	0.00	0.00
40	127.00	NNVV-65B-R4	3	77.40	12.27	0.74	358.24	13.702	0.74	0.00	0.00
41	127.00	RMQP-4096-HK	1	2645.00	51.70	1.00	5368.94	89.325	1.00	0.00	0.00
42	117.00	Standoff Sector Frame Commscope	3	395.00	15.10	0.75	771.57	33.608	0.75	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	44.10	1.86	0.67	90.38	2.419	0.67	0.00	0.00
44	117.00	Ericsson 0208 RRU	3	19.80	1.37	0.67	53.88	1.856	0.67	0.00	0.00
45	117.00	Comba ODI2-065R18K-GQ	3	25.10	4.85	0.70	129.02	5.808	0.70	0.00	0.00
		Totals:	**127**	**13,770.90**			**33,275.57**				

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	167.00	(10) 1 5/8" Coax	0.00	Inside
0.00	167.00	(3) 1 5/8" Fiber	0.00	Inside
0.00	167.00	(1) 1-1/4" Fiber	0.00	Inside
0.00	157.00	(12) 1 5/8" Coax	0.00	Inside
0.00	157.00	(4) 1 5/8" Coax	1.98	Outside
0.00	157.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	157.00	(1) 1/2" Coax	0.00	Inside
0.00	148.00	(7) 1 5/8" Coax	0.00	Inside
0.00	148.00	(4) 1" DC	0.00	Inside
0.00	148.00	(2) 1/2" Fiber	0.00	Inside
0.00	148.00	(2) 3/4" DC	0.00	Inside
0.00	137.00	(6) 1 5/8" Coax	0.00	Inside
0.00	127.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	127.00	(4) 1-1/4" Fiber	0.00	Inside
0.00	127.00	(4) 1/2" Coax	0.00	Inside
0.00	117.00	(1) 1-1/4" Hybrid	0.00	Inside
99.25	104.50	(1) 1" Reinforcing plate	1.00	Outside
89.25	99.25	(1) 1" Reinforcing plate	1.00	Outside

Shaft Section Properties

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Increment Length: **5 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.4375	56.180	77.403	30386.6	21.23	128.41	65	76	0.0				
5.00		0.4375	55.180	76.014	28780.1	20.83	126.13	65	77	1305.1				
10.00		0.4375	54.180	74.625	27231.3	20.43	123.84	65	77	1281.5				
15.00		0.4375	53.180	73.236	25739.1	20.02	121.55	65	78	1257.8				
20.00		0.4375	52.179	71.848	24302.4	19.62	119.27	65	78	1234.2				
25.00		0.4375	51.179	70.459	22920.2	19.22	116.98	65	79	1210.6				
30.00		0.4375	50.179	69.070	21591.5	18.81	114.70	65	79	1187.0				
35.00		0.4375	49.179	67.681	20315.1	18.41	112.41	65	80	1163.3				
40.00		0.4375	48.179	66.292	19090.0	18.01	110.12	65	80	1139.7				
40.75	Bot - Section 2	0.4375	48.029	66.084	18910.6	17.95	109.78	65	80	168.9				
45.00		0.4375	47.179	64.904	17915.2	17.60	107.84	65	81	1773.0				
47.00	Top - Section 1	0.3750	47.529	56.123	15766.0	20.94	126.74	65	77	823.4				
50.00		0.3750	46.929	55.408	15171.7	20.66	125.14	65	77	569.3				
55.00		0.3750	45.928	54.218	14214.7	20.19	122.48	65	78	932.6				
60.00		0.3750	44.928	53.028	13298.8	19.71	119.81	65	78	912.3				
65.00		0.3750	43.928	51.837	12423.2	19.24	117.14	65	79	892.1				
70.00		0.3750	42.928	50.647	11586.8	18.77	114.47	65	79	871.8				
75.00		0.3750	41.928	49.456	10788.9	18.30	111.81	65	80	851.6				
80.00		0.3750	40.928	48.266	10028.4	17.83	109.14	65	80	831.3				
85.00		0.3750	39.927	47.076	9304.6	17.36	106.47	65	81	811.1				
89.25	Bot - Section 3	0.3750	39.077	46.064	8717.4	16.96	104.21	65	81	673.5				
90.00		0.3750	38.927	45.885	8616.4	16.89	103.81	65	82	196.8				
91.50	RB1	0.3750	38.627	45.528	8416.8	16.75	103.01	65	82	391.4	18.00	4449.0	2805.1	91.9
94.25	Top - Section 2	0.2500	38.577	30.412	5644.2	25.80	154.31	65	71	709.6	18.00	4328.3	2729.4	168.4
95.00		0.2500	38.427	30.293	5578.2	25.69	153.71	65	71	77.5	18.00	4290.5	2703.4	45.9
96.75	RB2	0.2500	38.077	30.015	5426.2	25.45	152.31	65	71	179.6	36.00	7688.0	6129.7	214.4
97.00	RT1	0.2500	38.027	29.975	5404.7	25.41	152.11	65	72	25.5	18.00	3454.8	3454.8	15.3
100.00		0.2500	37.427	29.499	5151.2	24.99	149.71	65	72	303.6	18.00	3350.2	3350.2	183.7
102.25	RT2	0.2500	36.977	29.142	4966.4	24.67	147.91	65	72	224.5	18.00	3272.8	3272.8	137.8
105.00		0.2500	36.427	28.705	4746.6	24.28	145.71	65	73	270.7				
110.00		0.2500	35.427	27.912	4363.7	23.58	141.71	65	74	481.6				
115.00		0.2500	34.427	27.118	4001.9	22.87	137.71	65	75	468.1				
117.00		0.2500	34.027	26.801	3863.0	22.59	136.11	65	75	183.5				
120.00		0.2500	33.426	26.325	3660.8	22.17	133.71	65	75	271.2				
125.00		0.2500	32.426	25.531	3339.6	21.46	129.71	65	76	441.1				
127.00		0.2500	32.026	25.214	3216.6	21.18	128.10	65	76	172.7				
130.00		0.2500	31.426	24.737	3037.7	20.75	125.70	65	77	255.0				
135.00		0.2500	30.426	23.944	2754.7	20.05	121.70	65	78	414.1				
139.00	Bot - Section 4	0.2500	29.626	23.309	2541.3	19.48	118.50	65	78	321.6				
140.00		0.2500	29.426	23.150	2489.7	19.34	117.70	65	79	139.2				
142.75	Top - Section 3	0.1875	29.251	17.296	1845.8	26.10	156.00	65	71	378.0				
145.00		0.1875	28.801	17.028	1761.3	25.67	153.60	65	71	131.4				
146.00		0.1875	28.601	16.909	1724.7	25.49	152.54	65	71	57.7				
148.00		0.1875	28.201	16.671	1652.8	25.11	150.40	65	72	114.3				
150.00		0.1875	27.801	16.433	1583.0	24.73	148.27	65	72	112.6				
155.00		0.1875	26.800	15.837	1417.2	23.79	142.94	65	73	274.5				
157.00		0.1875	26.400	15.599	1354.2	23.42	140.80	65	74	107.0				
160.00		0.1875	25.800	15.242	1263.3	22.85	137.60	65	75	157.4				
165.00		0.1875	24.800	14.647	1121.0	21.91	132.27	65	76	254.3				
167.00		0.1875	24.400	14.409	1067.3	21.54	130.13	65	76	98.9				

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ixp (in^4)	Additional Reinforcing Iyp (in^4)	Additional Reinforcing Weight (lb)
169.00		0.1875	24.000	14.171	1015.2	21.16	128.00	65	77	97.3				
									Total Weight	**27200.5**				**857.5**

Wind Loading - Shaft

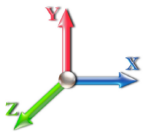
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	16.018	17.62	385.81	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	378.94	0.650	0.000	5.00	23.558	15.31	431.7	0.0	1566.1
10.00		1.00	0.70	16.018	17.62	372.07	0.650	0.000	5.00	23.135	15.04	423.9	0.0	1537.8
15.00		1.00	0.70	16.018	17.62	365.20	0.650	0.000	5.00	22.712	14.76	416.2	0.0	1509.4
20.00		1.00	0.70	16.018	17.62	358.33	0.650	0.000	5.00	22.288	14.49	408.4	0.0	1481.1
25.00		1.00	0.70	16.018	17.62	351.46	0.650	0.000	5.00	21.865	14.21	400.7	0.0	1452.7
30.00		1.00	0.70	16.031	17.63	344.74	0.650	0.000	5.00	21.442	13.94	393.2	0.0	1424.4
35.00		1.00	0.73	16.753	18.43	345.39	0.650	0.000	5.00	21.019	13.66	402.8	0.0	1396.0
40.00		1.00	0.76	17.405	19.15	344.89	0.650	0.000	5.00	20.596	13.39	410.1	0.0	1367.6
40.75	Bot - Section 2	1.00	0.76	17.497	19.25	344.73	0.650	0.000	0.75	3.053	1.98	61.1	0.0	202.7
45.00		1.00	0.79	18.000	19.80	343.46	0.650	0.000	4.25	17.389	11.30	358.1	0.0	2127.6
47.00	Top - Section 1	1.00	0.80	18.225	20.05	342.67	0.650	0.000	2.00	8.077	5.25	168.4	0.0	988.1
50.00		1.00	0.81	18.551	20.41	346.82	0.650	0.000	3.00	11.989	7.79	254.4	0.0	683.1
55.00		1.00	0.83	19.063	20.97	344.08	0.650	0.000	5.00	19.644	12.77	428.4	0.0	1119.1
60.00		1.00	0.85	19.543	21.50	340.80	0.650	0.000	5.00	19.220	12.49	429.7	0.0	1094.8
65.00		1.00	0.87	19.995	21.99	337.04	0.650	0.000	5.00	18.797	12.22	430.0	0.0	1070.5
70.00		1.00	0.89	20.422	22.46	332.87	0.650	0.000	5.00	18.374	11.94	429.3	0.0	1046.2
75.00		1.00	0.91	20.829	22.91	328.34	0.650	0.000	5.00	17.951	11.67	427.7	0.0	1021.9
80.00		1.00	0.93	21.217	23.34	323.47	0.650	0.000	5.00	17.528	11.39	425.4	0.0	997.6
85.00		1.00	0.94	21.587	23.75	318.32	0.650	0.000	5.00	17.105	11.12	422.4	0.0	973.3
89.25	Bot - Section 3	1.00	0.96	21.890	24.08	313.72	0.650	0.000	4.25	14.206	9.23	355.8	0.0	808.2
90.00		1.00	0.96	21.943	24.14	312.89	0.650	0.000	0.75	2.507	1.63	62.9	0.0	236.2
91.50	RB1	1.00	0.96	22.047	24.25	311.21	0.650	0.000	1.50	4.985	3.24	125.7	0.0	469.6
94.25	Top - Section 2	1.00	0.97	22.234	24.46	308.08	0.650	0.000	2.75	9.041	5.88	230.0	0.0	851.5
95.00		1.00	0.97	22.284	24.51	311.26	0.650	0.000	0.75	2.444	1.59	62.3	0.0	93.0
96.75	RB2	1.00	0.98	22.401	24.64	309.23	0.650	0.000	1.75	5.664	3.68	145.2	0.0	215.5
97.00	RT1	1.00	0.98	22.417	24.66	308.94	0.650	0.000	0.25	0.805	0.52	20.6	0.0	30.6
100.00		1.00	0.99	22.613	24.87	305.39	0.650	0.000	3.00	9.577	6.23	247.8	0.0	364.3
102.25	RT2	1.00	0.99	22.758	25.03	302.68	0.650	0.000	2.25	7.083	4.60	184.4	0.0	269.4
105.00		1.00	1.00	22.931	25.22	299.31	0.650	0.000	2.75	8.541	5.55	224.0	0.0	324.8
110.00		1.00	1.02	23.238	25.56	293.03	0.650	0.000	5.00	15.200	9.88	404.1	0.0	578.0
115.00		1.00	1.03	23.535	25.89	286.57	0.650	0.000	5.00	14.777	9.61	397.9	0.0	561.8
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	283.94	0.650	0.000	2.00	5.792	3.77	156.7	0.0	220.2
120.00		1.00	1.04	23.823	26.20	279.94	0.650	0.000	3.00	8.562	5.57	233.3	0.0	325.4
125.00		1.00	1.05	24.102	26.51	273.16	0.650	0.000	5.00	13.931	9.06	384.1	0.0	529.4
127.00	Appurtenance(s)	1.00	1.06	24.212	26.63	270.40	0.650	0.000	2.00	5.454	3.55	151.1	0.0	207.2
130.00		1.00	1.07	24.374	26.81	266.22	0.650	0.000	3.00	8.054	5.24	224.6	0.0	305.9
135.00		1.00	1.08	24.638	27.10	259.14	0.650	0.000	5.00	13.085	8.51	368.8	0.0	497.0
139.00	Bot - Section 4	1.00	1.09	24.844	27.33	253.38	0.650	0.000	4.00	10.163	6.61	288.9	0.0	385.9
140.00		1.00	1.09	24.895	27.38	251.93	0.650	0.000	1.00	2.530	1.64	72.1	0.0	167.1
142.75	Top - Section 3	1.00	1.09	25.034	27.54	247.90	0.650	0.000	2.75	6.871	4.47	196.8	0.0	453.6
145.00		1.00	1.10	25.146	27.66	247.81	0.650	0.000	2.25	5.526	3.59	159.0	0.0	157.7
146.00	Appurtenance(s)	1.00	1.10	25.196	27.72	246.33	0.650	0.000	1.00	2.429	1.58	70.0	0.0	69.3
148.00	Appurtenance(s)	1.00	1.11	25.294	27.82	243.36	0.650	0.000	2.00	4.806	3.12	139.1	0.0	137.1
150.00	Appurtenance(s)	1.00	1.11	25.391	27.93	240.37	0.650	0.000	2.00	4.739	3.08	137.6	0.0	135.2
155.00		1.00	1.12	25.630	28.19	232.81	0.650	0.000	5.00	11.551	7.51	338.7	0.0	329.4
157.00	Appurtenance(s)	1.00	1.12	25.724	28.30	229.75	0.650	0.000	2.00	4.502	2.93	132.5	0.0	128.4

Wind Loading - Shaft

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

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160.00		1.00	1.13	25.863	28.45	225.14	0.650	0.000	3.00	6.626	4.31	196.0	0.0	188.9
165.00	Appurtenance(s)	1.00	1.14	26.092	28.70	217.37	0.650	0.000	5.00	10.704	6.96	319.5	0.0	305.1
167.00	Appurtenance(s)	1.00	1.14	26.182	28.80	214.23	0.650	0.000	2.00	4.163	2.71	124.7	0.0	118.6
169.00		1.00	1.15	26.271	28.90	211.07	0.650	0.000	2.00	4.096	2.66	123.1	0.0	116.7
								Totals:	**169.00**			**13,399.2**		**32,640.6**

Discrete Appurtenance Forces

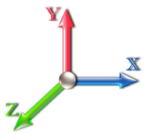
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	167.00	RRUS 4415 B25	3	26.182	28.800	0.54	0.80	2.64	165.60	0.000	0.000	121.52	0.00	0.00
2	167.00	Ericsson - KRY 112 144/2	3	26.182	28.800	0.60	0.80	0.74	39.60	0.000	0.000	34.01	0.00	0.00
3	167.00	AIR 21 B2A/B4P	3	26.182	28.800	0.77	0.90	14.14	331.20	0.000	0.000	651.61	0.00	0.00
4	167.00	T-Arms/Commscope	3	26.204	28.825	0.56	0.75	11.39	1224.00	0.000	0.500	525.33	0.00	262.66
5	167.00	Ericsson - Radio 4449	3	26.182	28.800	0.60	0.80	2.97	266.40	0.000	0.000	136.86	0.00	0.00
6	167.00	AIR 6449 B41	3	26.182	28.800	0.56	0.80	9.49	370.80	0.000	0.000	437.39	0.00	0.00
7	165.00	APXVAA24_43-U-A20	3	26.092	28.701	0.66	0.90	39.89	460.80	0.000	0.000	1831.95	0.00	0.00
8	165.00	Air 32	3	26.092	28.701	0.78	0.90	15.29	380.88	0.000	0.000	702.23	0.00	0.00
9	157.00	DB846H80E-SX	2	25.724	28.296	0.88	0.80	8.82	38.40	0.000	0.000	399.21	0.00	0.00
10	157.00	RF4439d-25A	3	25.724	28.296	0.66	0.80	3.74	303.84	0.000	0.000	169.55	0.00	0.00
11	157.00	DB846F65ZAXY	4	25.724	28.296	0.74	0.80	20.76	100.80	0.000	0.000	939.67	0.00	0.00
12	157.00	T-Arms	3	25.724	28.296	0.56	0.75	13.50	1260.00	0.000	0.000	611.20	0.00	0.00
13	157.00	DB-C1-12C-24AB-0Z	1	25.724	28.296	1.00	1.00	4.06	38.40	0.000	0.000	183.81	0.00	0.00
14	157.00	RF4440d-13A	3	25.724	28.296	0.66	0.80	3.74	303.84	0.000	0.000	169.55	0.00	0.00
15	157.00	MX06FRO660-02	6	25.724	28.296	0.70	0.80	41.22	432.00	0.000	0.000	1866.07	0.00	0.00
16	157.00	MT6407-77A	3	25.724	28.296	0.56	0.80	7.88	285.84	0.000	0.000	356.72	0.00	0.00
17	150.00	Collar Mount	1	25.391	27.930	1.00	1.00	3.50	120.00	0.000	0.000	156.41	0.00	0.00
18	150.00	Ericsson Air6419 B77G	3	25.391	27.930	0.61	0.80	6.93	237.96	0.000	0.000	309.74	0.00	0.00
19	148.00	Powerwave 21401	6	25.294	27.823	0.54	0.80	4.15	101.52	0.000	0.000	184.68	0.00	0.00
20	148.00	Commscope	1	25.294	27.823	0.54	0.80	0.53	41.40	0.000	0.000	23.62	0.00	0.00
21	148.00	Powerwave 1001940	3	25.294	27.823	0.54	0.80	0.40	7.92	0.000	0.000	17.90	0.00	0.00
22	148.00	Raycap	2	25.294	27.823	0.80	0.80	1.82	62.88	0.000	0.000	81.20	0.00	0.00
23	148.00	Ericsson RRUS 4478 B14	3	25.294	27.823	0.54	0.80	2.65	213.84	0.000	0.000	118.11	0.00	0.00
24	148.00	Quintel QD6616-7	1	25.294	27.823	0.74	0.80	5.98	133.20	0.000	0.000	266.37	0.00	0.00
25	148.00	T-Arms w/ Modifications	3	25.294	27.823	0.56	0.75	20.25	1620.00	0.000	0.000	901.47	0.00	0.00
26	148.00	CCI DMP65R-BU8DA	2	25.294	27.823	0.58	0.80	20.87	229.68	0.000	0.000	929.16	0.00	0.00
27	148.00	CCi DMP65R-BU6DA	1	25.294	27.823	0.58	0.80	7.32	95.28	0.000	0.000	325.91	0.00	0.00
28	148.00	Ericsson RRUS 4449	3	25.294	27.823	0.54	0.80	3.17	255.60	0.000	0.000	141.02	0.00	0.00
29	148.00	Quintel QD8616-7	2	25.294	27.823	0.74	0.80	11.97	266.40	0.000	0.000	532.75	0.00	0.00
30	148.00	Powerwave LGP13519	6	25.294	27.823	0.80	0.80	6.19	101.52	0.000	0.000	275.65	0.00	0.00
31	148.00	Ericsson RRUS 8843 B2	3	25.294	27.823	0.54	0.80	2.65	270.00	0.000	0.000	118.11	0.00	0.00
32	148.00	Ericsson RRUS 32	3	25.294	27.823	0.54	0.80	2.65	277.20	0.000	0.000	118.11	0.00	0.00
33	146.00	Ericsson Air6449 B77D	3	25.196	27.715	0.68	0.80	8.43	316.80	0.000	0.000	373.61	0.00	0.00
34	127.00	AAHC	3	24.212	26.633	0.56	0.75	7.10	372.96	0.000	0.000	302.73	0.00	0.00
35	127.00	VHLP800-11	1	24.212	26.633	1.00	1.00	8.43	57.60	1.455	0.000	359.22	326.67	0.00
36	127.00	NNVV-65B-R4	3	24.212	26.633	0.55	0.75	20.43	278.64	0.000	0.000	870.55	0.00	0.00
37	127.00	VHLP2-11	3	24.212	26.633	1.00	1.00	14.04	97.20	1.455	0.000	598.28	544.06	0.00
38	127.00	TD-RRH8x20-25	3	24.212	26.633	0.52	0.75	6.29	252.00	0.000	0.000	267.93	0.00	0.00
39	127.00	RMQP-4096-HK	1	24.212	26.633	1.00	1.00	51.70	3174.00	0.000	0.000	2203.06	0.00	0.00
40	127.00	Horizon Duo	4	24.212	26.633	0.60	0.80	1.42	33.60	0.000	0.000	60.34	0.00	0.00
41	127.00	1900MHz RRH	3	24.212	26.633	0.74	0.75	6.17	216.00	0.000	0.000	262.93	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	23.651	26.016	0.54	0.80	2.20	71.28	0.000	0.000	91.70	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	23.651	26.016	0.54	0.80	1.99	105.84	0.000	0.000	83.00	0.00	0.00
44	117.00	Standoff Sector Frame	3	23.651	26.016	0.56	0.75	25.48	1422.00	0.000	0.000	1060.67	0.00	0.00
45	117.00	Comba	3	23.651	26.016	0.56	0.80	8.15	90.36	0.000	0.000	339.16	0.00	0.00
							Totals:		**16,525.08**			**20,510.08**		

Total Applied Force Summary

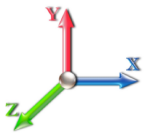
Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		431.69	1896.75	0.00	0.00
10.00		423.93	1868.40	0.00	0.00
15.00		416.18	1840.04	0.00	0.00
20.00		408.42	1811.69	0.00	0.00
25.00		400.67	1783.33	0.00	0.00
30.00		393.25	1754.98	0.00	0.00
35.00		402.84	1726.63	0.00	0.00
40.00		410.08	1698.27	0.00	0.00
40.75		61.11	252.30	0.00	0.00
45.00		358.09	2408.62	0.00	0.00
47.00		168.42	1120.31	0.00	0.00
50.00		254.43	881.50	0.00	0.00
55.00		428.38	1449.73	0.00	0.00
60.00		429.70	1425.42	0.00	0.00
65.00		429.97	1401.12	0.00	0.00
70.00		429.28	1376.81	0.00	0.00
75.00		427.74	1352.51	0.00	0.00
80.00		425.43	1328.21	0.00	0.00
85.00		422.42	1303.90	0.00	0.00
89.25		355.76	1089.21	0.00	0.00
90.00		62.93	285.77	0.00	0.00
91.50		125.74	568.81	0.00	0.00
94.25		229.96	1033.36	0.00	0.00
95.00		62.29	142.55	0.00	0.00
96.75		145.16	331.19	0.00	0.00
97.00		20.64	47.15	0.00	0.00
100.00		247.76	562.65	0.00	0.00
102.25		184.40	418.16	0.00	0.00
105.00		224.04	506.63	0.00	0.00
110.00		404.09	908.59	0.00	0.00
115.00		397.86	892.39	0.00	0.00
117.00	(11) attachments	1731.26	2041.90	0.00	0.00
120.00		233.33	520.33	0.00	0.00
125.00		384.12	854.26	0.00	0.00
127.00	(21) attachments	5076.11	4819.17	870.74	0.00
130.00		224.57	480.89	0.00	0.00
135.00		368.80	788.52	0.00	0.00
139.00		288.85	604.17	0.00	0.00
140.00		72.06	217.88	0.00	0.00
142.75		196.77	593.33	0.00	0.00
145.00		158.98	272.03	0.00	0.00
146.00	(3) attachments	443.61	436.91	0.00	0.00
148.00	(39) attachments	4173.14	3915.21	0.00	0.00
150.00	(4) attachments	603.80	571.26	0.00	0.00
155.00		338.67	524.75	0.00	0.00
157.00	(25) attachments	4828.26	2969.62	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

160.00		196.04	241.66	0.00	0.00
165.00	(6) attachments	2853.70	1234.72	0.00	0.00
167.00	(18) attachments	2031.41	2551.42	0.00	262.66
169.00		123.09	116.70	0.00	0.00
	Totals:	**33,909.25**	**59,221.70**	**870.74**	**262.66**

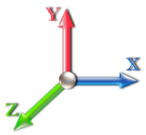
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.035	0.000	16.018	0.00	24.96
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.036	0.000	16.018	0.00	24.96
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.036	0.000	16.018	0.00	24.96
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.037	0.000	16.018	0.00	24.96
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.038	0.000	16.018	0.00	24.96
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.038	0.000	16.031	0.00	24.96
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.039	0.000	16.753	0.00	24.96
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.040	0.000	17.405	0.00	24.96
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.041	0.000	17.497	0.00	3.74
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.041	0.000	18.000	0.00	21.22
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	18.225	0.00	9.98
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.041	0.000	18.551	0.00	14.98
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.042	0.000	19.063	0.00	24.96
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.043	0.000	19.543	0.00	24.96
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.044	0.000	19.995	0.00	24.96
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.045	0.000	20.422	0.00	24.96
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.046	0.000	20.829	0.00	24.96
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.047	0.000	21.217	0.00	24.96
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.048	0.000	21.587	0.00	24.96
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.049	0.000	21.890	0.00	21.22
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.075	0.000	21.943	0.00	3.74
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.075	0.000	21.943	0.00	0.00
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.076	0.000	22.047	0.00	7.49
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.076	0.000	22.047	0.00	0.00
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.077	0.000	22.234	0.00	13.73
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.23	0.00	0.077	0.000	22.234	0.00	0.00
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.076	0.000	22.284	0.00	3.74
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.076	0.000	22.284	0.00	0.00
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.077	0.000	22.401	0.00	8.74
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.077	0.000	22.401	0.00	0.00
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.077	0.000	22.417	0.00	1.25
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.077	0.000	22.417	0.00	0.00
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.078	0.000	22.613	0.00	14.98
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.078	0.000	22.613	0.00	0.00
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.078	0.000	22.613	0.00	0.00
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.079	0.000	22.758	0.00	11.23
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.079	0.000	22.758	0.00	0.00
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.075	0.000	22.931	0.00	13.73
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.075	0.000	22.931	0.00	0.00
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.054	0.000	23.238	0.00	24.96
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.056	0.000	23.535	0.00	24.96
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	23.651	0.00	9.98
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.058	0.000	23.823	0.00	14.98
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.059	0.000	24.102	0.00	24.96
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	24.212	0.00	9.98
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.061	0.000	24.374	0.00	14.98
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.063	0.000	24.638	0.00	24.96

Linear Appurtenance Segment Forces (Factored)

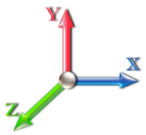
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.065	0.000	24.844	0.00	19.97
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.066	0.000	24.895	0.00	4.99
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.067	0.000	25.034	0.00	13.73
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.067	0.000	25.146	0.00	11.23
146.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.068	0.000	25.196	0.00	4.99
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	25.294	0.00	9.98
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	25.391	0.00	9.98
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.071	0.000	25.630	0.00	24.96
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	25.724	0.00	9.98
										Totals:	**0.0**	**783.7**

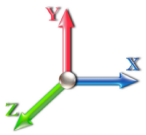
Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-59.16	-34.01	-0.85	-4354.7	-0.02	4354.78	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.724
5.00	-57.15	-33.78	-0.85	-4184.7	-0.02	4184.72	5261.08	2630.54	11832.5	5925.09	0.11	-0.200	0.000	0.717
10.00	-55.16	-33.54	-0.85	-4015.8	-0.02	4015.82	5196.80	2598.40	11472.7	5744.92	0.43	-0.403	0.000	0.710
15.00	-53.21	-33.30	-0.85	-3848.1	-0.02	3848.11	5131.34	2565.67	11115.7	5566.13	0.96	-0.608	0.000	0.702
20.00	-51.28	-33.06	-0.85	-3681.6	-0.02	3681.60	5064.69	2532.35	10761.6	5388.80	1.71	-0.816	0.000	0.693
25.00	-49.38	-32.81	-0.85	-3516.3	-0.02	3516.30	4996.86	2498.43	10410.5	5212.99	2.67	-1.027	0.000	0.685
30.00	-47.51	-32.56	-0.85	-3352.2	-0.02	3352.24	4927.84	2463.92	10062.6	5038.79	3.86	-1.240	0.000	0.675
35.00	-45.67	-32.29	-0.85	-3189.4	-0.02	3189.43	4857.63	2428.82	9718.08	4866.26	5.28	-1.455	0.000	0.665
40.00	-43.92	-31.93	-0.85	-3027.9	-0.02	3027.97	4786.24	2393.12	9377.03	4695.49	6.92	-1.673	0.000	0.654
40.75	-43.61	-31.95	-0.85	-3004.0	-0.02	3004.02	4775.43	2387.72	9326.19	4670.03	7.18	-1.707	0.000	0.653
45.00	-41.13	-31.61	-0.85	-2868.2	-0.02	2868.24	4713.67	2356.83	9039.63	4526.53	8.79	-1.894	0.000	0.643
47.00	-39.96	-31.49	-0.85	-2805.0	-0.02	2805.01	3877.89	1938.95	7512.92	3762.05	9.60	-1.985	0.000	0.756
50.00	-38.98	-31.33	-0.86	-2710.5	-0.03	2710.56	3845.09	1922.55	7353.82	3682.38	10.89	-2.119	-0.001	0.746
55.00	-37.42	-31.01	-0.86	-2553.9	-0.03	2553.90	3789.47	1894.74	7090.51	3550.52	13.24	-2.366	-0.001	0.729
60.00	-35.88	-30.67	-0.86	-2398.8	-0.03	2398.86	3732.67	1866.34	6829.63	3419.89	15.85	-2.614	-0.001	0.711
65.00	-34.37	-30.33	-0.86	-2245.5	-0.03	2245.50	3674.68	1837.34	6571.34	3290.55	18.72	-2.862	-0.001	0.692
70.00	-32.89	-29.97	-0.86	-2093.8	-0.03	2093.88	3615.51	1807.76	6315.78	3162.58	21.85	-3.111	-0.001	0.671
75.00	-31.43	-29.60	-0.86	-1944.0	-0.03	1944.04	3555.15	1777.58	6063.10	3036.06	25.24	-3.359	-0.001	0.649
80.00	-30.01	-29.22	-0.86	-1796.0	-0.04	1796.04	3493.61	1746.80	5813.45	2911.05	28.89	-3.605	-0.001	0.626
85.00	-28.62	-28.83	-0.86	-1649.9	-0.04	1649.92	3430.88	1715.44	5566.98	2787.63	32.80	-3.850	-0.001	0.601
89.25	-27.50	-28.46	-0.86	-1527.4	-0.04	1527.40	3376.63	1688.32	5360.08	2684.02	36.31	-4.056	-0.001	0.578
90.00	-27.19	-28.40	-0.86	-1506.0	-0.04	1506.06	3366.97	1683.48	5323.83	2665.87	36.95	-4.093	-0.001	0.573
91.50	-26.59	-28.27	-0.86	-1463.4	-0.04	1463.45	3347.56	1673.78	5251.55	2629.68	38.25	-4.167	-0.001	0.423
94.25	-25.55	-28.00	-0.86	-1385.7	-0.04	1385.70	1944.87	972.44	3066.99	1535.78	40.68	-4.266	-0.001	0.479
95.00	-25.38	-27.95	-0.86	-1364.7	-0.04	1364.70	1940.65	970.33	3048.28	1526.41	41.35	-4.293	-0.002	0.610
96.75	-25.04	-27.80	-0.86	-1315.7	-0.04	1315.79	1930.70	965.35	3004.67	1504.57	42.94	-4.374	-0.002	0.417
97.00	-24.96	-27.80	-0.86	-1308.8	-0.04	1308.84	1929.27	964.63	2998.44	1501.45	43.17	-4.382	-0.002	0.541
100.00	-24.37	-27.56	-0.86	-1225.4	-0.04	1225.43	1911.84	955.92	2923.84	1464.09	45.96	-4.504	-0.002	0.516
102.25	-23.92	-27.38	-0.86	-1163.4	-0.04	1163.43	1898.49	949.24	2868.04	1436.15	48.10	-4.594	-0.002	0.497
102.25	-23.92	-27.38	-0.86	-1163.4	-0.04	1163.43	1898.49	949.24	2868.04	1436.15	48.10	-4.594	-0.002	0.497
105.00	-23.33	-27.20	-0.86	-1088.1	-0.05	1088.13	1881.84	940.92	2800.02	1402.09	50.78	-4.701	-0.002	0.789
110.00	-22.32	-26.84	-0.87	-952.12	-0.05	952.12	1850.66	925.33	2676.97	1340.48	55.86	-5.006	-0.002	0.723
115.00	-21.38	-26.44	-0.87	-817.93	-0.05	817.93	1818.29	909.14	2554.84	1279.32	61.25	-5.295	-0.003	0.652
117.00	-19.45	-24.57	-0.87	-765.05	-0.05	765.05	1805.01	902.50	2506.28	1255.00	63.49	-5.407	-0.003	0.621
120.00	-18.87	-24.36	-0.87	-691.35	-0.06	691.35	1784.73	892.37	2433.78	1218.70	66.94	-5.568	-0.003	0.579
125.00	-17.99	-23.94	-0.87	-569.57	-0.06	569.57	1749.99	875.00	2313.93	1158.68	72.90	-5.813	-0.003	0.503
127.00	-13.68	-18.43	0.00	-521.69	0.03	521.69	1735.77	867.88	2266.36	1134.86	75.35	-5.906	-0.003	0.468
130.00	-13.17	-18.19	0.00	-466.42	0.02	466.42	1714.07	857.04	2195.44	1099.35	79.10	-6.037	-0.003	0.432
135.00	-12.37	-17.78	0.00	-375.47	0.02	375.47	1676.96	838.48	2078.45	1040.77	85.52	-6.234	-0.003	0.369
139.00	-11.78	-17.44	0.00	-304.37	0.02	304.37	1646.42	823.21	1986.05	994.50	90.79	-6.375	-0.003	0.314
140.00	-11.55	-17.36	0.00	-286.93	0.01	286.93	1638.67	819.33	1963.12	983.02	92.13	-6.408	-0.003	0.299
142.75	-10.96	-17.11	0.00	-239.20	0.01	239.20	1100.62	550.31	1316.21	659.08	95.84	-6.491	-0.003	0.374
145.00	-10.70	-16.93	0.00	-200.71	0.01	200.71	1091.20	545.60	1284.61	643.26	98.91	-6.551	-0.003	0.323
146.00	-10.30	-16.44	0.00	-183.79	0.01	183.79	1086.94	543.47	1270.59	636.24	100.28	-6.582	-0.003	0.299
148.00	-6.88	-11.85	0.00	-150.90	0.01	150.90	1078.27	539.14	1242.60	622.22	103.04	-6.637	-0.003	0.249
150.00	-6.37	-11.20	0.00	-127.19	0.01	127.19	1069.42	534.71	1214.68	608.24	105.83	-6.685	-0.003	0.216
155.00	-5.88	-10.80	0.00	-71.22	0.00	71.22	1046.45	523.23	1145.25	573.48	112.87	-6.774	-0.003	0.130
157.00	-3.50	-5.66	0.00	-49.61	0.00	49.61	1036.93	518.47	1117.66	559.66	115.70	-6.798	-0.003	0.092

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

160.00	-3.28	-5.44	0.00	-32.64	0.00	32.64	1022.30	511.15	1076.48	539.04	119.97	-6.824	-0.003	0.064
165.00	-2.39	-2.46	0.00	-5.45	0.00	5.45	996.96	498.48	1008.51	505.00	127.12	-6.845	-0.003	0.013
167.00	-0.10	-0.14	0.00	-0.27	0.00	0.27	986.50	493.25	981.58	491.52	129.98	-6.847	-0.003	0.001
169.00	0.00	-0.12	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	132.84	-6.847	-0.003	0.000

Wind Loading - Shaft

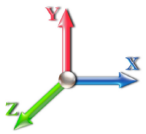
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	16.018	17.62	385.81	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	378.94	0.650	0.000	5.00	23.558	15.31	431.7	0.0	1174.6
10.00		1.00	0.70	16.018	17.62	372.07	0.650	0.000	5.00	23.135	15.04	423.9	0.0	1153.3
15.00		1.00	0.70	16.018	17.62	365.20	0.650	0.000	5.00	22.712	14.76	416.2	0.0	1132.1
20.00		1.00	0.70	16.018	17.62	358.33	0.650	0.000	5.00	22.288	14.49	408.4	0.0	1110.8
25.00		1.00	0.70	16.018	17.62	351.46	0.650	0.000	5.00	21.865	14.21	400.7	0.0	1089.5
30.00		1.00	0.70	16.031	17.63	344.74	0.650	0.000	5.00	21.442	13.94	393.2	0.0	1068.3
35.00		1.00	0.73	16.753	18.43	345.39	0.650	0.000	5.00	21.019	13.66	402.8	0.0	1047.0
40.00		1.00	0.76	17.405	19.15	344.89	0.650	0.000	5.00	20.596	13.39	410.1	0.0	1025.7
40.75	Bot - Section 2	1.00	0.76	17.497	19.25	344.73	0.650	0.000	0.75	3.053	1.98	61.1	0.0	152.0
45.00		1.00	0.79	18.000	19.80	343.46	0.650	0.000	4.25	17.389	11.30	358.1	0.0	1595.7
47.00	Top - Section 1	1.00	0.80	18.225	20.05	342.67	0.650	0.000	2.00	8.077	5.25	168.4	0.0	741.0
50.00		1.00	0.81	18.551	20.41	346.82	0.650	0.000	3.00	11.989	7.79	254.4	0.0	512.3
55.00		1.00	0.83	19.063	20.97	344.08	0.650	0.000	5.00	19.644	12.77	428.4	0.0	839.3
60.00		1.00	0.85	19.543	21.50	340.80	0.650	0.000	5.00	19.220	12.49	429.7	0.0	821.1
65.00		1.00	0.87	19.995	21.99	337.04	0.650	0.000	5.00	18.797	12.22	430.0	0.0	802.9
70.00		1.00	0.89	20.422	22.46	332.87	0.650	0.000	5.00	18.374	11.94	429.3	0.0	784.6
75.00		1.00	0.91	20.829	22.91	328.34	0.650	0.000	5.00	17.951	11.67	427.7	0.0	766.4
80.00		1.00	0.93	21.217	23.34	323.47	0.650	0.000	5.00	17.528	11.39	425.4	0.0	748.2
85.00		1.00	0.94	21.587	23.75	318.32	0.650	0.000	5.00	17.105	11.12	422.4	0.0	730.0
89.25	Bot - Section 3	1.00	0.96	21.890	24.08	313.72	0.650	0.000	4.25	14.206	9.23	355.8	0.0	606.1
90.00		1.00	0.96	21.943	24.14	312.89	0.650	0.000	0.75	2.507	1.63	62.9	0.0	177.1
91.50	RB1	1.00	0.96	22.047	24.25	311.21	0.650	0.000	1.50	4.985	3.24	125.7	0.0	352.2
94.25	Top - Section 2	1.00	0.97	22.234	24.46	308.08	0.650	0.000	2.75	9.041	5.88	230.0	0.0	638.6
95.00		1.00	0.97	22.284	24.51	311.26	0.650	0.000	0.75	2.444	1.59	62.3	0.0	69.7
96.75	RB2	1.00	0.98	22.401	24.64	309.23	0.650	0.000	1.75	5.664	3.68	145.2	0.0	161.6
97.00	RT1	1.00	0.98	22.417	24.66	308.94	0.650	0.000	0.25	0.805	0.52	20.6	0.0	23.0
100.00		1.00	0.99	22.613	24.87	305.39	0.650	0.000	3.00	9.577	6.23	247.8	0.0	273.2
102.25	RT2	1.00	0.99	22.758	25.03	302.68	0.650	0.000	2.25	7.083	4.60	184.4	0.0	202.0
105.00		1.00	1.00	22.931	25.22	299.31	0.650	0.000	2.75	8.541	5.55	224.0	0.0	243.6
110.00		1.00	1.02	23.238	25.56	293.03	0.650	0.000	5.00	15.200	9.88	404.1	0.0	433.5
115.00		1.00	1.03	23.535	25.89	286.57	0.650	0.000	5.00	14.777	9.61	397.9	0.0	421.3
117.00	Appurtenance(s)	1.00	1.03	23.651	26.02	283.94	0.650	0.000	2.00	5.792	3.77	156.7	0.0	165.1
120.00		1.00	1.04	23.823	26.20	279.94	0.650	0.000	3.00	8.562	5.57	233.3	0.0	244.0
125.00		1.00	1.05	24.102	26.51	273.16	0.650	0.000	5.00	13.931	9.06	384.1	0.0	397.0
127.00	Appurtenance(s)	1.00	1.06	24.212	26.63	270.40	0.650	0.000	2.00	5.454	3.55	151.1	0.0	155.4
130.00		1.00	1.07	24.374	26.81	266.22	0.650	0.000	3.00	8.054	5.24	224.6	0.0	229.5
135.00		1.00	1.08	24.638	27.10	259.14	0.650	0.000	5.00	13.085	8.51	368.8	0.0	372.7
139.00	Bot - Section 4	1.00	1.09	24.844	27.33	253.38	0.650	0.000	4.00	10.163	6.61	288.9	0.0	289.4
140.00		1.00	1.09	24.895	27.38	251.93	0.650	0.000	1.00	2.530	1.64	72.1	0.0	125.3
142.75	Top - Section 3	1.00	1.09	25.034	27.54	247.90	0.650	0.000	2.75	6.871	4.47	196.8	0.0	340.2
145.00		1.00	1.10	25.146	27.66	247.81	0.650	0.000	2.25	5.526	3.59	159.0	0.0	118.3
146.00	Appurtenance(s)	1.00	1.10	25.196	27.72	246.33	0.650	0.000	1.00	2.429	1.58	70.0	0.0	52.0
148.00	Appurtenance(s)	1.00	1.11	25.294	27.82	243.36	0.650	0.000	2.00	4.806	3.12	139.1	0.0	102.8
150.00	Appurtenance(s)	1.00	1.11	25.391	27.93	240.37	0.650	0.000	2.00	4.739	3.08	137.6	0.0	101.4
155.00		1.00	1.12	25.630	28.19	232.81	0.650	0.000	5.00	11.551	7.51	338.7	0.0	247.1
157.00	Appurtenance(s)	1.00	1.12	25.724	28.30	229.75	0.650	0.000	2.00	4.502	2.93	132.5	0.0	96.3

Wind Loading - Shaft

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

160.00		1.00	1.13	25.863	28.45	225.14	0.650	0.000	3.00	6.626	4.31	196.0	0.0	141.7
165.00	Appurtenance(s)	1.00	1.14	26.092	28.70	217.37	0.650	0.000	5.00	10.704	6.96	319.5	0.0	228.8
167.00	Appurtenance(s)	1.00	1.14	26.182	28.80	214.23	0.650	0.000	2.00	4.163	2.71	124.7	0.0	89.0
169.00		1.00	1.15	26.271	28.90	211.07	0.650	0.000	2.00	4.096	2.66	123.1	0.0	87.5
								Totals:	**169.00**			**13,399.2**		**24,480.4**

Discrete Appurtenance Forces

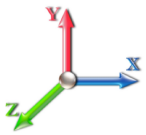
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	167.00	RRUS 4415 B25	3	26.182	28.800	0.54	0.80	2.64	124.20	0.000	0.000	121.52	0.00	0.00
2	167.00	Ericsson - KRY 112 144/2	3	26.182	28.800	0.60	0.80	0.74	29.70	0.000	0.000	34.01	0.00	0.00
3	167.00	AIR 21 B2A/B4P	3	26.182	28.800	0.77	0.90	14.14	248.40	0.000	0.000	651.61	0.00	0.00
4	167.00	T-Arms/Commscope	3	26.204	28.825	0.56	0.75	11.39	918.00	0.000	0.500	525.33	0.00	262.66
5	167.00	Ericsson - Radio 4449	3	26.182	28.800	0.60	0.80	2.97	199.80	0.000	0.000	136.86	0.00	0.00
6	167.00	AIR 6449 B41	3	26.182	28.800	0.56	0.80	9.49	278.10	0.000	0.000	437.39	0.00	0.00
7	165.00	APXVAA24_43-U-A20	3	26.092	28.701	0.66	0.90	39.89	345.60	0.000	0.000	1831.95	0.00	0.00
8	165.00	Air 32	3	26.092	28.701	0.78	0.90	15.29	285.66	0.000	0.000	702.23	0.00	0.00
9	157.00	DB846H80E-SX	2	25.724	28.296	0.88	0.80	8.82	28.80	0.000	0.000	399.21	0.00	0.00
10	157.00	RF4439d-25A	3	25.724	28.296	0.66	0.80	3.74	227.88	0.000	0.000	169.55	0.00	0.00
11	157.00	DB846F65ZAXY	4	25.724	28.296	0.74	0.80	20.76	75.60	0.000	0.000	939.67	0.00	0.00
12	157.00	T-Arms	3	25.724	28.296	0.56	0.75	13.50	945.00	0.000	0.000	611.20	0.00	0.00
13	157.00	DB-C1-12C-24AB-0Z	1	25.724	28.296	1.00	1.00	4.06	28.80	0.000	0.000	183.81	0.00	0.00
14	157.00	RF4440d-13A	3	25.724	28.296	0.66	0.80	3.74	227.88	0.000	0.000	169.55	0.00	0.00
15	157.00	MX06FRO660-02	6	25.724	28.296	0.70	0.80	41.22	324.00	0.000	0.000	1866.07	0.00	0.00
16	157.00	MT6407-77A	3	25.724	28.296	0.56	0.80	7.88	214.38	0.000	0.000	356.72	0.00	0.00
17	150.00	Collar Mount	1	25.391	27.930	1.00	1.00	3.50	90.00	0.000	0.000	156.41	0.00	0.00
18	150.00	Ericsson Air6419 B77G	3	25.391	27.930	0.61	0.80	6.93	178.47	0.000	0.000	309.74	0.00	0.00
19	148.00	Powerwave 21401	6	25.294	27.823	0.54	0.80	4.15	76.14	0.000	0.000	184.68	0.00	0.00
20	148.00	Commscope	1	25.294	27.823	0.54	0.80	0.53	31.05	0.000	0.000	23.62	0.00	0.00
21	148.00	Powerwave 1001940	3	25.294	27.823	0.54	0.80	0.40	5.94	0.000	0.000	17.90	0.00	0.00
22	148.00	Raycap	2	25.294	27.823	0.80	0.80	1.82	47.16	0.000	0.000	81.20	0.00	0.00
23	148.00	Ericsson RRUS 4478 B14	3	25.294	27.823	0.54	0.80	2.65	160.38	0.000	0.000	118.11	0.00	0.00
24	148.00	Quintel QD6616-7	1	25.294	27.823	0.74	0.80	5.98	99.90	0.000	0.000	266.37	0.00	0.00
25	148.00	T-Arms w/ Modifications	3	25.294	27.823	0.56	0.75	20.25	1215.00	0.000	0.000	901.47	0.00	0.00
26	148.00	CCI DMP65R-BU8DA	2	25.294	27.823	0.58	0.80	20.87	172.26	0.000	0.000	929.16	0.00	0.00
27	148.00	CCi DMP65R-BU6DA	1	25.294	27.823	0.58	0.80	7.32	71.46	0.000	0.000	325.91	0.00	0.00
28	148.00	Ericsson RRUS 4449	3	25.294	27.823	0.54	0.80	3.17	191.70	0.000	0.000	141.02	0.00	0.00
29	148.00	Quintel QD8616-7	2	25.294	27.823	0.74	0.80	11.97	199.80	0.000	0.000	532.75	0.00	0.00
30	148.00	Powerwave LGP13519	6	25.294	27.823	0.80	0.80	6.19	76.14	0.000	0.000	275.65	0.00	0.00
31	148.00	Ericsson RRUS 8843 B2	3	25.294	27.823	0.54	0.80	2.65	202.50	0.000	0.000	118.11	0.00	0.00
32	148.00	Ericsson RRUS 32	3	25.294	27.823	0.54	0.80	2.65	207.90	0.000	0.000	118.11	0.00	0.00
33	146.00	Ericsson Air6449 B77D	3	25.196	27.715	0.68	0.80	8.43	237.60	0.000	0.000	373.61	0.00	0.00
34	127.00	AAHC	3	24.212	26.633	0.56	0.75	7.10	279.72	0.000	0.000	302.73	0.00	0.00
35	127.00	VHLP800-11	1	24.212	26.633	1.00	1.00	8.43	43.20	1.455	0.000	359.22	326.67	0.00
36	127.00	NNVV-65B-R4	3	24.212	26.633	0.55	0.75	20.43	208.98	0.000	0.000	870.55	0.00	0.00
37	127.00	VHLP2-11	3	24.212	26.633	1.00	1.00	14.04	72.90	1.455	0.000	598.28	544.06	0.00
38	127.00	TD-RRH8x20-25	3	24.212	26.633	0.52	0.75	6.29	189.00	0.000	0.000	267.93	0.00	0.00
39	127.00	RMQP-4096-HK	1	24.212	26.633	1.00	1.00	51.70	2380.50	0.000	0.000	2203.06	0.00	0.00
40	127.00	Horizon Duo	4	24.212	26.633	0.60	0.80	1.42	25.20	0.000	0.000	60.34	0.00	0.00
41	127.00	1900MHz RRH	3	24.212	26.633	0.74	0.75	6.17	162.00	0.000	0.000	262.93	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	23.651	26.016	0.54	0.80	2.20	53.46	0.000	0.000	91.70	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	23.651	26.016	0.54	0.80	1.99	79.38	0.000	0.000	83.00	0.00	0.00
44	117.00	Standoff Sector Frame	3	23.651	26.016	0.56	0.75	25.48	1066.50	0.000	0.000	1060.67	0.00	0.00
45	117.00	Comba	3	23.651	26.016	0.56	0.80	8.15	67.77	0.000	0.000	339.16	0.00	0.00
							Totals:		**12,393.81**			**20,510.08**		

Total Applied Force Summary

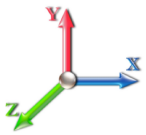
Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		431.69	1422.56	0.00	0.00
10.00		423.93	1401.30	0.00	0.00
15.00		416.18	1380.03	0.00	0.00
20.00		408.42	1358.77	0.00	0.00
25.00		400.67	1337.50	0.00	0.00
30.00		393.25	1316.23	0.00	0.00
35.00		402.84	1294.97	0.00	0.00
40.00		410.08	1273.70	0.00	0.00
40.75		61.11	189.22	0.00	0.00
45.00		358.09	1806.47	0.00	0.00
47.00		168.42	840.23	0.00	0.00
50.00		254.43	661.13	0.00	0.00
55.00		428.38	1087.29	0.00	0.00
60.00		429.70	1069.07	0.00	0.00
65.00		429.97	1050.84	0.00	0.00
70.00		429.28	1032.61	0.00	0.00
75.00		427.74	1014.38	0.00	0.00
80.00		425.43	996.16	0.00	0.00
85.00		422.42	977.93	0.00	0.00
89.25		355.76	816.91	0.00	0.00
90.00		62.93	214.33	0.00	0.00
91.50		125.74	426.61	0.00	0.00
94.25		229.96	775.02	0.00	0.00
95.00		62.29	106.91	0.00	0.00
96.75		145.16	248.39	0.00	0.00
97.00		20.64	35.36	0.00	0.00
100.00		247.76	421.99	0.00	0.00
102.25		184.40	313.62	0.00	0.00
105.00		224.04	379.97	0.00	0.00
110.00		404.09	681.44	0.00	0.00
115.00		397.86	669.29	0.00	0.00
117.00	(11) attachments	1731.26	1531.42	0.00	0.00
120.00		233.33	390.25	0.00	0.00
125.00		384.12	640.69	0.00	0.00
127.00	(21) attachments	5076.11	3614.38	870.74	0.00
130.00		224.57	360.67	0.00	0.00
135.00		368.80	591.39	0.00	0.00
139.00		288.85	453.13	0.00	0.00
140.00		72.06	163.41	0.00	0.00
142.75		196.77	445.00	0.00	0.00
145.00		158.98	204.02	0.00	0.00
146.00	(3) attachments	443.61	327.68	0.00	0.00
148.00	(39) attachments	4173.14	2936.40	0.00	0.00
150.00	(4) attachments	603.80	428.45	0.00	0.00
155.00		338.67	393.56	0.00	0.00
157.00	(25) attachments	4828.26	2227.21	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 23

Tower Engineering Solutions

160.00		196.04	181.24	0.00	0.00
165.00	(6) attachments	2853.70	926.04	0.00	0.00
167.00	(18) attachments	2031.41	1913.56	0.00	262.66
169.00		123.09	87.53	0.00	0.00
	Totals:	**33,909.25**	**44,416.28**	**870.74**	**262.66**

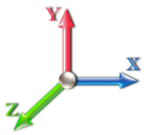
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.035	0.000	16.018	0.00	18.72
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.036	0.000	16.018	0.00	18.72
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.036	0.000	16.018	0.00	18.72
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.037	0.000	16.018	0.00	18.72
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.038	0.000	16.018	0.00	18.72
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.038	0.000	16.031	0.00	18.72
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.039	0.000	16.753	0.00	18.72
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.040	0.000	17.405	0.00	18.72
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.041	0.000	17.497	0.00	2.81
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.041	0.000	18.000	0.00	15.91
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	18.225	0.00	7.49
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.041	0.000	18.551	0.00	11.23
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.042	0.000	19.063	0.00	18.72
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.043	0.000	19.543	0.00	18.72
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.044	0.000	19.995	0.00	18.72
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.045	0.000	20.422	0.00	18.72
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.046	0.000	20.829	0.00	18.72
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.047	0.000	21.217	0.00	18.72
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.048	0.000	21.587	0.00	18.72
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.049	0.000	21.890	0.00	15.91
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.075	0.000	21.943	0.00	2.81
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.075	0.000	21.943	0.00	0.00
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.076	0.000	22.047	0.00	5.62
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.076	0.000	22.047	0.00	0.00
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.077	0.000	22.234	0.00	10.30
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.23	0.00	0.077	0.000	22.234	0.00	0.00
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.076	0.000	22.284	0.00	2.81
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.076	0.000	22.284	0.00	0.00
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.077	0.000	22.401	0.00	6.55
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.077	0.000	22.401	0.00	0.00
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.077	0.000	22.417	0.00	0.94
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.077	0.000	22.417	0.00	0.00
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.078	0.000	22.613	0.00	11.23
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.078	0.000	22.613	0.00	0.00
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.078	0.000	22.613	0.00	0.00
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.079	0.000	22.758	0.00	8.42
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.079	0.000	22.758	0.00	0.00
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.075	0.000	22.931	0.00	10.30
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.075	0.000	22.931	0.00	0.00
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.054	0.000	23.238	0.00	18.72
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.056	0.000	23.535	0.00	18.72
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	23.651	0.00	7.49
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.058	0.000	23.823	0.00	11.23
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.059	0.000	24.102	0.00	18.72
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	24.212	0.00	7.49
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.061	0.000	24.374	0.00	11.23
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.063	0.000	24.638	0.00	18.72

Linear Appurtenance Segment Forces (Factored)

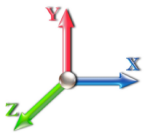
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.065	0.000	24.844	0.00	14.98
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.066	0.000	24.895	0.00	3.74
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.067	0.000	25.034	0.00	10.30
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.067	0.000	25.146	0.00	8.42
146.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.068	0.000	25.196	0.00	3.74
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	25.294	0.00	7.49
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	25.391	0.00	7.49
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.071	0.000	25.630	0.00	18.72
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	25.724	0.00	7.49
										Totals:	**0.0**	**587.8**

Calculated Forces

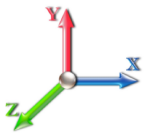
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-44.36	-33.99	-0.85	-4291.2	-0.01	4291.25	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.711
5.00	-42.82	-33.70	-0.85	-4121.3	-0.01	4121.32	5261.08	2630.54	11832.5	5925.09	0.11	-0.197	0.000	0.704
10.00	-41.30	-33.41	-0.85	-3952.8	-0.01	3952.82	5196.80	2598.40	11472.7	5744.92	0.42	-0.396	0.000	0.696
15.00	-39.81	-33.13	-0.85	-3785.7	-0.01	3785.74	5131.34	2565.67	11115.7	5566.13	0.94	-0.599	0.000	0.688
20.00	-38.34	-32.84	-0.85	-3620.1	-0.02	3620.11	5064.69	2532.35	10761.6	5388.80	1.68	-0.803	0.000	0.680
25.00	-36.89	-32.55	-0.85	-3455.9	-0.02	3455.90	4996.86	2498.43	10410.5	5212.99	2.63	-1.010	0.000	0.670
30.00	-35.46	-32.27	-0.85	-3293.1	-0.02	3293.14	4927.84	2463.92	10062.6	5038.79	3.80	-1.220	0.000	0.661
35.00	-34.06	-31.96	-0.85	-3131.8	-0.02	3131.81	4857.63	2428.82	9718.08	4866.26	5.19	-1.431	0.000	0.651
40.00	-32.73	-31.59	-0.85	-2972.0	-0.02	2972.02	4786.24	2393.12	9377.03	4695.49	6.81	-1.645	0.000	0.640
40.75	-32.48	-31.58	-0.85	-2948.3	-0.02	2948.33	4775.43	2387.72	9326.19	4670.03	7.07	-1.678	0.000	0.638
45.00	-30.61	-31.24	-0.86	-2814.1	-0.02	2814.12	4713.67	2356.83	9039.63	4526.53	8.65	-1.862	0.000	0.628
47.00	-29.72	-31.10	-0.86	-2751.6	-0.02	2751.64	3877.89	1938.95	7512.92	3762.05	9.44	-1.951	0.000	0.739
50.00	-28.96	-30.92	-0.86	-2658.3	-0.02	2658.34	3845.09	1922.55	7353.82	3682.38	10.71	-2.083	-0.001	0.730
55.00	-27.77	-30.57	-0.86	-2503.7	-0.02	2503.75	3789.47	1894.74	7090.51	3550.52	13.02	-2.325	-0.001	0.713
60.00	-26.59	-30.20	-0.86	-2350.9	-0.02	2350.92	3732.67	1866.34	6829.63	3419.89	15.59	-2.568	-0.001	0.695
65.00	-25.43	-29.83	-0.86	-2199.9	-0.03	2199.90	3674.68	1837.34	6571.34	3290.55	18.41	-2.811	-0.001	0.676
70.00	-24.30	-29.46	-0.86	-2050.7	-0.03	2050.74	3615.51	1807.76	6315.78	3162.58	21.48	-3.055	-0.001	0.655
75.00	-23.19	-29.07	-0.86	-1903.4	-0.03	1903.46	3555.15	1777.58	6063.10	3036.06	24.81	-3.297	-0.001	0.634
80.00	-22.10	-28.68	-0.86	-1758.1	-0.03	1758.11	3493.61	1746.80	5813.45	2911.05	28.39	-3.539	-0.001	0.611
85.00	-21.04	-28.28	-0.86	-1614.7	-0.03	1614.72	3430.88	1715.44	5566.98	2787.63	32.22	-3.778	-0.001	0.586
89.25	-20.19	-27.91	-0.86	-1494.5	-0.03	1494.55	3376.63	1688.32	5360.08	2684.02	35.68	-3.980	-0.001	0.563
90.00	-19.96	-27.85	-0.86	-1473.6	-0.04	1473.61	3366.97	1683.48	5323.83	2665.87	36.31	-4.016	-0.001	0.559
91.50	-19.50	-27.72	-0.86	-1431.8	-0.04	1431.84	3347.56	1673.78	5251.55	2629.68	37.58	-4.088	-0.001	0.412
94.25	-18.71	-27.46	-0.86	-1355.6	-0.04	1355.61	1944.87	972.44	3066.99	1535.78	39.96	-4.185	-0.001	0.467
95.00	-18.58	-27.40	-0.86	-1335.0	-0.04	1335.02	1940.65	970.33	3048.28	1526.41	40.62	-4.212	-0.002	0.595
96.75	-18.33	-27.25	-0.86	-1287.0	-0.04	1287.06	1930.70	965.35	3004.67	1504.57	42.18	-4.291	-0.002	0.407
97.00	-18.26	-27.25	-0.86	-1280.2	-0.04	1280.24	1929.27	964.63	2998.44	1501.45	42.40	-4.299	-0.002	0.527
100.00	-17.81	-27.01	-0.86	-1198.4	-0.04	1198.49	1911.84	955.92	2923.84	1464.09	45.14	-4.418	-0.002	0.503
102.25	-17.47	-26.83	-0.86	-1137.7	-0.04	1137.73	1898.49	949.24	2868.04	1436.15	47.24	-4.506	-0.002	0.484
102.25	-17.47	-26.83	-0.86	-1137.7	-0.04	1137.73	1898.49	949.24	2868.04	1436.15	47.24	-4.506	-0.002	0.484
105.00	-17.01	-26.63	-0.87	-1063.9	-0.04	1063.96	1881.84	940.92	2800.02	1402.09	49.87	-4.611	-0.002	0.769
110.00	-16.23	-26.26	-0.87	-930.79	-0.05	930.79	1850.66	925.33	2676.97	1340.48	54.85	-4.909	-0.002	0.704
115.00	-15.52	-25.85	-0.87	-799.51	-0.05	799.51	1818.29	909.14	2554.84	1279.32	60.14	-5.191	-0.003	0.634
117.00	-14.09	-24.02	-0.87	-747.80	-0.05	747.80	1805.01	902.50	2506.28	1255.00	62.34	-5.301	-0.003	0.604
120.00	-13.64	-23.80	-0.87	-675.73	-0.05	675.73	1784.73	892.37	2433.78	1218.70	65.72	-5.459	-0.003	0.563
125.00	-12.98	-23.39	-0.87	-556.72	-0.06	556.72	1749.99	875.00	2313.93	1158.68	71.56	-5.698	-0.003	0.489
127.00	-9.85	-18.00	0.00	-509.93	0.03	509.93	1735.77	867.88	2266.36	1134.86	73.96	-5.789	-0.003	0.455
130.00	-9.47	-17.77	0.00	-455.93	0.02	455.93	1714.07	857.04	2195.44	1099.35	77.63	-5.917	-0.003	0.421
135.00	-8.87	-17.36	0.00	-367.09	0.02	367.09	1676.96	838.48	2078.45	1040.77	83.93	-6.110	-0.003	0.358
139.00	-8.42	-17.04	0.00	-297.63	0.02	297.63	1646.42	823.21	1986.05	994.50	89.10	-6.247	-0.003	0.305
140.00	-8.25	-16.96	0.00	-280.59	0.02	280.59	1638.67	819.33	1963.12	983.02	90.41	-6.280	-0.003	0.291
142.75	-7.81	-16.72	0.00	-233.95	0.01	233.95	1100.62	550.31	1316.21	659.08	94.04	-6.360	-0.003	0.363
145.00	-7.61	-16.55	0.00	-196.32	0.01	196.32	1091.20	545.60	1284.61	643.26	97.05	-6.419	-0.003	0.313
146.00	-7.33	-16.08	0.00	-179.77	0.01	179.77	1086.94	543.47	1270.59	636.24	98.39	-6.449	-0.003	0.290
148.00	-4.87	-11.60	0.00	-147.62	0.01	147.62	1078.27	539.14	1242.60	622.22	101.10	-6.503	-0.003	0.242
150.00	-4.50	-10.96	0.00	-124.41	0.01	124.41	1069.42	534.71	1214.68	608.24	103.83	-6.550	-0.003	0.209
155.00	-4.14	-10.58	0.00	-69.61	0.00	69.61	1046.45	523.23	1145.25	573.48	110.73	-6.637	-0.003	0.126
157.00	-2.48	-5.53	0.00	-48.44	0.00	48.44	1036.93	518.47	1117.66	559.66	113.51	-6.661	-0.003	0.089

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

160.00	-2.32	-5.32	0.00	-31.85	0.00	31.85	1022.30	511.15	1076.48	539.04	117.69	-6.686	-0.003	0.061
165.00	-1.74	-2.37	0.00	-5.27	0.00	5.27	996.96	498.48	1008.51	505.00	124.69	-6.707	-0.003	0.012
167.00	-0.07	-0.13	0.00	-0.26	0.00	0.26	986.50	493.25	981.58	491.52	127.50	-6.709	-0.003	0.001
169.00	0.00	-0.12	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	130.30	-6.709	-0.003	0.000

Wind Loading - Shaft

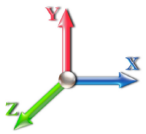
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	24.593	29.51	138.2	439.0	2005.1
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	24.244	29.09	136.2	462.9	2000.7
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	23.867	28.64	134.1	473.8	1983.3
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	23.477	28.17	131.9	479.1	1960.2
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	23.081	27.70	129.7	481.0	1933.8
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	22.680	27.22	127.5	480.8	1905.2
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	22.276	26.73	130.9	479.1	1875.1
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	5.00	21.870	26.24	133.5	476.1	1843.8
40.75	Bot - Section 2	1.00	0.76	4.649	5.11	0.00	1.200	1.532	0.75	3.244	3.89	19.9	71.3	274.0
45.00		1.00	0.79	4.783	5.26	0.00	1.200	1.547	4.25	18.485	22.18	116.7	407.6	2535.2
47.00	Top - Section 1	1.00	0.80	4.843	5.33	0.00	1.200	1.554	2.00	8.595	10.31	54.9	191.1	1179.2
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	3.00	12.771	15.33	83.1	285.0	968.1
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	5.00	20.959	25.15	140.1	469.7	1588.8
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	20.547	24.66	140.8	464.0	1558.8
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	20.135	24.16	141.2	457.8	1528.3
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	19.722	23.67	141.3	451.2	1497.4
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	5.00	19.308	23.17	141.1	444.2	1466.1
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	5.00	18.894	22.67	140.6	436.9	1434.5
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	5.00	18.479	22.17	139.9	429.3	1402.6
89.25	Bot - Section 3	1.00	0.96	5.816	6.40	0.00	1.200	1.657	4.25	15.380	18.46	118.1	359.3	1167.5
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	0.75	2.714	3.26	20.9	64.0	300.2
91.50	RB1	1.00	0.96	5.858	6.44	0.00	1.200	1.661	1.50	5.401	6.48	41.8	127.3	596.9
94.25	Top - Section 2	1.00	0.97	5.908	6.50	0.00	1.200	1.666	2.75	9.805	11.77	76.5	230.9	1082.4
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	0.75	2.652	3.18	20.7	62.8	155.8
96.75	RB2	1.00	0.98	5.952	6.55	0.00	1.200	1.670	1.75	6.152	7.38	48.3	145.5	361.0
97.00	RT1	1.00	0.98	5.956	6.55	0.00	1.200	1.671	0.25	0.875	1.05	6.9	20.8	51.4
100.00		1.00	0.99	6.008	6.61	0.00	1.200	1.676	3.00	10.415	12.50	82.6	246.2	610.5
102.25	RT2	1.00	0.99	6.047	6.65	0.00	1.200	1.680	2.25	7.713	9.26	61.6	183.0	452.4
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	2.75	9.312	11.17	74.9	221.1	545.9
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	5.00	16.610	19.93	135.4	393.3	971.2
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	5.00	16.193	19.43	133.7	384.5	946.2
117.00	Appurtenance(s)	1.00	1.03	6.284	6.91	0.00	1.200	1.702	2.00	6.360	7.63	52.8	152.4	372.5
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	3.00	9.415	11.30	78.7	225.3	550.7
125.00		1.00	1.05	6.404	7.04	0.00	1.200	1.714	5.00	15.359	18.43	129.8	366.4	895.7
127.00	Appurtenance(s)	1.00	1.06	6.433	7.08	0.00	1.200	1.716	2.00	6.026	7.23	51.2	145.1	352.3
130.00		1.00	1.07	6.476	7.12	0.00	1.200	1.720	3.00	8.914	10.70	76.2	214.2	520.2
135.00		1.00	1.08	6.546	7.20	0.00	1.200	1.727	5.00	14.524	17.43	125.5	347.7	844.6
139.00	Bot - Section 4	1.00	1.09	6.601	7.26	0.00	1.200	1.732	4.00	11.318	13.58	98.6	272.0	657.9
140.00		1.00	1.09	6.615	7.28	0.00	1.200	1.733	1.00	2.819	3.38	24.6	68.4	235.5
142.75	Top - Section 3	1.00	1.09	6.652	7.32	0.00	1.200	1.737	2.75	7.667	9.20	67.3	185.3	638.9
145.00		1.00	1.10	6.681	7.35	0.00	1.200	1.739	2.25	6.179	7.41	54.5	149.7	307.3
146.00	Appurtenance(s)	1.00	1.10	6.695	7.36	0.00	1.200	1.741	1.00	2.719	3.26	24.0	66.1	135.4
148.00	Appurtenance(s)	1.00	1.11	6.721	7.39	0.00	1.200	1.743	2.00	5.387	6.46	47.8	130.7	267.8
150.00	Appurtenance(s)	1.00	1.11	6.746	7.42	0.00	1.200	1.745	2.00	5.320	6.38	47.4	129.1	264.3
155.00		1.00	1.12	6.810	7.49	0.00	1.200	1.751	5.00	13.010	15.61	116.9	313.0	642.4
157.00	Appurtenance(s)	1.00	1.12	6.835	7.52	0.00	1.200	1.753	2.00	5.086	6.10	45.9	123.6	252.0

Wind Loading - Shaft

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

160.00		1.00	1.13	6.872	7.56	0.00	1.200	1.757	3.00	7.504	9.00	68.1	181.8	370.7
165.00	Appurtenance(s)	1.00	1.14	6.933	7.63	0.00	1.200	1.762	5.00	12.173	14.61	111.4	293.0	598.1
167.00	Appurtenance(s)	1.00	1.14	6.957	7.65	0.00	1.200	1.764	2.00	4.751	5.70	43.6	115.6	234.2
169.00		1.00	1.15	6.980	7.68	0.00	1.200	1.766	2.00	4.684	5.62	43.2	114.0	230.7
								Totals:	**169.00**			**4,450.2**		**46,552.6**

Discrete Appurtenance Forces

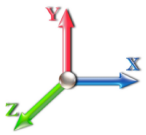
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	167.00	RRUS 4415 B25	3	6.957	7.652	0.54	0.80	3.47	262.04	0.000	0.000	26.59	0.00	0.00
2	167.00	Ericsson - KRY 112 144/2	3	6.957	7.652	0.60	0.80	1.60	62.99	0.000	0.000	12.26	0.00	0.00
3	167.00	AIR 21 B2A/B4P	3	6.957	7.652	0.77	0.90	16.61	844.54	0.000	0.000	127.14	0.00	0.00
4	167.00	T-Arms/Commscope	3	6.963	7.659	0.56	0.75	21.44	1703.73	0.000	0.500	164.18	0.00	82.09
5	167.00	Ericsson - Radio 4449	3	6.957	7.652	0.60	0.80	3.90	471.00	0.000	0.000	29.85	0.00	0.00
6	167.00	AIR 6449 B41	3	6.957	7.652	0.56	0.80	11.15	835.33	0.000	0.000	85.29	0.00	0.00
7	165.00	APXVAA24_43-U-A20	3	6.933	7.626	0.66	0.90	43.73	1758.98	0.000	0.000	333.45	0.00	0.00
8	165.00	Air 32	3	6.933	7.626	0.78	0.90	18.09	940.28	0.000	0.000	137.96	0.00	0.00
9	157.00	DB846H80E-SX	2	6.835	7.518	0.88	0.80	10.97	359.21	0.000	0.000	82.45	0.00	0.00
10	157.00	RF4439d-25A	3	6.835	7.518	0.66	0.80	4.85	352.72	0.000	0.000	36.45	0.00	0.00
11	157.00	DB846F65ZAXY	4	6.835	7.518	0.74	0.80	24.66	894.70	0.000	0.000	185.42	0.00	0.00
12	157.00	T-Arms	3	6.835	7.518	0.56	0.75	25.33	1786.34	0.000	0.000	190.47	0.00	0.00
13	157.00	DB-C1-12C-24AB-0Z	1	6.835	7.518	1.00	1.00	4.89	124.25	0.000	0.000	36.73	0.00	0.00
14	157.00	RF4440d-13A	3	6.835	7.518	0.66	0.80	4.85	352.72	0.000	0.000	36.45	0.00	0.00
15	157.00	MX06FRO660-02	6	6.835	7.518	0.70	0.80	46.99	2054.36	0.000	0.000	353.29	0.00	0.00
16	157.00	MT6407-77A	3	6.835	7.518	0.56	0.80	9.48	646.45	0.000	0.000	71.26	0.00	0.00
17	150.00	Collar Mount	1	6.746	7.421	1.00	1.00	5.94	-146.23	0.000	0.000	44.11	0.00	0.00
18	150.00	Ericsson Air6419 B77G	3	6.746	7.421	0.61	0.80	8.38	458.49	0.000	0.000	62.21	0.00	0.00
19	148.00	Powerwave 21401	6	6.721	7.393	0.54	0.80	6.83	208.73	0.000	0.000	50.51	0.00	0.00
20	148.00	Commscope	1	6.721	7.393	0.54	0.80	0.76	84.48	0.000	0.000	5.62	0.00	0.00
21	148.00	Powerwave 1001940	3	6.721	7.393	0.54	0.80	1.08	24.82	0.000	0.000	7.96	0.00	0.00
22	148.00	Raycap	2	6.721	7.393	0.80	0.80	4.36	240.38	0.000	0.000	32.23	0.00	0.00
23	148.00	Ericsson RRUS 4478 B14	3	6.721	7.393	0.54	0.80	3.49	309.87	0.000	0.000	25.77	0.00	0.00
24	148.00	Quintel QD6616-7	1	6.721	7.393	0.74	0.80	6.94	360.12	0.000	0.000	51.29	0.00	0.00
25	148.00	T-Arms w/ Modifications	3	6.721	7.393	0.56	0.75	37.90	2651.15	0.000	0.000	280.16	0.00	0.00
26	148.00	CCI DMP65R-BU8DA	2	6.721	7.393	0.58	0.80	22.97	1214.35	0.000	0.000	169.79	0.00	0.00
27	148.00	CCi DMP65R-BU6DA	1	6.721	7.393	0.58	0.80	8.16	322.13	0.000	0.000	60.35	0.00	0.00
28	148.00	Ericsson RRUS 4449	3	6.721	7.393	0.54	0.80	4.05	374.73	0.000	0.000	29.92	0.00	0.00
29	148.00	Quintel QD8616-7	2	6.721	7.393	0.74	0.80	13.88	720.25	0.000	0.000	102.59	0.00	0.00
30	148.00	Powerwave LGP13519	6	6.721	7.393	0.80	0.80	10.20	208.73	0.000	0.000	75.39	0.00	0.00
31	148.00	Ericsson RRUS 8843 B2	3	6.721	7.393	0.54	0.80	3.52	493.72	0.000	0.000	26.00	0.00	0.00
32	148.00	Ericsson RRUS 32	3	6.721	7.393	0.54	0.80	3.58	422.41	0.000	0.000	26.49	0.00	0.00
33	146.00	Ericsson Air6449 B77D	3	6.695	7.364	0.68	0.80	10.17	728.12	0.000	0.000	74.89	0.00	0.00
34	127.00	AAHC	3	6.433	7.076	0.56	0.75	8.45	608.99	0.000	0.000	59.80	0.00	0.00
35	127.00	VHLP800-11	1	6.433	7.076	1.00	1.00	10.11	179.87	1.455	0.000	71.53	104.08	0.00
36	127.00	NNVV-65B-R4	3	6.433	7.076	0.55	0.75	22.81	923.77	0.000	0.000	161.44	0.00	0.00
37	127.00	VHLP2-11	3	6.433	7.076	1.00	1.00	17.80	301.94	1.455	0.000	125.96	183.27	0.00
38	127.00	TD-RRH8x20-25	3	6.433	7.076	0.53	0.75	7.75	576.79	0.000	0.000	54.81	0.00	0.00
39	127.00	RMQP-4096-HK	1	6.433	7.076	1.00	1.00	89.33	5142.94	0.000	0.000	632.10	0.00	0.00
40	127.00	Horizon Duo	4	6.433	7.076	0.60	0.80	2.74	77.05	0.000	0.000	19.40	0.00	0.00
41	127.00	1900MHz RRH	3	6.433	7.076	0.74	0.75	8.95	390.47	0.000	0.000	63.33	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	6.284	6.913	0.54	0.80	2.98	151.63	0.000	0.000	20.63	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	6.284	6.913	0.54	0.80	2.59	177.99	0.000	0.000	17.92	0.00	0.00
44	117.00	Standoff Sector Frame	3	6.284	6.913	0.56	0.75	56.71	2086.70	0.000	0.000	392.04	0.00	0.00
45	117.00	Comba	3	6.284	6.913	0.56	0.80	9.76	336.12	0.000	0.000	67.45	0.00	0.00
							Totals:		**33,080.15**			**4,720.92**		

Total Applied Force Summary

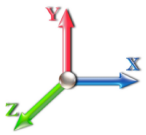
Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		138.16	2389.98	0.00	0.00
10.00		136.20	2389.67	0.00	0.00
15.00		134.08	2374.87	0.00	0.00
20.00		131.89	2353.70	0.00	0.00
25.00		129.67	2328.86	0.00	0.00
30.00		127.52	2301.60	0.00	0.00
35.00		130.89	2272.61	0.00	0.00
40.00		133.50	2242.30	0.00	0.00
40.75		19.91	333.84	0.00	0.00
45.00		116.70	2874.70	0.00	0.00
47.00		54.94	1339.07	0.00	0.00
50.00		83.09	1208.24	0.00	0.00
55.00		140.13	1989.84	0.00	0.00
60.00		140.83	1960.49	0.00	0.00
65.00		141.20	1930.63	0.00	0.00
70.00		141.26	1900.32	0.00	0.00
75.00		141.05	1869.61	0.00	0.00
80.00		140.59	1838.55	0.00	0.00
85.00		139.91	1807.18	0.00	0.00
89.25		118.08	1511.70	0.00	0.00
90.00		20.89	364.49	0.00	0.00
91.50		41.76	725.59	0.00	0.00
94.25		76.46	1318.55	0.00	0.00
95.00		20.73	220.16	0.00	0.00
96.75		48.33	511.36	0.00	0.00
97.00		6.88	72.87	0.00	0.00
100.00		82.60	868.53	0.00	0.00
102.25		61.56	646.00	0.00	0.00
105.00		74.90	780.28	0.00	0.00
110.00		135.38	1378.01	0.00	0.00
115.00		133.67	1353.38	0.00	0.00
117.00	(11) attachments	550.79	3287.90	0.00	0.00
120.00		78.67	791.76	0.00	0.00
125.00		129.83	1297.87	0.00	0.00
127.00	(21) attachments	1239.54	8715.02	287.35	0.00
130.00		76.20	741.70	0.00	0.00
135.00		125.50	1214.14	0.00	0.00
139.00		98.62	938.79	0.00	0.00
140.00		24.61	301.98	0.00	0.00
142.75		67.31	821.79	0.00	0.00
145.00		54.49	457.06	0.00	0.00
146.00	(3) attachments	98.91	930.09	0.00	0.00
148.00	(39) attachments	991.86	8036.84	0.00	0.00
150.00	(4) attachments	153.70	686.26	0.00	0.00
155.00		116.95	916.94	0.00	0.00
157.00	(25) attachments	1038.42	6932.57	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 32

Tower Engineering Solutions

160.00		68.07	423.48	0.00	0.00
165.00	(6) attachments	582.80	3385.29	0.00	0.00
167.00	(18) attachments	488.94	4449.03	0.00	82.09
169.00		43.16	230.65	0.00	0.00
	Totals:	**9,171.15**	**92,016.19**	**287.35**	**82.09**

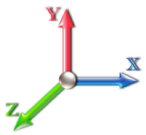
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.86	0.00	0.035	0.000	4.256	0.00	79.18
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.93	0.00	0.036	0.000	4.256	0.00	83.33
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	1.98	0.00	0.036	0.000	4.256	0.00	85.94
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.01	0.00	0.037	0.000	4.256	0.00	87.88
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.04	0.00	0.038	0.000	4.256	0.00	89.44
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.06	0.00	0.038	0.000	4.260	0.00	90.75
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.08	0.00	0.039	0.000	4.451	0.00	91.88
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.10	0.00	0.040	0.000	4.625	0.00	92.88
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.32	0.00	0.041	0.000	4.649	0.00	13.95
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	1.80	0.00	0.041	0.000	4.783	0.00	79.72
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.042	0.000	4.843	0.00	37.65
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.28	0.00	0.041	0.000	4.929	0.00	56.76
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.14	0.00	0.042	0.000	5.065	0.00	95.35
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.15	0.00	0.043	0.000	5.193	0.00	96.04
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.16	0.00	0.044	0.000	5.313	0.00	96.68
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.17	0.00	0.045	0.000	5.426	0.00	97.29
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.18	0.00	0.046	0.000	5.534	0.00	97.85
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.19	0.00	0.047	0.000	5.637	0.00	98.39
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.20	0.00	0.048	0.000	5.736	0.00	98.90
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	1.87	0.00	0.049	0.000	5.816	0.00	84.41
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.33	0.00	0.075	0.000	5.830	0.00	14.91
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.27	0.00	0.075	0.000	5.830	0.00	3.55
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.66	0.00	0.076	0.000	5.858	0.00	29.86
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.54	0.00	0.076	0.000	5.858	0.00	7.12
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	1.22	0.00	0.077	0.000	5.908	0.00	54.87
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.99	0.00	0.077	0.000	5.908	0.00	13.12
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.33	0.00	0.076	0.000	5.921	0.00	14.98
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.27	0.00	0.076	0.000	5.921	0.00	3.58
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.78	0.00	0.077	0.000	5.952	0.00	35.00
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.63	0.00	0.077	0.000	5.952	0.00	8.38
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.11	0.00	0.077	0.000	5.956	0.00	5.00
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.09	0.00	0.077	0.000	5.956	0.00	1.20
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.33	0.00	0.078	0.000	6.008	0.00	60.17
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.27	0.00	0.078	0.000	6.008	0.00	3.61
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.82	0.00	0.078	0.000	6.008	0.00	10.84
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	1.00	0.00	0.079	0.000	6.047	0.00	45.21
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.82	0.00	0.079	0.000	6.047	0.00	10.88
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	1.23	0.00	0.075	0.000	6.093	0.00	55.38
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.82	0.00	0.075	0.000	6.093	0.00	10.93
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.23	0.00	0.054	0.000	6.174	0.00	101.10
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.24	0.00	0.056	0.000	6.253	0.00	101.49
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.057	0.000	6.284	0.00	40.66
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.35	0.00	0.058	0.000	6.330	0.00	61.12
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.25	0.00	0.059	0.000	6.404	0.00	102.22
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.061	0.000	6.433	0.00	40.95
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	1.36	0.00	0.061	0.000	6.476	0.00	61.54
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.26	0.00	0.063	0.000	6.546	0.00	102.91

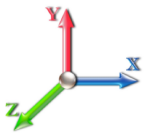
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	1.81	0.00	0.065	0.000	6.601	0.00	82.54
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.066	0.000	6.615	0.00	20.65
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	1.25	0.00	0.067	0.000	6.652	0.00	56.88
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	1.02	0.00	0.067	0.000	6.681	0.00	46.60
146.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.068	0.000	6.695	0.00	20.72
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.069	0.000	6.721	0.00	41.50
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.070	0.000	6.746	0.00	41.54
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.28	0.00	0.071	0.000	6.810	0.00	104.16
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.073	0.000	6.835	0.00	41.71
										Totals:	**0.0**	**3,111.2**

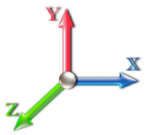
Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-92.01	-9.21	-0.29	-1176.8	0.00	1176.88	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.210
5.00	-89.61	-9.16	-0.29	-1130.8	0.00	1130.81	5261.08	2630.54	11832.5	5925.09	0.03	-0.054	0.000	0.208
10.00	-87.21	-9.10	-0.29	-1085.0	0.00	1085.01	5196.80	2598.40	11472.7	5744.92	0.11	-0.109	0.000	0.206
15.00	-84.83	-9.05	-0.29	-1039.4	0.00	1039.48	5131.34	2565.67	11115.7	5566.13	0.26	-0.164	0.000	0.203
20.00	-82.47	-8.99	-0.29	-994.25	0.00	994.25	5064.69	2532.35	10761.6	5388.80	0.46	-0.220	0.000	0.201
25.00	-80.13	-8.93	-0.29	-949.30	0.00	949.30	4996.86	2498.43	10410.5	5212.99	0.72	-0.277	0.000	0.198
30.00	-77.82	-8.87	-0.29	-904.65	0.00	904.65	4927.84	2463.92	10062.6	5038.79	1.04	-0.335	0.000	0.195
35.00	-75.54	-8.80	-0.29	-860.31	0.00	860.31	4857.63	2428.82	9718.08	4866.26	1.43	-0.393	0.000	0.192
40.00	-73.30	-8.69	-0.29	-816.31	0.00	816.31	4786.24	2393.12	9377.03	4695.49	1.87	-0.452	0.000	0.189
40.75	-72.96	-8.71	-0.29	-809.80	0.00	809.80	4775.43	2387.72	9326.19	4670.03	1.94	-0.461	0.000	0.189
45.00	-70.08	-8.61	-0.29	-772.78	0.00	772.78	4713.67	2356.83	9039.63	4526.53	2.37	-0.511	0.000	0.186
47.00	-68.74	-8.58	-0.29	-755.56	0.00	755.56	3877.89	1938.95	7512.92	3762.05	2.59	-0.536	0.000	0.219
50.00	-67.52	-8.55	-0.29	-729.81	0.00	729.81	3845.09	1922.55	7353.82	3682.38	2.94	-0.572	0.000	0.216
55.00	-65.52	-8.46	-0.29	-687.07	0.00	687.07	3789.47	1894.74	7090.51	3550.52	3.58	-0.638	0.000	0.211
60.00	-63.55	-8.37	-0.29	-644.75	0.00	644.75	3732.67	1866.34	6829.63	3419.89	4.28	-0.705	0.000	0.206
65.00	-61.62	-8.28	-0.29	-602.89	0.00	602.89	3674.68	1837.34	6571.34	3290.55	5.05	-0.772	0.000	0.200
70.00	-59.71	-8.18	-0.29	-561.49	0.00	561.49	3615.51	1807.76	6315.78	3162.58	5.90	-0.838	0.000	0.194
75.00	-57.83	-8.08	-0.29	-520.59	0.00	520.59	3555.15	1777.58	6063.10	3036.06	6.81	-0.905	0.000	0.188
80.00	-55.99	-7.97	-0.29	-480.20	0.00	480.20	3493.61	1746.80	5813.45	2911.05	7.80	-0.971	0.000	0.181
85.00	-54.17	-7.86	-0.29	-440.34	0.00	440.34	3430.88	1715.44	5566.98	2787.63	8.85	-1.036	0.000	0.174
89.25	-52.66	-7.74	-0.29	-406.95	0.00	406.95	3376.63	1688.32	5360.08	2684.02	9.80	-1.091	0.000	0.167
90.00	-52.29	-7.73	-0.29	-401.15	0.00	401.15	3366.97	1683.48	5323.83	2665.87	9.97	-1.101	0.000	0.166
91.50	-51.57	-7.69	-0.29	-389.56	0.00	389.56	3347.56	1673.78	5251.55	2629.68	10.32	-1.121	0.000	0.122
94.25	-50.25	-7.60	-0.29	-368.41	0.00	368.41	1944.87	972.44	3066.99	1535.78	10.97	-1.147	0.000	0.138
95.00	-50.03	-7.59	-0.29	-362.71	-0.01	362.71	1940.65	970.33	3048.28	1526.41	11.15	-1.154	-0.001	0.176
96.75	-49.51	-7.54	-0.29	-349.42	0.00	349.42	1930.70	965.35	3004.67	1504.57	11.58	-1.176	-0.001	0.121
97.00	-49.44	-7.55	-0.29	-347.54	-0.01	347.54	1929.27	964.63	2998.44	1501.45	11.64	-1.178	-0.001	0.157
100.00	-48.57	-7.47	-0.29	-324.89	-0.01	324.89	1911.84	955.92	2923.84	1464.09	12.39	-1.210	-0.001	0.150
102.25	-47.92	-7.42	-0.29	-308.08	-0.01	308.08	1898.49	949.24	2868.04	1436.15	12.97	-1.234	-0.001	0.145
102.25	-47.92	-7.42	-0.29	-308.08	-0.01	308.08	1898.49	949.24	2868.04	1436.15	12.97	-1.234	-0.001	0.145
105.00	-47.13	-7.37	-0.29	-287.68	-0.01	287.68	1881.84	940.92	2800.02	1402.09	13.69	-1.262	-0.001	0.230
110.00	-45.75	-7.27	-0.29	-250.83	-0.01	250.83	1850.66	925.33	2676.97	1340.48	15.05	-1.343	-0.001	0.212
115.00	-44.39	-7.14	-0.29	-214.49	-0.01	214.49	1818.29	909.14	2554.84	1279.32	16.50	-1.419	-0.001	0.192
117.00	-41.12	-6.53	-0.29	-200.21	-0.01	200.21	1805.01	902.50	2506.28	1255.00	17.10	-1.448	-0.001	0.182
120.00	-40.32	-6.47	-0.29	-180.60	-0.01	180.60	1784.73	892.37	2433.78	1218.70	18.02	-1.490	-0.001	0.171
125.00	-39.02	-6.34	-0.29	-148.24	-0.01	148.24	1749.99	875.00	2313.93	1158.68	19.62	-1.554	-0.001	0.150
127.00	-30.34	-4.88	0.00	-135.56	0.00	135.56	1735.77	867.88	2266.36	1134.86	20.28	-1.578	-0.001	0.137
130.00	-29.60	-4.80	0.00	-120.93	0.00	120.93	1714.07	857.04	2195.44	1099.35	21.28	-1.612	-0.001	0.127
135.00	-28.39	-4.66	0.00	-96.93	0.00	96.93	1676.96	838.48	2078.45	1040.77	23.00	-1.663	-0.001	0.110
139.00	-27.45	-4.55	0.00	-78.27	0.00	78.27	1646.42	823.21	1986.05	994.50	24.41	-1.700	-0.001	0.095
140.00	-27.15	-4.52	0.00	-73.73	0.00	73.73	1638.67	819.33	1963.12	983.02	24.76	-1.708	-0.001	0.092
142.75	-26.33	-4.44	0.00	-61.29	0.00	61.29	1100.62	550.31	1316.21	659.08	25.75	-1.729	-0.001	0.117
145.00	-25.87	-4.37	0.00	-51.31	0.00	51.31	1091.20	545.60	1284.61	643.26	26.57	-1.745	-0.001	0.104
146.00	-24.94	-4.25	0.00	-46.94	0.00	46.94	1086.94	543.47	1270.59	636.24	26.94	-1.753	-0.001	0.097
148.00	-16.94	-3.02	0.00	-38.43	0.00	38.43	1078.27	539.14	1242.60	622.22	27.68	-1.767	-0.001	0.078
150.00	-16.26	-2.85	0.00	-32.40	0.00	32.40	1069.42	534.71	1214.68	608.24	28.42	-1.779	-0.001	0.068
155.00	-15.34	-2.71	0.00	-18.16	0.00	18.16	1046.45	523.23	1145.25	573.48	30.30	-1.802	-0.001	0.046
157.00	-8.45	-1.45	0.00	-12.75	0.00	12.75	1036.93	518.47	1117.66	559.66	31.05	-1.808	-0.001	0.031

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 36

160.00	-8.03	-1.37	0.00	-8.39	0.00	8.39	1022.30	511.15	1076.48	539.04	32.19	-1.815	-0.001	0.023
165.00	-4.66	-0.68	0.00	-1.54	0.00	1.54	996.96	498.48	1008.51	505.00	34.09	-1.820	-0.001	0.008
167.00	-0.23	-0.05	0.00	-0.10	0.00	0.10	986.50	493.25	981.58	491.52	34.86	-1.821	-0.001	0.000
169.00	0.00	-0.04	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	35.62	-1.821	-0.001	0.000

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1305.1	0.00	0.03	0.02	24.54	
10.00		1281.4	0.01	0.05	0.03	34.89	
15.00		1257.8	0.01	0.06	0.04	39.66	
20.00		1234.2	0.03	0.07	0.04	41.75	
25.00		1210.5	0.04	0.07	0.04	42.55	
30.00		1186.9	0.06	0.07	0.04	42.78	
35.00		1163.3	0.08	0.07	0.04	42.84	
40.00		1139.7	0.11	0.07	0.04	42.89	
40.75	Bot - Section 2	168.92	0.11	0.07	0.04	6.38	
45.00		1773.0	0.13	0.07	0.03	68.15	
47.00	Top - Section 1	823.38	0.15	0.07	0.03	31.89	
50.00		569.27	0.17	0.07	0.03	22.26	
55.00		932.58	0.20	0.06	0.02	36.67	
60.00		912.33	0.24	0.06	0.02	35.27	
65.00		892.08	0.28	0.05	0.01	32.61	
70.00		871.83	0.32	0.04	0.01	28.14	
75.00		851.57	0.37	0.03	0.01	21.42	
80.00		831.32	0.42	0.01	0.01	12.36	
85.00		811.07	0.48	-0.01	0.01	1.57	
89.25	Bot - Section 3	673.48	0.53	-0.03	0.01	-6.73	
90.00		196.82	0.54	-0.03	0.01	-2.38	
91.50	RB1	391.36	0.55	-0.04	0.01	-6.32	
94.25	Top - Section 2	709.60	0.59	-0.05	0.01	-16.45	
95.00		77.46	0.60	-0.05	0.01	-1.93	
96.75	RB2	179.56	0.62	-0.06	0.02	-5.18	
97.00	RT1	25.52	0.62	-0.06	0.02	-0.75	
100.00		303.57	0.66	-0.07	0.02	-10.58	
102.25	RT2	224.48	0.69	-0.08	0.03	-8.54	
105.00		270.66	0.73	-0.10	0.04	-11.03	
110.00		481.64	0.80	-0.11	0.05	-20.42	
115.00		468.14	0.88	-0.12	0.08	-18.67	
117.00	Appurtenance(s)	1591.3	0.91	-0.12	0.09	-60.07	
120.00		271.16	0.95	-0.12	0.11	-9.05	
125.00		441.13	1.03	-0.10	0.15	-10.17	
127.00	Appurtenance(s)	3907.6	1.07	-0.09	0.17	-69.77	
130.00		254.96	1.12	-0.06	0.20	-2.28	
135.00		414.13	1.21	0.01	0.26	3.70	
139.00	Bot - Section 4	321.58	1.28	0.09	0.32	8.35	
140.00		139.21	1.30	0.12	0.33	4.26	
142.75	Top - Section 3	377.97	1.35	0.19	0.38	16.69	
145.00		131.39	1.39	0.27	0.42	7.37	
146.00	Appurtenance(s)	321.74	1.41	0.30	0.44	19.84	
148.00	Appurtenance(s)	3177.9	1.45	0.38	0.48	232.92	
150.00	Appurtenance(s)	410.94	1.49	0.47	0.53	35.15	
155.00		274.52	1.59	0.75	0.66	32.67	

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 38

157.00	Appurtenance(s)	2409.5	1.63	0.88	0.71	321.73			
160.00		157.42	1.69	1.10	0.81	24.65			
165.00	Appurtenance(s)	955.67	1.80	1.55	0.98	189.52			
167.00	Appurtenance(s)	2096.8	1.85	1.75	1.06	453.37			
169.00		97.25	1.89	1.98	1.14	22.83			
	Totals:	**40,971.4**				**1,721.4**	**Total Wind:**	**33,909.3**	

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

IES Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**SA**	0.03	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-59.22	-1.99	0.00	-258.21	0.00	258.21	5324.18	2662.09	12195.0	6106.56		0.00	0.00	0.053
5.00	-57.32	-1.97	0.00	-248.27	0.00	248.27	5261.08	2630.54	11832.5	5925.09		0.01	-0.01	0.053
10.00	-55.46	-1.95	0.00	-238.40	0.00	238.40	5196.80	2598.40	11472.7	5744.92		0.03	-0.02	0.052
15.00	-53.62	-1.92	0.00	-228.65	0.00	228.65	5131.34	2565.67	11115.7	5566.13		0.06	-0.04	0.052
20.00	-51.80	-1.89	0.00	-219.04	0.00	219.04	5064.69	2532.35	10761.6	5388.80		0.10	-0.05	0.051
25.00	-50.02	-1.86	0.00	-209.60	0.00	209.60	4996.86	2498.43	10410.5	5212.99		0.16	-0.06	0.050
30.00	-48.26	-1.82	0.00	-200.32	0.00	200.32	4927.84	2463.92	10062.6	5038.79		0.23	-0.07	0.050
35.00	-46.54	-1.79	0.00	-191.21	0.00	191.21	4857.63	2428.82	9718.08	4866.26		0.31	-0.09	0.049
40.00	-44.84	-1.75	0.00	-182.27	0.00	182.27	4786.24	2393.12	9377.03	4695.49		0.41	-0.10	0.048
40.75	-44.59	-1.75	0.00	-180.96	0.00	180.96	4775.43	2387.72	9326.19	4670.03		0.43	-0.10	0.048
45.00	-42.18	-1.68	0.00	-173.54	0.00	173.54	4713.67	2356.83	9039.63	4526.53		0.52	-0.11	0.047
47.00	-41.06	-1.65	0.00	-170.18	0.00	170.18	3877.89	1938.95	7512.92	3762.05		0.57	-0.12	0.056
50.00	-40.18	-1.63	0.00	-165.23	0.00	165.23	3845.09	1922.55	7353.82	3682.38		0.65	-0.13	0.055
55.00	-38.73	-1.60	0.00	-157.06	0.00	157.06	3789.47	1894.74	7090.51	3550.52		0.79	-0.14	0.054
60.00	-37.30	-1.58	0.00	-149.03	0.00	149.03	3732.67	1866.34	6829.63	3419.89		0.95	-0.16	0.054
65.00	-35.90	-1.55	0.00	-141.16	0.00	141.16	3674.68	1837.34	6571.34	3290.55		1.12	-0.17	0.053
70.00	-34.52	-1.53	0.00	-133.41	0.00	133.41	3615.51	1807.76	6315.78	3162.58		1.31	-0.19	0.052
75.00	-33.17	-1.51	0.00	-125.78	0.00	125.78	3555.15	1777.58	6063.10	3036.06		1.51	-0.20	0.051
80.00	-31.84	-1.50	0.00	-118.24	0.00	118.24	3493.61	1746.80	5813.45	2911.05		1.74	-0.22	0.050
85.00	-30.54	-1.50	0.00	-110.73	0.00	110.73	3430.88	1715.44	5566.98	2787.63		1.98	-0.24	0.049
89.25	-29.45	-1.50	0.00	-104.35	0.00	104.35	3376.63	1688.32	5360.08	2684.02		2.19	-0.25	0.048
90.00	-29.16	-1.50	0.00	-103.22	0.00	103.22	3366.97	1683.48	5323.83	2665.87		2.23	-0.25	0.047
91.50	-28.59	-1.50	0.00	-100.97	0.00	100.97	3347.56	1673.78	5251.55	2629.68		2.31	-0.26	0.035
94.25	-27.56	-1.50	0.00	-96.84	0.00	96.84	1944.87	972.44	3066.99	1535.78		2.46	-0.27	0.040
95.00	-27.41	-1.50	0.00	-95.71	0.00	95.71	1940.65	970.33	3048.28	1526.41		2.51	-0.27	0.051
96.75	-27.08	-1.50	0.00	-93.09	0.00	93.09	1930.70	965.35	3004.67	1504.57		2.60	-0.27	0.035
97.00	-27.04	-1.50	0.00	-92.71	0.00	92.71	1929.27	964.63	2998.44	1501.45		2.62	-0.27	0.046
100.00	-26.47	-1.50	0.00	-88.20	0.00	88.20	1911.84	955.92	2923.84	1464.09		2.79	-0.28	0.045
102.25	-26.05	-1.51	0.00	-84.82	0.00	84.82	1898.49	949.24	2868.04	1436.15		2.93	-0.29	0.044
102.25	-26.05	-1.51	0.00	-84.82	0.00	84.82	1898.49	949.24	2868.04	1436.15		2.93	-0.29	0.044
105.00	-25.55	-1.51	0.00	-80.68	0.00	80.68	1881.84	940.92	2800.02	1402.09		3.10	-0.30	0.071
110.00	-24.64	-1.51	0.00	-73.13	0.00	73.13	1850.66	925.33	2676.97	1340.48		3.42	-0.32	0.068
115.00	-23.75	-1.52	0.00	-65.55	0.00	65.55	1818.29	909.14	2554.84	1279.32		3.77	-0.34	0.064
117.00	-21.70	-1.51	0.00	-62.52	0.00	62.52	1805.01	902.50	2506.28	1255.00		3.91	-0.35	0.062
120.00	-21.18	-1.51	0.00	-58.00	0.00	58.00	1784.73	892.37	2433.78	1218.70		4.14	-0.36	0.059
125.00	-20.33	-1.51	0.00	-50.44	0.00	50.44	1749.99	875.00	2313.93	1158.68		4.53	-0.39	0.055
127.00	-15.51	-1.48	0.00	-47.42	0.00	47.42	1735.77	867.88	2266.36	1134.86		4.69	-0.39	0.051
130.00	-15.03	-1.48	0.00	-42.98	0.00	42.98	1714.07	857.04	2195.44	1099.35		4.94	-0.41	0.048
135.00	-14.24	-1.48	0.00	-35.57	0.00	35.57	1676.96	838.48	2078.45	1040.77		5.38	-0.42	0.043
139.00	-13.63	-1.47	0.00	-29.67	0.00	29.67	1646.42	823.21	1986.05	994.50		5.74	-0.44	0.038
140.00	-13.42	-1.46	0.00	-28.20	0.00	28.20	1638.67	819.33	1963.12	983.02		5.83	-0.44	0.037
142.75	-12.82	-1.44	0.00	-24.19	0.00	24.19	1100.62	550.31	1316.21	659.08		6.09	-0.45	0.048
145.00	-12.55	-1.43	0.00	-20.94	0.00	20.94	1091.20	545.60	1284.61	643.26		6.30	-0.46	0.044
146.00	-12.11	-1.41	0.00	-19.51	0.00	19.51	1086.94	543.47	1270.59	636.24		6.40	-0.46	0.042
148.00	-8.20	-1.15	0.00	-16.69	0.00	16.69	1078.27	539.14	1242.60	622.22		6.59	-0.46	0.034
150.00	-7.63	-1.11	0.00	-14.40	0.00	14.40	1069.42	534.71	1214.68	608.24		6.79	-0.47	0.031
155.00	-7.11	-1.07	0.00	-8.86	0.00	8.86	1046.45	523.23	1145.25	573.48		7.28	-0.48	0.022

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 40

157.00	-4.14	-0.73	0.00	-6.72	0.00	6.72	1036.93	518.47	1117.66	559.66	7.49	-0.48	0.016
160.00	-3.90	-0.70	0.00	-4.54	0.00	4.54	1022.30	511.15	1076.48	539.04	7.79	-0.49	0.012
165.00	-2.66	-0.50	0.00	-1.05	0.00	1.05	996.96	498.48	1008.51	505.00	8.30	-0.49	0.005
167.00	-0.12	-0.02	0.00	-0.05	0.00	0.05	986.50	493.25	981.58	491.52	8.51	-0.49	0.000
169.00	0.00	-0.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	8.71	-0.49	0.000

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

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Load Case: 0.9D + 1.0E

Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	24
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**SA**	0.03	**S1**	0.06
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1305.1	0.00	0.03	0.02	24.54	
10.00		1281.4	0.01	0.05	0.03	34.89	
15.00		1257.8	0.01	0.06	0.04	39.66	
20.00		1234.2	0.03	0.07	0.04	41.75	
25.00		1210.5	0.04	0.07	0.04	42.55	
30.00		1186.9	0.06	0.07	0.04	42.78	
35.00		1163.3	0.08	0.07	0.04	42.84	
40.00		1139.7	0.11	0.07	0.04	42.89	
40.75	Bot - Section 2	168.92	0.11	0.07	0.04	6.38	
45.00		1773.0	0.13	0.07	0.03	68.15	
47.00	Top - Section 1	823.38	0.15	0.07	0.03	31.89	
50.00		569.27	0.17	0.07	0.03	22.26	
55.00		932.58	0.20	0.06	0.02	36.67	
60.00		912.33	0.24	0.06	0.02	35.27	
65.00		892.08	0.28	0.05	0.01	32.61	
70.00		871.83	0.32	0.04	0.01	28.14	
75.00		851.57	0.37	0.03	0.01	21.42	
80.00		831.32	0.42	0.01	0.01	12.36	
85.00		811.07	0.48	-0.01	0.01	1.57	
89.25	Bot - Section 3	673.48	0.53	-0.03	0.01	-6.73	
90.00		196.82	0.54	-0.03	0.01	-2.38	
91.50	RB1	391.36	0.55	-0.04	0.01	-6.32	
94.25	Top - Section 2	709.60	0.59	-0.05	0.01	-16.45	
95.00		77.46	0.60	-0.05	0.01	-1.93	
96.75	RB2	179.56	0.62	-0.06	0.02	-5.18	
97.00	RT1	25.52	0.62	-0.06	0.02	-0.75	
100.00		303.57	0.66	-0.07	0.02	-10.58	
102.25	RT2	224.48	0.69	-0.08	0.03	-8.54	
105.00		270.66	0.73	-0.10	0.04	-11.03	
110.00		481.64	0.80	-0.11	0.05	-20.42	
115.00		468.14	0.88	-0.12	0.08	-18.67	
117.00	Appurtenance(s)	1591.3	0.91	-0.12	0.09	-60.07	
120.00		271.16	0.95	-0.12	0.11	-9.05	
125.00		441.13	1.03	-0.10	0.15	-10.17	
127.00	Appurtenance(s)	3907.6	1.07	-0.09	0.17	-69.77	
130.00		254.96	1.12	-0.06	0.20	-2.28	
135.00		414.13	1.21	0.01	0.26	3.70	
139.00	Bot - Section 4	321.58	1.28	0.09	0.32	8.35	
140.00		139.21	1.30	0.12	0.33	4.26	
142.75	Top - Section 3	377.97	1.35	0.19	0.38	16.69	
145.00		131.39	1.39	0.27	0.42	7.37	
146.00	Appurtenance(s)	321.74	1.41	0.30	0.44	19.84	
148.00	Appurtenance(s)	3177.9	1.45	0.38	0.48	232.92	
150.00	Appurtenance(s)	410.94	1.49	0.47	0.53	35.15	
155.00		274.52	1.59	0.75	0.66	32.67	

Seismic Segment Forces (Factored)

Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

157.00	Appurtenance(s)		2409.5	1.63	0.88	0.71	321.73		
160.00			157.42	1.69	1.10	0.81	24.65		
165.00	Appurtenance(s)		955.67	1.80	1.55	0.98	189.52		
167.00	Appurtenance(s)		2096.8	1.85	1.75	1.06	453.37		
169.00			97.25	1.89	1.98	1.14	22.83		
		Totals:	**40,971.4**				**1,721.4**	**Total Wind:**	**33,909.3**

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

IES Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**SA**	0.03			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-44.42	-1.99	0.00	-254.18	0.00	254.18	5324.18	2662.09	12195.0	6106.56		0.00	0.00	0.050
5.00	-42.99	-1.97	0.00	-244.26	0.00	244.26	5261.08	2630.54	11832.5	5925.09		0.01	-0.01	0.049
10.00	-41.59	-1.94	0.00	-234.41	0.00	234.41	5196.80	2598.40	11472.7	5744.92		0.02	-0.02	0.049
15.00	-40.21	-1.91	0.00	-224.70	0.00	224.70	5131.34	2565.67	11115.7	5566.13		0.06	-0.04	0.048
20.00	-38.85	-1.88	0.00	-215.14	0.00	215.14	5064.69	2532.35	10761.6	5388.80		0.10	-0.05	0.048
25.00	-37.51	-1.84	0.00	-205.76	0.00	205.76	4996.86	2498.43	10410.5	5212.99		0.16	-0.06	0.047
30.00	-36.20	-1.80	0.00	-196.55	0.00	196.55	4927.84	2463.92	10062.6	5038.79		0.23	-0.07	0.046
35.00	-34.90	-1.77	0.00	-187.53	0.00	187.53	4857.63	2428.82	9718.08	4866.26		0.31	-0.09	0.046
40.00	-33.63	-1.73	0.00	-178.69	0.00	178.69	4786.24	2393.12	9377.03	4695.49		0.40	-0.10	0.045
40.75	-33.44	-1.72	0.00	-177.40	0.00	177.40	4775.43	2387.72	9326.19	4670.03		0.42	-0.10	0.045
45.00	-31.63	-1.66	0.00	-170.07	0.00	170.07	4713.67	2356.83	9039.63	4526.53		0.51	-0.11	0.044
47.00	-30.79	-1.63	0.00	-166.76	0.00	166.76	3877.89	1938.95	7512.92	3762.05		0.56	-0.12	0.052
50.00	-30.13	-1.61	0.00	-161.88	0.00	161.88	3845.09	1922.55	7353.82	3682.38		0.64	-0.12	0.052
55.00	-29.04	-1.58	0.00	-153.83	0.00	153.83	3789.47	1894.74	7090.51	3550.52		0.78	-0.14	0.051
60.00	-27.97	-1.55	0.00	-145.94	0.00	145.94	3732.67	1866.34	6829.63	3419.89		0.93	-0.15	0.050
65.00	-26.92	-1.52	0.00	-138.20	0.00	138.20	3674.68	1837.34	6571.34	3290.55		1.10	-0.17	0.049
70.00	-25.89	-1.49	0.00	-130.61	0.00	130.61	3615.51	1807.76	6315.78	3162.58		1.28	-0.18	0.048
75.00	-24.87	-1.48	0.00	-123.13	0.00	123.13	3555.15	1777.58	6063.10	3036.06		1.49	-0.20	0.048
80.00	-23.88	-1.47	0.00	-115.75	0.00	115.75	3493.61	1746.80	5813.45	2911.05		1.70	-0.22	0.047
85.00	-22.90	-1.47	0.00	-108.41	0.00	108.41	3430.88	1715.44	5566.98	2787.63		1.94	-0.23	0.046
89.25	-22.08	-1.47	0.00	-102.18	0.00	102.18	3376.63	1688.32	5360.08	2684.02		2.15	-0.25	0.045
90.00	-21.87	-1.47	0.00	-101.08	0.00	101.08	3366.97	1683.48	5323.83	2665.87		2.19	-0.25	0.044
91.50	-21.44	-1.47	0.00	-98.87	0.00	98.87	3347.56	1673.78	5251.55	2629.68		2.27	-0.25	0.033
94.25	-20.67	-1.47	0.00	-94.84	0.00	94.84	1944.87	972.44	3066.99	1535.78		2.42	-0.26	0.037
95.00	-20.56	-1.47	0.00	-93.74	0.00	93.74	1940.65	970.33	3048.28	1526.41		2.46	-0.26	0.048
96.75	-20.31	-1.47	0.00	-91.17	0.00	91.17	1930.70	965.35	3004.67	1504.57		2.56	-0.27	0.033
97.00	-20.28	-1.47	0.00	-90.80	0.00	90.80	1929.27	964.63	2998.44	1501.45		2.57	-0.27	0.043
100.00	-19.85	-1.47	0.00	-86.40	0.00	86.40	1911.84	955.92	2923.84	1464.09		2.74	-0.28	0.042
102.25	-19.54	-1.47	0.00	-83.09	0.00	83.09	1898.49	949.24	2868.04	1436.15		2.87	-0.28	0.041
102.25	-19.54	-1.47	0.00	-83.09	0.00	83.09	1898.49	949.24	2868.04	1436.15		2.87	-0.28	0.041
105.00	-19.16	-1.47	0.00	-79.05	0.00	79.05	1881.84	940.92	2800.02	1402.09		3.04	-0.29	0.067
110.00	-18.48	-1.48	0.00	-71.68	0.00	71.68	1850.66	925.33	2676.97	1340.48		3.35	-0.31	0.063
115.00	-17.81	-1.48	0.00	-64.30	0.00	64.30	1818.29	909.14	2554.84	1279.32		3.69	-0.34	0.060
117.00	-16.28	-1.47	0.00	-61.34	0.00	61.34	1805.01	902.50	2506.28	1255.00		3.84	-0.34	0.058
120.00	-15.89	-1.47	0.00	-56.92	0.00	56.92	1784.73	892.37	2433.78	1218.70		4.06	-0.36	0.056
125.00	-15.24	-1.47	0.00	-49.55	0.00	49.55	1749.99	875.00	2313.93	1158.68		4.44	-0.38	0.051
127.00	-11.63	-1.45	0.00	-46.60	0.00	46.60	1735.77	867.88	2266.36	1134.86		4.60	-0.39	0.048
130.00	-11.27	-1.45	0.00	-42.25	0.00	42.25	1714.07	857.04	2195.44	1099.35		4.85	-0.40	0.045
135.00	-10.68	-1.45	0.00	-34.98	0.00	34.98	1676.96	838.48	2078.45	1040.77		5.28	-0.42	0.040
139.00	-10.22	-1.44	0.00	-29.19	0.00	29.19	1646.42	823.21	1986.05	994.50		5.63	-0.43	0.036
140.00	-10.06	-1.43	0.00	-27.75	0.00	27.75	1638.67	819.33	1963.12	983.02		5.72	-0.43	0.034
142.75	-9.62	-1.41	0.00	-23.81	0.00	23.81	1100.62	550.31	1316.21	659.08		5.97	-0.44	0.045
145.00	-9.41	-1.41	0.00	-20.63	0.00	20.63	1091.20	545.60	1284.61	643.26		6.18	-0.45	0.041
146.00	-9.08	-1.38	0.00	-19.23	0.00	19.23	1086.94	543.47	1270.59	636.24		6.27	-0.45	0.039
148.00	-6.15	-1.13	0.00	-16.46	0.00	16.46	1078.27	539.14	1242.60	622.22		6.46	-0.46	0.032
150.00	-5.72	-1.09	0.00	-14.20	0.00	14.20	1069.42	534.71	1214.68	608.24		6.66	-0.46	0.029
155.00	-5.33	-1.06	0.00	-8.74	0.00	8.74	1046.45	523.23	1145.25	573.48		7.15	-0.47	0.020

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 44

157.00	-3.10	-0.72	0.00	-6.63	0.00	6.63	1036.93	518.47	1117.66	559.66	7.34	-0.47	0.015
160.00	-2.92	-0.69	0.00	-4.48	0.00	4.48	1022.30	511.15	1076.48	539.04	7.64	-0.48	0.011
165.00	-2.00	-0.49	0.00	-1.03	0.00	1.03	996.96	498.48	1008.51	505.00	8.15	-0.48	0.004
167.00	-0.09	-0.02	0.00	-0.05	0.00	0.05	986.50	493.25	981.58	491.52	8.35	-0.48	0.000
169.00	0.00	-0.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	8.55	-0.48	0.000

Wind Loading - Shaft

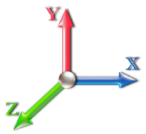
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 45	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	238.64	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	234.39	0.650	0.000	5.00	23.558	15.31	103.2	0.0	1305.1
10.00		1.00	0.70	6.129	6.74	230.15	0.650	0.000	5.00	23.135	15.04	101.4	0.0	1281.5
15.00		1.00	0.70	6.129	6.74	225.90	0.650	0.000	5.00	22.712	14.76	99.5	0.0	1257.8
20.00		1.00	0.70	6.129	6.74	221.65	0.650	0.000	5.00	22.288	14.49	97.7	0.0	1234.2
25.00		1.00	0.70	6.129	6.74	217.40	0.650	0.000	5.00	21.865	14.21	95.8	0.0	1210.6
30.00		1.00	0.70	6.134	6.75	213.24	0.650	0.000	5.00	21.442	13.94	94.0	0.0	1187.0
35.00		1.00	0.73	6.410	7.05	213.65	0.650	0.000	5.00	21.019	13.66	96.3	0.0	1163.3
40.00		1.00	0.76	6.659	7.33	213.33	0.650	0.000	5.00	20.596	13.39	98.1	0.0	1139.7
40.75	Bot - Section 2	1.00	0.76	6.695	7.36	213.23	0.650	0.000	0.75	3.053	1.98	14.6	0.0	168.9
45.00		1.00	0.79	6.887	7.58	212.45	0.650	0.000	4.25	17.389	11.30	85.6	0.0	1773.0
47.00	Top - Section 1	1.00	0.80	6.973	7.67	211.96	0.650	0.000	2.00	8.077	5.25	40.3	0.0	823.4
50.00		1.00	0.81	7.098	7.81	214.53	0.650	0.000	3.00	11.989	7.79	60.8	0.0	569.3
55.00		1.00	0.83	7.294	8.02	212.83	0.650	0.000	5.00	19.644	12.77	102.4	0.0	932.6
60.00		1.00	0.85	7.477	8.22	210.80	0.650	0.000	5.00	19.220	12.49	102.8	0.0	912.3
65.00		1.00	0.87	7.650	8.42	208.48	0.650	0.000	5.00	18.797	12.22	102.8	0.0	892.1
70.00		1.00	0.89	7.814	8.60	205.90	0.650	0.000	5.00	18.374	11.94	102.7	0.0	871.8
75.00		1.00	0.91	7.969	8.77	203.10	0.650	0.000	5.00	17.951	11.67	102.3	0.0	851.6
80.00		1.00	0.93	8.118	8.93	200.09	0.650	0.000	5.00	17.528	11.39	101.7	0.0	831.3
85.00		1.00	0.94	8.260	9.09	196.90	0.650	0.000	5.00	17.105	11.12	101.0	0.0	811.1
89.25	Bot - Section 3	1.00	0.96	8.376	9.21	194.05	0.650	0.000	4.25	14.206	9.23	85.1	0.0	673.5
90.00		1.00	0.96	8.396	9.24	193.54	0.650	0.000	0.75	2.507	1.63	15.0	0.0	196.8
91.50	RB1	1.00	0.96	8.435	9.28	192.50	0.650	0.000	1.50	4.985	3.24	30.1	0.0	391.4
94.25	Top - Section 2	1.00	0.97	8.507	9.36	190.56	0.650	0.000	2.75	9.041	5.88	55.0	0.0	709.6
95.00		1.00	0.97	8.526	9.38	192.53	0.650	0.000	0.75	2.444	1.59	14.9	0.0	77.5
96.75	RB2	1.00	0.98	8.571	9.43	191.28	0.650	0.000	1.75	5.664	3.68	34.7	0.0	179.6
97.00	RT1	1.00	0.98	8.577	9.43	191.10	0.650	0.000	0.25	0.805	0.52	4.9	0.0	25.5
100.00		1.00	0.99	8.652	9.52	188.90	0.650	0.000	3.00	9.577	6.23	59.2	0.0	303.6
102.25	RT2	1.00	0.99	8.707	9.58	187.22	0.650	0.000	2.25	7.083	4.60	44.1	0.0	224.5
105.00		1.00	1.00	8.774	9.65	185.14	0.650	0.000	2.75	8.541	5.55	53.6	0.0	270.7
110.00		1.00	1.02	8.891	9.78	181.26	0.650	0.000	5.00	15.200	9.88	96.6	0.0	481.6
115.00		1.00	1.03	9.005	9.91	177.26	0.650	0.000	5.00	14.777	9.61	95.1	0.0	468.1
117.00	Appurtenance(s)	1.00	1.03	9.049	9.95	175.63	0.650	0.000	2.00	5.792	3.77	37.5	0.0	183.5
120.00		1.00	1.04	9.115	10.03	173.16	0.650	0.000	3.00	8.562	5.57	55.8	0.0	271.2
125.00		1.00	1.05	9.222	10.14	168.96	0.650	0.000	5.00	13.931	9.06	91.9	0.0	441.1
127.00	Appurtenance(s)	1.00	1.06	9.264	10.19	167.26	0.650	0.000	2.00	5.454	3.55	36.1	0.0	172.7
130.00		1.00	1.07	9.326	10.26	164.67	0.650	0.000	3.00	8.054	5.24	53.7	0.0	255.0
135.00		1.00	1.08	9.427	10.37	160.29	0.650	0.000	5.00	13.085	8.51	88.2	0.0	414.1
139.00	Bot - Section 4	1.00	1.09	9.506	10.46	156.73	0.650	0.000	4.00	10.163	6.61	69.1	0.0	321.6
140.00		1.00	1.09	9.525	10.48	155.83	0.650	0.000	1.00	2.530	1.64	17.2	0.0	139.2
142.75	Top - Section 3	1.00	1.09	9.578	10.54	153.34	0.650	0.000	2.75	6.871	4.47	47.1	0.0	378.0
145.00		1.00	1.10	9.621	10.58	153.29	0.650	0.000	2.25	5.526	3.59	38.0	0.0	131.4
146.00	Appurtenance(s)	1.00	1.10	9.640	10.60	152.37	0.650	0.000	1.00	2.429	1.58	16.7	0.0	57.7
148.00	Appurtenance(s)	1.00	1.11	9.678	10.65	150.53	0.650	0.000	2.00	4.806	3.12	33.3	0.0	114.3
150.00	Appurtenance(s)	1.00	1.11	9.715	10.69	148.68	0.650	0.000	2.00	4.739	3.08	32.9	0.0	112.6
155.00		1.00	1.12	9.806	10.79	144.01	0.650	0.000	5.00	11.551	7.51	81.0	0.0	274.5
157.00	Appurtenance(s)	1.00	1.12	9.842	10.83	142.12	0.650	0.000	2.00	4.502	2.93	31.7	0.0	107.0

Wind Loading - Shaft

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46	

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160.00		1.00	1.13	9.896	10.89	139.26	0.650	0.000	3.00	6.626	4.31	46.9	0.0	157.4
165.00	Appurtenance(s)	1.00	1.14	9.983	10.98	134.45	0.650	0.000	5.00	10.704	6.96	76.4	0.0	254.3
167.00	Appurtenance(s)	1.00	1.14	10.017	11.02	132.51	0.650	0.000	2.00	4.163	2.71	29.8	0.0	98.9
169.00		1.00	1.15	10.052	11.06	130.56	0.650	0.000	2.00	4.096	2.66	29.4	0.0	97.3
								Totals:	**169.00**			**3,204.2**		**27,200.5**

Discrete Appurtenance Forces

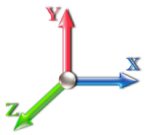
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	167.00	RRUS 4415 B25	3	10.017	11.019	0.54	0.80	2.64	138.00	0.000	0.000	29.06	0.00	0.00
2	167.00	Ericsson - KRY 112 144/2	3	10.017	11.019	0.60	0.80	0.74	33.00	0.000	0.000	8.13	0.00	0.00
3	167.00	AIR 21 B2A/B4P	3	10.017	11.019	0.77	0.90	14.14	276.00	0.000	0.000	155.82	0.00	0.00
4	167.00	T-Arms/Commscope	3	10.026	11.029	0.56	0.75	11.39	1020.00	0.000	0.500	125.62	0.00	62.81
5	167.00	Ericsson - Radio 4449	3	10.017	11.019	0.60	0.80	2.97	222.00	0.000	0.000	32.73	0.00	0.00
6	167.00	AIR 6449 B41	3	10.017	11.019	0.56	0.80	9.49	309.00	0.000	0.000	104.59	0.00	0.00
7	165.00	APXVAA24_43-U-A20	3	9.983	10.981	0.66	0.90	39.89	384.00	0.000	0.000	438.08	0.00	0.00
8	165.00	Air 32	3	9.983	10.981	0.78	0.90	15.29	317.40	0.000	0.000	167.93	0.00	0.00
9	157.00	DB846H80E-SX	2	9.842	10.827	0.88	0.80	8.82	32.00	0.000	0.000	95.46	0.00	0.00
10	157.00	RF4439d-25A	3	9.842	10.827	0.66	0.80	3.74	253.20	0.000	0.000	40.54	0.00	0.00
11	157.00	DB846F65ZAXY	4	9.842	10.827	0.74	0.80	20.76	84.00	0.000	0.000	224.71	0.00	0.00
12	157.00	T-Arms	3	9.842	10.827	0.56	0.75	13.50	1050.00	0.000	0.000	146.16	0.00	0.00
13	157.00	DB-C1-12C-24AB-0Z	1	9.842	10.827	1.00	1.00	4.06	32.00	0.000	0.000	43.96	0.00	0.00
14	157.00	RF4440d-13A	3	9.842	10.827	0.66	0.80	3.74	253.20	0.000	0.000	40.54	0.00	0.00
15	157.00	MX06FRO660-02	6	9.842	10.827	0.70	0.80	41.22	360.00	0.000	0.000	446.24	0.00	0.00
16	157.00	MT6407-77A	3	9.842	10.827	0.56	0.80	7.88	238.20	0.000	0.000	85.30	0.00	0.00
17	150.00	Collar Mount	1	9.715	10.686	1.00	1.00	3.50	100.00	0.000	0.000	37.40	0.00	0.00
18	150.00	Ericsson Air6419 B77G	3	9.715	10.686	0.61	0.80	6.93	198.30	0.000	0.000	74.07	0.00	0.00
19	148.00	Powerwave 21401	6	9.678	10.645	0.54	0.80	4.15	84.60	0.000	0.000	44.16	0.00	0.00
20	148.00	Commscope	1	9.678	10.645	0.54	0.80	0.53	34.50	0.000	0.000	5.65	0.00	0.00
21	148.00	Powerwave 1001940	3	9.678	10.645	0.54	0.80	0.40	6.60	0.000	0.000	4.28	0.00	0.00
22	148.00	Raycap	2	9.678	10.645	0.80	0.80	1.82	52.40	0.000	0.000	19.42	0.00	0.00
23	148.00	Ericsson RRUS 4478 B14	3	9.678	10.645	0.54	0.80	2.65	178.20	0.000	0.000	28.24	0.00	0.00
24	148.00	Quintel QD6616-7	1	9.678	10.645	0.74	0.80	5.98	111.00	0.000	0.000	63.70	0.00	0.00
25	148.00	T-Arms w/ Modifications	3	9.678	10.645	0.56	0.75	20.25	1350.00	0.000	0.000	215.57	0.00	0.00
26	148.00	CCI DMP65R-BU8DA	2	9.678	10.645	0.58	0.80	20.87	191.40	0.000	0.000	222.19	0.00	0.00
27	148.00	CCi DMP65R-BU6DA	1	9.678	10.645	0.58	0.80	7.32	79.40	0.000	0.000	77.93	0.00	0.00
28	148.00	Ericsson RRUS 4449	3	9.678	10.645	0.54	0.80	3.17	213.00	0.000	0.000	33.72	0.00	0.00
29	148.00	Quintel QD8616-7	2	9.678	10.645	0.74	0.80	11.97	222.00	0.000	0.000	127.40	0.00	0.00
30	148.00	Powerwave LGP13519	6	9.678	10.645	0.80	0.80	6.19	84.60	0.000	0.000	65.92	0.00	0.00
31	148.00	Ericsson RRUS 8843 B2	3	9.678	10.645	0.54	0.80	2.65	225.00	0.000	0.000	28.24	0.00	0.00
32	148.00	Ericsson RRUS 32	3	9.678	10.645	0.54	0.80	2.65	231.00	0.000	0.000	28.24	0.00	0.00
33	146.00	Ericsson Air6449 B77D	3	9.640	10.604	0.68	0.80	8.43	264.00	0.000	0.000	89.34	0.00	0.00
34	127.00	AAHC	3	9.264	10.190	0.56	0.75	7.10	310.80	0.000	0.000	72.39	0.00	0.00
35	127.00	VHLP800-11	1	9.264	10.190	1.00	1.00	8.43	48.00	1.455	0.000	85.90	124.99	0.00
36	127.00	NNVV-65B-R4	3	9.264	10.190	0.55	0.75	20.43	232.20	0.000	0.000	208.18	0.00	0.00
37	127.00	VHLP2-11	3	9.264	10.190	1.00	1.00	14.04	81.00	1.455	0.000	143.07	208.17	0.00
38	127.00	TD-RRH8x20-25	3	9.264	10.190	0.52	0.75	6.29	210.00	0.000	0.000	64.07	0.00	0.00
39	127.00	RMQP-4096-HK	1	9.264	10.190	1.00	1.00	51.70	2645.00	0.000	0.000	526.82	0.00	0.00
40	127.00	Horizon Duo	4	9.264	10.190	0.60	0.80	1.42	28.00	0.000	0.000	14.43	0.00	0.00
41	127.00	1900MHz RRH	3	9.264	10.190	0.74	0.75	6.17	180.00	0.000	0.000	62.87	0.00	0.00
42	117.00	Ericsson 0208 RRU	3	9.049	9.954	0.54	0.80	2.20	59.40	0.000	0.000	21.93	0.00	0.00
43	117.00	Ericsson 4415 RRU	2	9.049	9.954	0.54	0.80	1.99	88.20	0.000	0.000	19.85	0.00	0.00
44	117.00	Standoff Sector Frame	3	9.049	9.954	0.56	0.75	25.48	1185.00	0.000	0.000	253.64	0.00	0.00
45	117.00	Comba	3	9.049	9.954	0.56	0.80	8.15	75.30	0.000	0.000	81.11	0.00	0.00
							Totals:		**13,770.90**			**4,904.63**		

Total Applied Force Summary

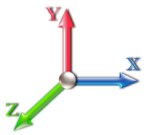
Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 48

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		103.23	1580.63	0.00	0.00
10.00		101.38	1557.00	0.00	0.00
15.00		99.52	1533.37	0.00	0.00
20.00		97.67	1509.74	0.00	0.00
25.00		95.81	1486.11	0.00	0.00
30.00		94.04	1462.48	0.00	0.00
35.00		96.33	1438.85	0.00	0.00
40.00		98.06	1415.23	0.00	0.00
40.75		14.61	210.25	0.00	0.00
45.00		85.63	2007.19	0.00	0.00
47.00		40.27	933.59	0.00	0.00
50.00		60.84	734.58	0.00	0.00
55.00		102.44	1208.10	0.00	0.00
60.00		102.76	1187.85	0.00	0.00
65.00		102.82	1167.60	0.00	0.00
70.00		102.66	1147.35	0.00	0.00
75.00		102.29	1127.09	0.00	0.00
80.00		101.73	1106.84	0.00	0.00
85.00		101.01	1086.59	0.00	0.00
89.25		85.07	907.67	0.00	0.00
90.00		15.05	238.15	0.00	0.00
91.50		30.07	474.01	0.00	0.00
94.25		54.99	861.13	0.00	0.00
95.00		14.90	118.79	0.00	0.00
96.75		34.71	275.99	0.00	0.00
97.00		4.94	39.29	0.00	0.00
100.00		59.25	468.88	0.00	0.00
102.25		44.10	348.47	0.00	0.00
105.00		53.58	422.19	0.00	0.00
110.00		96.63	757.16	0.00	0.00
115.00		95.14	743.66	0.00	0.00
117.00	(11) attachments	414.00	1701.58	0.00	0.00
120.00		55.80	433.61	0.00	0.00
125.00		91.85	711.88	0.00	0.00
127.00	(21) attachments	1213.86	4015.97	333.15	0.00
130.00		53.70	400.74	0.00	0.00
135.00		88.19	657.10	0.00	0.00
139.00		69.07	503.48	0.00	0.00
140.00		17.23	181.57	0.00	0.00
142.75		47.05	494.44	0.00	0.00
145.00		38.02	226.69	0.00	0.00
146.00	(3) attachments	106.08	364.09	0.00	0.00
148.00	(39) attachments	997.94	3262.67	0.00	0.00
150.00	(4) attachments	144.39	476.05	0.00	0.00
155.00		80.99	437.29	0.00	0.00
157.00	(25) attachments	1154.60	2474.68	0.00	0.00

Total Applied Force Summary

Structure:	CT13071-A-SBA		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 49

Tower Engineering Solutions

160.00		46.88	201.38	0.00	0.00
165.00	(6) attachments	682.41	1028.94	0.00	0.00
167.00	(18) attachments	485.78	2126.18	0.00	62.81
169.00		29.43	97.25	0.00	0.00
	Totals:	**8,108.81**	**49,351.42**	**333.15**	**62.81**

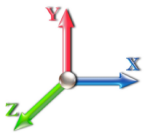
Linear Appurtenance Segment Forces (Factored)

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.035	0.000	6.129	0.00	20.80
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.036	0.000	6.129	0.00	20.80
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.036	0.000	6.129	0.00	20.80
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.037	0.000	6.129	0.00	20.80
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.038	0.000	6.129	0.00	20.80
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.038	0.000	6.134	0.00	20.80
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.039	0.000	6.410	0.00	20.80
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.040	0.000	6.659	0.00	20.80
40.75	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.041	0.000	6.695	0.00	3.12
45.00	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.041	0.000	6.887	0.00	17.68
47.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	6.973	0.00	8.32
50.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.041	0.000	7.098	0.00	12.48
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.042	0.000	7.294	0.00	20.80
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.043	0.000	7.477	0.00	20.80
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.044	0.000	7.650	0.00	20.80
70.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.045	0.000	7.814	0.00	20.80
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.046	0.000	7.969	0.00	20.80
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.047	0.000	8.118	0.00	20.80
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.048	0.000	8.260	0.00	20.80
89.25	1 5/8" Coax	Yes	4.25	0.000	1.98	0.70	0.00	0.049	0.000	8.376	0.00	17.68
90.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.075	0.000	8.396	0.00	3.12
90.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.075	0.000	8.396	0.00	0.00
91.50	1 5/8" Coax	Yes	1.50	0.000	1.98	0.25	0.00	0.076	0.000	8.435	0.00	6.24
91.50	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.076	0.000	8.435	0.00	0.00
94.25	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.077	0.000	8.507	0.00	11.44
94.25	1" Reinforcing plate	Yes	2.75	0.000	1.00	0.23	0.00	0.077	0.000	8.507	0.00	0.00
95.00	1 5/8" Coax	Yes	0.75	0.000	1.98	0.12	0.00	0.076	0.000	8.526	0.00	3.12
95.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.076	0.000	8.526	0.00	0.00
96.75	1 5/8" Coax	Yes	1.75	0.000	1.98	0.29	0.00	0.077	0.000	8.571	0.00	7.28
96.75	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.077	0.000	8.571	0.00	0.00
97.00	1 5/8" Coax	Yes	0.25	0.000	1.98	0.04	0.00	0.077	0.000	8.577	0.00	1.04
97.00	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.077	0.000	8.577	0.00	0.00
100.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.078	0.000	8.652	0.00	12.48
100.00	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.078	0.000	8.652	0.00	0.00
100.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.078	0.000	8.652	0.00	0.00
102.25	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.079	0.000	8.707	0.00	9.36
102.25	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.079	0.000	8.707	0.00	0.00
105.00	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.075	0.000	8.774	0.00	11.44
105.00	1" Reinforcing plate	Yes	2.25	0.000	1.00	0.19	0.00	0.075	0.000	8.774	0.00	0.00
110.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.054	0.000	8.891	0.00	20.80
115.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.056	0.000	9.005	0.00	20.80
117.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	9.049	0.00	8.32
120.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.058	0.000	9.115	0.00	12.48
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.059	0.000	9.222	0.00	20.80
127.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	9.264	0.00	8.32
130.00	1 5/8" Coax	Yes	3.00	0.000	1.98	0.49	0.00	0.061	0.000	9.326	0.00	12.48
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.063	0.000	9.427	0.00	20.80

Linear Appurtenance Segment Forces (Factored)

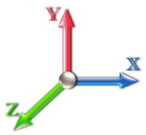
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
139.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.065	0.000	9.506	0.00	16.64
140.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.066	0.000	9.525	0.00	4.16
142.75	1 5/8" Coax	Yes	2.75	0.000	1.98	0.45	0.00	0.067	0.000	9.578	0.00	11.44
145.00	1 5/8" Coax	Yes	2.25	0.000	1.98	0.37	0.00	0.067	0.000	9.621	0.00	9.36
146.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.068	0.000	9.640	0.00	4.16
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.069	0.000	9.678	0.00	8.32
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	9.715	0.00	8.32
155.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.071	0.000	9.806	0.00	20.80
157.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	9.842	0.00	8.32
										Totals:	**0.0**	**653.1**

Calculated Forces

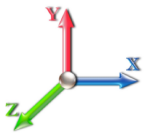
Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-49.35	-8.13	-0.33	-1033.0	0.00	1033.08	5324.18	2662.09	12195.0	6106.56	0.00	0.000	0.000	0.178
5.00	-47.76	-8.06	-0.33	-992.44	0.00	992.44	5261.08	2630.54	11832.5	5925.09	0.03	-0.047	0.000	0.177
10.00	-46.20	-8.00	-0.33	-952.12	0.00	952.12	5196.80	2598.40	11472.7	5744.92	0.10	-0.095	0.000	0.175
15.00	-44.66	-7.94	-0.33	-912.12	0.00	912.12	5131.34	2565.67	11115.7	5566.13	0.23	-0.144	0.000	0.173
20.00	-43.14	-7.87	-0.33	-872.44	0.00	872.44	5064.69	2532.35	10761.6	5388.80	0.40	-0.193	0.000	0.170
25.00	-41.65	-7.81	-0.33	-833.09	0.00	833.09	4996.86	2498.43	10410.5	5212.99	0.63	-0.243	0.000	0.168
30.00	-40.18	-7.74	-0.33	-794.06	0.00	794.06	4927.84	2463.92	10062.6	5038.79	0.92	-0.294	0.000	0.166
35.00	-38.73	-7.67	-0.33	-755.36	0.00	755.36	4857.63	2428.82	9718.08	4866.26	1.25	-0.345	0.000	0.163
40.00	-37.32	-7.58	-0.33	-717.01	0.00	717.01	4786.24	2393.12	9377.03	4695.49	1.64	-0.396	0.000	0.161
40.75	-37.10	-7.58	-0.33	-711.32	0.00	711.32	4775.43	2387.72	9326.19	4670.03	1.70	-0.404	0.000	0.160
45.00	-35.09	-7.50	-0.33	-679.09	0.00	679.09	4713.67	2356.83	9039.63	4526.53	2.08	-0.449	0.000	0.157
47.00	-34.15	-7.47	-0.33	-664.08	0.00	664.08	3877.89	1938.95	7512.92	3762.05	2.28	-0.470	0.000	0.185
50.00	-33.41	-7.43	-0.33	-641.67	0.00	641.67	3845.09	1922.55	7353.82	3682.38	2.58	-0.502	0.000	0.183
55.00	-32.20	-7.35	-0.33	-604.51	0.00	604.51	3789.47	1894.74	7090.51	3550.52	3.14	-0.561	0.000	0.179
60.00	-31.01	-7.27	-0.33	-567.76	0.00	567.76	3732.67	1866.34	6829.63	3419.89	3.76	-0.619	0.000	0.174
65.00	-29.83	-7.18	-0.33	-531.43	0.00	531.43	3674.68	1837.34	6571.34	3290.55	4.44	-0.678	0.000	0.170
70.00	-28.68	-7.09	-0.33	-495.52	0.00	495.52	3615.51	1807.76	6315.78	3162.58	5.18	-0.737	0.000	0.165
75.00	-27.55	-7.00	-0.33	-460.05	0.00	460.05	3555.15	1777.58	6063.10	3036.06	5.98	-0.795	0.000	0.159
80.00	-26.43	-6.91	-0.33	-425.03	0.00	425.03	3493.61	1746.80	5813.45	2911.05	6.85	-0.854	0.000	0.154
85.00	-25.34	-6.82	-0.33	-390.46	0.00	390.46	3430.88	1715.44	5566.98	2787.63	7.77	-0.912	0.000	0.147
89.25	-24.43	-6.73	-0.33	-361.47	0.00	361.47	3376.63	1688.32	5360.08	2684.02	8.61	-0.961	-0.001	0.142
90.00	-24.19	-6.72	-0.33	-356.42	0.00	356.42	3366.97	1683.48	5323.83	2665.87	8.76	-0.969	-0.001	0.141
91.50	-23.72	-6.69	-0.33	-346.35	0.00	346.35	3347.56	1673.78	5251.55	2629.68	9.07	-0.987	-0.001	0.104
94.25	-22.86	-6.63	-0.33	-327.95	0.00	327.95	1944.87	972.44	3066.99	1535.78	9.64	-1.010	-0.001	0.117
95.00	-22.74	-6.61	-0.33	-322.98	0.00	322.98	1940.65	970.33	3048.28	1526.41	9.80	-1.017	-0.001	0.150
96.75	-22.46	-6.58	-0.33	-311.41	0.00	311.41	1930.70	965.35	3004.67	1504.57	10.18	-1.036	-0.001	0.102
97.00	-22.42	-6.58	-0.33	-309.77	0.00	309.77	1929.27	964.63	2998.44	1501.45	10.23	-1.038	-0.001	0.133
100.00	-21.95	-6.52	-0.33	-290.03	0.00	290.03	1911.84	955.92	2923.84	1464.09	10.89	-1.066	-0.001	0.127
102.25	-21.60	-6.48	-0.33	-275.36	0.00	275.36	1898.49	949.24	2868.04	1436.15	11.40	-1.088	-0.001	0.123
102.25	-21.60	-6.48	-0.33	-275.36	0.00	275.36	1898.49	949.24	2868.04	1436.15	11.40	-1.088	-0.001	0.123
105.00	-21.17	-6.43	-0.33	-257.55	0.00	257.55	1881.84	940.92	2800.02	1402.09	12.03	-1.113	-0.001	0.195
110.00	-20.41	-6.35	-0.33	-225.38	0.00	225.38	1850.66	925.33	2676.97	1340.48	13.24	-1.185	-0.001	0.179
115.00	-19.66	-6.25	-0.33	-193.64	0.00	193.64	1818.29	909.14	2554.84	1279.32	14.52	-1.254	-0.001	0.162
117.00	-17.97	-5.81	-0.33	-181.13	0.00	181.13	1805.01	902.50	2506.28	1255.00	15.05	-1.280	-0.001	0.154
120.00	-17.53	-5.76	-0.33	-163.70	-0.01	163.70	1784.73	892.37	2433.78	1218.70	15.87	-1.318	-0.001	0.144
125.00	-16.82	-5.66	-0.33	-134.89	-0.01	134.89	1749.99	875.00	2313.93	1158.68	17.28	-1.376	-0.001	0.126
127.00	-12.83	-4.36	0.00	-123.56	0.00	123.56	1735.77	867.88	2266.36	1134.86	17.86	-1.398	-0.001	0.116
130.00	-12.43	-4.30	0.00	-110.49	0.00	110.49	1714.07	857.04	2195.44	1099.35	18.75	-1.430	-0.001	0.108
135.00	-11.77	-4.21	0.00	-88.97	0.00	88.97	1676.96	838.48	2078.45	1040.77	20.27	-1.476	-0.001	0.093
139.00	-11.27	-4.13	0.00	-72.14	0.00	72.14	1646.42	823.21	1986.05	994.50	21.52	-1.510	-0.001	0.079
140.00	-11.08	-4.11	0.00	-68.01	0.00	68.01	1638.67	819.33	1963.12	983.02	21.84	-1.517	-0.001	0.076
142.75	-10.59	-4.05	0.00	-56.70	0.00	56.70	1100.62	550.31	1316.21	659.08	22.72	-1.537	-0.001	0.096
145.00	-10.36	-4.01	0.00	-47.59	0.00	47.59	1091.20	545.60	1284.61	643.26	23.45	-1.551	-0.001	0.084
146.00	-10.00	-3.90	0.00	-43.57	0.00	43.57	1086.94	543.47	1270.59	636.24	23.77	-1.559	-0.001	0.078
148.00	-6.77	-2.81	0.00	-35.78	0.00	35.78	1078.27	539.14	1242.60	622.22	24.43	-1.572	-0.001	0.064
150.00	-6.29	-2.66	0.00	-30.16	0.00	30.16	1069.42	534.71	1214.68	608.24	25.09	-1.583	-0.001	0.055
155.00	-5.86	-2.56	0.00	-16.88	0.00	16.88	1046.45	523.23	1145.25	573.48	26.76	-1.604	-0.001	0.035
157.00	-3.42	-1.34	0.00	-11.75	0.00	11.75	1036.93	518.47	1117.66	559.66	27.44	-1.610	-0.001	0.024

Calculated Forces

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G
Site Name:	Woodbridge	**Exposure:**	B
Height:	169.00 (ft)	**Crest Height:**	0.00
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil
Gh:	1.1	**Topography:** 1	**Struct Class:** II

4/21/2022

Tower Engineering Solutions

160.00	-3.22	-1.29	0.00	-7.73	0.00	7.73	1022.30	511.15	1076.48	539.04	28.45	-1.616	-0.001	0.017
165.00	-2.21	-0.58	0.00	-1.28	0.00	1.28	996.96	498.48	1008.51	505.00	30.14	-1.621	-0.001	0.005
167.00	-0.10	-0.03	0.00	-0.06	0.00	0.06	986.50	493.25	981.58	491.52	30.82	-1.621	-0.001	0.000
169.00	0.00	-0.03	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	31.50	-1.621	-0.001	0.000

Final Analysis Summary

Structure:	CT13071-A-SBA	**Code:**	TIA-222-G	4/21/2022	
Site Name:	Woodbridge	**Exposure:**	B		
Height:	169.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 54	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	34.0	0.00	59.16	0.02	0.85	4354.78
0.9D + 1.6W 97 mph Wind	34.0	0.00	44.36	0.01	0.85	4291.25
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.2	0.00	92.01	0.00	0.29	1176.88
1.2D + 1.0E	2.0	0.00	59.22	0.00	0.00	258.21
0.9D + 1.0E	2.0	0.00	44.42	0.00	0.00	254.18
1.0D + 1.0W 60 mph Wind	8.1	0.00	49.35	0.00	0.33	1033.08

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-23.33	-27.20	-0.86	-1088.1	-0.05	-1088.1	1881.84	940.92	2800.02	1402.09	105.00	0.789
0.9D + 1.6W 97 mph Wind	-17.01	-26.63	-0.87	-1063.9	-0.04	-1063.9	1881.84	940.92	2800.02	1402.09	105.00	0.769
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-47.13	-7.37	-0.29	-287.68	-0.01	-287.68	1881.84	940.92	2800.02	1402.09	105.00	0.230
1.2D + 1.0E	-25.55	-1.51	0.00	-80.68	0.00	-80.68	1881.84	940.92	2800.02	1402.09	105.00	0.071
0.9D + 1.0E	-19.16	-1.47	0.00	-79.05	0.00	-79.05	1881.84	940.92	2800.02	1402.09	105.00	0.067
1.0D + 1.0W 60 mph Wind	-21.17	-6.43	-0.33	-257.55	0.00	-257.55	1881.84	940.92	2800.02	1402.09	105.00	0.195

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
91.5	97.0	(3) LNP-LP6X100-G-10TT	-377.1	-8.67	25.3	178.8	25.3	8	9	152.0	25.3	7	9	218.85	301.8	288.75	0.758
96.8	102.3	(3) LNP-LP6X100-G-10TT	378.6	8.71	25.3	156.1	25.3	7	9	193.1	25.3	8	9	207.56	301.8	288.75	0.719

Base Plate Summary

Structure:	CT13071-A-SB		**Code:**	TIA-222-G	4/21/2022
Site Name:	Woodbridge		**Exposure:**	B	
Height:	169.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 55

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	4977.00
Axial (kip):	60.20
Shear (kip):	43.70

Analysis (1.2D + 1.6W)

Moment (kip-ft):	4354.78
Axial (kip):	59.16
Shear (kip):	34.01

Base Plate

Yield (ksi):	60.00
Width (in):	61.25
Style:	Clipped
Polygon Sides:	0.00
Clip Length (in):	12.00
Effective Len (in):	8.31
Moment (kip-in):	604.42
Allow Stress (ksi):	81.00
Applied Stress (ksi):	48.60
Stress Ratio:	0.60

Anchor Bolts

Bolt Circle:	62.75
Number Bolts:	16.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00

Compression

Force (kip):	182.71
Allowable (kip):	260.00
Ratio:	0.72

Tension

Force (kip):	171.20
Allowable (kip):	260.00
Ratio:	0.67

Monopole Mat Foundation Design

			Date: 4/21/2022
Customer Name:	AT&T	**TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	169
Site Number:	CT13071-A-SBA	**Engineer Name:**	K. Azisllari
Engr. Number:	127984	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

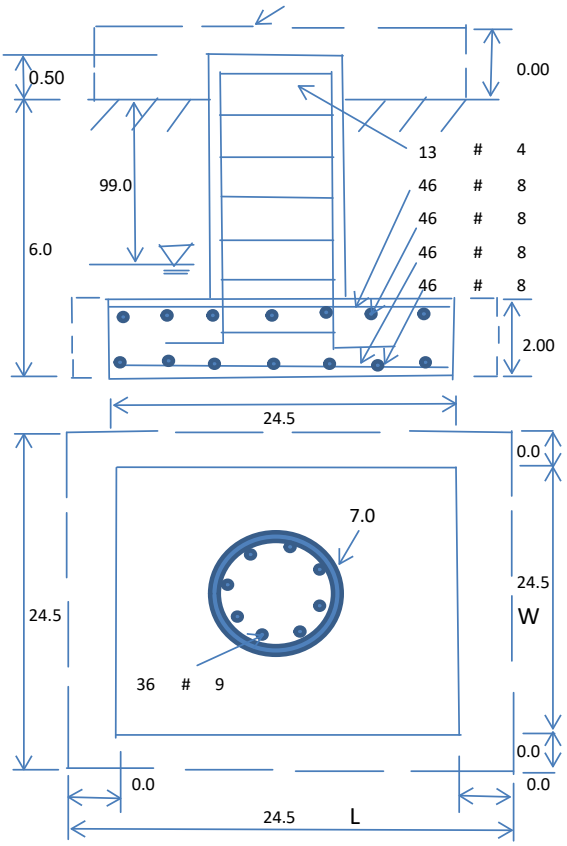
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	59.2	Shear Force (Kips):	34.0
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4354.8
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	24.5	Width of Pad (ft.):	24.5
Final Length of pad (ft)	24.5	Final width of pad (ft):	24.5



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	46	Qty. of Rebar in Pad (W):	46	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	46	Qty. of Rebar in Pad (W):	46	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	10000	Ultimate Skin Friction:	200	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	2247.06	Total Dry Soil Weight (Kips):	269.65
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	269.65	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1373.68	Total Dry Concrete Weight (Kips):	206.05
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	206.05	Total Vertical Load on Base (Kips):	534.90

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3623	<	Allowable Factored Soil Bearing (psf):	7500	0.48	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5969.8	>	Design Factored Momont (kips-ft):	4576	0.77	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.30	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6026.1	>	Design Factored Moment (Mu, Kips-F	4507.8	0.75	OK!
Calculated Shear Capacity (Kips):	794.5	>	Design Factored Shear (Kips):	34.0	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1944.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9734.2	>	Design Factored Axial Load (Pu Kips):	59.2	0.01	OK!
Moment & Axial Strength Combination:	0.75	OK!	Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	571.8	>	One-Way Factored Shear (L-D. Kips):	292.0	0.51	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	571.8	>	One-Way Factored Shear (W-D., Kips)	292.0	0.51	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	565.5	>	One-Way Factored Shear (C-C, Kips):	304.6	0.54	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0060	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0060		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3174.0	>	Moment at Bottom (L-Dir. K-Ft):	1389.8	0.44	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3174.0	>	Moment at Bottom (W-Dir. K-Ft):	1389.8	0.44	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4424.9	>	Moment at Bottom (C-C Dir. K-Ft):	1965.5	0.44	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0060	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0060		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	3174.0	>	Moment at the top (L-Dir K-Ft):	672.9	0.21	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	3174.0	>	Moment at the top (W-Dir K-Ft):	672.9	0.21	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4424.9	>	Moment at the top (C-C Dir. K-Ft):	631.8	0.14	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1741.9	k-ft.	Max. factored shear stress v_{u_CD}:		4.6	Psi
Max. factored shear stress v_{u_AB}:	19.3	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	19.3	Psi	Check Usage of Punching Shear Capacity:		0.10	OK!

March 29, 2022

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT2359
	FA Number:	10126685
	PACE Number:	MRCTB055252
	PT Number:	2051A11P27
	Site Name:	ANSONIA CT DEERFIELD LANE
	Site Address:	1 Deerfield Lane Ansonia, CT 06401

To Whom It May Concern:

Hudson Design Group LLC (HDG) 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) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- **(1) QD6616-7 Antennas (72"x22"x9.6" – Wt. = 130.0 lbs. /each)**
- **(2) QD8616-7 Antennas (96"x22"x9.6" – Wt. = 150.0 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"x15.9"x10.6" – Wt. = 82.0 lbs. /each)**
- **(3) AIR6419 Antennas (31.1"x16.1"x7.3" – Wt. = 66.0 lbs. /each)**
- **(1) OPA65R-BU6A Antennas (71.1"x11.7"x8.4" – Wt. = 58 lbs. /each)**
- **(2) OPA65R-BU8DA Antennas (96"x21"x7.8" – Wt. = 77.0 lbs. /each)**
- **(3) 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60.0 lbs. /each)**
- **(3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. = 72.0 lbs. /each)**
- **(3) 2012 B29 RRH's (16.5"x13.5"x5.9" – Wt. = 43.0 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x10.4" – Wt. = 73.0 lbs. /each)**

**Proposed equipment shown in bold.*

No original structural design documents or fabrication drawings were available for the existing mounts. A previous HDG Mount Analysis dated October 15, 2018, was used to perform this analysis. HDG conducted a ground audit of the existing antenna mounts on September 23, 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 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R16.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-Hand Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 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 1.16 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.195 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.064.
- The mount has been analyzed using a service wind speed of 50 mph wind on the worstcase antenna.Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 2.
- The existing mounts are secured to the existing monopole with ring mounts and threaded rods. HDG considers the threaded rods to be the governing connection member

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	19	LC2	85%	**PASS**

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG 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 mount has 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. HDG 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.

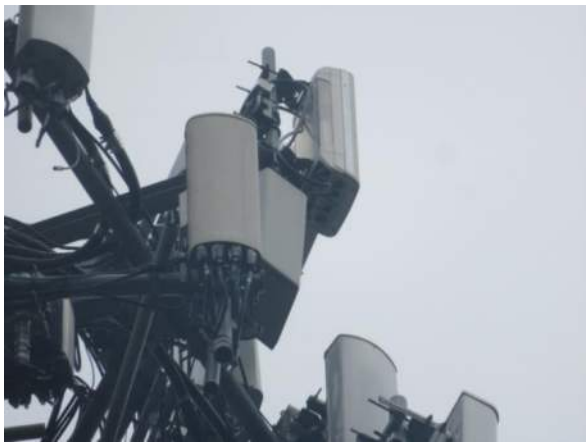
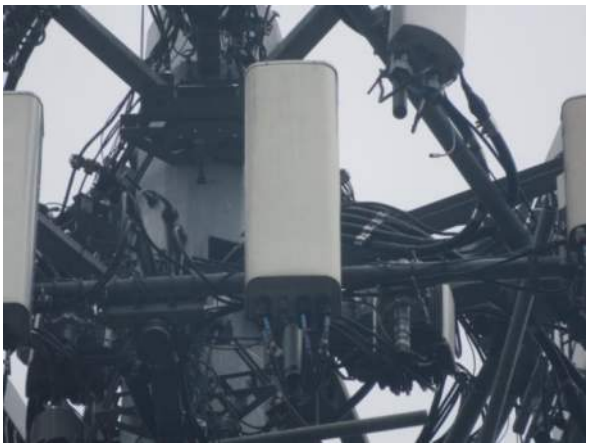
Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:




HUDSON
Design Group LLC

Wind & Ice
Calculations

ANSI/TIA-222H - WIND, ICE & SEISMIC LOAD CALCULATIONS

Site Code/Name		CT2359 - ANSONIA CT DEERFIELD LANE		
State		Connecticut		
County		New Haven		*Reference*
Structure Class		II		*Table 2-1*
Exposure Category		B		*Section 2.6.5.1.2*
Topographic Category		1 - Kzt = 1		*Section 2.6.6.2.1*
Mean Elevation of base of structure	z_s	483.35	ft	*ASCE7-16 Hazards*
Height Above Ground	z	148	ft	

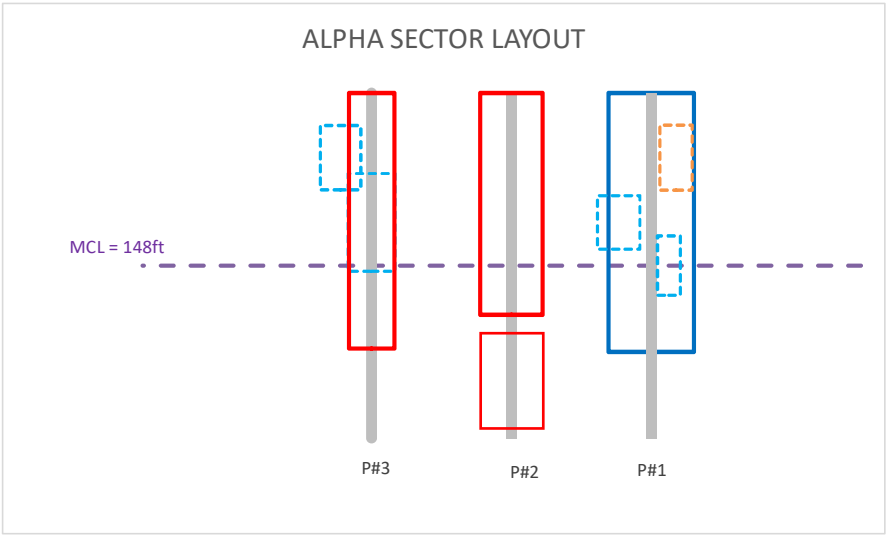
Wind Parameters				
Basic wind speed	V	125	mph	*Appendix N of Connecticut Building Code*
Wind direction probability factor	K_d	0.95		*Section 16.6*
Gust effect factor	G_h	1		*Section 16.6*
Velocity Pressure (Ka = 0.9)		37.15	psf	*Section 2.6.11.6*

Wind & Ice Parameters				
Base windspeed in conjunction with ice, V_i		50	mph	*ASCE7-16 Hazards Tool*
Base Ice thickness	t_i	1.00	in	*ASCE7-16 Hazards Tool*
Ice Velocity Pressure (Ka = 0.9)	q_{ice}	5.94	psf	*Section 2.6.11.6*
Design Ice Thickness	t_{iz}	1.16	in	*Section 2.6.10*

Seismic Parameters				
Site Soil Class		D - Default		*Table 2-10*
Seismic Design Category		B		*ASCE7-16 Hazards Tool*
Spectral Response at Short Periods	S_s	0.195		*Appendix N of Connecticut Building Code*
Spectral Response at 1sec	S_1	0.064		*Appendix N of Connecticut Building Code*
Long Period Transition Period	T_L	6		*ASCE7-16 Hazards Tool*
Seismic Importance Factor	I_s	1		*Table 2-3*
Response modification coefficient	R	2		*Section 16.7*
Short-Period Site Coefficient	F_a	1.6		*Table 2-11*
Design Spectral Response at Short Periods	S_{DS}	0.208		*Section 2.7.5*
Seismic Response Coefficient	C_s	0.104		*Section 2.7.7.1*

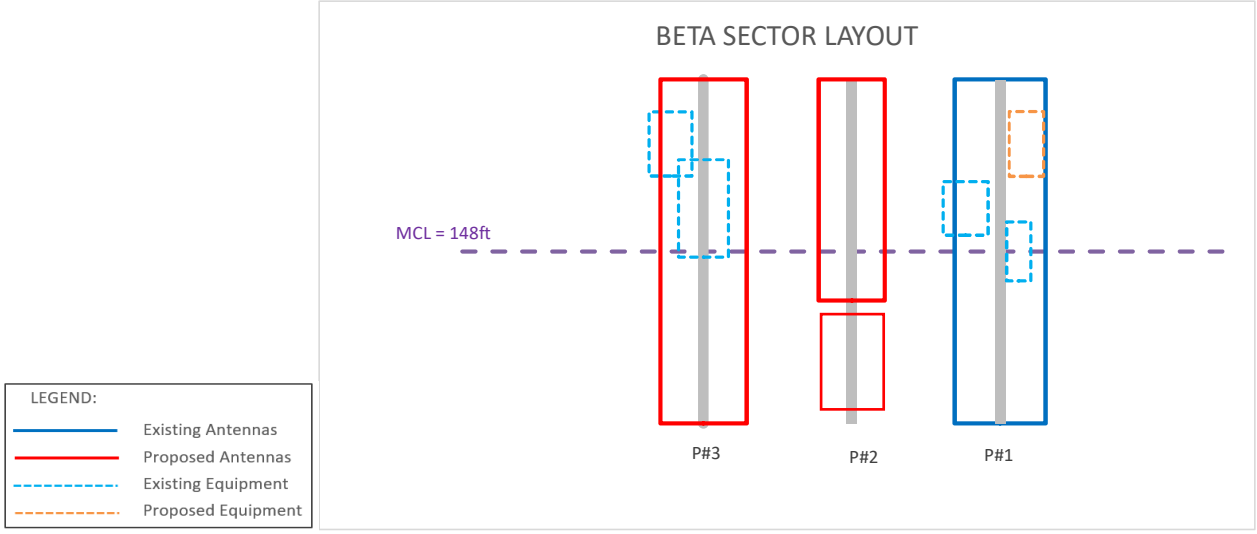
ALPHA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
1	Quintel	QD6616-7	72.0	22.0	9.6	130.0	504.4	252.6	217.8	13.5
2	Ericsson	AIR6449+AIR6419 Stacked	61.7	16.1	10.6	148.0	322.7	227.4	152.0	15.4
3	CCI	OPA65R-BU6DA	71.1	11.7	8.4	58.0	291.6	223.2	133.1	6.0
1	Ericsson	4478 B14	18.1	13.4	8.3	60.0	46.5	75.1	38.6	6.2
1	Ericsson	8843 B2/B66A	14.9	13.2	10.9	72.0	50.3	60.9	34.7	7.5
1	Ericsson	2012 B29	16.5	13.5	5.9	43.0	30.5	69.0	33.2	4.5
3	Ericsson	4449 B5/B12	17.9	13.2	10.4	73.0	57.6	73.1	40.5	7.6
3	Ericsson	RRUS-32 B30	27.2	12.1	7.0	60.0	101.9	62.0	50.8	6.2



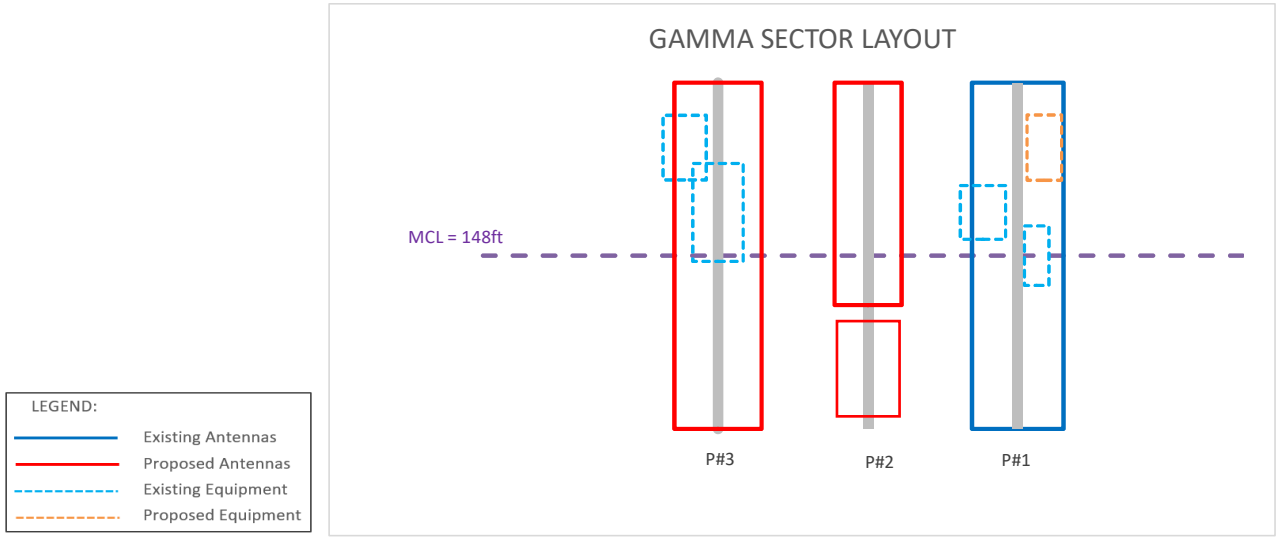
BETA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
1	Quintel	QD8616-7	96.0	22.0	9.6	150.0	698.9	356.6	289.2	15.6
2	Ericsson	AIR6449+AIR6419 Stacked	61.7	16.1	10.6	148.0	322.7	227.4	152.0	15.4
3	CCI	OPA65R-BU8DA	96.0	21.0	7.8	76.5	672.0	304.6	270.8	8.0
1	Ericsson	4478 B14	18.1	13.4	8.3	60.0	67.9	53.6	38.6	6.2
1	Ericsson	8843 B2/B66A	14.9	13.2	10.9	72.0	58.2	52.9	34.7	7.5
1	Ericsson	2012 B29	16.5	13.5	5.9	43.0	59.3	40.1	33.2	4.5
3	Ericsson	4449 B5/B12	17.9	13.2	10.4	73.0	69.3	61.5	40.5	7.6
3	Ericsson	RRUS-32 B30	27.2	12.1	7.0	60.0	71.9	91.9	50.8	6.2



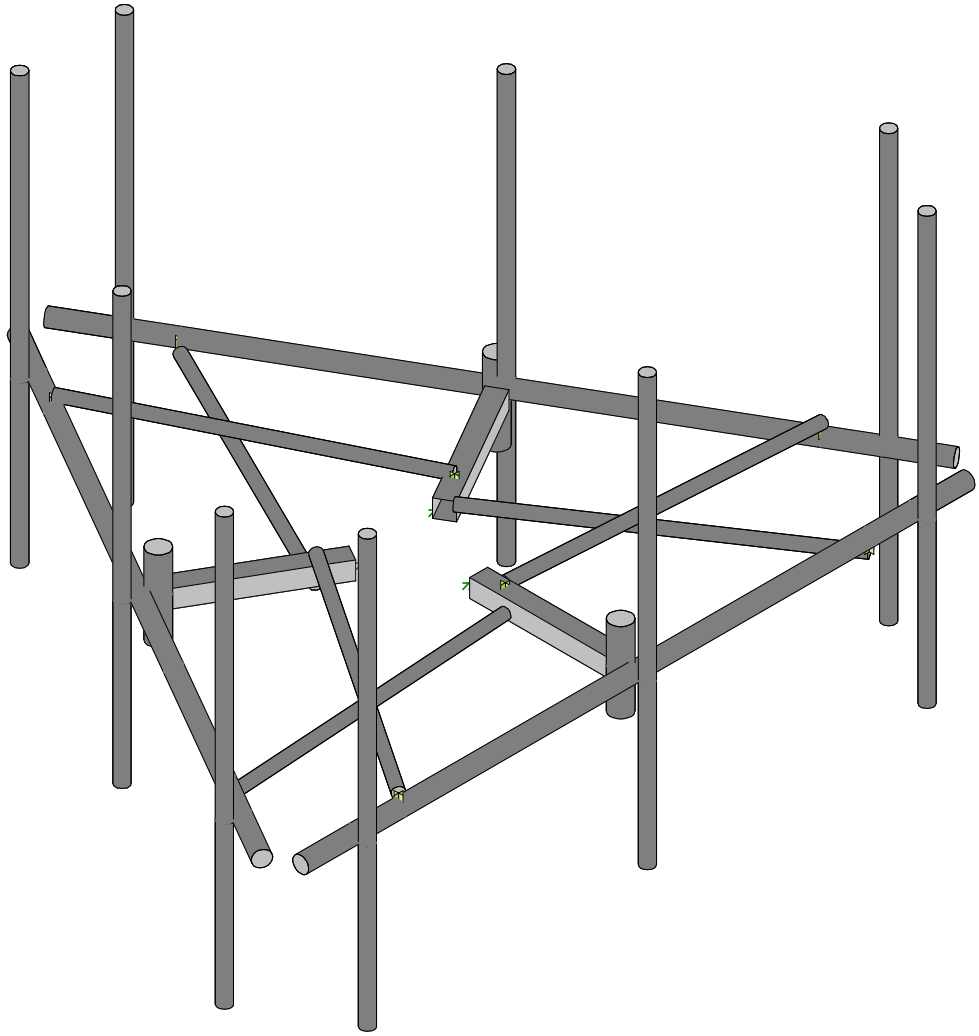
GAMMA SECTOR

Position	Appurtenance properties						Wind		Ice	Seismic
	Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0^o [lbs]	90^o [lbs]	IceWeight [lbs]	E_H [lbs]
1	Quintel	QD8616-7	96.0	22.0	9.6	150.0	698.9	356.6	289.2	15.6
2	Ericsson	AIR6449+AIR6419 Stacked	61.7	16.1	10.6	148.0	322.7	227.4	152.0	15.4
3	CCI	OPA65R-BU8DA	96.0	21.0	7.8	76.5	672.0	304.6	270.8	8.0
1	Ericsson	4478 B14	18.1	13.4	8.3	60.0	67.9	53.6	38.6	6.2
1	Ericsson	8843 B2/B66A	14.9	13.2	10.9	72.0	58.2	52.9	34.7	7.5
1	Ericsson	2012 B29	16.5	13.5	5.9	43.0	59.3	40.1	33.2	4.5
3	Ericsson	4449 B5/B12	17.9	13.2	10.4	73.0	69.3	61.5	40.5	7.6
3	Ericsson	RRUS-32 B30	27.2	12.1	7.0	60.0	71.9	91.9	50.8	6.2



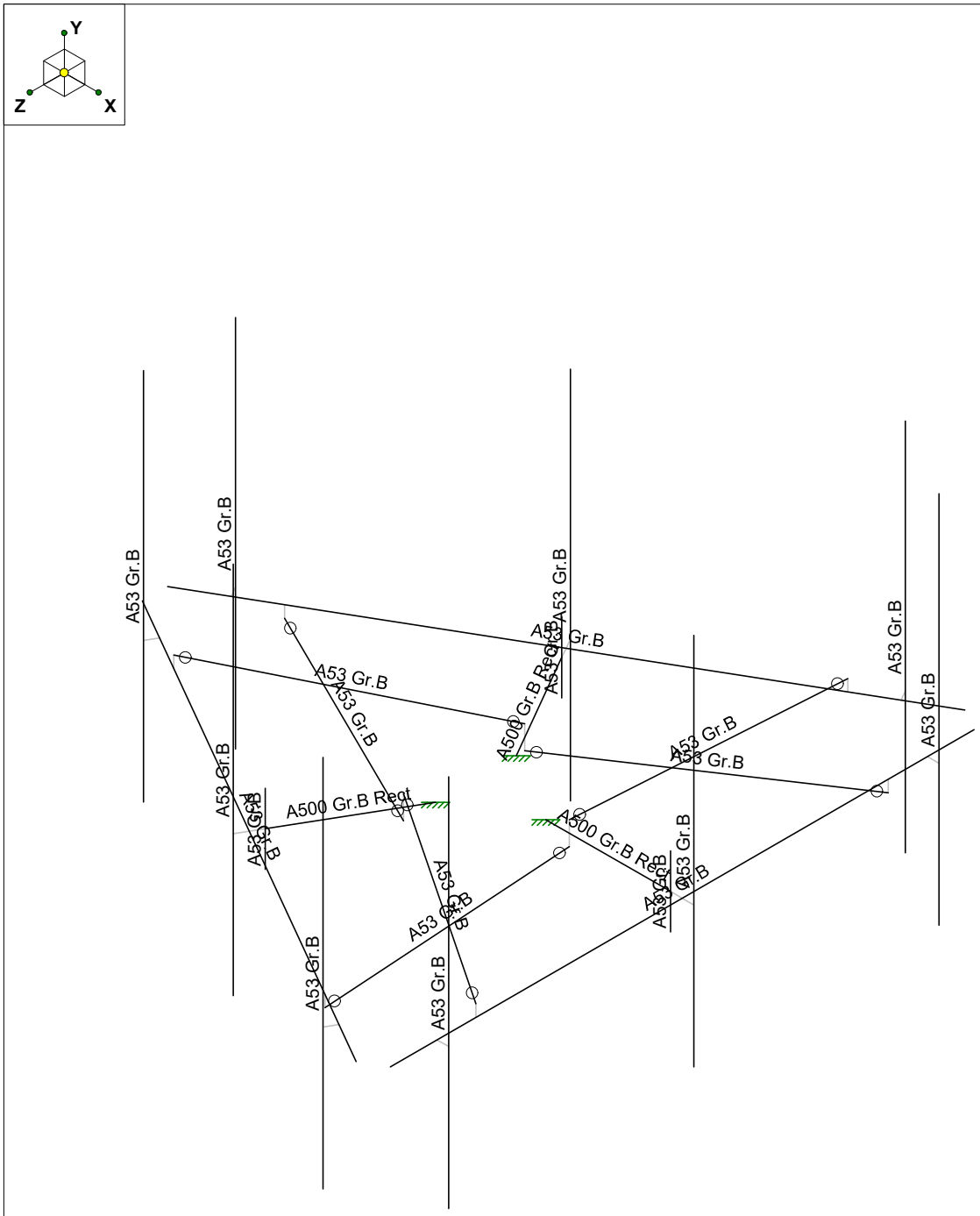
HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)



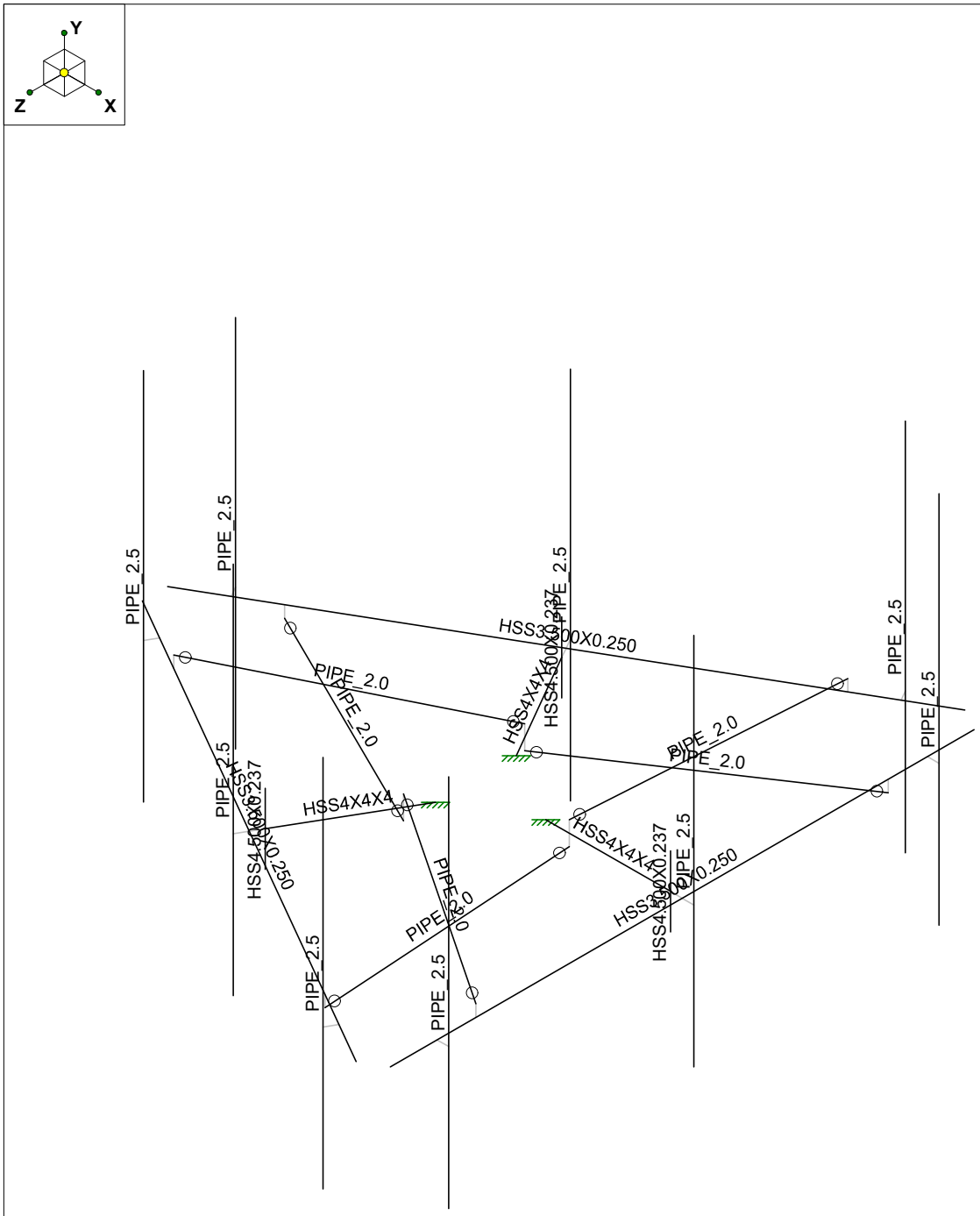
Loads: BLC 20, 250lbs LV 5
Envelope Only Solution

Hudson Design Group,LLC	ANSONIA CT DEERFIELD LANE	SK - 1
TJ		Mar 29, 2022 at 12:10 PM
CT2359		6. CT2359 R1.r3d



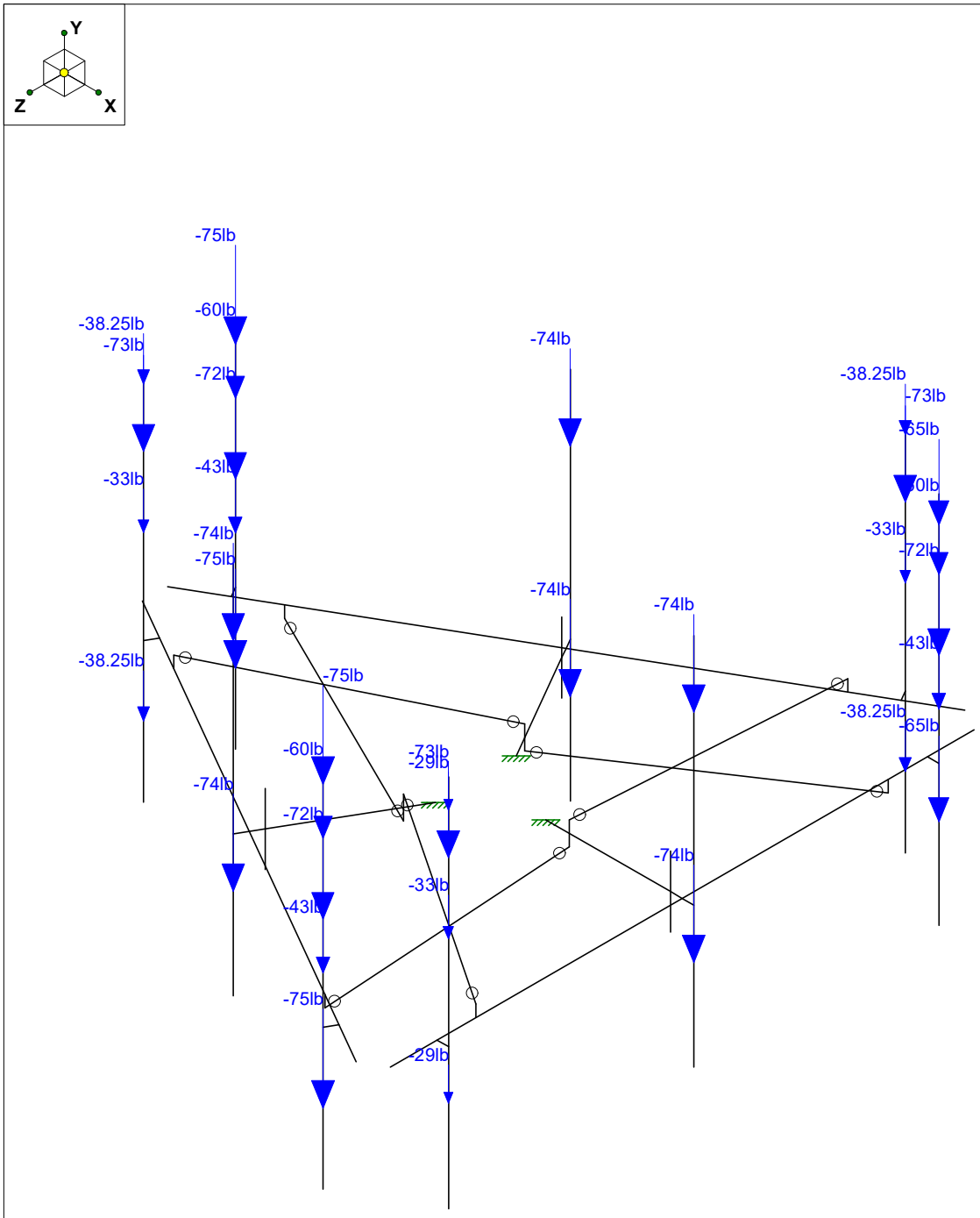
Envelope Only Solution

Hudson Design Group,LLC	ANSONIA CT DEERFIELD LANE	SK - 3
TJ		Mar 29, 2022 at 12:12 PM
CT2359		6. CT2359 R1.r3d



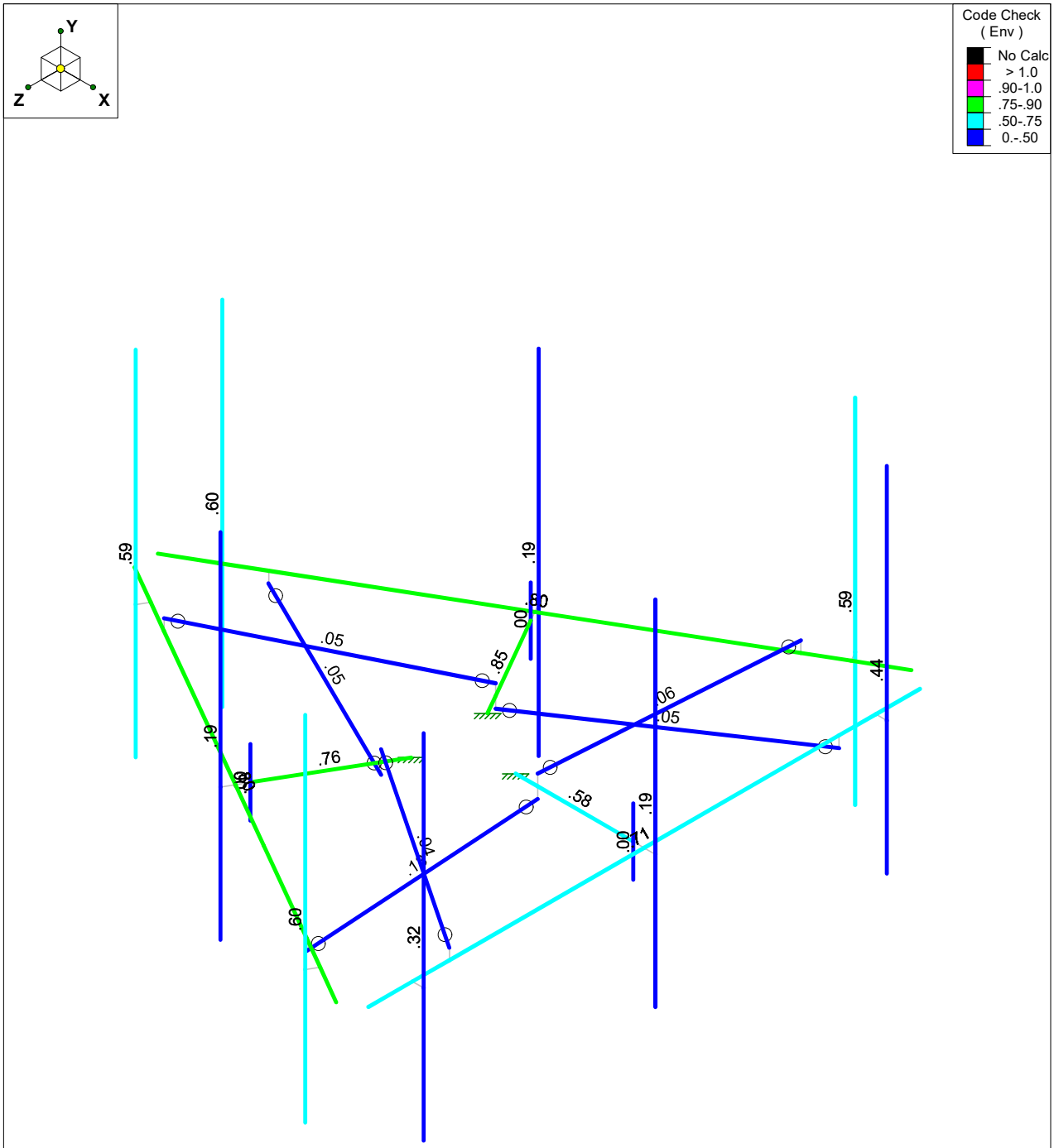
Envelope Only Solution

Hudson Design Group,LLC	ANSONIA CT DEERFIELD LANE	SK - 4
TJ		Mar 29, 2022 at 12:13 PM
CT2359		6. CT2359 R1.r3d



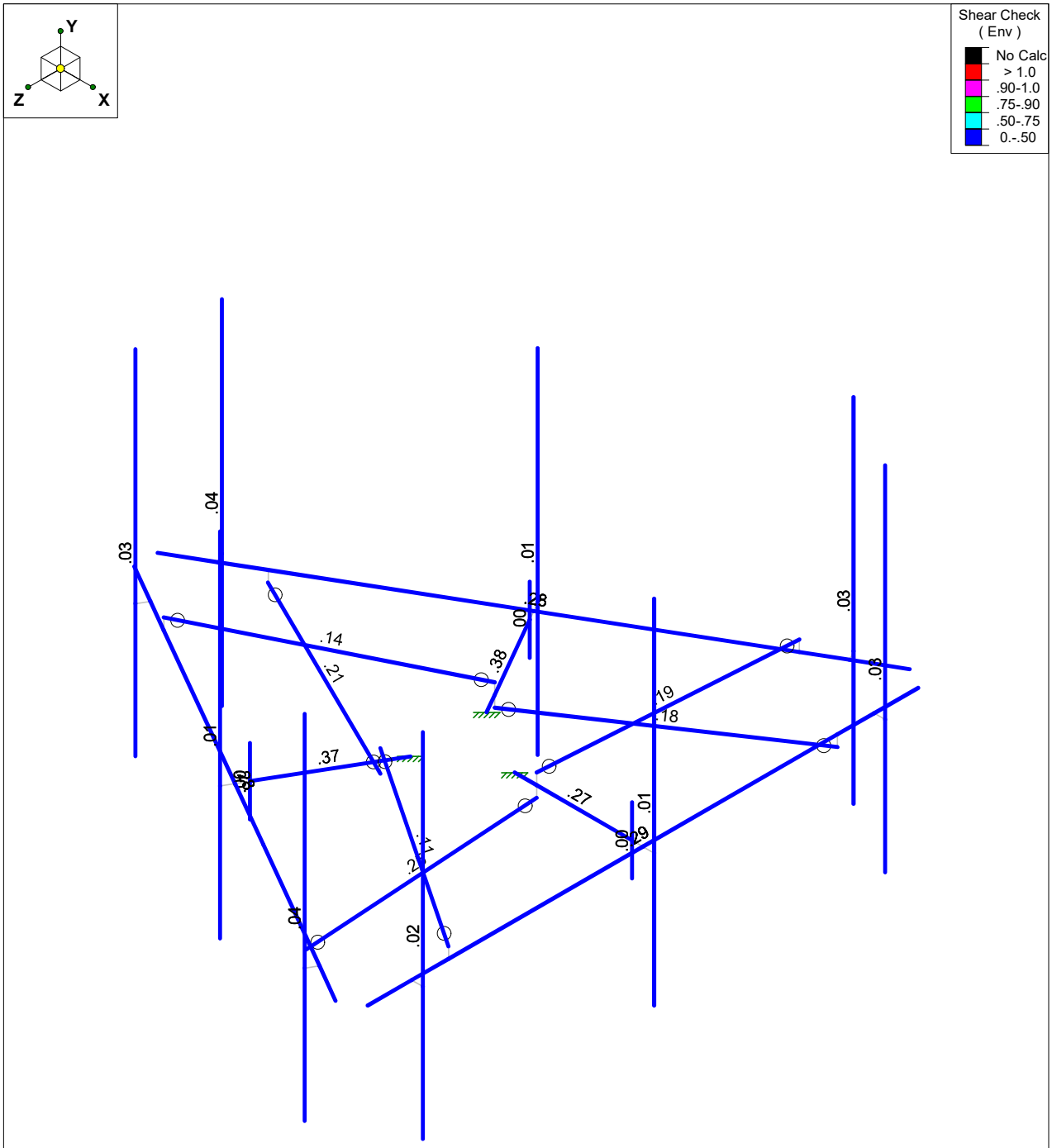
Loads: BLC 2, We
Envelope Only Solution

Hudson Design Group,LLC	ANSONIA CT DEERFIELD LANE	SK - 2
TJ		Mar 29, 2022 at 12:10 PM
CT2359		6. CT2359 R1.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Hudson Design Group,LLC	ANSONIA CT DEERFIELD LANE	SK - 5
TJ		Mar 29, 2022 at 12:13 PM
CT2359		6. CT2359 R1.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Hudson Design Group,LLC	ANSONIA CT DEERFIELD LANE	SK - 6
TJ		Mar 29, 2022 at 12:13 PM
CT2359		6. CT2359 R1.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	AA ADM1-15: LRFD - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

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

(Global) Model Settings, Continued

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

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Standoff	HSS4X4X4	None	None	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
2	Mount Pipe	PIPE_2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	Horizontal	HSS3.500X0.250	None	None	A53 Gr.B	Typical	2.39	3.21	3.21	6.41
4	Pipe 4.0	HSS4.500X0.237	None	None	A53 Gr.B	Typical	2.96	6.79	6.79	13.6
5	Tie Back	PIPE_2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-in/rad]	Y Rot.[k-in/rad]	Z Rot.[k-in/rad]
1	N4						
2	N9	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N24						
4	N25						
5	N26						
6	N27						
7	N28						
8	N36	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N47						
10	N48						

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-in/rad]	Y Rot.[k-in/rad]	Z Rot.[k-in/rad]
11	N49						
12	N57	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N66						

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N1	N2			Horizontal	None	None	A53 Gr.B	Typical
2	M2	N4	N5			Tie Back	None	None	A53 Gr.B	Typical
3	M3	N6	N7			Pipe 4.0	None	None	A53 Gr.B	Typical
4	M4	N8	N3			RIGID	None	None	RIGID	Typical
5	M5	N9	N8			Standoff	None	None	A500 Gr....	Typical
6	M6	N10	N11			RIGID	None	None	RIGID	Typical
7	M7	N12	N13			Mount Pipe	None	None	A53 Gr.B	Typical
8	M8	N3	N14			RIGID	None	None	RIGID	Typical
9	M9	N15	N16			Mount Pipe	None	None	A53 Gr.B	Typical
10	M10	N17	N18			RIGID	None	None	RIGID	Typical
11	M11	N19	N20			Mount Pipe	None	None	A53 Gr.B	Typical
12	M12	N21	N5			RIGID	None	None	RIGID	Typical
13	M13	N22	N23			RIGID	None	None	RIGID	Typical
14	M14	N27	N23			Tie Back	None	None	A53 Gr.B	Typical
15	M15	N29	N30			Horizontal	None	None	A53 Gr.B	Typical
16	M16	N25	N32			Tie Back	None	None	A53 Gr.B	Typical
17	M17	N33	N34			Pipe 4.0	None	None	A53 Gr.B	Typical
18	M18	N35	N31			RIGID	None	None	RIGID	Typical
19	M19	N36	N35			Standoff	None	None	A500 Gr....	Typical
20	M20	N37	N38			RIGID	None	None	RIGID	Typical
21	M21	N39	N40			Mount Pipe	None	None	A53 Gr.B	Typical
22	M22	N44	N32			RIGID	None	None	RIGID	Typical
23	M23	N45	N46			RIGID	None	None	RIGID	Typical
24	M24	N49	N46			Tie Back	None	None	A53 Gr.B	Typical
25	M25	N50	N51			Horizontal	None	None	A53 Gr.B	Typical
26	M26	N48	N53			Tie Back	None	None	A53 Gr.B	Typical
27	M27	N54	N55			Pipe 4.0	None	None	A53 Gr.B	Typical
28	M28	N56	N52			RIGID	None	None	RIGID	Typical
29	M29	N57	N56			Standoff	None	None	A500 Gr....	Typical
30	M30	N58	N59			RIGID	None	None	RIGID	Typical
31	M31	N60	N61			Mount Pipe	None	None	A53 Gr.B	Typical
32	M32	N63	N53			RIGID	None	None	RIGID	Typical
33	M33	N64	N65			RIGID	None	None	RIGID	Typical
34	M34	N26	N65			Tie Back	None	None	A53 Gr.B	Typical
35	M35	N24	N26			RIGID	None	None	RIGID	Typical
36	M36	N24	N25			RIGID	None	None	RIGID	Typical
37	M37	N47	N27			RIGID	None	None	RIGID	Typical
38	M38	N47	N48			RIGID	None	None	RIGID	Typical
39	M39	N66	N4			RIGID	None	None	RIGID	Typical
40	M40	N66	N49			RIGID	None	None	RIGID	Typical
41	M41	N62	N67			RIGID	None	None	RIGID	Typical
42	M42	N68	N69			Mount Pipe	None	None	A53 Gr.B	Typical
43	M43	N52	N72			RIGID	None	None	RIGID	Typical
44	M44	N73	N74			Mount Pipe	None	None	A53 Gr.B	Typical
45	M45	N41	N75			RIGID	None	None	RIGID	Typical
46	M46	N42	N43			Mount Pipe	None	None	A53 Gr.B	Typical
47	M47	N31	N76			RIGID	None	None	RIGID	Typical
48	M48	N77	N78			Mount Pipe	None	None	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	** NA **			None
2	M2	BenPIN	BenPIN				Yes	** NA **			None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6						Yes	** NA **			None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	M9						Yes	** NA **			None
10	M10						Yes	** NA **			None
11	M11						Yes	** NA **			None
12	M12						Yes	** NA **			None
13	M13						Yes	** NA **			None
14	M14	BenPIN	BenPIN				Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16	BenPIN	BenPIN				Yes	** NA **			None
17	M17						Yes	** NA **			None
18	M18						Yes	** NA **			None
19	M19						Yes	** NA **			None
20	M20						Yes	** NA **			None
21	M21						Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes	** NA **			None
24	M24	BenPIN	BenPIN				Yes	** NA **			None
25	M25						Yes	** NA **			None
26	M26	BenPIN	BenPIN				Yes	** NA **			None
27	M27						Yes	** NA **			None
28	M28						Yes	** NA **			None
29	M29						Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	** NA **			None
34	M34	BenPIN	BenPIN				Yes	** NA **			None
35	M35						Yes	** NA **			None
36	M36						Yes	** NA **			None
37	M37						Yes	** NA **			None
38	M38						Yes	** NA **			None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45						Yes	** NA **			None
46	M46						Yes	** NA **			None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Horizontal	150			Lbyy						Lateral
2	M2	Tie Back	67.347									Lateral
3	M3	Pipe 4.0	18			Lbyy						Lateral
4	M5	Standoff	32									Lateral
5	M7	Mount Pipe	96			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
6	M9	Mount Pipe	96			Lbyy						Lateral
7	M11	Mount Pipe	96			Lbyy						Lateral
8	M14	Tie Back	67.347									Lateral
9	M15	Horizontal	150			Lbyy						Lateral
10	M16	Tie Back	67.347									Lateral
11	M17	Pipe 4.0	18			Lbyy						Lateral
12	M19	Standoff	32									Lateral
13	M21	Mount Pipe	96			Lbyy						Lateral
14	M24	Tie Back	67.347									Lateral
15	M25	Horizontal	150			Lbyy						Lateral
16	M26	Tie Back	67.347									Lateral
17	M27	Pipe 4.0	18			Lbyy						Lateral
18	M29	Standoff	32									Lateral
19	M31	Mount Pipe	96			Lbyy						Lateral
20	M34	Tie Back	67.347									Lateral
21	M42	Mount Pipe	96			Lbyy						Lateral
22	M44	Mount Pipe	96			Lbyy						Lateral
23	M46	Mount Pipe	96			Lbyy						Lateral
24	M48	Mount Pipe	96			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Self We	DL		-1.1						
2	We	DL					33			
3	Ice We	DL					33	24		
4	W0	WL					33	24		
5	W30	WL					66	48		
6	W60	WL					66	48		
7	W90	WL					33	24		
8	W120	WL					66	48		
9	W150	WL					66	48		
10	W0 + Ice	WL					33	24		
11	W30 + Ice	WL					66	48		
12	W60 + Ice	WL					66	48		
13	W90 + Ice	WL					33	24		
14	W120 + Ice	WL					66	48		
15	W150 + Ice	WL					66	48		
16	500lbs LM 1	LL								
17	500lbs LM 2	LL								
18	500lbs LM 3	LL								
19	500lbs LM 4	LL								
20	250lbs LV 5	LL								
21	250lbs LV 6	LL								
22	E0	EL	-.1				33			
23	E90	EL			.1		33			

Load Combinations

	Description	Solve	PDe...	S...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	Dead	Yes	Y		1	1.4	2	1.4	0		0													
2	Dead + Wind 0	Yes	Y		1	1.2	2	1.2	4	1	0													
3	Dead + Wind 30	Yes	Y		1	1.2	2	1.2	5	1	0													
4	Dead + Wind 60	Yes	Y		1	1.2	2	1.2	6	1	0													
5	Dead + Wind 90	Yes	Y		1	1.2	2	1.2	7	1	0													
6	Dead + Wind 120	Yes	Y		1	1.2	2	1.2	8	1	0													
7	Dead + Wind 150	Yes	Y		1	1.2	2	1.2	9	1	0													
8	Dead + Wind 180	Yes	Y		1	1.2	2	1.2	4	-1	0													

Load Combinations (Continued)

	Description	Solve	PDe...	S...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
9	Dead + Wind 210	Yes	Y		1	1.2	2	1.2	5	-1	0													
10	Dead + Wind 240	Yes	Y		1	1.2	2	1.2	6	-1	0													
11	Dead + Wind 270	Yes	Y		1	1.2	2	1.2	7	-1	0													
12	Dead + Wind 300	Yes	Y		1	1.2	2	1.2	8	-1	0													
13	Dead + Wind 330	Yes	Y		1	1.2	2	1.2	9	-1	0													
14	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	10	1	3	1												
15	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	11	1	3	1												
16	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	12	1	3	1												
17	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	13	1	3	1												
18	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	14	1	3	1												
19	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	15	1	3	1												
20	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	10	-1	3	1												
21	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	11	-1	3	1												
22	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	12	-1	3	1												
23	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	13	-1	3	1												
24	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	14	-1	3	1												
25	Dead + Ice + Wind...	Yes	Y		1	1.2	2	1.2	15	-1	3	1												
26	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	4	.058												
27	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	5	.058												
28	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	6	.058												
29	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	7	.058												
30	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	8	.058												
31	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	9	.058												
32	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	4	-.0...												
33	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	5	-.0...												
34	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	6	-.0...												
35	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	7	-.0...												
36	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	8	-.0...												
37	Dead + LM5001 + ...	Yes	Y		1	1.2	2	1.2	16	1.5	9	-.0...												
38	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	4	.058												
39	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	5	.058												
40	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	6	.058												
41	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	7	.058												
42	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	8	.058												
43	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	9	.058												
44	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	4	-.0...												
45	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	5	-.0...												
46	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	6	-.0...												
47	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	7	-.0...												
48	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	8	-.0...												
49	Dead + LM5002 + ...	Yes	Y		1	1.2	2	1.2	17	1.5	9	-.0...												
50	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	4	.058												
51	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	5	.058												
52	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	6	.058												
53	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	7	.058												
54	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	8	.058												
55	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	9	.058												
56	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	4	-.0...												
57	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	5	-.0...												
58	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	6	-.0...												
59	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	7	-.0...												
60	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	8	-.0...												
61	Dead + LM5003 + ...	Yes	Y		1	1.2	2	1.2	18	1.5	9	-.0...												
62	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	4	.058												
63	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	5	.058												
64	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	6	.058												
65	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	7	.058												
66	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	8	.058												
67	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	9	.058												

Load Combinations (Continued)

	Description	Solve	PDe...	S...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
68	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	4	-.0...														
69	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	5	-.0...														
70	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	6	-.0...														
71	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	7	-.0...														
72	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	8	-.0...														
73	Dead + LM5004 + ...	Yes	Y		1	1.2	2	1.2	19	1.5	9	-.0...														
74	Dead + LV2505	Yes	Y		1	1.2	2	1.2	20	1.5	0															
75	Dead + LV2506	Yes	Y		1	1.2	2	1.2	21	1.5	0															
76	Service 60mph Wi...	Yes	Y		1	1	2	1	4	.23	0															
77	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	1	23															
78	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	.866	23	.5														
79	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	.5	23	.866														
80	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22		23	1														
81	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	-.5	23	.866														
82	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	-.8...	23	.5														
83	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	-1	23															
84	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	-.8...	23	-.5														
85	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	-.5	23	-.8...														
86	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22		23	-1														
87	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	.5	23	-.8...														
88	(1.2 + 0.2SDS)De...	Yes	Y		1	1.2...	2	1.2...	22	.866	23	-.5														

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-...	LC	MY [k-ft]	LC	MZ [k...	LC
1	N9	m...	106.23	3	2164...	14	2916...	11	2.663	11	4.028	6	7.509	20
2		min	-160....	9	973.0...	76	-2701...	5	-1.069	5	-3.829	12	.517	2
3	N36	m...	3780....	3	2419....	19	1928....	9	6.686	23	6.2	9	.647	8
4		min	-3566...	9	1005....	76	-1988...	3	.451	6	-5.984	3	-5.855	2
5	N57	m...	3281....	13	2418....	22	1979....	13	-1.342	10	6.089	13	2.085	8
6		min	-3441...	7	1005....	76	-2135...	7	-7.629	16	-5.872	7	-4.488	2
7	Totals:	m...	6541....	2	6975....	25	4516....	11						
8		min	-6541...	8	2984....	76	-4516...	5						

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

	Member	Shape	Code Che...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M19	HSS4X4X4	.845	0	2	.384	0	z	3	135427....	139518	16.181	16.181	1....	H3-6
2	M15	HSS3.500X...	.801	75	14	.285	75		13	31940.07	75285	6.536	6.536	1....	H1-1b
3	M25	HSS3.500X...	.797	75	19	.281	75		3	31940.07	75285	6.536	6.536	1....	H1-1b
4	M29	HSS4X4X4	.756	0	7	.374	6	z	7	135427....	139518	16.181	16.181	1....	H3-6
5	M1	HSS3.500X...	.713	75	22	.289	75		8	31940.07	75285	6.536	6.536	1....	H1-1b
6	M46	PIPE_2.5	.601	60	2	.039	60		2	30038.4...	50715	3.596	3.596	1....	H1-1b
7	M42	PIPE_2.5	.599	60	8	.039	60		8	30038.4...	50715	3.596	3.596	1....	H1-1b
8	M31	PIPE_2.5	.589	60	2	.034	60		2	30038.4...	50715	3.596	3.596	1....	H1-1b
9	M21	PIPE_2.5	.588	60	8	.034	60		8	30038.4...	50715	3.596	3.596	1....	H1-1b
10	M5	HSS4X4X4	.575	0	7	.271	0	z	11	135427....	139518	16.181	16.181	1....	H1-1b
11	M11	PIPE_2.5	.436	60	8	.028	60		8	30038.4...	50715	3.596	3.596	1....	H1-1b
12	M7	PIPE_2.5	.321	60	8	.022	60		8	30038.4...	50715	3.596	3.596	2....	H1-1b
13	M48	PIPE_2.5	.194	60	2	.014	60		2	30038.4...	50715	3.596	3.596	2....	H1-1b
14	M9	PIPE_2.5	.194	60	8	.014	60		8	30038.4...	50715	3.596	3.596	2....	H1-1b
15	M44	PIPE_2.5	.194	60	2	.014	60		2	30038.4...	50715	3.596	3.596	2....	H1-1b
16	M34	PIPE_2.0	.128	35.077	8	.252	0		8	22024.1...	32130	1.872	1.872	1....	H3-6
17	M16	PIPE_2.0	.057	0	7	.193	67.347		8	22024.1...	32130	1.872	1.872	1....	H1-1b*
18	M14	PIPE_2.0	.052	0	2	.185	67.347		12	22024.1...	32130	1.872	1.872	1....	H1-1b*
19	M24	PIPE_2.0	.048	0	6	.212	0		3	22024.1...	32130	1.872	1.872	1....	H1-1b*
20	M26	PIPE_2.0	.046	0	10	.143	67.347		13	22024.1...	32130	1.872	1.872	1....	H1-1b*
21	M2	PIPE_2.0	.038	0	2	.111	67.347		4	22024.1...	32130	1.872	1.872	1....	H1-1b*

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

	Member	Shape	Code Che...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
22	M17	HSS4.500X...	.000	9	2	.000	9		2	92568.3...	93240	10.579	10.579	1....	H1-1b
23	M3	HSS4.500X...	.000	9	9	.000	9		9	92568.3...	93240	10.579	10.579	1....	H1-1b
24	M27	HSS4.500X...	.000	9	6	.000	9		6	92568.3...	93240	10.579	10.579	1....	H1-1b

HUDSON
Design Group LLC

Connection Check

SITE DETAILS

Site Name/Code	CT2359 - ANSONIA CT DEERFIELD LANE
Date	03/29/2022
Engineer	TJ

CONNECTION PARAMETERS

Number of bolts		4	
b - width of member		4	*in*
d - height of member		4	*in*
B - horizontal bolt spacing		6	*in*
D - vertical bolt spacing		6	*in*
Bolt Diameter	d	5/8	*in*
Section Shape		HSS	
Weld Thickness		3/16	*in*
Tensile Area	A_b	0.31	in^2
Tensile Area	A_n	0.23	in^2
Grade		A325	
Bolt Ultimate Strength	F_{ub}	120	*ksi*
Connection length reduction factor	R_b	1	

Connection Sketch/Photo

FLANGE LOADS

Loadcase #		**2**	
Bending Moment	Mzz	**5.65**	*kips-in*
Bending Moment	Myy	**5.50**	*kips-in*
Torsional Moment	Mxx	**3.50**	*kips-in*
Shear Force	Vy	**1.21**	*kips*
Shear Force	Vz	**4.01**	*kips*
Axial Force	Px	**0.11**	*kips*

BOLT CHECK

Bolt Tension Capacity

$\phi R_{nt} = 0.75 * F_{ub} * A_n$

ϕR_{nt}= **20.3** *kips*

Bolt Shear Capacity

$\phi R_{nv} = 0.75 * 0.625 * 0.8 * Fub * Ab * Rb$

ϕR_{nv}= **13.8** *kips*

Maximum Bolt Tension

$T_{ub} = F_{Mxx} + F_{Mzz} + T_y/4$

T_{ub}= **0.96** *kips*

Maximum Bolt Shear

$V_{ub} = \text{sqrt}\left((V_x/4)^2 + (V_y/4)^2\right) + F_{Myy}$

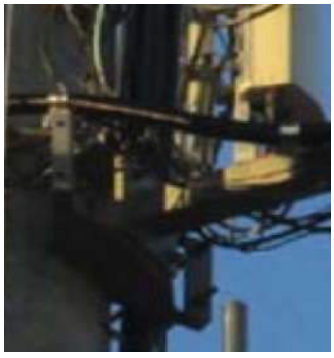
V_{ub}= **1.25** *kips*

Tension Ratio:	**4.7%**	**%**	**Shear Ratio:**	**9.1%**	**%**
	PASS			PASS	
$(T_{ub} / \phi R_{nt})^2 + (V_{ub} / \phi R_{nv})^2 < 1.0$	**OK**		Ratio	**1.0%**	PASS

WELD CHECK

Filler Metal F_{EXX}	**70**	ksi	
Weld Thk.	**0.1875**	in	
Base metal F_u	**58**	ksi	
Type of section	**HSS**		
Length of Section [b]	**4.0**	in	
Length of Section [d]	**4.0**	in	
I_{total}	**16.00**	in	
I_p	**85.33**	in^3	
S_z	**21.33**	in^2	
S_y	**21.33**	in^2	
R_{ux}	0.53	kips/in	
R_{uy}	0.16	kips/in	
R_{uz}	0.33	kips/in	
R_u	0.64	kips/in	
Allowable Weld Stress	**4.18**	kips/in	**15.4%** PASS

Are stiffners present? **No**



Connection Sketch

Town of Ansonia, CT

Property Listing Report

Map Block Lot	100 0002 0000	Building #	1	Unique Identifier	16660

Property Information

Property Location	1 DEERFIELD LA
Mailing Address	11 HEMLOCK HOLLOW RD WOODBRIDGE CT 06525
Land Use	Residential
Zoning Code	AA
Neighborhood	X13

Owner	MACABEE PROPERTIES LLC
Co-Owner	
Book / Page	0435/0195
Land Class	Residential
Census Tract	1252
Acreage	17.2

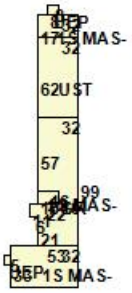
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	240300	168200
Outbuildings	27900	19600
Land	280100	106820
Total	548300	294620

Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	Yes
Well	No



Primary Construction Details

Year Built	1958
Building Desc.	Residential
Building Style	Family Flat 4
Stories	1
Exterior Walls	Concr/Cinder
Exterior Walls 2	
Interior Walls	Plaster
Interior Walls 2	
Interior Floors 1	Carpet
Interior Floors 2	Softwood

Heating Fuel	Oil
Heating Type	Hot Water
AC Type	
Bedrooms	8
Full Bathrooms	4
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	12
Bath Style	NA
Kitchen Style	Typical
Occupancy	4

Building Use	Four Family
Building Condition	Average
Frame Type	Masonry
Fireplaces	0
Bsmt Gar	0
Fin Bsmt Area	0
Fin Bsmt Quality	
Building Grade	0
Roof Style	Flat
Roof Cover	Tar and Gravel

Report Created On 2/25/2022

Town of Ansonia, CT

Property Listing Report | Map Block Lot **100 0002 0000** | Building # **1** | Unique Identifier **16660**

Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built
Barn	1 Story Barn	384	Average	2003
Farm	Stable	800	Average	1958
Garage	Poor	1200	Average	2002
Shed	Frame	800	Average	1958

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built
Utility	Storage	1984	Average	1958
Porch	Unfinished Enclosed Porch	64	Average	1958
Garage	Frame	160	Average	1958
Porch	Unfinished Enclosed Porch	40	Average	1958

Sales History

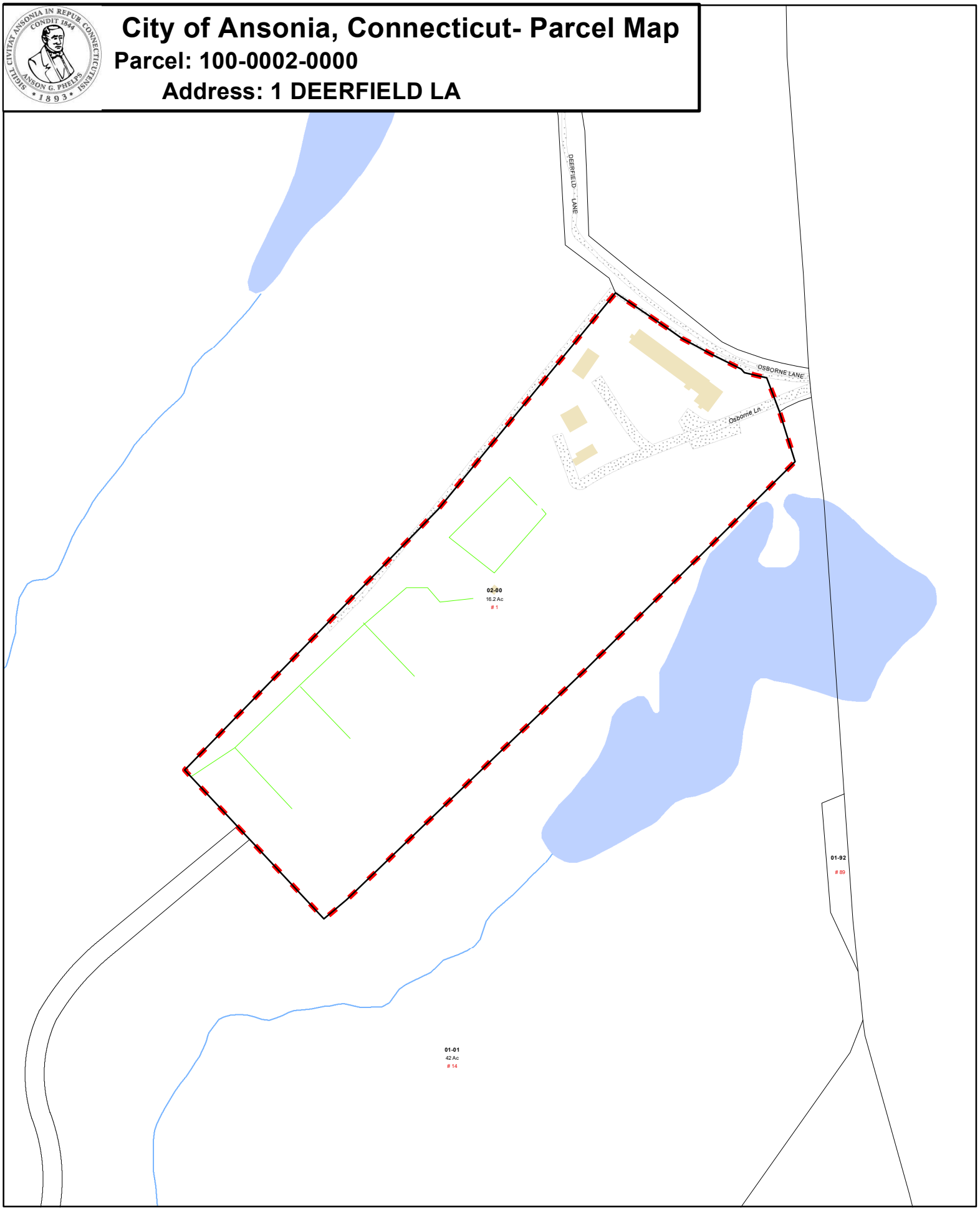
Owner of Record	Book/ Page	Sale Date	Sale Price
MACABEE PROPERTIES LLC	0435_0195	12/28/2005	0
GELERTNER JOEL & CHERYL	0316_0863	12/2/1998	235000

Report Created On **2/25/2022**

City of Ansonia, Connecticut- Parcel Map

Parcel: 100-0002-0000

Address: 1 DEERFIELD LA



Approximate Scale: 1 inch = 250 feet

0 140 280 420 560 Feet

Map Produced: February 2022

DOCKET NO. 340 - Optasite Towers LLC and Omnipoint Communications, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1 Deerfield Lane, Ansonia, Connecticut.	Connecticut Siting Council November 29, 2007

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Optasite Towers LLC (Optasite) and Ominipoint Communications, Inc. (T-Mobile), hereinafter collectively referred to as the Certificate Holder, for a telecommunications facility at 1 Deerfield Lane, Ansonia, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of T-Mobile and other entities, both public and private, but such tower shall not exceed a height of 170 feet above ground level. The height at the top of Certificate Holder's antennas shall not exceed 170 feet above ground level.

2. Such tower shall incorporate a yield point to eliminate the potential fall radius onto the adjacent property.

3. All cellular and PCS antennas shall be attached to the tower with T-arms.

4. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of Ansonia for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
    b) construction plans for site clearing, grading, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

5. Utilities shall be underground and follow the general alignment of the access drive.

6. During construction activities, no soils should be removed from the site without proper waste characterization to determine disposal requirements.

7. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

8. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

9. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

10. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Ansonia and Town of Woodbridge public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

11. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

12. Any request for extension of the time period referred to in Condition 11 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Ansonia. Any proposed modifications to this Decision and Order shall likewise be so served.

13. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

14. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

15. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

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

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Optasite Towers LLC and Omnipoint Communications, Inc.	Julie Kohler, Esq. Carrie L. Larson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-1821 (203) 394-9901 jkohler@cohenandwolf.com clarson@cohenandwolf.com
Intervenor	**Its Representative**
Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 (860) 275-8299 fax kbaldwin@rc.com
Intervenor	**Its Representative**
Osborne Lane Associates, LLC	William Fieber Keith A. Russo c/o The Fieber Group 47 Elm Street New Canaan, CT 06840 (203) 972-4975 (203) 972-4977 fax krusso@fiebergroup.com
Intervenor	**Its Representative**
Gennaro Savino	Gennaro Savino 128 Ford Road Woodbridge, CT 06525 (203) 387-1573 savinovineyards@sbcglobal.net

Intervenor	**Its Representative**
Brian Freeman	Brian Freeman 5 Hampton Trail Wallingford, CT 06492 (203) 793-7505 Brian@sparc.us

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@ct.gov
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

May 8, 2008

Steven L. Levine
Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **TS-CING-002-080424** – New Cingular Wireless PCS, LLC request for an order to approve tower sharing at an approved telecommunications facility located at 1 Deerfield Lane, Ansonia, Connecticut.

Dear Mr. Levine:

At a public meeting held May 8, 2008, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the condition that the proposed antennas are attached to the tower via T-arm mounts. 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 may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or 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.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated April 24, 2008, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Daniel F. Caruso
Chairman

DFC/MP/cm

c: The Honorable James T. DellaVolpe, Mayor, City of Ansonia
Peter Crabtree, Zoning Enforcement Officer, City of Ansonia
Keith Coppins, Optasite, Inc.

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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@ct.gov
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

April 9, 2008

Carrie L. Larson, Esq.
Cohen and Wolf P.C.
1115 Broad Street
P.O. Box 1821
Bridgeport, CT 06601-1821

RE: **DOCKET NO. 340** - Optasite Towers LLC and Omnipoint Communications, Inc. Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1 Deerfield Lane, Ansonia, Connecticut.

Dear Attorney Larson:

At a public meeting of the Connecticut Siting Council held on March 26, 2008, the Connecticut Siting Council (Council) considered and approved an Amendment to the Decision and Order deleting Condition No. 5. The Council also approved the modification to the Development and Management Plan (D&M Plan) submitted for this project as specified in your correspondence dated February 21, 2008.

This approval applies only to the correspondence submitted on February 21, 2008. Any further changes to the D&M Plan require advance Council notification and approval.

Please be advised that deviations from this plan are enforceable under the provisions of the Connecticut General Statutes § 16-50u. Enclosed is a copy of the staff report, dated March 26, 2008 and the amended Decision and Order dated March 26, 2008.

Thank you for your attention and cooperation.

Very truly yours,

Daniel F. Caruso
Chairman

DFC/MP/laf

Enclosure: Staff Report, dated March 26, 2008
Amended Decision and Order, dated March 26, 2008
Service List dated September 19, 2007

c: Parties and Intervenors
The Honorable James T. DellaVolpe, Mayor, City of Ansonia
Peter Crabtree, Zoning Enforcement Officer, City of Ansonia

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Daniel F. Caruso
Chairman

Docket No. 340
Optasite and T-Mobile
1 Deerfield Lane, Ansonia
Modification to D&M Plan and Decision and Order
Staff Report
March 26, 2008

On July 7, 2007, the Connecticut Siting Council (Council) received an application (Application) for a Certificate of Environmental Compatibility and Public Need from Optasite and T-Mobile (collectively, the Applicant) for a telecommunications facility to be located at 1 Deerfield Lane, Ansonia. In the Application, the Applicant proposed that the utilities be run overhead. Specifically, utilities would be installed overhead from existing service on Osbourne Lane to the compound. Approximately ten, 30-foot utility poles would be installed along the proposed access roadway with approximately 100-foot spacing. However, during the hearing, Optasite testified that it is amenable to running the utilities underground.

On November 29, 2007, the Council approved the Application and per Order No. 5 of the Decision and Order (D&O), required that the utilities be run underground following the general alignment of the access drive. On January 24, 2008, the Council approved the Development and Management Plan (D&M Plan) which included underground utilities, consistent with the D&O.

Subsequent to the D&M Plan approval, Optasite had discussions with The United Illuminating Company (UI) and the property owner. By letter dated February 21, 2008, Optasite advised the Council that both UI and the property owner have safety concerns regarding the proposed underground utilities. The underground utility run is located immediately adjacent to paddock fencing used in the operation of the horse farm. The fencing is pressure-operated and the digging for the underground utilities would disrupt the operation of the fencing. Also, given the topography, installation of underground utilities could result in the destabilization of the ground and the fence collapsing. Finally, the utility routing runs along an existing roadway that is used on a daily basis for the operation of the horse farm. The installation would also require the disturbance and installation of a second, temporary route to maintain the operation of the farm. Thus, Optasite requests a modification of the D&M Plan to allow the utilities to be run overhead and relief from Order No. 5 (the requirement to underground utilities).

DOCKET NO. 340 - Optasite Towers LLC and Omnipoint Communications, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1 Deerfield Lane, Ansonia, Connecticut.	Connecticut Siting Council
	March 26, 2008

Amended Decision and Order
(*Deleted material is in brackets.)

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Optasite Towers LLC (Optasite) and Ominipoint Communications, Inc. (T-Mobile), hereinafter collectively referred to as the Certificate Holder, for a telecommunications facility at 1 Deerfield Lane, Ansonia, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of T-Mobile and other entities, both public and private, but such tower shall not exceed a height of 170 feet above ground level. The height at the top of Certificate Holder's antennas shall not exceed 170 feet above ground level.

2. Such tower shall incorporate a yield point to eliminate the potential fall radius onto the adjacent property.

3. All cellular and PCS antennas shall be attached to the tower with T-arms.

4. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of Ansonia for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
   a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
   b) construction plans for site clearing, grading, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

5. [Utilities shall be underground and follow the general alignment of the access drive.]

6. During construction activities, no soils should be removed from the site without proper waste characterization to determine disposal requirements.

7. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

8. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

9. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

10. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Ansonia and Town of Woodbridge public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

11. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

12. Any request for extension of the time period referred to in Condition 11 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Ansonia. Any proposed modifications to this Decision and Order shall likewise be so served.

13. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

14. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

15. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

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

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

The parties and intervenors to this proceeding are:

Applicant	Its Representative
Optasite Towers LLC and Omnipoint Communications, Inc.	Julie Kohler, Esq. Carrie L. Larson, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-1821 (203) 394-9901 jkohler@cohenandwolf.com clarson@cohenandwolf.com
Intervenor	**Its Representative**
Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 (860) 275-8299 fax kbaldwin@rc.com
Intervenor	**Its Representative**
Osborne Lane Associates, LLC	William Fieber Keith A. Russo c/o The Fieber Group 47 Elm Street New Canaan, CT 06840 (203) 972-4975 (203) 972-4977 fax krusso@fiebergroup.com
Intervenor	**Its Representative**
Gennaro Savino	Gennaro Savino 128 Ford Road Woodbridge, CT 06525 (203) 387-1573 savinovineyards@sbcglobal.net

Intervenor

Brian Freeman

Its Representative

Brian Freeman
5 Hampton Trail
Wallingford, CT 06492
(203) 793-7505
Brian@sparc.us

STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the amended Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of amended Decision and Order in Docket No. 340 has been forwarded by Certified First Class Return Receipt Requested mail on April 9, 2008, to all parties and intervenors of record as listed on the attached service list, dated September 19, 2007.

ATTEST:

Lisa A. Fontaine
Fiscal Administrative Officer
Connecticut Siting Council

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@ct.gov
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

May 8, 2008

Steven L. Levine
Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **TS-CING-002-080424** – New Cingular Wireless PCS, LLC request for an order to approve tower sharing at an approved telecommunications facility located at 1 Deerfield Lane, Ansonia, Connecticut.

Dear Mr. Levine:

At a public meeting held May 8, 2008, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the condition that the proposed antennas are attached to the tower via T-arm mounts. 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 may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or 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.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated April 24, 2008, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Daniel F. Caruso
Chairman

DFC/MP/cm

c: The Honorable James T. DellaVolpe, Mayor, City of Ansonia
Peter Crabtree, Zoning Enforcement Officer, City of Ansonia
Keith Coppins, Optasite, Inc.

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SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561.995.7670
F + 561.995.7626

sbasite.com

LETTER OF AUTHORIZATION

SBA Site ID: CT13071-A, Woodbridge

Property Located at: 1 Deerfield Lane, Ansonia, CT, 06401

THE CITY/COUNTY OF: Ansonia / New Haven/Ansonia

APPLICATION FOR ZONING/USE/BUILDING PERMIT

This letter authorizes AT&T and its authorized agents to file for all necessary zoning, planning and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility on the existing tower on the property referenced above on behalf of Macabee Properties, LLC.

All approval conditions that may be granted to AT&T in connection with above referenced facility relating to this specific application are the sole responsibility of AT&T.

SBA Towers IV, LLC

Jason Silberstein

Executive VP, Site Leasing

Date: 6/02/2022

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SALEM NH 03079-2837

Expected Delivery Date: 06/06/22
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R013

MACABEE PROPERTIES LLC
11 HEMLOCK HOLLOW RD
WOODBRIDGE CT 06525-1313

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SALEM NH 03079-2837

Expected Delivery Date: 06/06/22
Ref#: CT2359
0004

C001

HON DAVID CASSETTI, MAYOR MS RONDA
CITY OF ANSONIA, CITY HALL
253 MAIN ST
ANSONIA CT 06401-1855

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SAI GROUP
12 INDUSTRIAL WAY
SALEM NH 03079-2837

Expected Delivery Date: 06/06/22
Ref#: CT2359
0004

C036

SBA COMMUNICATIONS CORP
8051 CONGRESS AVE
BOCA RATON FL 33487-1307

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Expected Delivery Date: 06/06/22
Ref#: CT2359
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C006

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

USPS TRACKING

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From: auto-reply@usps.com
Sent: Friday, June 3, 2022 3:53 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Saturday, June 4, 2022 arriving by 9:00pm 940550369930026450805 1

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To: Hollis Redding
Subject: USPS® Expected Delivery by Saturday, June 4, 2022 arriving by 9:00pm 9405503699300264508020

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Hollis Redding SBA Tower Owner Copy

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Subject: USPS® Expected Delivery by Monday, June 6, 2022 arriving by 9:00pm 9405503699300264508068

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Expected Delivery By

Mon
6
June

By 9:00pm

Tracking & Delivery Options

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