



July 1, 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 CT1160
35 Wildwood Street, New Britain, CT 06051 (the "Property")
Latitude: 41.668186 N Longitude: 72.755198 W

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 114' level on the existing 111' monopole tower ("Tower") at 35 Wildwood Street, New Britain, CT. The Tower is owned by SRR Towers, LLC and the property is owned by the City of New Britain ("City"). AT&T intends to modify its facility by removing all (9) antennas and adding (3) AIR6449 B77D at the 112'1" level, (3) QD6616-7 & (3) DMP65R-BU6DA antennas at the 114' level and (3) AIR6419 B77G antennas at the 115'8" level of the tower. The AIR6649 B77 & AIR6419 B77G antennas are stacked one on top of the other. AT&T also intends on removing (9) RRUs and adding (3) 4478 B14, (3) 4415 B25 & (3) 4449 B5/B12 RRUs at the 114' level. The height of AT&T's existing antennas is 114' and proposed antennas is 112'1", 114' & 115'8" on the Tower. The height of AT&T's existing & proposed RRUs is 114'.

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

The City of New Britain approved the replacement of a 60' light stanchion with a 111' monopole on August 11, 2004. The CT Siting Council acknowledged, on March 3, 2005, in Petition 703, the City had jurisdiction over the replacement of the light stanchion. There were no conditions that could be feasibility be violated by this modification, including total facility height and mounting restrictions. The AT&T modification complies with the above-mentioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent the Hon. Erin E. Stewart, Mayor, City of New Britain, as chief elected official & property owner, Mr. Steven P. Schiller, City Planner, City of New Britain and SRR Towers, 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:

Hon. Erin E. Stewart, Mayor, chief elected official & property owner
Mr. Steven P. Schiller, City Planner, Town of Southington
SRR Towers, LLC, the tower owner

Calculated Radio Frequency Exposure



CT1160

Wildwood Street, New Britain, CT

June 21, 2022

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of AT&T antenna arrays on the existing monopole located at Wildwood Street in New Britain, CT. The coordinates of the existing monopole are 41-40-5.46 N, 72-45-18.71 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&T¹ 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/cm²). 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 05/31/22.

3. RF Exposure Calculation Methods

The power density calculation results were generated using the following formula as outlined in FCC bulletin OET 65:

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

Where:

ERP = Effective Radiated Power

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

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 to the existing monopole facility 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
T-Mobile	100	1900	4	1028	0.1674	1.0000	1.67%
T-Mobile	100	1900	2	2057	0.1674	1.0000	1.67%
T-Mobile	100	2100	2	2308	0.1879	1.0000	1.88%
T-Mobile	100	600	2	592	0.0482	0.4000	1.20%
T-Mobile	100	600	1	1578	0.0642	0.4000	1.61%
T-Mobile	100	700	2	649	0.0528	0.4667	1.13%
T-Mobile	100	1900	2	2204	0.1794	1.0000	1.79%
T-Mobile	100	2100	2	1295	0.1054	1.0000	1.05%
T-Mobile	100	2500	2	6413	0.5220	1.0000	5.22%
T-Mobile	100	2500	2	6413	0.5220	1.0000	5.22%
Clearwire antennas	76	850	2	153	0.0225	1.0000	0.22%
Clearwire antennas	76	850	1	211	0.0155	1.0000	0.15%
Clearwire antennas	76	1900	1	211	0.0155	1.0000	0.15%
Clearwire antennas	76	1900	1	211	0.0155	1.0000	0.15%
Verizon	90	869	9	273	0.1252	0.5793	2.16%
Verizon	90	1970	11	274	0.1536	1.0000	1.54%
Verizon	90	2145	1	666	0.0339	1.0000	0.34%
Verizon	90	698	1	886	0.0452	0.4653	0.97%
AT&T	114	739	2	2878	0.0178	0.4927	3.60%
AT&T	114	763	1	2038	0.0063	0.5087	1.24%
AT&T	114	885	1	2813	0.0087	0.5900	1.47%
AT&T	114	1900	3	5118	0.0474	1.0000	4.74%
AT&T	114	2100	2	8614	0.0531	1.0000	5.31%
AT&T	114	2300	1	10121	0.0312	1.0000	3.12%
AT&T	115.6	3500	1	24286	0.0727	1.0000	7.27%
AT&T	112.1	3500	1	24286	0.0776	1.0000	7.76%
						Total	62.67%

Table 1: Carrier Information²

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 T-Mobile, Clearwire, 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 facility 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 for AT&T's equipment is **62.67% 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.



June 21, 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 Exposure³

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 Exposure⁴

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

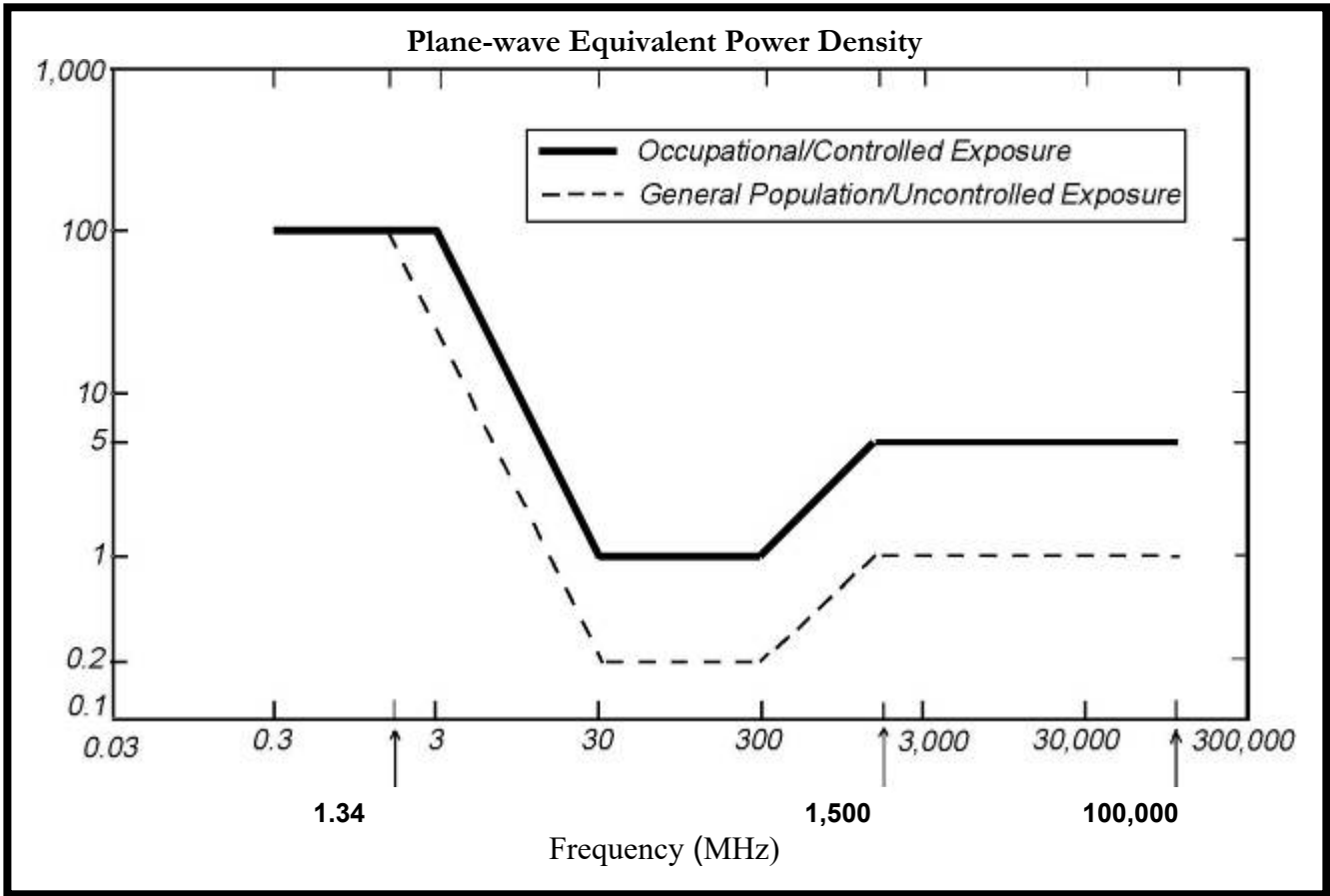
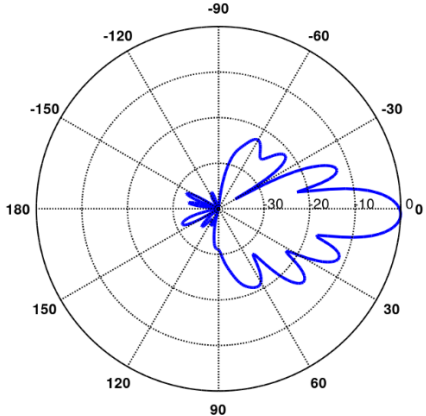
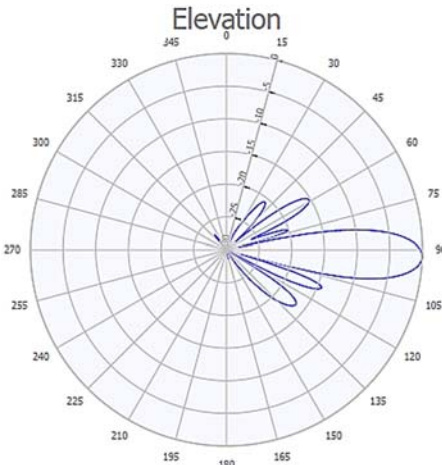
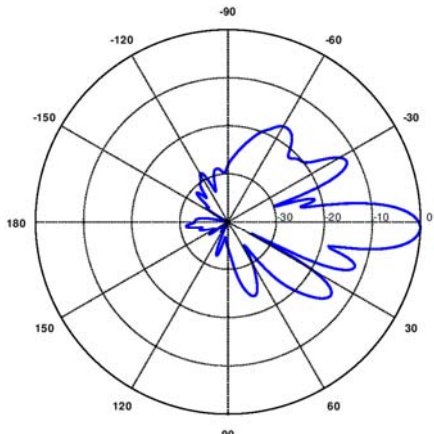
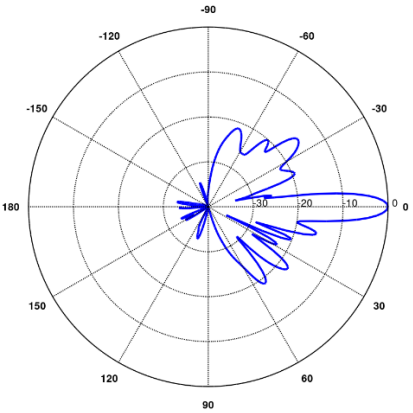
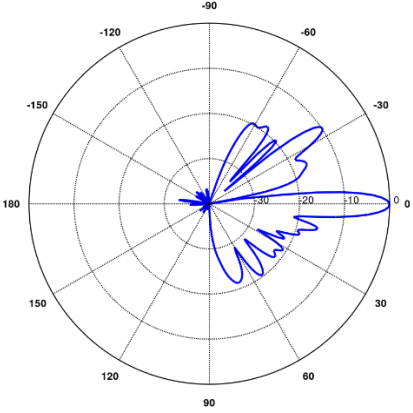
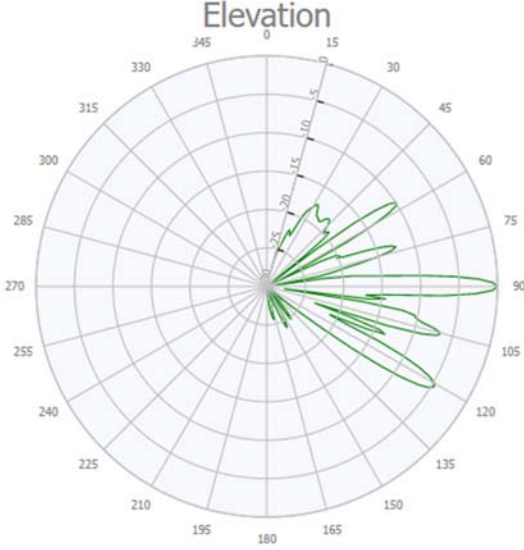


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

<p>700 MHz</p> <p>Manufacturer: Quintel Model #: QD6616-7 Frequency Band: 698-728 MHz Gain: 14.2 dBi Vertical Beamwidth: 12.5° Horizontal Beamwidth: 71° Polarization: 45° Size L x W x D: 72" x 22" x 9.6"</p>	
<p>700 MHz</p> <p>Manufacturer: CCI Products Model #: DMP65R-BU6D Frequency Band: 698-798 MHz Gain: 13.2 dBi Vertical Beamwidth: 13° Horizontal Beamwidth: 74° Polarization: Dual Linear 45° Size L x W x D: 71.2" x 20.7" x 7.7"</p>	<p align="center">Elevation</p> 
<p>885 MHz</p> <p>Manufacturer: CCI Products Model #: DMP65R-BU6D Frequency Band: 824 - 896 MHz Gain: 14.6 dBi Vertical Beamwidth: 11.1° Horizontal Beamwidth: 63° Polarization: Dual Linear 45° Size L x W x D: 71.2" x 20.7" x 7.7"</p>	

<p>1900 MHz</p> <p>Manufacturer: Quintel Model #: QD6616-7 Frequency Band: 1850-1990 MHz Gain: 17.2 dBi Vertical Beamwidth: 6.5° Horizontal Beamwidth: 67° Polarization: 4x 45° Size L x W x D: 72" x 22" x 9.6"</p>	
<p>2100 MHz</p> <p>Manufacturer: Quintel Model #: QD6616-7 Frequency Band: 2110-2180 MHz Gain: 17.7 dBi Vertical Beamwidth: 5.7° Horizontal Beamwidth: 62° Polarization: 4x 45° Size L x W x D: 72" x 22" x 9.6"</p>	
<p>2300 MHz</p> <p>Manufacturer: CCI Products Model #: DMP65R-BU6D Frequency Band: 2300-2400 MHz Gain: 18.4 dBi Vertical Beamwidth: 5.7° Horizontal Beamwidth: 54° Polarization: Dual Linear 45° Size L x W x D: 71.2" x 20.7" x 7.7"</p>	<p style="text-align: center;">Elevation</p> 

PROJECT INFORMATION

SCOPE OF WORK: **ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:**

- NEW AT&T ANTENNAS: QD6616-7 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6449 B77D (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: DMP65R-BU6DA (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRU'S: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRU'S: 4415 B25 (1900) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRU'S: 4449 B5/B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE ARRESTOR : DC9-48-60-24-8C-EV (TOTAL OF 1) WITH (3) DC POWER & (1) FIBER LINES.
- NEW AT&T (3) Y-CABLES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- ADD (4) RECTIFIERS.
- ADD 6673 FHG.
- ADD IDLe.
- NEW AT&T RRU'S: 2012 B29 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE: APDC-BDFDM-DB (TYP. OF 2 PER SECTOR, TOTAL OF 6).

ITEMS TO BE REMOVED:

- EXISTING AT&T UMTS ANTENNA: 7770 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T LTE ANTENNA: 800-10798 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T LTE ANTENNA: AM-X-CD-16-65-00T-RET (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T DIPLEXER: LGP13519 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T DIPLEXER: DBCT108F1V92-1 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T TMA: LGP21401 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T RRU'S: 4478 B5 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRU'S: RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRU'S: RRUS-12 B2 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING (6) COAX CABLES.

ITEMS TO REMAIN:

- (6) RRU'S, (2) SURGE ARRESTOR , (6) COAX CABLES, (4) DC POWER & (2) FIBER.

SITE ADDRESS: WILDWOOD STREET
NEW BRITAIN, CT 06051

LATITUDE: 41.668186 N, 41° 40' 05.46" N
LONGITUDE: 72.755198 W, 72° 45' 18.71" W
TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT: 111'-0"±
RAD CENTER: 114'-0"± LTE, 115'-8"± DOD, 112'-1"± C-BAND
CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT1160

SITE NAME: NEW BRITAIN WILDWOOD ST

FA CODE: 10050945

PACE ID: MRCTB052630, MRCTB050979, MRCTB051097, MRCTB051413, MRCTB051322, MRCTB051508

PROJECT: LTE 6C, 7C, 5G NR, C-BAND, DOD, RETROFIT UPGRADE

VICINITY MAP

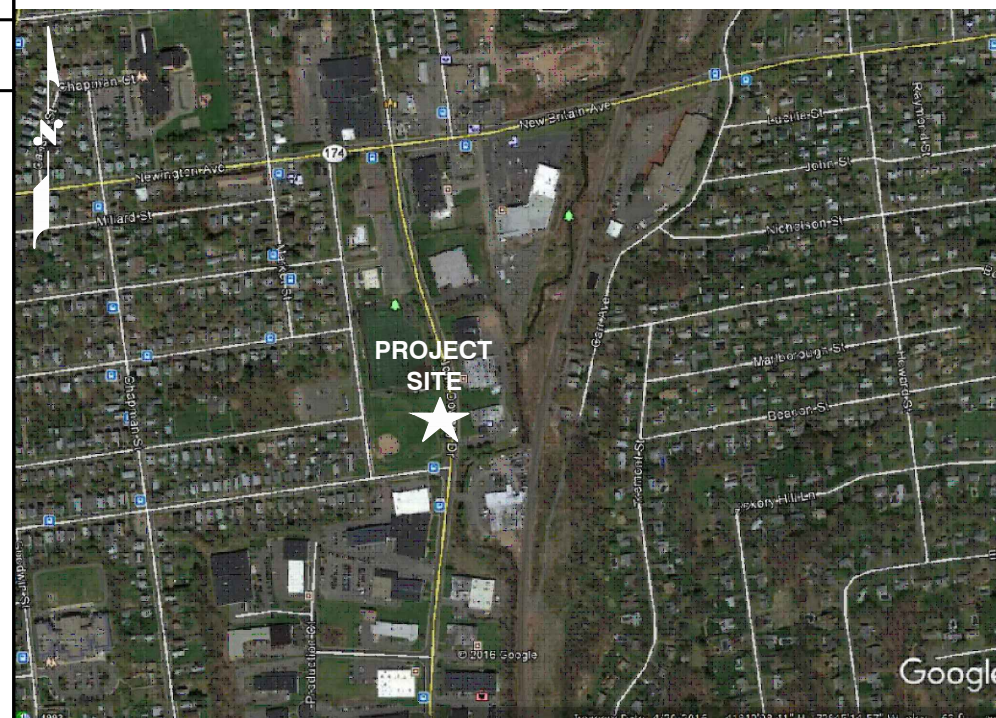
DIRECTIONS TO SITE:
START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD 0.3 MI. TURN LEFT ONTO CAPITAL BLVD 0.3 MI. TURN LEFT ONTO WEST ST 0.3 MI. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN 1.8 MI. TAKE EXIT 22N TO MERGE ONTO CT-9 N TOWARD NEW BRITAIN 5.5 MI. TAKE EXIT 25 FOR ELLIS ST 0.3 MI. TURN RIGHT ONTO ELLIS ST 0.3 MI. TAKE THE 3RD LEFT ONTO EAST ST 0.6 MI. TURN RIGHT ONTO BELDEN ST 0.5 MI. TAKE THE 2ND LEFT ONTO WILDWOOD ST. DESTINATION WILL BE ON THE RIGHT.

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.

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND & EQUIPMENT PLANS	1
A-2	ANTENNA LAYOUTS & ELEVATION	1
A-3	DETAILS	1
A-4	DETAILS	1
SN-1	STRUCTURAL NOTES	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1



72 HOURS

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

UNDERGROUND SERVICE ALERT

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

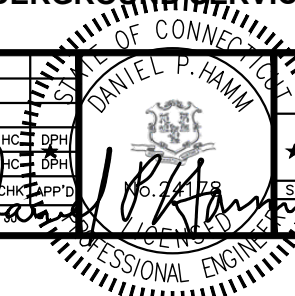
SITE NUMBER: CT1160
SITE NAME: NEW BRITAIN WILDWOOD ST

WILDWOOD STREET
NEW BRITAIN, CT 06051
HARTFORD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/28/22	ISSUED FOR CONSTRUCTION	JJ	HC	DPH
A	09/24/21	ISSUED FOR REVIEW	JJ	HC	DPH

SCALE: AS SHOWN DESIGNED BY: HC DRAWN BY: [Signature]



AT&T
TITLE SHEET
LTE 6C, 7C, 5G NR, C-BAND,
DOD, RETROFIT UPGRADE
SITE NUMBER: CT1160
DRAWING NUMBER: T-1
REV: 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	REFER TO DRAWING		



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



12 INDUSTRIAL WAY
 SALEM, NH 03079

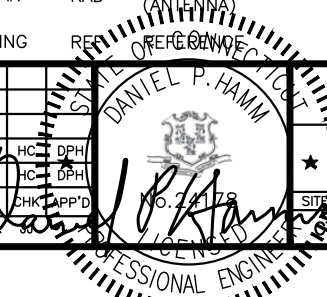
**SITE NUMBER: CT1160
 SITE NAME: NEW BRITAIN WILDWOOD ST**

WILDWOOD STREET
 NEW BRITAIN, CT 06051
 HARTFORD COUNTY



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

NO.		DATE		REVISIONS		BY		CHK		APP'D		DATE		SCALE		DESIGNED BY		DRAWN BY		SITE NUMBER		DRAWING NUMBER		REV	
1		06/28/22		ISSUED FOR CONSTRUCTION		JJ		HC		DPH				AS SHOWN		HC		DPH		CT1160		GN-1		1	
A		09/24/21		ISSUED FOR REVIEW		JJ		HC		DPH															

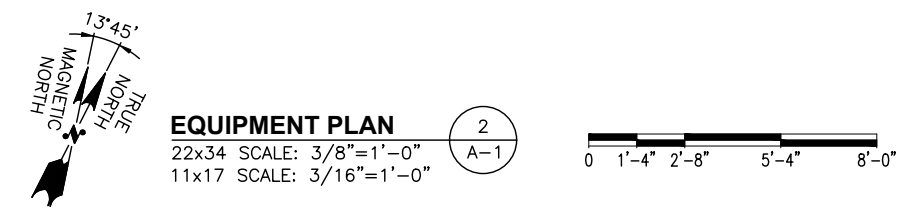
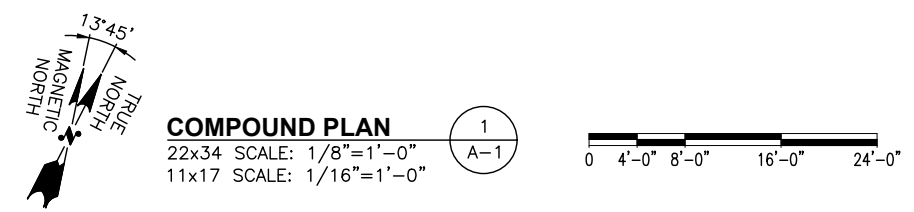
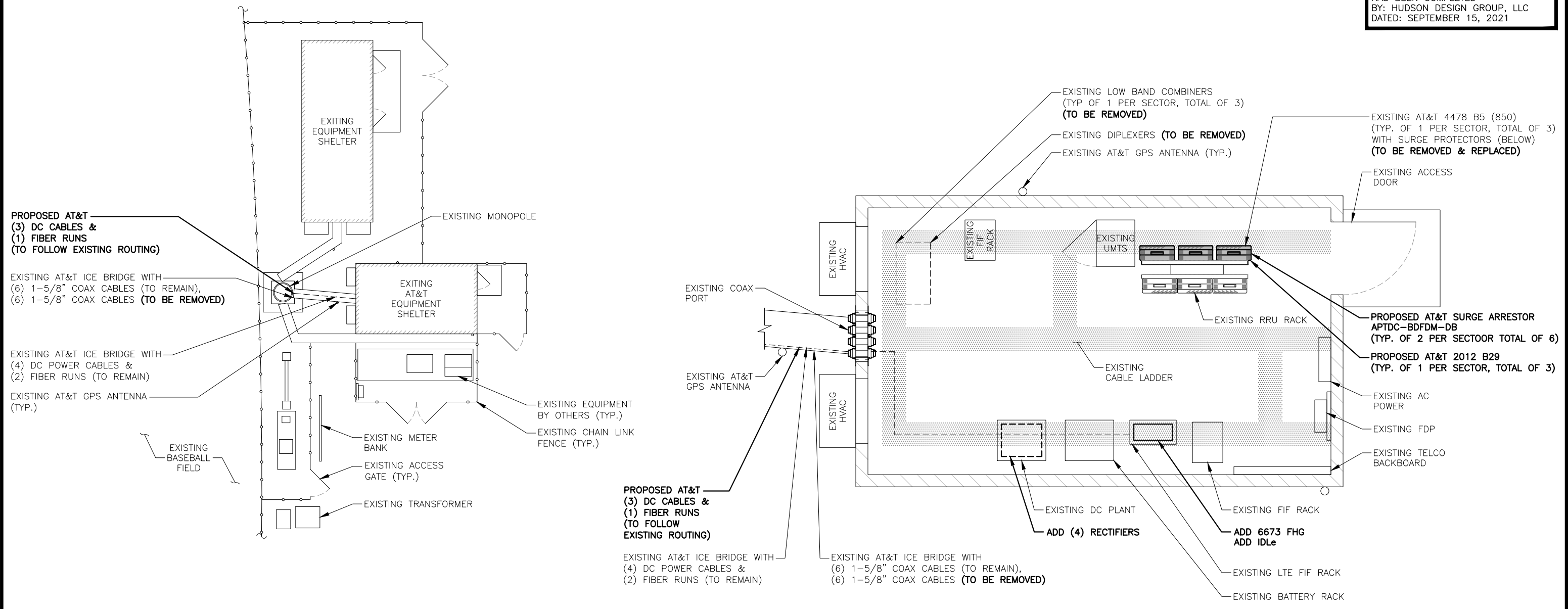


AT&T

GENERAL NOTES
 LTE 6C, 7C, 5G NR, C-BAND,
 DOD, RETROFIT UPGRADE

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

NOTE:
AN ANALYSIS FOR THE CAPACITY OF EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC
DATED: SEPTEMBER 15, 2021



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

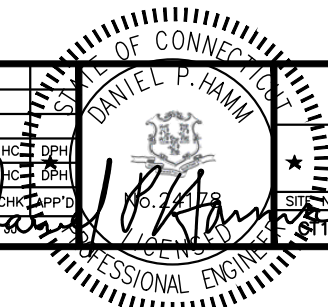
SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1160
SITE NAME: NEW BRITAIN WILDWOOD ST
WILDWOOD STREET
NEW BRITAIN, CT 06051
HARTFORD COUNTY

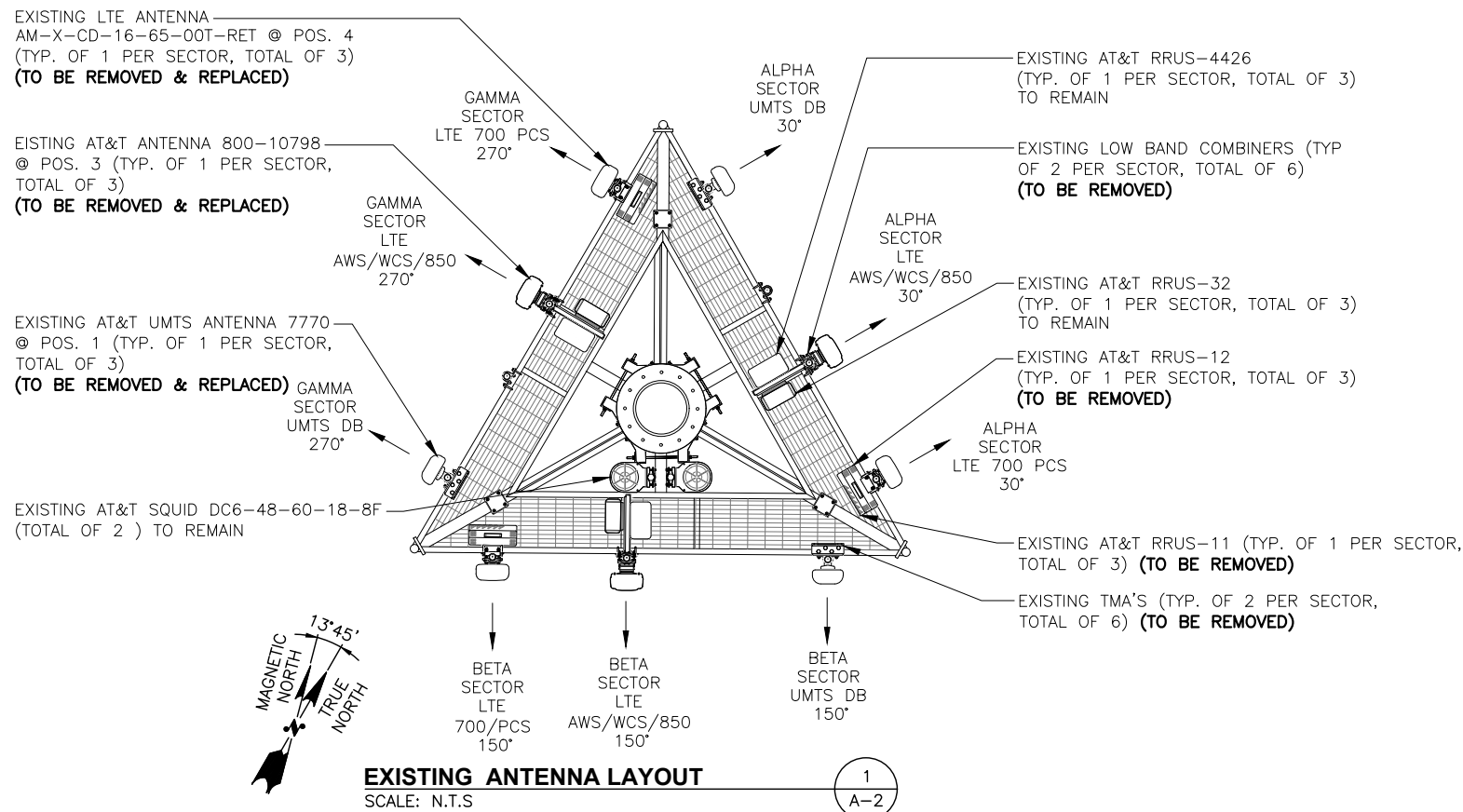
at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	09/24/21	ISSUED FOR REVIEW	JJ	HC	DPH

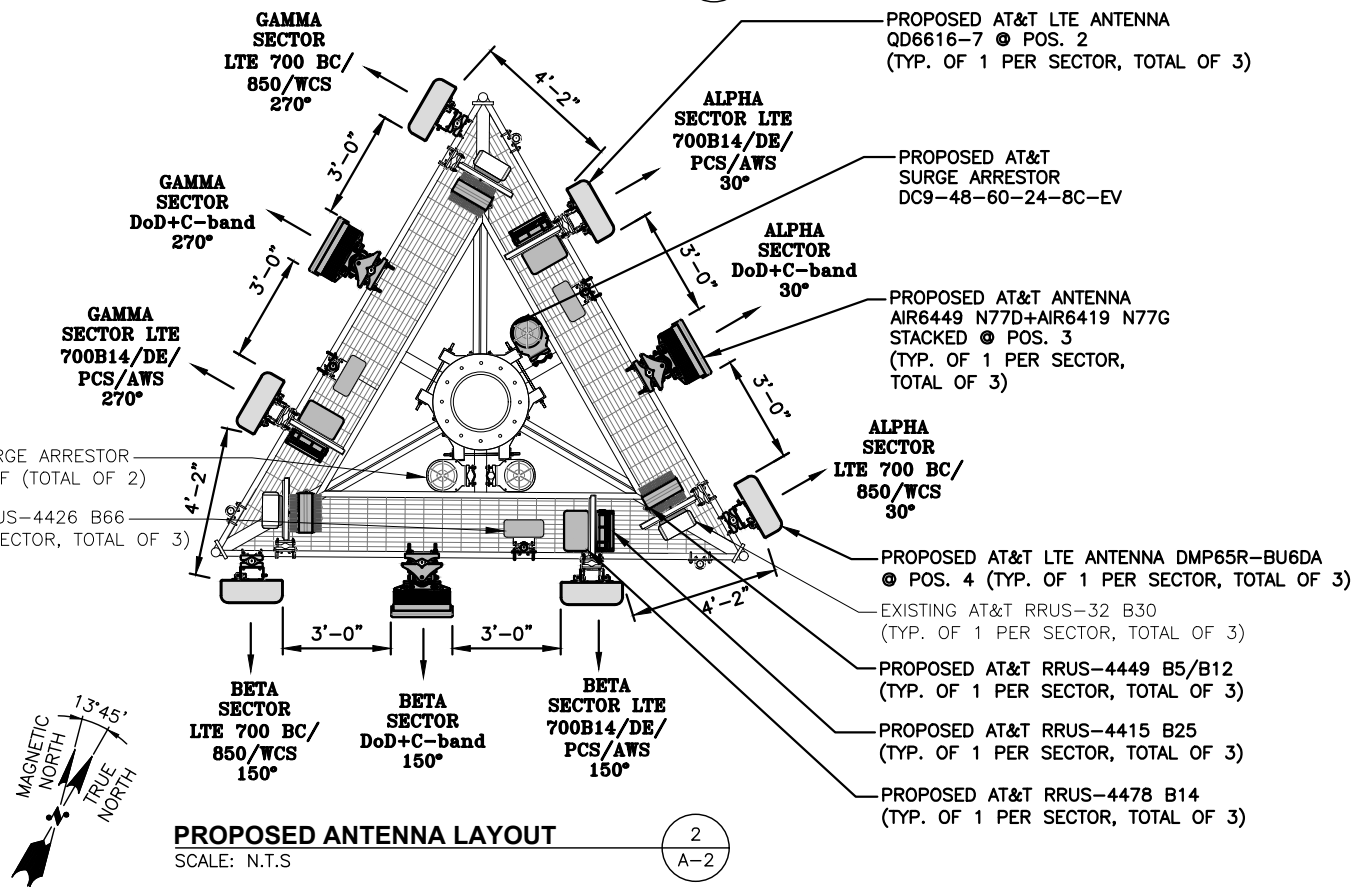
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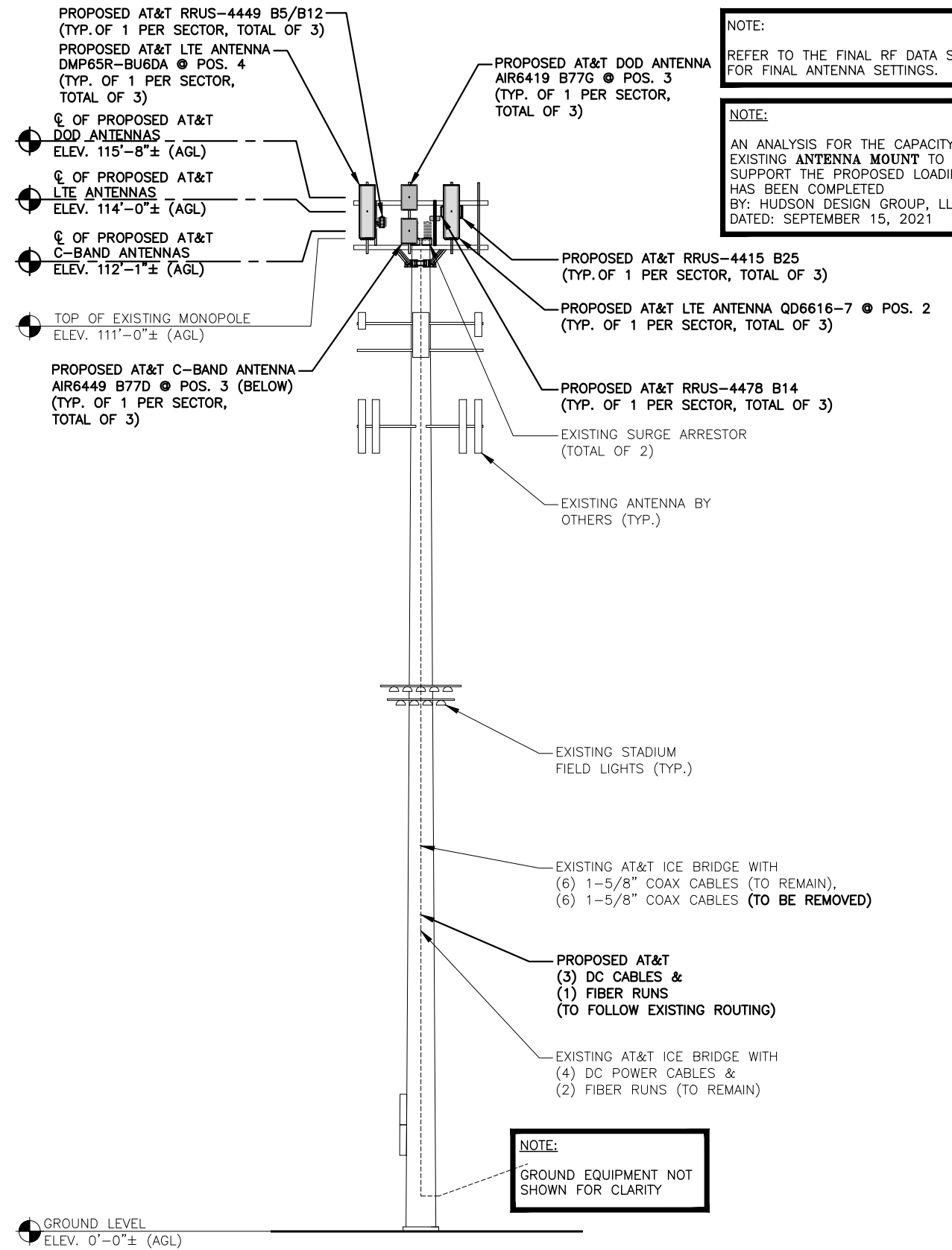
AT&T
COMPOUND & EQUIPMENT PLANS
LTE 6C, 7C, 5G NR, C-BAND,
DOD, RETROFIT UPGRADE
SITE NUMBER: CT1160 DRAWING NUMBER: A-1 REV: 1



EXISTING ANTENNA LAYOUT
SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT
SCALE: N.T.S.



ELEVATION
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

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

NOTE:
AN ANALYSIS FOR THE CAPACITY OF EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC DATED: SEPTEMBER 15, 2021

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	-	-	-	-	-	-	-	-	-	-	-	-
A2	PROPOSED	LTE 700B14/ DE/PCS/AWS	QD6616-7	72X22X9.6	114'-0"±	117'-0"±	30°	-	(E)(1) 4426 B66 (AWS) (P)(1) 4478 B14 (700) (P)(1) 4415 B25 (PCS) (P)(1)(G) 2012 B29	18.1X13.4X8.3 16.6X13.5X6.3 16.5X13.5X4.9	(2)(E) 1-5/8" COAX	(E)(1) RAYCAP DC6-48-60-18-8F
A3	PROPOSED	DoD+C-BAND	AIR6419 B77G AIR6449 B77D (STACKED)	31.1"X16.1X7.3" 30.6"X15.9"X10.6"	115'-8" 112'-1"	117'-0"± 113'-4"±	30°	-	-	-	(2)(E) DC POWER & (1) FIBER	(E)(1) RAYCAP DC6-48-60-18-8F
A4	PROPOSED	LTE 700 BC/850/WCS	DMP65R-BU6DA	71.2X20.7X7.7	114'-0"±	117'-0"±	30°	-	(E)(1) RRUS-32 B30 (WCS) (P)(1) 4449 B5/B12 (850/700)	17.9X13.2X10.4	(P)(1) Y-CABLE	(E)(1) RAYCAP DC6-48-60-18-8F
B1	-	-	-	-	-	-	-	-	-	-	-	-
B2	PROPOSED	LTE 700B14/ DE/PCS/AWS	QD6616-7	72X22X9.6	114'-0"±	117'-0"±	150°	-	(E)(1) 4426 B66 (AWS) (P)(1) 4478 B14 (700) (P)(1) 4415 B25 (PCS) (P)(1)(G) 2012 B29	18.1X13.4X8.3 16.6X13.5X6.3 16.5X13.5X4.9	(2)(E) 1-5/8" COAX	(E)(1) RAYCAP DC6-48-60-18-8F
B3	PROPOSED	DoD+C-BAND	AIR6419 B77G AIR6449 B77D (STACKED)	31.1"X16.1X7.3" 30.6"X15.9"X10.6"	115'-8" 112'-1"	117'-0"± 113'-4"±	150°	-	-	-	(2)(E) DC POWER & (1) FIBER	(E)(1) RAYCAP DC6-48-60-18-8F
B4	PROPOSED	LTE 700 BC/850/WCS	DMP65R-BU6DA	71.2X20.7X7.7	114'-0"±	117'-0"±	150°	-	(E)(1) RRUS-32 B30 (WCS) (P)(1) 4449 B5/B12 (850/700)	17.9X13.2X10.4	(P)(1) Y-CABLE	(E)(1) RAYCAP DC6-48-60-18-8F
C1	-	-	-	-	-	-	-	-	-	-	-	-
C2	PROPOSED	LTE 700B14/ DE/PCS/AWS	QD6616-7	72X22X9.6	114'-0"±	117'-0"±	270°	-	(E)(1) 4426 B66 (AWS) (P)(1) 4478 B14 (700) (P)(1) 4415 B25 (PCS) (P)(1)(G) 2012 B29	18.1X13.4X8.3 16.6X13.5X6.3 16.5X13.5X4.9	(2)(E) 1-5/8" COAX	(P)(1) RAYCAP DC9-48-60-24-8C-EV
C3	PROPOSED	DoD+C-BAND	AIR6419 B77G AIR6449 B77D (STACKED)	31.1"X16.1X7.3" 30.6"X15.9"X10.6"	115'-8" 112'-1"	117'-0"± 113'-4"±	270°	-	-	-	(3)(P) DC POWER & (1) FIBER	(P)(1) RAYCAP DC9-48-60-24-8C-EV
C4	PROPOSED	LTE 700 BC/850/WCS	DMP65R-BU6DA	71.2X20.7X7.7	114'-0"±	117'-0"±	270°	-	(E)(1) RRUS-32 B30 (WCS) (P)(1) 4449 B5/B12 (850/700)	17.9X13.2X10.4	(P)(1) Y-CABLE	(P)(1) RAYCAP DC9-48-60-24-8C-EV

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

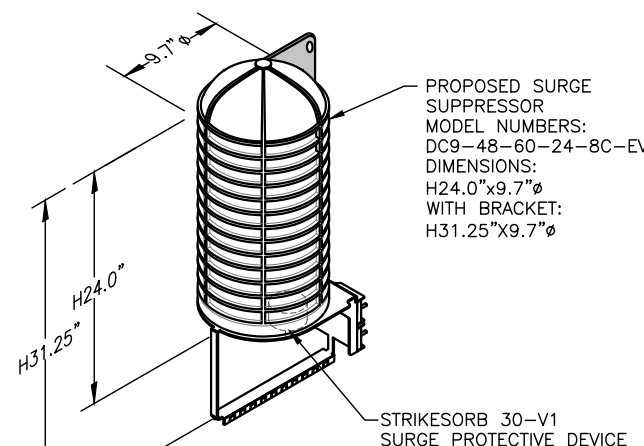
NOTE:
AN ANALYSIS FOR THE CAPACITY OF
EXISTING ANTENNA MOUNT TO
SUPPORT THE PROPOSED LOADING
HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC
DATED: SEPTEMBER 15, 2021

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
3(E)	4426 B66 (AWS)	14.9"x13.2"x5.8"
3(P)	4478 B14 (700)	18.1"x13.4"x8.3"
3(P)	4415 B25 (PCS)	16.6"x13.5"x6.3"
3(G)(P)	2012 B29	16.5"x13.5"x4.9"
3(E)	RRUS-32 B30 (WCS)	27.2"x12.1"x7"
3(P)	4449 B5/B12 (850/700)	17.9"x13.2"x10.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

FINAL ANTENNA SCHEDULE
SCALE: N.T.S

1
A-3



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL
SCALE: N.T.S

3
A-3

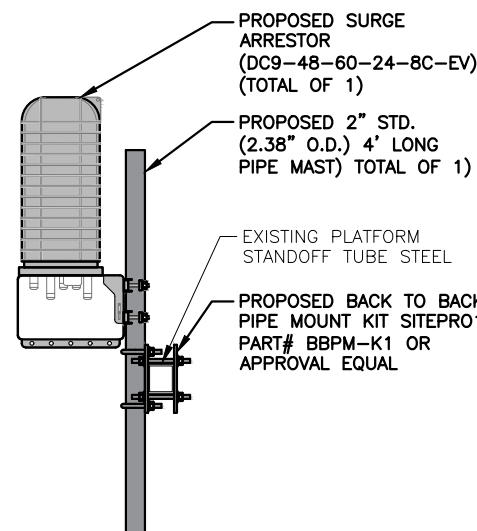
NOTE:
SEE RFDS FOR RRU
FREQUENCY AND
MODEL NUMBER

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

NOTE:
MOUNT PER MANUFACTURER'S
SPECIFICATIONS.

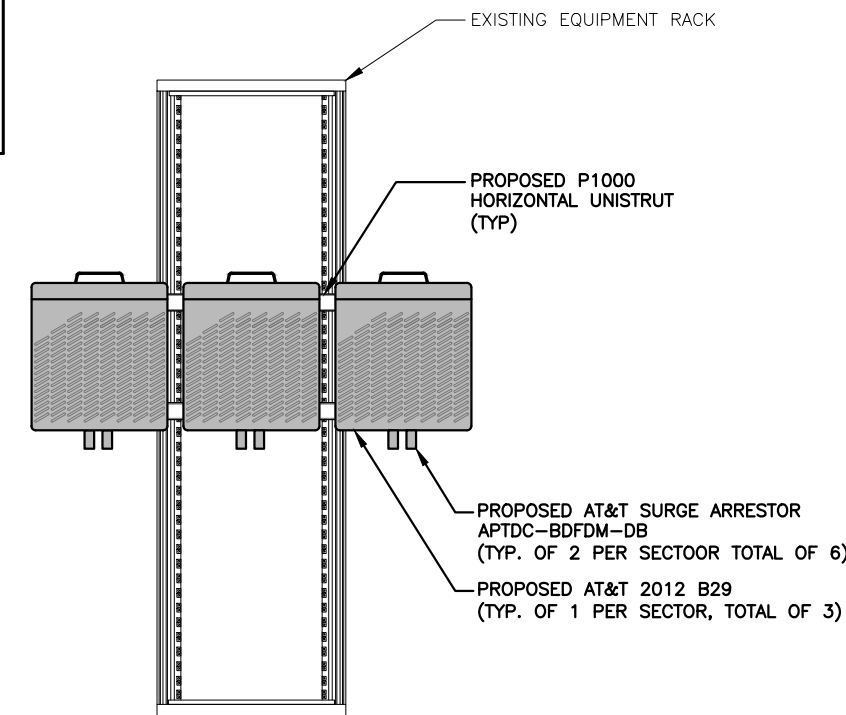
PROPOSED RRUS DETAIL
SCALE: N.T.S

2
A-3



PROPOSED SURGE ARRESTOR MOUNTING DETAIL
SCALE: N.T.S

4
A-3



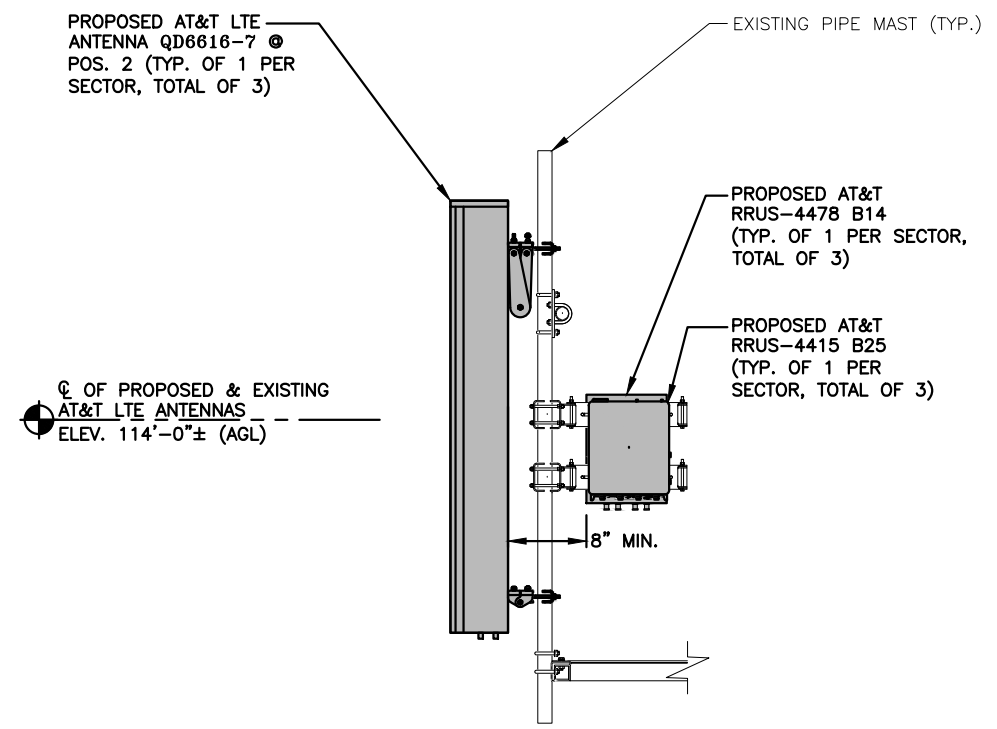
PROPOSED RRUS MOUNTING DETAIL
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

5
A-3

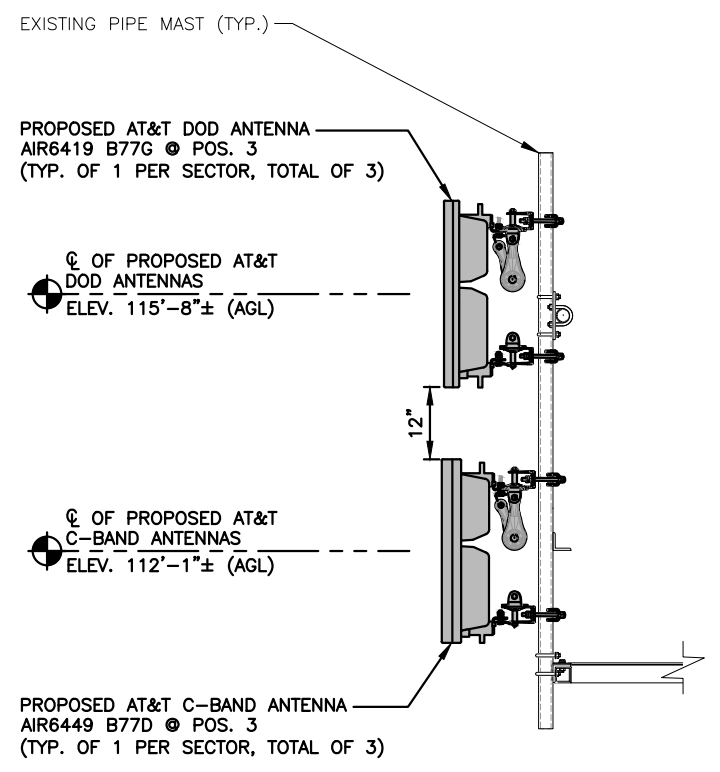
0 0'-6" 1'-0" 2'-0" 3'-0"

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

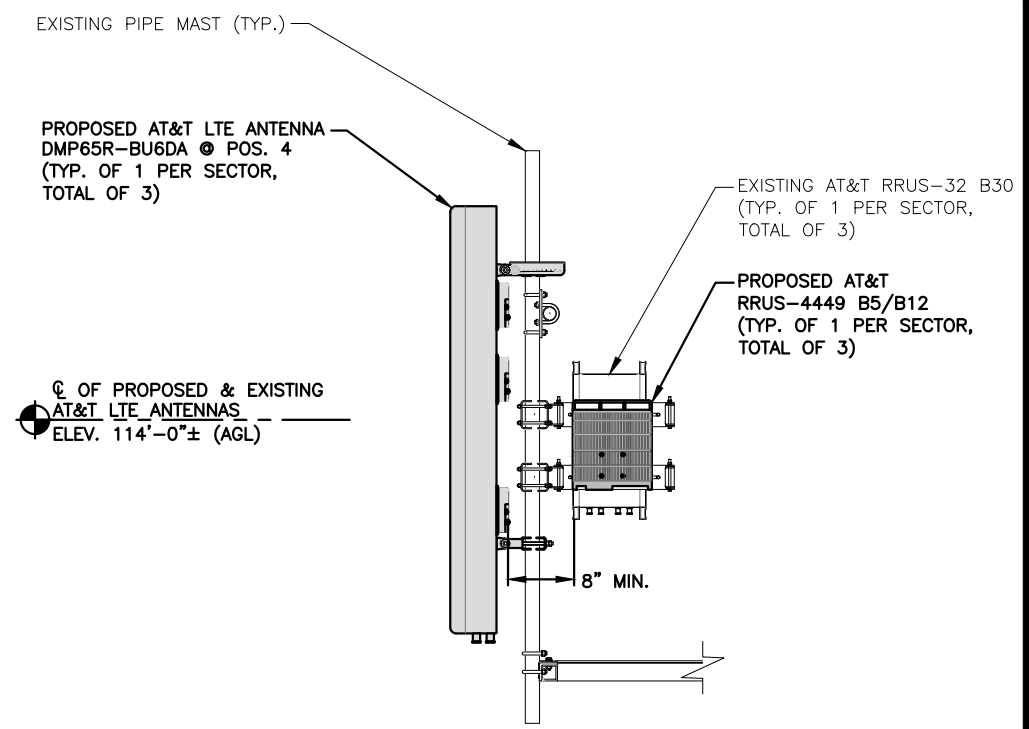
NOTE:
AN ANALYSIS FOR THE CAPACITY OF EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC
DATED: SEPTEMBER 15, 2021



PROPOSED LTE ANTENNA MOUNTING DETAIL (POS. 2)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
1
A-4



PROPOSED C-BAND ANTENNA MOUNTING DETAIL (POS.3)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
2
A-4



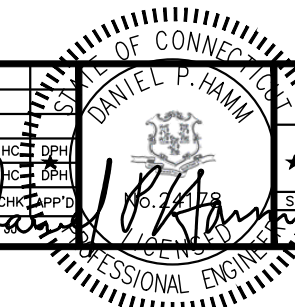
PROPOSED LTE ANTENNA MOUNTING DETAIL (POS. 4)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
3
A-4



SITE NUMBER: CT1160
SITE NAME: NEW BRITAIN WILDWOOD ST
WILDWOOD STREET
NEW BRITAIN, CT 06051
HARTFORD COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
1	06/28/22	ISSUED FOR CONSTRUCTION	JJ	HC	DPH
A	09/24/21	ISSUED FOR REVIEW	JJ	HC	DPH



AT&T	
DETAILS LTE 6C, 7C, 5G NR, C-BAND, DOD, RETROFIT UPGRADE	
SITE NUMBER CT1160	DRAWING NUMBER A-4
REV	1

STRUCTURAL NOTES:

- 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.
- 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.
- 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".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- 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.
- 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.
- 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.
- 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.
- 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 LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- 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:	

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

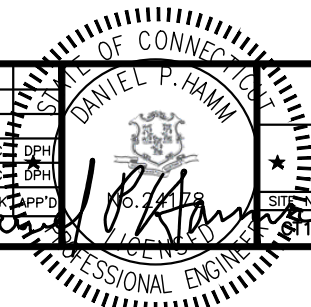
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1160
SITE NAME: NEW BRITAIN WILDWOOD ST

WILDWOOD STREET
NEW BRITAIN, CT 06051
HARTFORD COUNTY

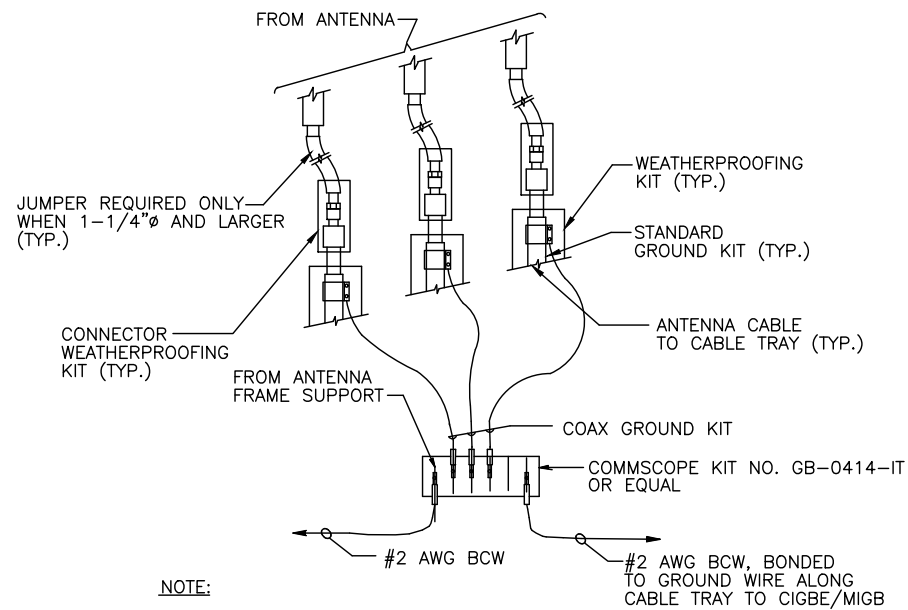
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.		DATE	REVISIONS	BY	CHK	APP'D	SCALE: AS SHOWN	DESIGNED BY: HC	DRAWN BY: [Signature]	DATE: 06/28/22	ISSUED FOR CONSTRUCTION	JJ	HC	DPH			
A		09/24/21	ISSUED FOR REVIEW	JJ	HC	DPH											
NO.		DATE	REVISIONS	BY	CHK	APP'D	SCALE: AS SHOWN	DESIGNED BY: HC	DRAWN BY: [Signature]	DATE: 09/24/21	ISSUED FOR REVIEW	JJ	HC	DPH			
SITE NUMBER		DRAWING NUMBER		REV		SITE NUMBER		DRAWING NUMBER		REV		SITE NUMBER		DRAWING NUMBER		REV	
CT1160		SN-1		1		CT1160		SN-1		1		CT1160		SN-1		1	



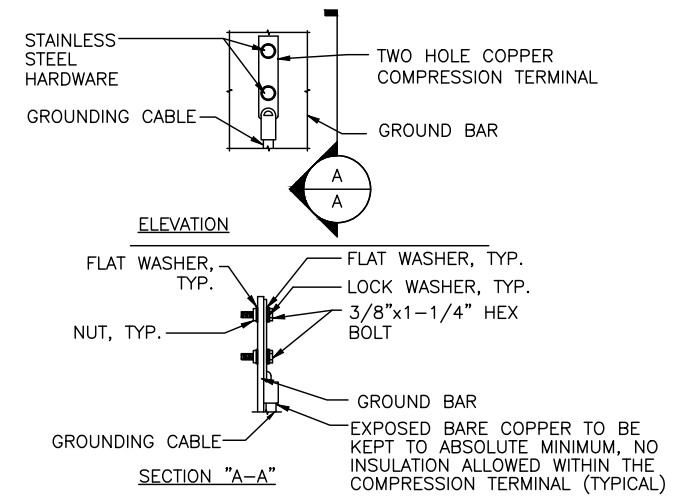
AT&T

GROUNDING DETAILS
LTE 6C, 7C, 5G NR, C-BAND,
DOD, RETROFIT UPGRADE



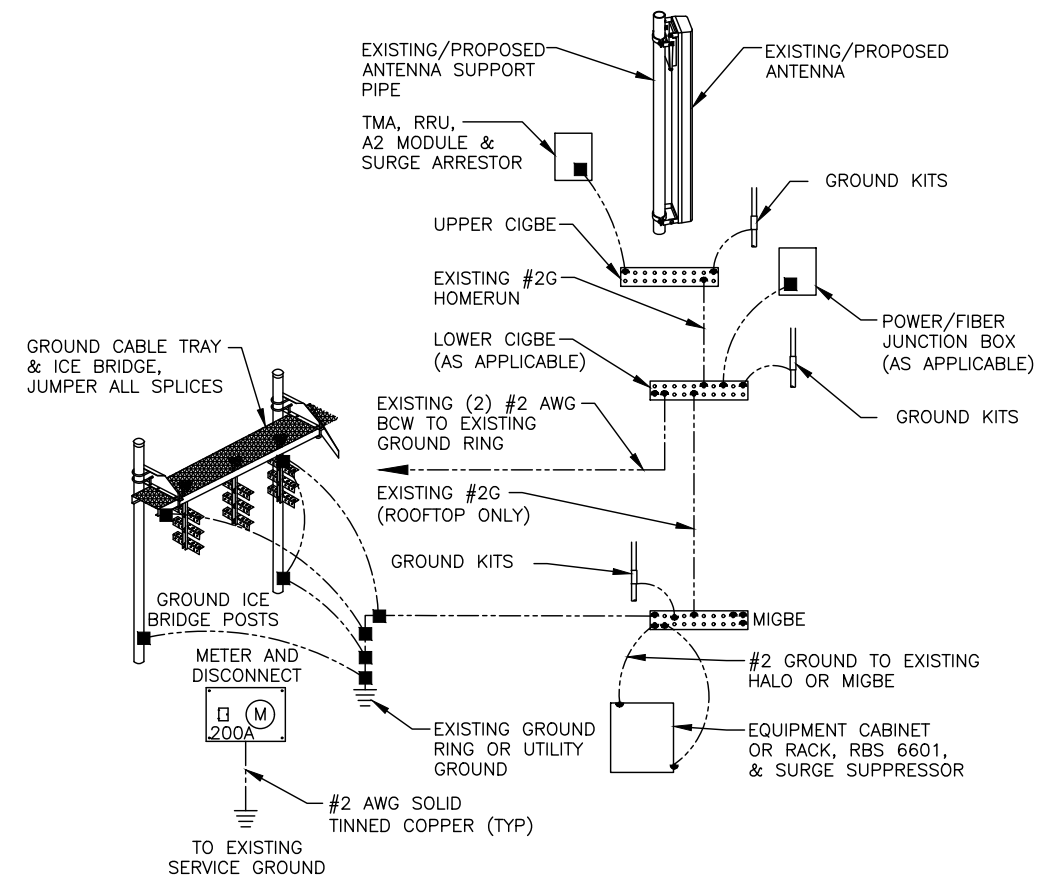
NOTE:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
 SCALE: N.T.S. G-1



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

TYPICAL GROUND BAR CONNECTION DETAIL 3
 SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
 SCALE: N.T.S. G-1

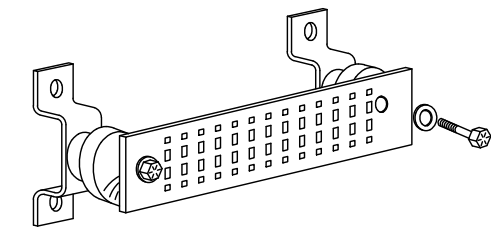
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

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

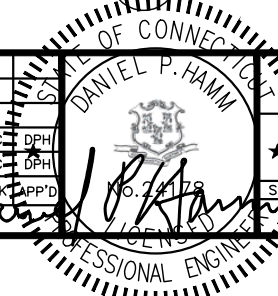
SECTION "A" - SURGE ABSORBERS

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

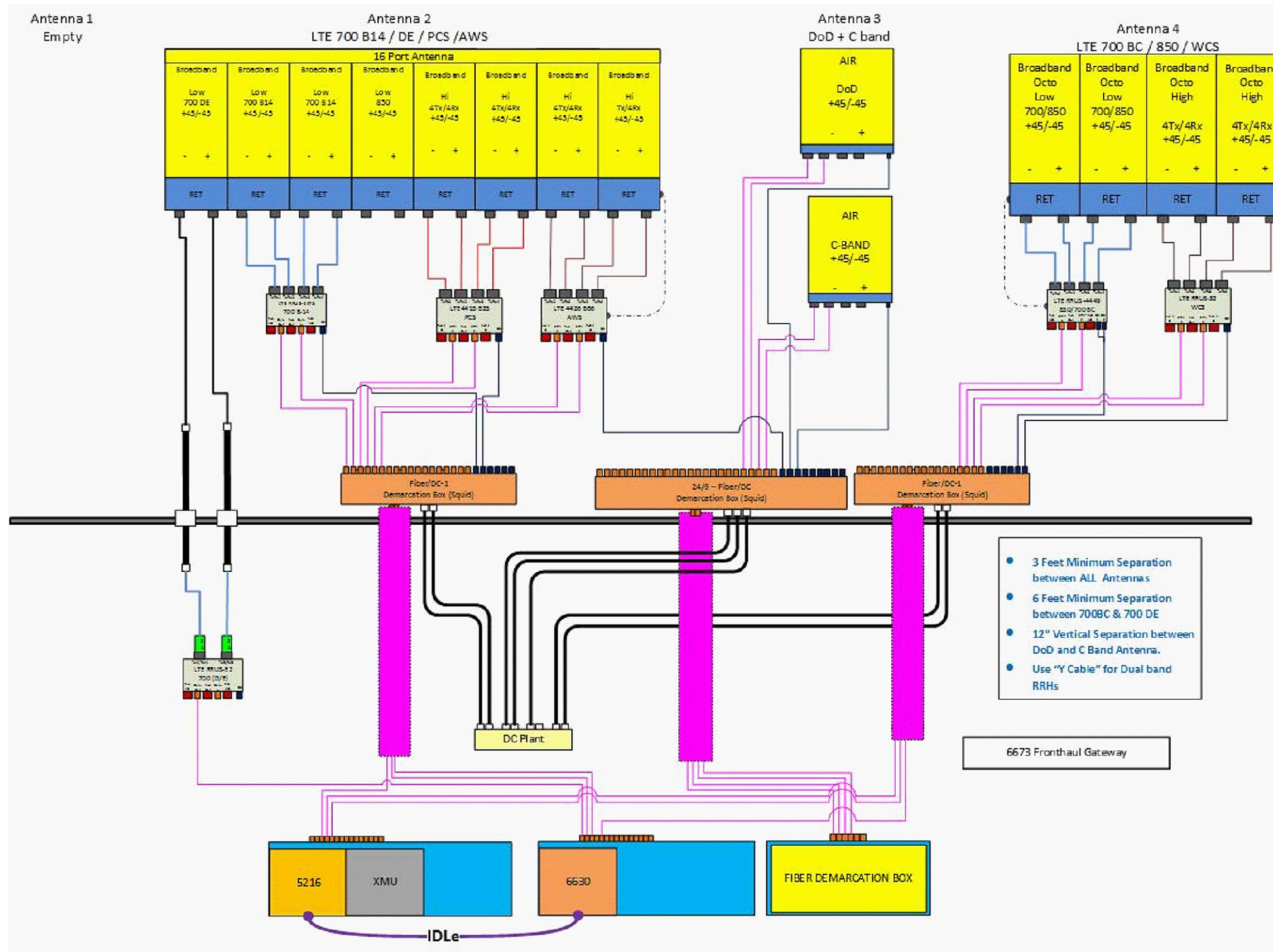


GROUND BAR - DETAIL (AS REQUIRED) 4
 SCALE: N.T.S. G-1

NO.		DATE	REVISIONS	BY	CHK	APP'D	SITE NUMBER		DRAWING NUMBER	REV
1	06/28/22	ISSUED FOR CONSTRUCTION		JJ	HC	DPH	CT1160	G-1	1	
A	09/24/21	ISSUED FOR REVIEW		JJ	HC	DPH				
SCALE:		AS SHOWN	DESIGNED BY:	HC	DRAWN BY:		DRAWING NUMBER		G-1	1



NOTE:
 REV: 3
 DATED: 05/31/2022
 RFDS ID: 4387632



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

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.

1	06/28/22	ISSUED FOR CONSTRUCTION	JJ	HC	DPH
A	09/24/21	ISSUED FOR REVIEW	JJ	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: JJ		

AT&T		
RF PLUMBING DIAGRAM LTE 6C, 7C, 5G NR, C-BAND, DOD, RETROFIT UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT1160	RF-1	1



BST MANAGEMENT
LLC

BST Management, LLC
352 Park Street, Suite 106
North Reading, MA 01864



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Professional Corporation

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Akron, OH 44311
(216) 927-8663
dpalkovic@gpdgroup.com

GPD# 2022703.26
June 14, 2022

COMPREHENSIVE STRUCTURAL ANALYSIS REPORT

SITE DESIGNATION:	BST Site #:	CT-1341
	BST Site Name:	New Britain Wildwood Street
	AT&T Site #:	CT1160
	AT&T Site Name:	New Britain Wildwood Street

ANALYSIS CRITERIA:	Codes:	TIA-222-H & 2018 Connecticut State Building Code
		118 mph (3-second gust) w/ 0" ice
		50 mph (3-second gust) w/ 1.5" ice

SITE DATA:	35 Wildwood Street, New Britain, CT 651, Hartford County
	Latitude 41° 40' 5.47" N, Longitude 72° 45' 18.72" W
	110' Penn Summit Monopole

To whom it may concern,

GPD is pleased to submit this Comprehensive Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	99.6%	Sufficient Capacity
Foundation Ratio with Proposed Equipment:	74.0%	Sufficient Capacity

We at GPD appreciate the opportunity of providing our continuing professional services to you and BST Management, LLC. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,

Christopher J. Scheks, P.E.
Connecticut #: 0030026



6/14/2022

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by AT&T Mobility and commissioned by BST Management, LLC.

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon a 3-second gust wind speed of 118 mph. Applicable Standard references and design criteria are listed in Appendices A & B.

The proposed feedlines shall be installed as shown in Appendices A & B for the analysis results to be valid.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	99.6%	Pass
Anchor Rods	70.5%	Pass
Base Plate	83.8%	Pass
Foundation	74.0%	Pass

RECOMMENDATIONS

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

ANALYSIS METHOD

tnxTower (Version 8.1.1.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various load cases. Selected output from the analysis is included the report appendices. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information.

DOCUMENTS PROVIDED

Document	Remarks	Source
Collocation Application	AT&T Collocation Application, updated 02/03/22	BST Management, LLC
Tower Design	PJF Job #: 29205-0027, dated 4/29/2005	GPD
Foundation Design	Not Provided	N/A
Geotechnical Report	Not Provided	N/A
Previous Tower Analysis	GPD Job #: 2022702.08, dated 2/24/2022	GPD
Tower Mapping	Not Provided	N/A

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The appurtenance configuration is as supplied, determined from available photos, and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
4. The soil parameters are as per data supplied or as assumed and stated in the calculations.
5. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
8. All prior structural modifications, if applicable, are assumed to be as per data supplied/available and to have been properly installed.
9. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
10. All existing and proposed loading has been taken from the available site photos as well as documents supplied to GPD at the time of generating this report. All such documents are listed in the Documents Provided Table and are assumed to be accurate. GPD is not responsible for loading scenarios outside those conveyed in the supplied documentation.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Comprehensive Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	New Britain Wildwood Street
Site Number	CT-1341
Date of Analysis	6/14/2022
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	110'	
Tower Manufacturer	Penn Summit	
Tower Model	n/a	
Tower Design	PJF Job #: 29205-0027	4/29/2005
Foundation Design	n/a	
Geotechnical Report	n/a	
Previous Tower Analysis	GPD Job #: 2022702.08	2/24/2022
Tower Mapping	n/a	
Modification Drawings	n/a	

Design Parameters	
Design Code Used	TIA-222-H & 2018 Connecticut State Building Code
Location of Tower (County, State)	Hartford, CT
Wind Speed (mph)	118 (3-second gust)
Ice Thickness (in)	1.5
Risk Category (I, II, III)	II
Exposure Category (B, C, D)	C
Topographic Category (1 to 5)	1

Analysis Results (% Maximum Usage)	
Existing/Reserved + Future + Proposed Condition	
Tower (%)	99.6%
Tower Base (%)	83.8%
Foundation (%)	74.0%
Foundation Adequate?	Yes

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Int/Ext
AT&T Mobility	110	114	3*	Panel	Powerwave	7770	30/150/270	1	Unknown	LP Platform w/ Rails	6*	Unknown	1-5/8"	Internal
AT&T Mobility	110	114	3*	Panel	Kathrein	800 10798	30/150/270	1	Site Pro 1	PRK-1245	6	Unknown	1-5/8"	Internal
AT&T Mobility	110	114	3*	Panel	KMW	AM-X-CD-16-65	30/150/270			on the same mount	4	DC Power	3/4"	Internal
AT&T Mobility	110	114	6*	TMA	Powerwave	LGP 21401				on the same mount	2	Fiber Cable	1/2"	Internal
AT&T Mobility	110	114	6*	Diplexer	Kaelus	DBCT108F1V92-1				on the same mount	2	Conduit	2"	Internal
AT&T Mobility	110	114	3*	RRU	Ericsson	RRUS-11				on the same mount				
AT&T Mobility	110	114	3*	RRU	Ericsson	RRUS-12				on the same mount				
AT&T Mobility	110	114	3	RRU	Ericsson	4478				on the same mount				
AT&T Mobility	110	114	3	RRU	Ericsson	4426				on the same mount				
AT&T Mobility	110	114	3	RRU	Ericsson	RRUS-32				on the same mount				
AT&T Mobility	110	114	2	Surge	Raycap	DC6-48-60-18-8F				Tower Mounted				
T-Mobile	97	100	3	TMA	RFS	1412D-1S20	60/160/310	1	Unknown	Platform w/ Rails	6	Unknown	1-5/8"	External
T-Mobile	97	100	3	Panel	RFS	APXVARR24_43 C-NA20	60/160/310			on the same mount				
T-Mobile	97	100	3	Panel	Ericsson	AIR 32 B66AaB2a				on the same mount				
T-Mobile	97	100	3	RRU	Ericsson	4449-B12+71				on the same mount				
Verizon	90	90	6	Panel	Commscope	NHH-65B-R2B	60/170/300	3	Unknown	T-Arms	2	Hybrid	1-1/4"	External
Verizon	90	90	3	Panel	Samsung	MT6407-77A	60/170/300	3	Commscope	BSAMNT-SBS-1-2	6	Unknown	1-5/8"	External
Verizon	90	90	3	RRH	Samsung	B2/B66A				on the same mount				
Verizon	90	90	3	RRH	Samsung	B5/B66A				on the same mount				
Verizon	90	90	3	Panel	Antel	BXA-80063	60/170/300			on the same mount				
Verizon	90	90	1	Surge	Raycap	DC6-48-60-18-8F				on the same mount				
Township	60	60	9	Lights	Unknown	2' Diameter Stadium Lights		1	Unknown	Stadium Light Rack				

*Indicates equipment/feedline quantity to be removed.

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Int/Ext
AT&T	110	114	3	Panel	CCI	DMP65R-BU6DA	30/150/270			On the existing mount	1	Fiber Cable	1/2"	Internal
AT&T	110	114	3	Panel	Quintel	QD6616-7	30/150/270			On the existing mount	3	DC Power	3/4"	Internal
AT&T	110	114	3	Panel	Ericsson	AIR6419/ Air6449 stacked	30/150/270			On the existing mount	2	Conduit	2"	Internal
AT&T	110	114	3	RRU	Ericsson	4415				On the existing mount				
AT&T	110	114	3	RRU	Ericsson	4449				On the existing mount				
AT&T	110	114	1	Surge	Raycap	DC9-48-60-24-8C-EV				On the existing mount				

Note: The proposed loading shall be in addition to the remaining existing equipment at the same elevation.

Note: The proposed feedlines shall be installed inside the monopole in order for this analysis to be valid.

APPENDIX B

Tower Analysis Output File

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Platform w/ Handrails Kickers [LP 1201-1_KCKR-HR-1]	110	AIR32 B66Aa/B2A w/ 60" Mount Pipe	97
Pipe Mount 6"x2.375"	110	APXVARR24_43 C-NA20 w/ Mount Pipe	97
Pipe Mount 6"x2.375"	110	APXVARR24_43 C-NA20 w/ Mount Pipe	97
Pipe Mount 6"x2.375"	110	APXVARR24_43 C-NA20 w/ Mount Pipe	97
DMP65R-BU6DA w/ Mount Pipe	110	APXVARR24_43 C-NA20 w/ Mount Pipe	97
DMP65R-BU6DA w/ Mount Pipe	110	RRUS 4449-B12+71	97
DMP65R-BU6DA w/ Mount Pipe	110	RRUS 4449-B12+71	97
QD6616-7 w/ Mount Pipe	110	RRUS 4449-B12+71	97
QD6616-7 w/ Mount Pipe	110	T-Arm Mount [TA 601-3]	89
QD6616-7 w/ Mount Pipe	110	BSAMNT-SBS-1-2	89
AIR6449	110	BSAMNT-SBS-1-2	89
AIR6449	110	BSAMNT-SBS-1-2	89
AIR6449	110	BSAMNT-SBS-1-2	89
AIR6419 w/ Mount Pipe	110	BXA-80063 w/ mount pipe	89
AIR6419 w/ Mount Pipe	110	BXA-80063 w/ mount pipe	89
AIR6419 w/ Mount Pipe	110	BXA-80063 w/ mount pipe	89
4478	110	(2) NHH-65B-R2B w/ Mount Pipe	89
4478	110	(2) NHH-65B-R2B w/ Mount Pipe	89
4478	110	(2) NHH-65B-R2B w/ Mount Pipe	89
4426	110	MT6407-77A w/ Mount Pipe	89
4426	110	MT6407-77A w/ Mount Pipe	89
4426	110	MT6407-77A w/ Mount Pipe	89
RRUS-32	110	B2/B66A RRH	89
RRUS-32	110	B2/B66A RRH	89
RRUS-32	110	B2/B66A RRH	89
4415	110	B5/B66A RRH	89
4415	110	B5/B66A RRH	89
4415	110	B5/B66A RRH	89
4449	110	DC6-48-60-18-8F Surge Suppression Unit	89
4449	110	DC6-48-60-18-8F Surge Suppression Unit	89
4449	110	DC6-48-60-18-8F Surge Suppression Unit	89
DC9-48-60-24-8C-EV	110	12' T-Arm - Round (GPD)	60
DC6-48-60-18-8F Surge Suppression Unit	110	10' T-Arm - Round (GPD)	60
DC6-48-60-18-8F Surge Suppression Unit	110	Stadium Light (2')	60
Platform w/ Handrails [LP 304-1_HR-1]	97	Stadium Light (2')	60
1412D-1S20	97	Stadium Light (2')	60
1412D-1S20	97	Stadium Light (2')	60
1412D-1S20	97	Stadium Light (2')	60
AIR32 B66Aa/B2A w/ 60" Mount Pipe	97	Stadium Light (2')	60
AIR32 B66Aa/B2A w/ 60" Mount Pipe	97		

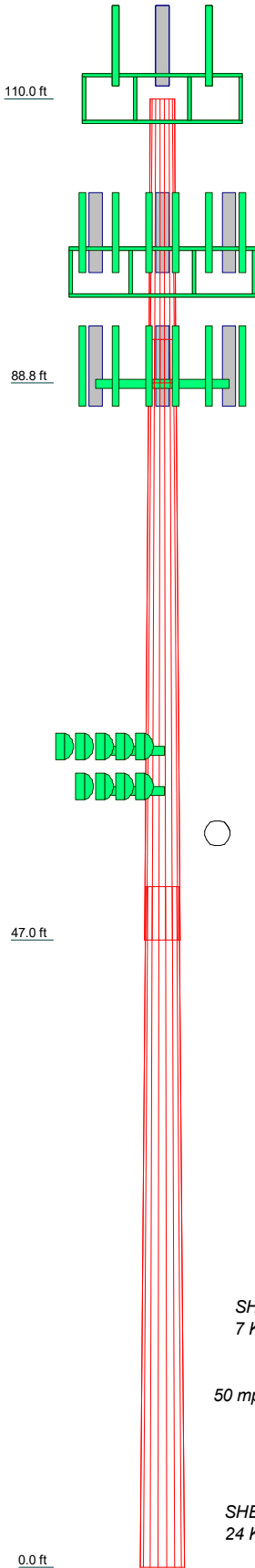
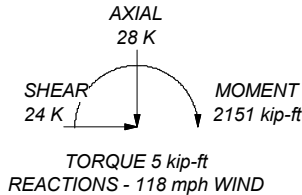
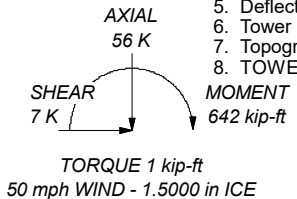
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 99.6%

ALL REACTIONS ARE FACTORED



Section	1	2	3
Length (ft)	21.25	45.00	51.00
Number of Sides	18	18	18
Thickness (in)	0.1875	0.2500	0.3125
Socket Length (ft)	3.25	4.00	
Top Dia (in)	21.0000	23.8650	30.7655
Bot Dia (in)	24.8250	31.9875	39.9300
Grade	A572-65	A572-65	A572-65
Weight (K)	1.0	3.4	6.0

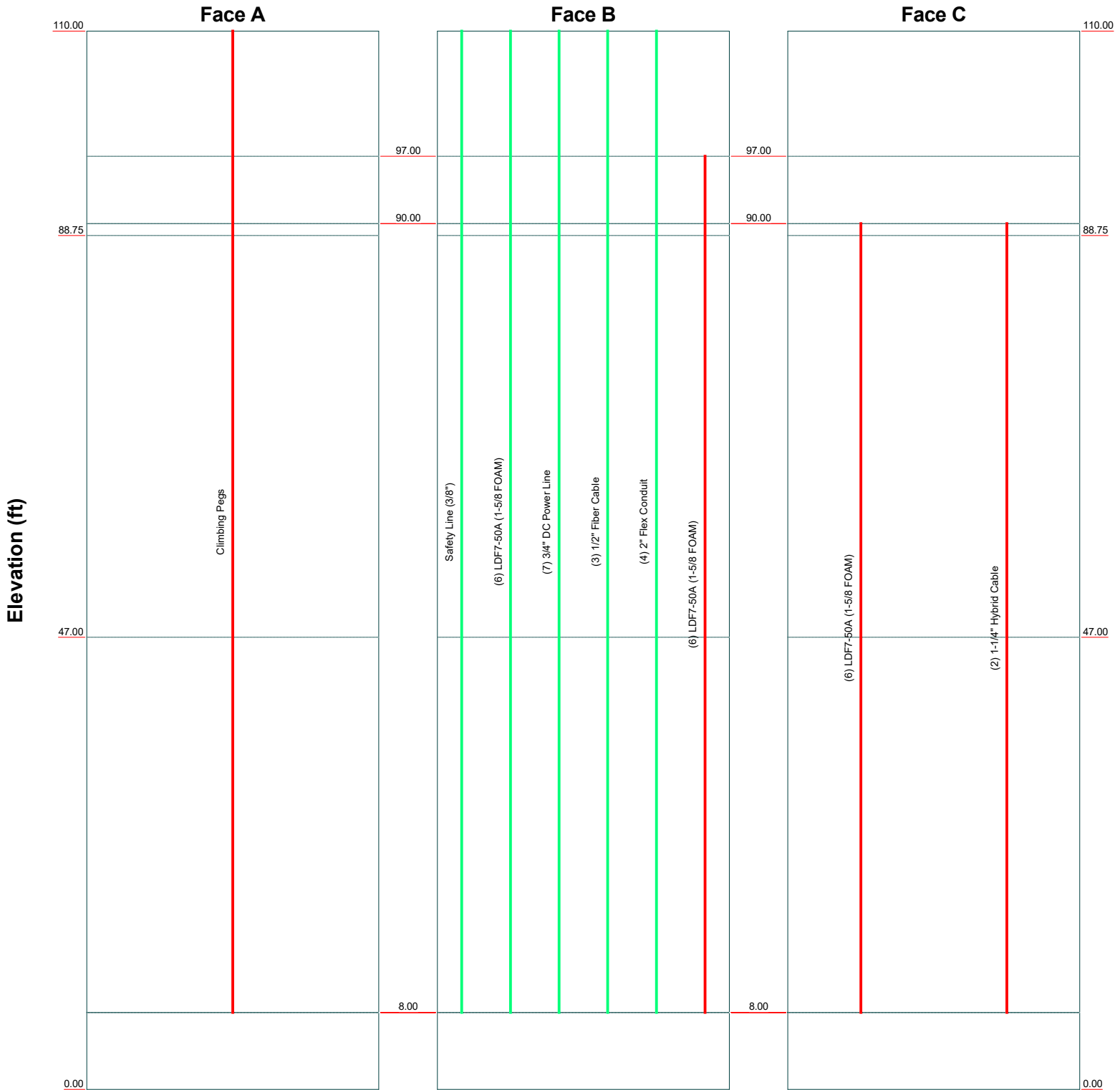
GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2222
FAX: (330) 572-3722

Job: **(CT-1341) NEW BRITAIN WILDWOOD STREET**
Project: **2022703.26**
Client: **BST Management, LLC.** Drawn by: **TDeak** App'd:
Code: **TIA-222-H** Date: **06/14/22** Scale: **NTS**
Path: **T:\ATandT\824114_2022703.26_BST_S&S_Structural\00_Structure\00_Structure\003_Modeling\824114.er** Dwg No. **E-1**

Feed Line Distribution Chart

0' - 110'

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



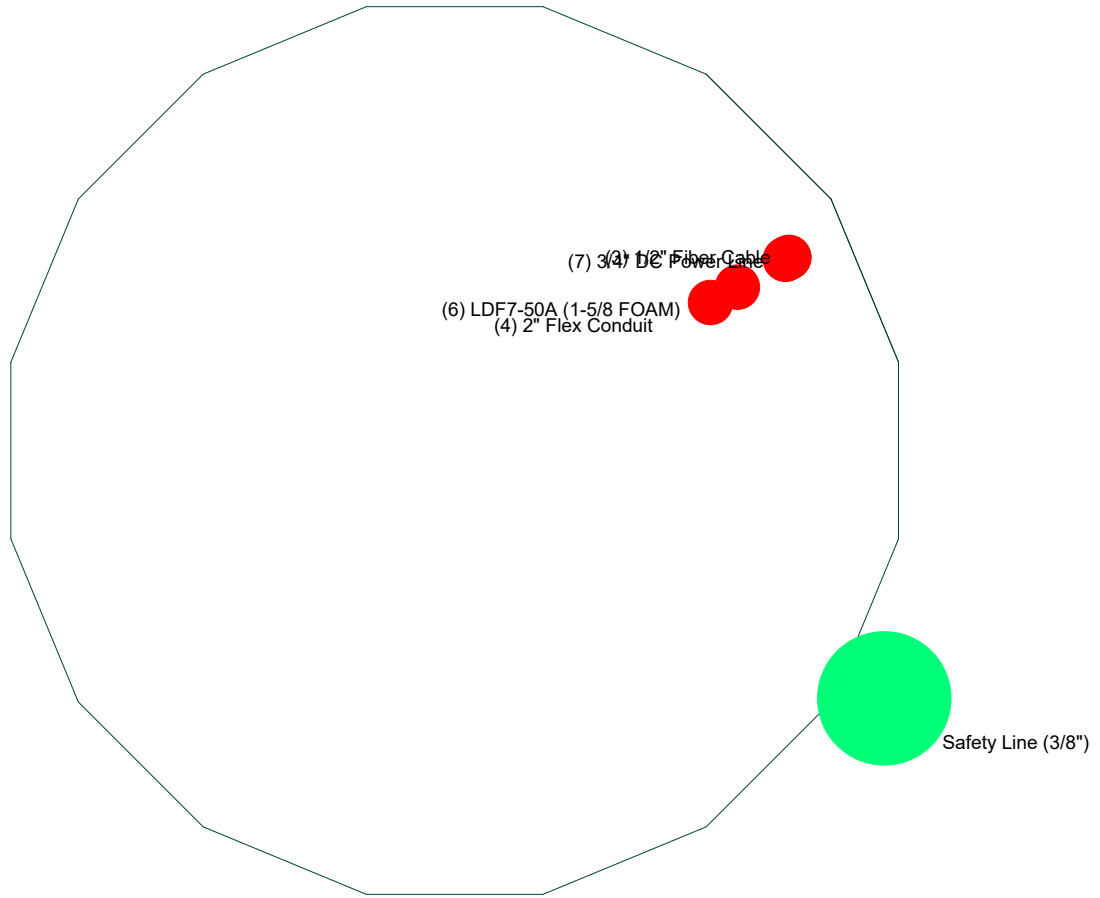
GPD

520 South Main Street Suite 2531
Akron, Ohio 44311
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Job: (CT-1341) NEW BRITAIN WILDWOOD STREET		
Project: 2022703.26		
Client: BST Management, LLC.	Drawn by: TDeak	App'd:
Code: TIA-222-H	Date: 06/14/22	Scale: NTS
Path: T:\ATandT\88241114_2022703.26_BST_SAI6_Structural\00_Structure\00_Rev 003_Modeling\882411.er		Dwg No. E-7

Feed Line Plan

— Round
 — Flat
 — App In Face
 — App Out Face



GPD
 520 South Main Street Suite 2531
 Akron, Ohio 44311
 Phone: (330) 572-2222
 FAX: (330) 572-3722

Job: (CT-1341) NEW BRITAIN WILDWOOD STREET		
Project: 2022703.26		
Client: BST Management, LLC.	Drawn by: TDeak	App'd:
Code: TIA-222-H	Date: 06/14/22	Scale: NTS
Path:		Dwg No. E-7
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tnxTower GPD 520 South Main Street Suite 2531 Akron, Ohio 44311 Phone: (330) 572-2222 FAX: (330) 572-3722	Job (CT-1341) NEW BRITAIN WILDWOOD STREET	Page 1 of 19
	Project 2022703.26	Date 13:34:38 06/14/22
	Client BST Management, LLC.	Designed by TDeak

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- Tower is located in Hartford County, Connecticut.
- Tower base elevation above sea level: 56.00 ft.
- Basic wind speed of 118 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.5000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination √ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	

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Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	110.00-88.75	21.25	3.25	18	21.0000	24.8250	0.1875	0.7500	A572-65 (65 ksi)
L2	88.75-47.00	45.00	4.00	18	23.8650	31.9875	0.2500	1.0000	A572-65 (65 ksi)
L3	47.00-0.00	51.00		18	30.7655	39.9300	0.3125	1.2500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	21.2950	12.3860	677.8263	7.3884	10.6680	63.5383	1356.5444	6.1942	3.3660	17.952
	25.1790	14.6624	1124.4381	8.7463	12.6111	89.1626	2250.3558	7.3326	4.0392	21.542
L2	24.7903	18.7385	1320.2258	8.3833	12.1234	108.8988	2642.1889	9.3710	3.7602	15.041
	32.4424	25.1837	3204.8117	11.2668	16.2496	197.2234	6413.8405	12.5942	5.1898	20.759
L3	31.9218	30.2056	3539.0332	10.8108	15.6289	226.4420	7082.7232	15.1057	4.8647	15.567
	40.4978	39.2956	7792.1193	14.0642	20.2844	384.1427	15594.4917	19.6515	6.4777	20.729

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 110.00-88.75				1	1	1			
L2 88.75-47.00				1	1	1			
L3 47.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Climbing Pegs	A	No	Surface Ar (CaAa)	110.00 - 8.00	1	1	0.000 0.000	0.1500		0.31
LDF7-50A (1-5/8 FOAM)	B	No	Surface Ar (CaAa)	97.00 - 8.00	6	6	-0.100 0.400	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	C	No	Surface Ar (CaAa)	90.00 - 8.00	6	6	-0.250 0.250	1.9800		0.82
1-1/4" Hybrid Cable	C	No	Surface Ar (CaAa)	90.00 - 8.00	2	2	0.000 0.000	1.2500		1.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight plf
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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_{AA} ft ² /ft	Weight plf
Safety Line (3/8")	B	No	No	CaAa (Out Of Face)	110.00 - 8.00	1	No Ice	0.04	0.22
							1/2" Ice	0.14	0.75
							1" Ice	0.24	1.28
							2" Ice	0.44	2.34
LDF7-50A (1-5/8 FOAM)	B	No	No	Inside Pole	110.00 - 8.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
3/4" DC Power Line	B	No	No	Inside Pole	110.00 - 8.00	7	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
1/2" Fiber Cable	B	No	No	Inside Pole	110.00 - 8.00	3	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
2" Flex Conduit	B	No	No	Inside Pole	110.00 - 8.00	4	No Ice	0.00	0.32
							1/2" Ice	0.00	0.32
							1" Ice	0.00	0.32
							2" Ice	0.00	0.32

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	110.00-88.75	A	0.000	0.000	0.319	0.000	0.01
		B	0.000	0.000	9.801	0.797	0.24
		C	0.000	0.000	1.797	0.000	0.01
L2	88.75-47.00	A	0.000	0.000	0.626	0.000	0.01
		B	0.000	0.000	49.599	1.566	0.59
		C	0.000	0.000	60.036	0.000	0.29
L3	47.00-0.00	A	0.000	0.000	0.585	0.000	0.01
		B	0.000	0.000	46.332	1.462	0.55
		C	0.000	0.000	56.082	0.000	0.27

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	110.00-88.75	A	1.674	0.000	0.000	7.435	0.000	0.09
		B		0.000	0.000	15.705	7.913	0.45
		C		0.000	0.000	3.293	0.000	0.05
L2	88.75-47.00	A	1.611	0.000	0.000	14.607	0.000	0.17
		B		0.000	0.000	79.474	15.546	1.58
		C		0.000	0.000	109.997	0.000	1.53
L3	47.00-0.00	A	1.451	0.000	0.000	13.149	0.000	0.15
		B		0.000	0.000	73.620	14.026	1.44
		C		0.000	0.000	101.512	0.000	1.38

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Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x	CP _z
				Ice in	Ice in
L1	110.00-88.75	3.0326	0.0011	2.0885	0.0361
L2	88.75-47.00	4.0324	4.0845	2.7405	3.2542
L3	47.00-0.00	4.0913	4.1476	2.9293	3.4677

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	1	Climbing Pegs	88.75 - 110.00	1.0000	1.0000
L1	7	LDF7-50A (1-5/8 FOAM)	88.75 - 97.00	1.0000	1.0000
L1	8	LDF7-50A (1-5/8 FOAM)	88.75 - 90.00	1.0000	1.0000
L1	9	1-1/4" Hybrid Cable	88.75 - 90.00	1.0000	1.0000
L2	1	Climbing Pegs	47.00 - 88.75	1.0000	1.0000
L2	7	LDF7-50A (1-5/8 FOAM)	47.00 - 88.75	1.0000	1.0000
L2	8	LDF7-50A (1-5/8 FOAM)	47.00 - 88.75	1.0000	1.0000
L2	9	1-1/4" Hybrid Cable	47.00 - 88.75	1.0000	1.0000
L3	1	Climbing Pegs	8.00 - 47.00	1.0000	1.0000
L3	7	LDF7-50A (1-5/8 FOAM)	8.00 - 47.00	1.0000	1.0000
L3	8	LDF7-50A (1-5/8 FOAM)	8.00 - 47.00	1.0000	1.0000
L3	9	1-1/4" Hybrid Cable	8.00 - 47.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K	
			Horz ft	Vert ft						
Platform w/ Handrails & Kickers [LP 1201-1_KCKR-HR-1]	C	None			0.0000	110.00	No Ice	37.61	37.61	2.63
							1/2" Ice	45.62	45.62	3.48
							1" Ice	53.59	53.59	4.46
							2" Ice	69.65	69.65	6.85
Pipe Mount 6'x2.375"	A	From Centroid-Le g	4.00	0.00	30.0000	110.00	No Ice	1.43	1.43	0.03
							1/2" Ice	1.92	1.92	0.04
							1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
Pipe Mount 6'x2.375"	B	From	4.00		30.0000	110.00	No Ice	1.43	1.43	0.03

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz Lateral ft	Vert ft					
Pipe Mount 6'x2.375"	C	Centroid- Le g	From 4.00	30.0000	110.00	1/2" Ice	1.92	1.92	0.04
						1" Ice	2.29	2.29	0.05
						2" Ice	3.06	3.06	0.09
						No Ice	1.43	1.43	0.03
						1/2" Ice	1.92	1.92	0.04
						1" Ice	2.29	2.29	0.05
DMP65R-BU6DA w/ Mount Pipe	A	Centroid- Le g	From 4.00	30.0000	110.00	2" Ice	3.06	3.06	0.09
						No Ice	12.95	7.26	0.10
						1/2" Ice	13.55	8.43	0.20
						1" Ice	14.11	9.31	0.30
						2" Ice	15.26	11.13	0.53
						No Ice	12.95	7.26	0.10
DMP65R-BU6DA w/ Mount Pipe	B	Centroid- Le g	From 4.00	30.0000	110.00	1/2" Ice	13.55	8.43	0.20
						1" Ice	14.11	9.31	0.30
						2" Ice	15.26	11.13	0.53
						No Ice	12.95	7.26	0.10
						1/2" Ice	13.55	8.43	0.20
						1" Ice	14.11	9.31	0.30
DMP65R-BU6DA w/ Mount Pipe	C	Centroid- Le g	From 4.00	30.0000	110.00	2" Ice	15.26	11.13	0.53
						No Ice	12.95	7.26	0.10
						1/2" Ice	13.55	8.43	0.20
						1" Ice	14.11	9.31	0.30
						2" Ice	15.26	11.13	0.53
						No Ice	12.95	7.26	0.10
QD6616-7 w/ Mount Pipe	A	Centroid- Le g	From 4.00	30.0000	110.00	1" Ice	14.11	9.31	0.30
						2" Ice	15.26	11.13	0.53
						No Ice	13.58	8.22	0.15
						1/2" Ice	14.08	9.19	0.25
						1" Ice	14.60	10.02	0.36
						2" Ice	15.65	11.71	0.61
QD6616-7 w/ Mount Pipe	B	Centroid- Le g	From 4.00	30.0000	110.00	No Ice	13.58	8.22	0.15
						1/2" Ice	14.08	9.19	0.25
						1" Ice	14.60	10.02	0.36
						2" Ice	15.65	11.71	0.61
						No Ice	13.58	8.22	0.15
						1/2" Ice	14.08	9.19	0.25
QD6616-7 w/ Mount Pipe	C	Centroid- Le g	From 4.00	30.0000	110.00	1" Ice	14.60	10.02	0.36
						2" Ice	15.65	11.71	0.61
						No Ice	13.58	8.22	0.15
						1/2" Ice	14.08	9.19	0.25
						1" Ice	14.60	10.02	0.36
						2" Ice	15.65	11.71	0.61
AIR6449	A	Centroid- Le g	From 4.00	30.0000	110.00	No Ice	4.03	2.15	0.08
						1/2" Ice	4.29	2.36	0.11
						1" Ice	4.56	2.57	0.14
						2" Ice	5.12	3.03	0.22
						No Ice	4.03	2.15	0.08
						1/2" Ice	4.29	2.36	0.11
AIR6449	B	Centroid- Le g	From 4.00	30.0000	110.00	1" Ice	4.56	2.57	0.14
						2" Ice	5.12	3.03	0.22
						No Ice	4.03	2.15	0.08
						1/2" Ice	4.29	2.36	0.11
						1" Ice	4.56	2.57	0.14
						2" Ice	5.12	3.03	0.22
AIR6449	C	Centroid- Le g	From 4.00	30.0000	110.00	No Ice	4.03	2.15	0.08
						1/2" Ice	4.29	2.36	0.11
						1" Ice	4.56	2.57	0.14
						2" Ice	5.12	3.03	0.22
						No Ice	4.11	2.81	0.09
						1/2" Ice	4.37	3.19	0.13
AIR6419 w/ Mount Pipe	A	Centroid- Le g	From 4.00	30.0000	110.00	1" Ice	4.64	3.59	0.17
						2" Ice	5.21	4.43	0.28
						No Ice	4.11	2.81	0.09
						1/2" Ice	4.37	3.19	0.13
						1" Ice	4.64	3.59	0.17
						2" Ice	5.21	4.43	0.28
AIR6419 w/ Mount Pipe	B	Centroid- Le g	From 4.00	30.0000	110.00	No Ice	4.11	2.81	0.09
						1/2" Ice	4.37	3.19	0.13
						1" Ice	4.64	3.59	0.17
						2" Ice	5.21	4.43	0.28
						No Ice	4.11	2.81	0.09
						1/2" Ice	4.37	3.19	0.13
AIR6419 w/ Mount Pipe	C	Centroid- Le g	From 4.00	30.0000	110.00	1" Ice	4.64	3.59	0.17
						2" Ice	5.21	4.43	0.28
						No Ice	4.11	2.81	0.09
						1/2" Ice	4.37	3.19	0.13
						1" Ice	4.64	3.59	0.17
						2" Ice	5.21	4.43	0.28
4478	A	Centroid- Le	From 4.00	30.0000	110.00	No Ice	0.42	0.41	0.01
						1/2" Ice	0.51	0.50	0.01

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Client		Designed by		
BST Management, LLC.		TDeak		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
		g	4.00			1" Ice	0.61	0.60	0.02
						2" Ice	0.83	0.82	0.04
4478	B	From	4.00	30.0000	110.00	No Ice	0.42	0.41	0.01
		Centroid-Le	0.00			1/2" Ice	0.51	0.50	0.01
		g	4.00			1" Ice	0.61	0.60	0.02
						2" Ice	0.83	0.82	0.04
4478	C	From	4.00	30.0000	110.00	No Ice	0.42	0.41	0.01
		Centroid-Le	0.00			1/2" Ice	0.51	0.50	0.01
		g	4.00			1" Ice	0.61	0.60	0.02
						2" Ice	0.83	0.82	0.04
4426	A	From	4.00	30.0000	110.00	No Ice	1.64	0.73	0.05
		Centroid-Le	0.00			1/2" Ice	1.80	0.84	0.06
		g	4.00			1" Ice	1.97	0.97	0.08
						2" Ice	2.33	1.24	0.11
4426	B	From	4.00	30.0000	110.00	No Ice	1.64	0.73	0.05
		Centroid-Le	0.00			1/2" Ice	1.80	0.84	0.06
		g	4.00			1" Ice	1.97	0.97	0.08
						2" Ice	2.33	1.24	0.11
4426	C	From	4.00	30.0000	110.00	No Ice	1.64	0.73	0.05
		Centroid-Le	0.00			1/2" Ice	1.80	0.84	0.06
		g	4.00			1" Ice	1.97	0.97	0.08
						2" Ice	2.33	1.24	0.11
RRUS-32	A	From	4.00	30.0000	110.00	No Ice	3.31	2.42	0.08
		Centroid-Le	0.00			1/2" Ice	3.56	2.64	0.10
		g	4.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	B	From	4.00	30.0000	110.00	No Ice	3.31	2.42	0.08
		Centroid-Le	0.00			1/2" Ice	3.56	2.64	0.10
		g	4.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	C	From	4.00	30.0000	110.00	No Ice	3.31	2.42	0.08
		Centroid-Le	0.00			1/2" Ice	3.56	2.64	0.10
		g	4.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
4415	A	From	4.00	30.0000	110.00	No Ice	1.86	0.69	0.04
		Centroid-Le	0.00			1/2" Ice	2.03	0.81	0.06
		g	4.00			1" Ice	2.20	0.93	0.07
						2" Ice	2.58	1.20	0.11
4415	B	From	4.00	30.0000	110.00	No Ice	1.86	0.69	0.04
		Centroid-Le	0.00			1/2" Ice	2.03	0.81	0.06
		g	4.00			1" Ice	2.20	0.93	0.07
						2" Ice	2.58	1.20	0.11
4415	C	From	4.00	30.0000	110.00	No Ice	1.86	0.69	0.04
		Centroid-Le	0.00			1/2" Ice	2.03	0.81	0.06
		g	4.00			1" Ice	2.20	0.93	0.07
						2" Ice	2.58	1.20	0.11
4449	A	From	4.00	30.0000	110.00	No Ice	1.98	1.41	0.07
		Centroid-Le	0.00			1/2" Ice	2.16	1.57	0.09
		g	4.00			1" Ice	2.34	1.73	0.11
						2" Ice	2.73	2.08	0.16
4449	B	From	4.00	30.0000	110.00	No Ice	1.98	1.41	0.07
		Centroid-Le	0.00			1/2" Ice	2.16	1.57	0.09
		g	4.00			1" Ice	2.34	1.73	0.11
						2" Ice	2.73	2.08	0.16
4449	C	From	4.00	30.0000	110.00	No Ice	1.98	1.41	0.07
		Centroid-Le	0.00			1/2" Ice	2.16	1.57	0.09
		g	4.00			1" Ice	2.34	1.73	0.11

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Client	Designed by	
	BST Management, LLC.	TDeak

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
DC9-48-60-24-8C-EV	C	From Centroid-Le g	4.00	0.00	30.0000	110.00	2" Ice	2.73	2.08	0.16
			4.00	0.00			No Ice	2.74	4.78	0.03
			4.00	0.00			1/2" Ice	2.96	5.06	0.06
			4.00	0.00			1" Ice	3.20	5.35	0.10
			4.00	0.00			2" Ice	3.68	5.95	0.20
DC6-48-60-18-8F Surge Suppression Unit	B	From Leg	0.50	0.00	0.0000	110.00	No Ice	0.92	0.92	0.02
			0.00	0.00			1/2" Ice	1.46	1.46	0.04
			4.00	0.00			1" Ice	1.64	1.64	0.06
			4.00	0.00			2" Ice	2.04	2.04	0.11
			4.00	0.00			No Ice	0.92	0.92	0.02
DC6-48-60-18-8F Surge Suppression Unit	C	From Leg	0.50	0.00	0.0000	110.00	1/2" Ice	1.46	1.46	0.04
			0.00	0.00			1" Ice	1.64	1.64	0.06
			4.00	0.00			2" Ice	2.04	2.04	0.11
			4.00	0.00			No Ice	0.92	0.92	0.02
			4.00	0.00			1/2" Ice	1.46	1.46	0.04
*** Platform w/ Handrails [LP 304-1_HR-1]	C	None	0.00	0.00	0.0000	97.00	1" Ice	1.64	1.64	0.06
			0.00	0.00			2" Ice	2.04	2.04	0.11
			0.00	0.00			No Ice	21.41	21.41	1.60
			0.00	0.00			1/2" Ice	26.62	26.62	2.06
			0.00	0.00			1" Ice	31.66	31.66	2.60
1412D-1S20	A	From Centroid-Le g	4.00	0.00	30.0000	97.00	2" Ice	41.38	41.38	3.96
			0.00	0.00			No Ice	1.00	0.41	0.01
			3.00	0.00			1/2" Ice	1.13	0.50	0.02
			3.00	0.00			1" Ice	1.26	0.59	0.03
			3.00	0.00			2" Ice	1.55	0.81	0.06
1412D-1S20	B	From Centroid-Le g	4.00	0.00	30.0000	97.00	No Ice	1.00	0.41	0.01
			0.00	0.00			1/2" Ice	1.13	0.50	0.02
			3.00	0.00			1" Ice	1.26	0.59	0.03
			3.00	0.00			2" Ice	1.55	0.81	0.06
			3.00	0.00			No Ice	1.00	0.41	0.01
1412D-1S20	C	From Centroid-Le g	4.00	0.00	30.0000	97.00	1/2" Ice	1.13	0.50	0.02
			0.00	0.00			1" Ice	1.26	0.59	0.03
			3.00	0.00			2" Ice	1.55	0.81	0.06
			3.00	0.00			No Ice	1.00	0.41	0.01
			3.00	0.00			1/2" Ice	1.13	0.50	0.02
AIR32 B66Aa/B2A w/ 60" Mount Pipe	A	From Centroid-Le g	4.00	0.00	30.0000	97.00	1" Ice	1.26	0.59	0.03
			0.00	0.00			2" Ice	1.55	0.81	0.06
			3.00	0.00			No Ice	6.58	5.90	0.15
			3.00	0.00			1/2" Ice	6.97	6.56	0.21
			3.00	0.00			1" Ice	7.37	7.24	0.28
AIR32 B66Aa/B2A w/ 60" Mount Pipe	B	From Centroid-Le g	4.00	0.00	30.0000	97.00	2" Ice	8.20	8.64	0.43
			0.00	0.00			No Ice	6.58	5.90	0.15
			3.00	0.00			1/2" Ice	6.97	6.56	0.21
			3.00	0.00			1" Ice	7.37	7.24	0.28
			3.00	0.00			2" Ice	8.20	8.64	0.43
AIR32 B66Aa/B2A w/ 60" Mount Pipe	C	From Centroid-Le g	4.00	0.00	30.0000	97.00	No Ice	6.58	5.90	0.15
			0.00	0.00			1/2" Ice	6.97	6.56	0.21
			3.00	0.00			1" Ice	7.37	7.24	0.28
			3.00	0.00			2" Ice	8.20	8.64	0.43
			3.00	0.00			No Ice	6.58	5.90	0.15
APXVARR24_43 C-NA20 w/ Mount Pipe	A	From Centroid-Le g	4.00	0.00	30.0000	97.00	1/2" Ice	6.97	6.56	0.21
			0.00	0.00			1" Ice	7.37	7.24	0.28
			3.00	0.00			2" Ice	8.20	8.64	0.43
			3.00	0.00			No Ice	17.15	10.64	0.12
			3.00	0.00			1/2" Ice	17.77	12.07	0.24
APXVARR24_43 C-NA20 w/ Mount Pipe	B	From Centroid-Le g	4.00	0.00	30.0000	97.00	1" Ice	18.40	13.35	0.37
			0.00	0.00			2" Ice	19.69	15.58	0.66
			3.00	0.00			No Ice	17.15	10.64	0.12
			3.00	0.00			1/2" Ice	17.77	12.07	0.24
			3.00	0.00			1" Ice	18.40	13.35	0.37
APXVARR24_43 C-NA20 w/ Mount Pipe	C	From Centroid-Le g	4.00	0.00	30.0000	97.00	2" Ice	19.69	15.58	0.66
			0.00	0.00			No Ice	17.15	10.64	0.12
			3.00	0.00			1/2" Ice	17.77	12.07	0.24
			3.00	0.00			1" Ice	18.40	13.35	0.37
			3.00	0.00			2" Ice	19.69	15.58	0.66
RRUS 4449-B12+71	A	From Centroid-Le g	4.00	0.00	30.0000	97.00	No Ice	1.65	1.16	0.07
			0.00	0.00			1/2" Ice	1.81	1.30	0.09
			0.00	0.00			1" Ice	1.98	1.45	0.10
			3.00	0.00			1" Ice	1.98	1.45	0.10

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	Project		Date	
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Client		Designed by		
BST Management, LLC.		TDeak		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
RRUS 4449-B12+71	B	From Centroid-Log	4.00	30.0000	97.00	2" Ice	2.34	1.76	0.15
			0.00	No Ice		1.65	1.16	0.07	
			3.00	1/2" Ice		1.81	1.30	0.09	
				1" Ice		1.98	1.45	0.10	
RRUS 4449-B12+71	C	From Centroid-Log	4.00	30.0000	97.00	2" Ice	2.34	1.76	0.15
			0.00	No Ice		1.65	1.16	0.07	
			3.00	1/2" Ice		1.81	1.30	0.09	
				1" Ice		1.98	1.45	0.10	
					2" Ice	2.34	1.76	0.15	

T-Arm Mount [TA 601-3]	A	None		0.0000	89.00	No Ice	12.56	12.56	0.73
						1/2" Ice	15.36	15.36	0.94
						1" Ice	18.04	18.04	1.21
						2" Ice	23.69	23.69	1.92
BSAMNT-SBS-1-2	A	From Leg	3.00	0.0000	89.00	No Ice	0.00	0.01	0.01
			0.00			1/2" Ice	0.00	0.03	0.02
			1.00			1" Ice	0.00	0.08	0.02
						2" Ice	0.00	0.19	0.02
BSAMNT-SBS-1-2	B	From Leg	3.00	0.0000	89.00	No Ice	0.00	0.01	0.01
			0.00			1/2" Ice	0.00	0.03	0.02
			1.00			1" Ice	0.00	0.08	0.02
						2" Ice	0.00	0.19	0.02
BSAMNT-SBS-1-2	C	From Leg	3.00	0.0000	89.00	No Ice	0.00	0.01	0.01
			0.00			1/2" Ice	0.00	0.03	0.02
			1.00			1" Ice	0.00	0.08	0.02
						2" Ice	0.00	0.19	0.02
BXA-80063 w/ mount pipe	A	From Leg	3.00	0.0000	89.00	No Ice	3.58	3.66	0.03
			0.00			1/2" Ice	3.88	4.21	0.06
			1.00			1" Ice	4.20	4.77	0.10
						2" Ice	4.84	5.93	0.20
BXA-80063 w/ mount pipe	B	From Leg	3.00	0.0000	89.00	No Ice	3.58	3.66	0.03
			0.00			1/2" Ice	3.88	4.21	0.06
			1.00			1" Ice	4.20	4.77	0.10
						2" Ice	4.84	5.93	0.20
BXA-80063 w/ mount pipe	C	From Leg	3.00	0.0000	89.00	No Ice	3.58	3.66	0.03
			0.00			1/2" Ice	3.88	4.21	0.06
			1.00			1" Ice	4.20	4.77	0.10
						2" Ice	4.84	5.93	0.20
(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	3.00	0.0000	89.00	No Ice	8.32	7.00	0.07
			0.00			1/2" Ice	8.88	8.19	0.14
			1.00			1" Ice	9.40	9.08	0.21
						2" Ice	10.47	10.90	0.39
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	3.00	0.0000	89.00	No Ice	8.32	7.00	0.07
			0.00			1/2" Ice	8.88	8.19	0.14
			1.00			1" Ice	9.40	9.08	0.21
						2" Ice	10.47	10.90	0.39
(2) NHH-65B-R2B w/ Mount Pipe	C	From Leg	3.00	0.0000	89.00	No Ice	8.32	7.00	0.07
			0.00			1/2" Ice	8.88	8.19	0.14
			1.00			1" Ice	9.40	9.08	0.21
						2" Ice	10.47	10.90	0.39
MT6407-77A w/ Mount Pipe	A	From Leg	3.00	0.0000	89.00	No Ice	4.91	2.68	0.10
			0.00			1/2" Ice	5.26	3.14	0.14
			1.00			1" Ice	5.61	3.62	0.18
						2" Ice	6.36	4.63	0.29
MT6407-77A w/ Mount Pipe	B	From Leg	3.00	0.0000	89.00	No Ice	4.91	2.68	0.10
			0.00			1/2" Ice	5.26	3.14	0.14
			1.00			1" Ice	5.61	3.62	0.18

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
MT6407-77A w/ Mount Pipe	C	From Leg	3.00	0.0000	89.00	2" Ice	6.36	4.63	0.29
			0.00			No Ice	4.91	2.68	0.10
			1.00			1/2" Ice	5.26	3.14	0.14
						1" Ice	5.61	3.62	0.18
B2/B66A RRH	A	From Leg	3.00	0.0000	89.00	2" Ice	6.36	4.63	0.29
			0.00			No Ice	1.88	1.25	0.08
			1.00			1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12
B2/B66A RRH	B	From Leg	3.00	0.0000	89.00	2" Ice	2.60	1.86	0.18
			0.00			No Ice	1.88	1.25	0.08
			1.00			1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12
B2/B66A RRH	C	From Leg	3.00	0.0000	89.00	2" Ice	2.60	1.86	0.18
			0.00			No Ice	1.88	1.25	0.08
			1.00			1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12
B5/B66A RRH	A	From Leg	3.00	0.0000	89.00	2" Ice	2.60	1.86	0.18
			0.00			No Ice	1.88	1.25	0.08
			1.00			1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12
B5/B66A RRH	B	From Leg	3.00	0.0000	89.00	2" Ice	2.60	1.86	0.18
			0.00			No Ice	1.88	1.25	0.08
			1.00			1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12
B5/B66A RRH	C	From Leg	3.00	0.0000	89.00	2" Ice	2.60	1.86	0.18
			0.00			No Ice	1.88	1.25	0.08
			1.00			1/2" Ice	2.05	1.39	0.10
						1" Ice	2.22	1.54	0.12
DC6-48-60-18-8F Surge Suppression Unit	A	From Leg	3.00	0.0000	89.00	2" Ice	2.60	1.86	0.18
			0.00			No Ice	0.92	0.92	0.02
			1.00			1/2" Ice	1.46	1.46	0.04
						1" Ice	1.64	1.64	0.06

12' T-Arm - Round (GPD)	C	From Leg	1.50	0.0000	60.00	2" Ice	6.67	4.87	0.53
			0.00			No Ice	4.70	2.33	0.33
			1.50			1/2" Ice	5.33	2.96	0.40
						1" Ice	6.00	3.60	0.47
10' T-Arm - Round (GPD)	C	From Leg	1.50	0.0000	60.00	2" Ice	6.67	4.87	0.53
			0.00			No Ice	3.90	2.33	0.25
			-1.50			1/2" Ice	4.30	2.96	0.30
						1" Ice	4.70	3.60	0.35
					2" Ice	5.50	4.87	0.45	

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral							Vert
Stadium Light (2')	C	Paraboloid	From	3.00	0.0000			60.00	2.00	No Ice	3.14	0.08

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
		w/Shroud (HP)	Leg	-6.00 1.50					1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 -3.00 1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 0.00 1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 3.00 1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 6.00 1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 -6.00 -1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 -3.00 -1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 0.00 -1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00
Stadium Light (2')	C	Paraboloid w/Shroud (HP)	From Leg	3.00 3.00 -1.50	0.0000		60.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68 2" Ice 4.21	0.08 0.02 0.00 0.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice

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Comb. No.	Description
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 88.75	22.647	46	1.7451	0.0078
L2	92 - 47	16.276	47	1.6082	0.0062
L3	51 - 0	5.053	47	0.9172	0.0036

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
110.00	Platform w/ Handrails & Kickers [LP 1201-1_KCKR-HR-1]	46	22.647	1.7451	0.0079	18572
97.00	Platform w/ Handrails [LP 304-1_HR-1]	47	18.003	1.6555	0.0068	7143
89.00	T-Arm Mount [TA 601-3]	47	15.266	1.5743	0.0061	4758
61.50	Stadium Light (2')	47	7.292	1.1204	0.0044	2700

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
60.00	12' T-Arm - Round (GPD)	47	6.940	1.0915	0.0043	2637
58.50	Stadium Light (2')	47	6.598	1.0625	0.0042	2577

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 88.75	97.516	16	7.5434	0.0336
L2	92 - 47	70.076	18	6.9510	0.0268
L3	51 - 0	21.801	6	3.9545	0.0156

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
110.00	Platform w/ Handrails & Kickers [LP 1201-1 KCKR-HR-1]	16	97.516	7.5434	0.0348	4419
97.00	Platform w/ Handrails [LP 304-1 HR-1]	16	77.510	7.1560	0.0296	1697
89.00	T-Arm Mount [TA 601-3]	18	65.730	6.8039	0.0267	1125
61.50	Stadium Light (2')	18	31.423	4.8340	0.0189	634
60.00	12' T-Arm - Round (GPD)	18	29.910	4.7088	0.0185	619
58.50	Stadium Light (2')	18	28.440	4.5831	0.0182	605

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	110 - 109	TP24.825x21x0.1875	21.25	0.00	0.0	12.4932	-4.80	730.85	0.007
	109 - 108					12.6003	-4.86	737.12	0.007
	108 - 107					12.7074	-4.92	743.38	0.007
	107 - 106					12.8145	-4.98	749.65	0.007
	106 - 105					12.9217	-5.04	755.92	0.007
	105 - 104					13.0288	-5.10	762.18	0.007
	104 - 103					13.1359	-5.16	768.45	0.007
	103 - 102					13.2430	-5.22	774.72	0.007
	102 - 101					13.3501	-5.29	780.98	0.007
	101 - 100					13.4573	-5.35	787.25	0.007
	100 - 99					13.5644	-5.42	793.52	0.007
	99 - 98					13.6715	-5.48	799.78	0.007
	98 - 97					13.7786	-5.55	806.05	0.007

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
	97 - 96					13.8858	-8.34	812.32	0.010
	96 - 95					13.9929	-8.42	818.58	0.010
	95 - 94					14.1000	-8.49	824.85	0.010
	94 - 93					14.2071	-8.56	831.12	0.010
	93 - 92					14.3142	-8.64	837.38	0.010
	92 - 88.75					14.6624	-5.92	857.75	0.007
L2	92 - 88.75	TP31.9875x23.865x0.25	45.00	0.00	0.0	19.2040	-5.24	1123.43	0.005
	88.75 - 86.6528					19.5044	-11.39	1141.01	0.010
	86.6528 - 84.5556					19.8047	-11.63	1158.58	0.010
	84.5556 - 82.4583					20.1051	-11.87	1176.15	0.010
	82.4583 - 80.3611					20.4055	-12.12	1193.72	0.010
	80.3611 - 78.2639					20.7059	-12.38	1211.29	0.010
	78.2639 - 76.1667					21.0063	-12.64	1228.87	0.010
	76.1667 - 74.0694					21.3066	-12.90	1246.44	0.010
	74.0694 - 71.9722					21.6070	-13.17	1264.01	0.010
	71.9722 - 69.875					21.9074	-13.45	1281.58	0.010
	69.875 - 67.7778					22.2078	-13.73	1299.15	0.011
	67.7778 - 65.6806					22.5082	-14.02	1316.73	0.011
	65.6806 - 63.5833					22.8085	-14.31	1334.30	0.011
	63.5833 - 61.4861					23.1089	-15.04	1351.87	0.011
	61.4861 - 59.3889					23.4093	-15.99	1369.44	0.012
	59.3889 - 57.2917					23.7097	-16.64	1387.02	0.012
	57.2917 - 55.1944					24.0100	-16.95	1404.59	0.012
	55.1944 - 53.0972					24.3104	-17.27	1422.16	0.012
	53.0972 - 51					24.6108	-17.59	1439.73	0.012
	51 - 47					25.1837	-8.39	1473.25	0.006
L3	51 - 47	TP39.93x30.7655x0.3125	51.00	0.00	0.0	30.9185	-10.25	1808.73	0.006
	47 - 44.5263					31.3594	-19.07	1834.53	0.010
	44.5263 - 42.0526					31.8003	-19.50	1860.32	0.010
	42.0526 - 39.5789					32.2412	-19.94	1886.11	0.011
	39.5789 - 37.1053					32.6821	-20.38	1911.90	0.011
	37.1053 - 34.6316					33.1230	-20.83	1937.70	0.011
	34.6316 - 32.1579					33.5639	-21.29	1963.49	0.011
	32.1579 - 29.6842					34.0048	-21.76	1989.28	0.011
	29.6842 - 27.2105					34.4457	-22.23	2015.07	0.011
	27.2105 -					34.8866	-22.71	2040.87	0.011

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
	24.7368								
	24.7368 -					35.3275	-23.18	2066.66	0.011
	22.2632								
	22.2632 -					35.7684	-23.66	2092.45	0.011
	19.7895								
	19.7895 -					36.2093	-24.16	2118.24	0.011
	17.3158								
	17.3158 -					36.6502	-24.66	2144.04	0.012
	14.8421								
	14.8421 -					37.0911	-25.16	2169.83	0.012
	12.3684								
	12.3684 -					37.5320	-25.67	2195.62	0.012
	9.89474								
	9.89474 -					37.9729	-26.19	2221.42	0.012
	7.42105								
	7.42105 -					38.4138	-26.71	2247.21	0.012
	4.94737								
	4.94737 -					38.8547	-27.23	2273.00	0.012
	2.47368								
	2.47368 - 0					39.2956	-27.76	2298.79	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	110 - 109	TP24.825x21x0.1875	30.45	383.29	0.079	0.00	383.29	0.000
	109 - 108		38.65	388.94	0.099	0.00	388.94	0.000
	108 - 107		46.92	394.61	0.119	0.00	394.61	0.000
	107 - 106		55.27	400.31	0.138	0.00	400.31	0.000
	106 - 105		63.68	406.02	0.157	0.00	406.02	0.000
	105 - 104		72.17	411.77	0.175	0.00	411.77	0.000
	104 - 103		80.73	417.53	0.193	0.00	417.53	0.000
	103 - 102		89.36	423.31	0.211	0.00	423.31	0.000
	102 - 101		98.06	429.12	0.229	0.00	429.12	0.000
	101 - 100		106.83	434.94	0.246	0.00	434.94	0.000
	100 - 99		115.68	440.78	0.262	0.00	440.78	0.000
	99 - 98		124.60	446.65	0.279	0.00	446.65	0.000
	98 - 97		133.59	452.53	0.295	0.00	452.53	0.000
	97 - 96		154.08	458.43	0.336	0.00	458.43	0.000
	96 - 95		167.10	464.35	0.360	0.00	464.35	0.000
	95 - 94		180.19	470.29	0.383	0.00	470.29	0.000
	94 - 93		193.35	476.24	0.406	0.00	476.24	0.000
	93 - 92		206.59	482.21	0.428	0.00	482.21	0.000
	92 - 88.75		113.81	501.73	0.227	0.00	501.73	0.000
L2	92 - 88.75	TP31.9875x23.865x0.25	140.14	705.21	0.199	0.00	705.21	0.000
	88.75 -		290.33	724.79	0.401	0.00	724.79	0.000
	86.6528							
	86.6528 -		327.08	744.54	0.439	0.00	744.54	0.000
	84.5556							
	84.5556 -		364.14	764.46	0.476	0.00	764.46	0.000
	82.4583							
	82.4583 -		401.51	784.54	0.512	0.00	784.54	0.000
	80.3611							
	80.3611 -		439.19	804.80	0.546	0.00	804.80	0.000
	78.2639							

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Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
	78.2639 - 76.1667		477.18	825.21	0.578	0.00	825.21	0.000
	76.1667 - 74.0694		515.48	845.77	0.609	0.00	845.77	0.000
	74.0694 - 71.9722		554.07	866.49	0.639	0.00	866.49	0.000
	71.9722 - 69.875		592.97	887.36	0.668	0.00	887.36	0.000
	69.875 - 67.7778		632.17	908.37	0.696	0.00	908.37	0.000
	67.7778 - 65.6806		671.66	929.52	0.723	0.00	929.52	0.000
	65.6806 - 63.5833		711.46	950.80	0.748	0.00	950.80	0.000
	63.5833 - 61.4861		752.57	972.22	0.774	0.00	972.22	0.000
	61.4861 - 59.3889		795.78	993.77	0.801	0.00	993.77	0.000
	59.3889 - 57.2917		840.86	1015.43	0.828	0.00	1015.43	0.000
	57.2917 - 55.1944		884.99	1037.22	0.853	0.00	1037.22	0.000
	55.1944 - 53.0972		929.40	1059.13	0.878	0.00	1059.13	0.000
	53.0972 - 51		974.08	1081.13	0.901	0.00	1081.13	0.000
	51 - 47		485.57	1123.43	0.432	0.00	1123.43	0.000
L3	51 - 47	TP39.93x30.7655x0.3125	574.69	1451.99	0.396	0.00	1451.99	0.000
	47 - 44.5263		1114.17	1488.52	0.749	0.00	1488.52	0.000
	44.5263 - 42.0526		1168.44	1525.33	0.766	0.00	1525.33	0.000
	42.0526 - 39.5789		1223.08	1562.43	0.783	0.00	1562.43	0.000
	39.5789 - 37.1053		1278.17	1599.80	0.799	0.00	1599.80	0.000
	37.1053 - 34.6316		1333.77	1637.44	0.815	0.00	1637.44	0.000
	34.6316 - 32.1579		1389.70	1675.34	0.830	0.00	1675.34	0.000
	32.1579 - 29.6842		1445.97	1713.51	0.844	0.00	1713.51	0.000
	29.6842 - 27.2105		1502.56	1751.93	0.858	0.00	1751.93	0.000
	27.2105 - 24.7368		1559.47	1790.58	0.871	0.00	1790.58	0.000
	24.7368 - 22.2632		1616.71	1829.47	0.884	0.00	1829.47	0.000
	22.2632 - 19.7895		1674.97	1868.61	0.896	0.00	1868.61	0.000
	19.7895 - 17.3158		1733.52	1907.96	0.909	0.00	1907.96	0.000
	17.3158 - 14.8421		1792.36	1947.53	0.920	0.00	1947.53	0.000
	14.8421 - 12.3684		1851.47	1987.32	0.932	0.00	1987.32	0.000
	12.3684 - 9.89474		1910.86	2027.30	0.943	0.00	2027.30	0.000
	9.89474 - 7.42105		1970.50	2067.49	0.953	0.00	2067.49	0.000
	7.42105 - 4.94737		2030.40	2107.88	0.963	0.00	2107.88	0.000

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Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
	4.94737 - 2.47368		2090.55	2148.44	0.973	0.00	2148.44	0.000
	2.47368 - 0		2150.93	2189.18	0.983	0.00	2189.18	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	110 - 109	TP24.825x21x0.1875	8.17	219.26	0.037	0.78	403.08	0.002
	109 - 108		8.24	221.13	0.037	0.78	410.02	0.002
	108 - 107		8.31	223.01	0.037	0.78	417.03	0.002
	107 - 106		8.38	224.90	0.037	0.78	424.09	0.002
	106 - 105		8.45	226.78	0.037	0.78	431.21	0.002
	105 - 104		8.52	228.66	0.037	0.78	438.38	0.002
	104 - 103		8.60	230.54	0.037	0.78	445.62	0.002
	103 - 102		8.67	232.41	0.037	0.78	452.92	0.002
	102 - 101		8.74	234.29	0.037	0.77	460.28	0.002
	101 - 100		8.81	236.18	0.037	0.77	467.69	0.002
	100 - 99		8.89	238.06	0.037	0.77	475.17	0.002
	99 - 98		8.96	239.94	0.037	0.77	482.70	0.002
	98 - 97		9.03	241.82	0.037	0.77	490.30	0.002
	97 - 96		12.99	243.69	0.053	0.76	497.95	0.002
	96 - 95		13.06	245.57	0.053	0.76	505.67	0.001
	95 - 94		13.13	247.46	0.053	0.75	513.44	0.001
	94 - 93		13.20	249.34	0.053	0.75	521.27	0.001
	93 - 92		13.28	251.22	0.053	0.75	529.16	0.001
	92 - 88.75		9.53	257.32	0.037	0.36	555.21	0.001
L2	92 - 88.75	TP31.9875x23.865x0.25	7.75	337.03	0.023	0.42	714.32	0.001
	88.75 - 86.6528		17.45	342.30	0.051	0.74	736.84	0.001
	86.6528 - 84.5556		17.60	347.57	0.051	0.74	759.71	0.001
	84.5556 - 82.4583		17.75	352.85	0.050	0.73	782.93	0.001
	82.4583 - 80.3611		17.90	358.12	0.050	0.73	806.50	0.001
	80.3611 - 78.2639		18.05	363.39	0.050	0.73	830.42	0.001
	78.2639 - 76.1667		18.20	368.66	0.049	0.72	854.69	0.001
	76.1667 - 74.0694		18.34	373.93	0.049	0.72	879.31	0.001
	74.0694 - 71.9722		18.49	379.20	0.049	0.71	904.27	0.001
	71.9722 - 69.875		18.63	384.48	0.048	0.71	929.59	0.001
	69.875 - 67.7778		18.78	389.75	0.048	0.70	955.26	0.001
	67.7778 - 65.6806		18.92	395.02	0.048	0.70	981.27	0.001
	65.6806 - 63.5833		19.06	400.29	0.048	0.70	1007.64	0.001
	63.5833 - 61.4861		19.73	405.56	0.049	2.20	1034.35	0.002
	61.4861 -		20.35	410.83	0.050	1.38	1061.42	0.001

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Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L3	59.3889	TP39.93x30.7655x0.3125	21.00	416.11	0.050	1.38	1088.83	0.001
	59.3889 - 57.2917							
	57.2917 - 55.1944							
	55.1944 - 53.0972							
	53.0972 - 51							
	51 - 47							
	51 - 47							
	47 - 44.5263							
	44.5263 - 42.0526							
	42.0526 - 39.5789							
	39.5789 - 37.1053							
	37.1053 - 34.6316							
	34.6316 - 32.1579							
	32.1579 - 29.6842							
	29.6842 - 27.2105							
	27.2105 - 24.7368							
	24.7368 - 22.2632							
	22.2632 - 19.7895							
	19.7895 - 17.3158							
	17.3158 - 14.8421							
	14.8421 - 12.3684							
	12.3684 - 9.89474							
	9.89474 - 7.42105							
	7.42105 - 4.94737							
	4.94737 - 2.47368							
	2.47368 - 0							

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	110 - 109	0.007	0.079	0.000	0.037	0.002	0.088	1.000	4.8.2
	109 - 108	0.007	0.099	0.000	0.037	0.002	0.107	1.000	4.8.2
	108 - 107	0.007	0.119	0.000	0.037	0.002	0.127	1.000	4.8.2

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
	107 - 106	0.007	0.138	0.000	0.037	0.002	0.146	1.000	4.8.2
	106 - 105	0.007	0.157	0.000	0.037	0.002	0.165	1.000	4.8.2
	105 - 104	0.007	0.175	0.000	0.037	0.002	0.183	1.000	4.8.2
	104 - 103	0.007	0.193	0.000	0.037	0.002	0.202	1.000	4.8.2
	103 - 102	0.007	0.211	0.000	0.037	0.002	0.219	1.000	4.8.2
	102 - 101	0.007	0.229	0.000	0.037	0.002	0.237	1.000	4.8.2
	101 - 100	0.007	0.246	0.000	0.037	0.002	0.254	1.000	4.8.2
	100 - 99	0.007	0.262	0.000	0.037	0.002	0.271	1.000	4.8.2
	99 - 98	0.007	0.279	0.000	0.037	0.002	0.287	1.000	4.8.2
	98 - 97	0.007	0.295	0.000	0.037	0.002	0.304	1.000	4.8.2
	97 - 96	0.010	0.336	0.000	0.053	0.002	0.349	1.000	4.8.2
	96 - 95	0.010	0.360	0.000	0.053	0.001	0.373	1.000	4.8.2
	95 - 94	0.010	0.383	0.000	0.053	0.001	0.396	1.000	4.8.2
	94 - 93	0.010	0.406	0.000	0.053	0.001	0.419	1.000	4.8.2
	93 - 92	0.010	0.428	0.000	0.053	0.001	0.442	1.000	4.8.2
	92 - 88.75	0.007	0.227	0.000	0.037	0.001	0.235	1.000	4.8.2
L2	92 - 88.75	0.005	0.199	0.000	0.023	0.001	0.204	1.000	4.8.2
	88.75 - 86.6528	0.010	0.401	0.000	0.051	0.001	0.413	1.000	4.8.2
	86.6528 - 84.5556	0.010	0.439	0.000	0.051	0.001	0.452	1.000	4.8.2
	84.5556 - 82.4583	0.010	0.476	0.000	0.050	0.001	0.489	1.000	4.8.2
	82.4583 - 80.3611	0.010	0.512	0.000	0.050	0.001	0.525	1.000	4.8.2
	80.3611 - 78.2639	0.010	0.546	0.000	0.050	0.001	0.558	1.000	4.8.2
	78.2639 - 76.1667	0.010	0.578	0.000	0.049	0.001	0.591	1.000	4.8.2
	76.1667 - 74.0694	0.010	0.609	0.000	0.049	0.001	0.622	1.000	4.8.2
	74.0694 - 71.9722	0.010	0.639	0.000	0.049	0.001	0.652	1.000	4.8.2
	71.9722 - 69.875	0.010	0.668	0.000	0.048	0.001	0.681	1.000	4.8.2
	69.875 - 67.7778	0.011	0.696	0.000	0.048	0.001	0.709	1.000	4.8.2
	67.7778 - 65.6806	0.011	0.723	0.000	0.048	0.001	0.736	1.000	4.8.2
	65.6806 - 63.5833	0.011	0.748	0.000	0.048	0.001	0.761	1.000	4.8.2
	63.5833 - 61.4861	0.011	0.774	0.000	0.049	0.002	0.788	1.000	4.8.2
	61.4861 - 59.3889	0.012	0.801	0.000	0.050	0.001	0.815	1.000	4.8.2
	59.3889 - 57.2917	0.012	0.828	0.000	0.050	0.001	0.843	1.000	4.8.2
	57.2917 - 55.1944	0.012	0.853	0.000	0.050	0.001	0.868	1.000	4.8.2
	55.1944 - 53.0972	0.012	0.878	0.000	0.050	0.001	0.892	1.000	4.8.2
	53.0972 - 51	0.012	0.901	0.000	0.050	0.001	0.916	1.000	4.8.2
	51 - 47	0.006	0.432	0.000	0.023	0.000	0.438	1.000	4.8.2
L3	51 - 47	0.006	0.396	0.000	0.022	0.000	0.402	1.000	4.8.2
	47 - 44.5263	0.010	0.749	0.000	0.040	0.001	0.761	1.000	4.8.2
	44.5263 - 42.0526	0.010	0.766	0.000	0.040	0.001	0.778	1.000	4.8.2
	42.0526 - 39.5789	0.011	0.783	0.000	0.039	0.001	0.795	1.000	4.8.2
	39.5789 -	0.011	0.799	0.000	0.039	0.000	0.811	1.000	4.8.2

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Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	37.1053								
	37.1053 - 34.6316	0.011	0.815	0.000	0.039	0.000	0.827	1.000	4.8.2
	34.6316 - 32.1579	0.011	0.830	0.000	0.039	0.000	0.842	1.000	4.8.2
	32.1579 - 29.6842	0.011	0.844	0.000	0.038	0.000	0.856	1.000	4.8.2
	29.6842 - 27.2105	0.011	0.858	0.000	0.038	0.000	0.870	1.000	4.8.2
	27.2105 - 24.7368	0.011	0.871	0.000	0.038	0.000	0.884	1.000	4.8.2
	24.7368 - 22.2632	0.011	0.884	0.000	0.038	0.000	0.896	1.000	4.8.2
	22.2632 - 19.7895	0.011	0.896	0.000	0.038	0.000	0.909	1.000	4.8.2
	19.7895 - 17.3158	0.011	0.909	0.000	0.037	0.000	0.921	1.000	4.8.2
	17.3158 - 14.8421	0.012	0.920	0.000	0.037	0.000	0.933	1.000	4.8.2
	14.8421 - 12.3684	0.012	0.932	0.000	0.037	0.000	0.945	1.000	4.8.2
	12.3684 - 9.89474	0.012	0.943	0.000	0.037	0.000	0.956	1.000	4.8.2
	9.89474 - 7.42105	0.012	0.953	0.000	0.036	0.000	0.966	1.000	4.8.2
	7.42105 - 4.94737	0.012	0.963	0.000	0.036	0.000	0.976	1.000	4.8.2
	4.94737 - 2.47368	0.012	0.973	0.000	0.036	0.000	0.986	1.000	4.8.2
	2.47368 - 0	0.012	0.983	0.000	0.036	0.000	0.996	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L1	110 - 88.75	Pole	TP24.825x21x0.1875	1	-8.64	837.38	44.2	Pass	
L2	88.75 - 47	Pole	TP31.9875x23.865x0.25	2	-17.59	1439.73	91.6	Pass	
L3	47 - 0	Pole	TP39.93x30.7655x0.3125	3	-27.76	2298.79	99.6	Pass	
							Summary		
							Pole (L3)	99.6	Pass
							RATING =	99.6	Pass

APPENDIX C

Additional Calculations



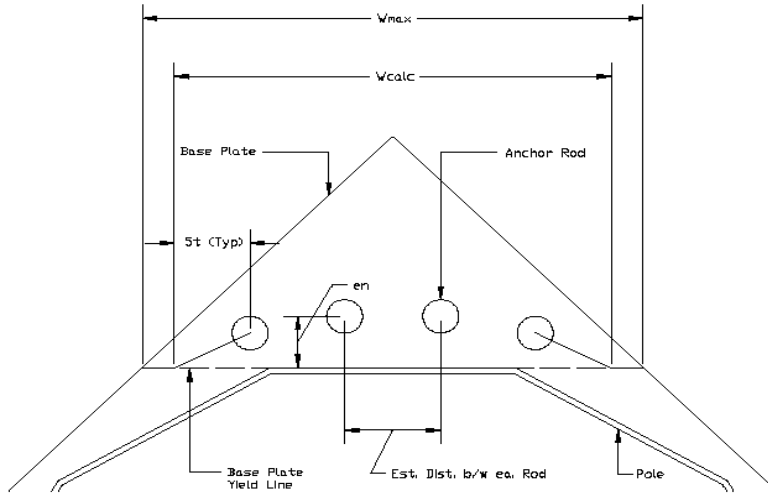
Anchor Rod and Base Plate Stresses, TIA-222-H-1
New Britain Wildwood Street (CT-1341)
2022703.26

Overturning Moment =	2151.00	k*ft
Axial Force =	28.00	k
Shear Force =	24.00	k

Maximum Capacity	100%
Apply TIA-222-H Section 15.5?	No

Anchor Rods		
Pole Diameter =	39.93	in
Number of Rods =	12	
Rod Yield Strength, F_y =	75	ksi
Rod Ultimate Strength, F_u =	100	ksi
Rod Circle =	46	in
Rod Diameter =	2.25	in
Rod Projection, l_{ar} =	2.25	in
Is grout present?	No	
Max Tension on Rod, P_{ut} =	184.49	k
Max Compression on Rod, P_{uc} =	189.15	k
Shear on Rod, V_u =	2.00	k
Moment on Rod, M_u =	0.00	k-in
Tension Interaction =	57.3%	OK
Compression Interaction =	70.5%	OK

Base Plate		
Plate Yield Strength, F_y =	50	ksi
ϕ =	0.9	
Plate Thickness =	2.5	in
Plate Width =	45	in
Est. Dist. b/w ea. Rod =	6	in
w_{calc} =	36.90	in
w_{max} =	23.71	in
w =	23.71	in
Z =	37.05	in ³
M_u =	1397.54	k-in
ϕM_n =	1667.08	k-in
Base Plate Capacity =	83.8%	OK



Pier and Pad Foundation

Site #: CT-1341
 Site Name: New Britain Wildwo

TIA-222 Revision: H
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	28	kips
Base Shear, V_{u_comp} :	24	kips
Moment, M_u :	2151	ft-kips
Tower Height, H :	110	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	96.29	24.00	24.9%	Pass
<i>Bearing Pressure (ksf)</i>	4.95	2.38	48.0%	Pass
<i>Overturning (kip*ft)</i>	3124.12	2313.00	74.0%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	3778.37	2235.00	59.2%	Pass
<i>Pier Compression (kip)</i>	13497.04	45.81	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	2401.63	913.75	38.0%	Pass
<i>Pad Shear - 1-way (kips)</i>	667.70	156.46	23.4%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.027	16.5%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	3289.60	1341.00	40.8%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	6	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, S_c :	8	
Pier Rebar Quantity, mc :	36	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :		
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Structural Rating:	59.2%
Soil Rating:	74.0%

Pad Properties		
Depth, D :	6	ft
Pad Width, W_1 :	21.5	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	22	
Pad Clear Cover, cc_{pad} :	3	in

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

Soil Properties		
Total Soil Unit Weight, γ :	100	pcf
Ultimate Net Bearing, Q_{net} :	6.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :		degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.3	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

<--Toggle between Gross and Net

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 – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix 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 1.5 in. An escalated ice thickness of 1.70 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 0.182 and a spectral response acceleration parameter at a period of 1 second, S_1 , of 0.064.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with a ring mount. The connection is considered OK by visual inspection.

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 (C-BAND) Mount Rating	27	LC9	90%	PASS

Reference Documents:

- Previous HDG Mount Structural Analysis dated June 07, 2018.

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

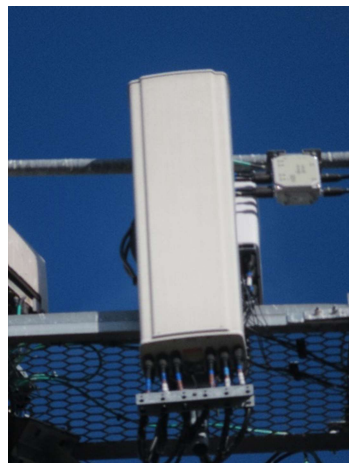
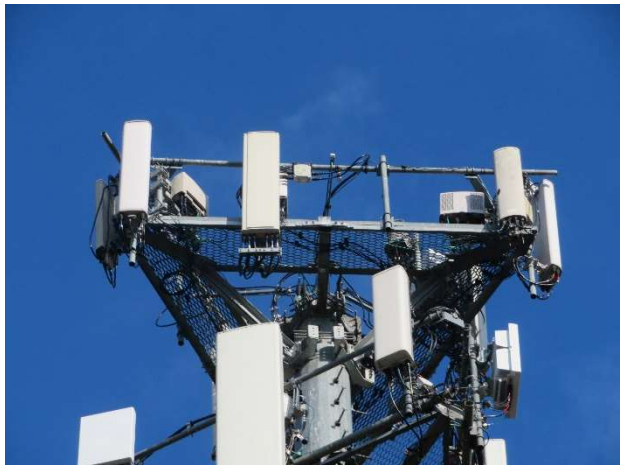


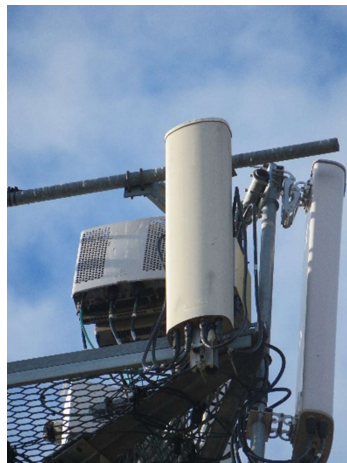
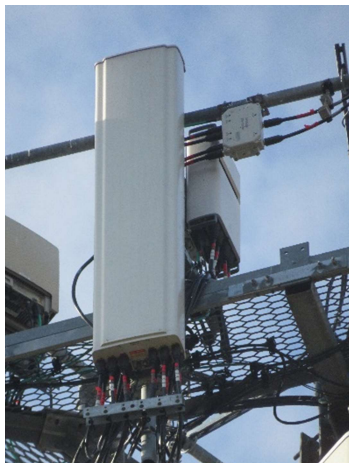
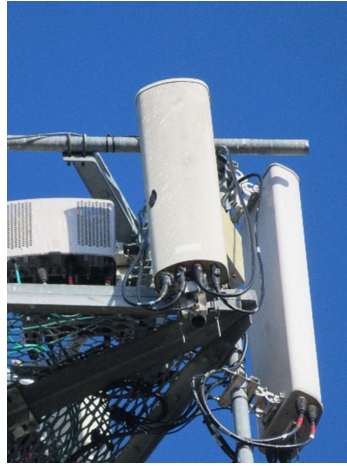
Michael Cabral
Vice President



Daniel P. Hamm, PE
Principal

FIELD PHOTOS:







HUDSON
Design Group LLC

Wind & Ice Calculations

Date: 9/15/2021
 Project Name: NEW BRITAIN WILDWOOD STREET
 Project No.: CT1160
 Designed By: CL Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

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

$K_z =$ **1.026**

$z =$ 114 (ft)
 $z_g =$ 1200 (ft)
 $\alpha =$ 7.0

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

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

2.6.6.2 Topographic Factor:

Table 2-5

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

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

$K_{zt} =$ **1**

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

Category = **1**

$$K_h = e^{(fz/H)}$$

$K_h =$ 1
 $K_c =$ 0.9 (from Table 2-4)
 $K_t =$ 0 (from Table 2-5)
 $f =$ 0 (from Table 2-5)
 $z =$ 114
 $z_s =$ 52 (Mean elevation of base of structure above sea level)
 $H =$ 0 (Ht. of the crest above surrounding terrain)
 $K_{zt} =$ 1.00 (from 2.6.6.2.1)
 $K_e =$ 1.00 (from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =
 Importance Factor =

$t_i =$ 1.50 in
 $I =$ 1.0 (from Table 2-3)
 $K_{iz} =$ 1.13 (from Sec. 2.6.10)

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

$t_{iz} =$ 1.70 in

Date: 9/15/2021
 Project Name: NEW BRITAIN WILDWOOD STREET
 Project No.: CT1160
 Designed By: CL Checked By: MSC



2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$ Latticed Structures > 600 ft

$G_h = 0.85$ Latticed Structures 450 ft or less

$G_h = 0.85 + 0.15 [h/150 - 3.0]$

$h =$ ht. of structure

$h =$ 114

$G_h =$ 0.85

2.6.9.2 Guyed Masts

$G_h =$ 0.85

2.6.9.3 Pole Structures

$G_h =$ 1.1

2.6.9 Appurtenances

$G_h =$ 1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5))

$G_h =$ 1.35

$G_h =$ 1.00

2.6.11.2 Design Wind Force on Appurtenances

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

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

$q_z =$	38.91
$q_z (ice) =$	6.23
$q_z (30) =$	2.24

$K_z =$	1.026 (from 2.6.5.2)
$K_{zt} =$	1.0 (from 2.6.6.2.1)
$K_s =$	1.0 (from 2.6.7)
$K_e =$	1.00 (from 2.6.8)
$K_d =$	0.95 (from Table 2-2)
$V_{max} =$	125 mph (Ultimate Wind Speed)
$V_{max (ice)} =$	50 mph
$V_{30} =$	30 mph

Table 2-2

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

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Determine Ca:

Table 2-9

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

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

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

Ice Thickness = **1.70 in** **Angle = 0 (deg)** **Equivalent Angle = 180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	3.27	1.23	528	102	30
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.91	1.20	157	34	9
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.78	1.20	143	31	8
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.44	1.24	495	97	28
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.90	1.20	55	14	3
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	3.81	1.26	29	9	2
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	3.89	1.26	65	17	4
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	37	13	2
B14 4478 RRH	18.1	8.3	13.4	1.04	2.18	1.20	49	13	3
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	4.36	1.28	26	9	1
4415 B25 RRH	16.5	5.9	13.4	0.68	2.80	1.21	32	10	2
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	5.59	1.34	18	7	1
4426 B66 RRH	14.9	13.2	5.8	1.37	1.13	1.20	64	16	4
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	44	11	3
2" Pipe	2.4	12.0		0.20	0.20	0.70	5		
HSS 4x4	4.0	12.0		0.33	0.33	0.70	9		
L 3x3 Angles	3.0	12.0		0.25	0.25	0.70	7		
T2L 3x3 Angles	6.0	12.0		0.50	0.50	0.70	14		

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WIND LOADS

Angle = 30 (deg) Ice Thickness = 1.70 in. Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs.)	Force (lbs.)	Force (lbs.)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	528	265	462
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	157	84	138
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	143	65	123
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	495	219	426
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	77	60
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	77	41
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	65	107	75
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	107	54
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	79	56
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	79	39
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	32	72	42
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	18	72	31
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	64	28	55

WIND LOADS WITH ICE:

QD6616-7 Antenna	75.4	25.4	13.0	13.30	6.80	2.97	5.80	1.22	1.35	101	57	90
AIR6449 N77D Antenna	33.8	19.3	11.5	4.53	2.70	1.75	2.94	1.20	1.22	34	20	30
AIR6419 N77G Antenna	31.4	19.1	10.1	4.16	2.20	1.64	3.11	1.20	1.23	31	17	28
DMP65R-BU6DA Antenna	74.6	24.1	11.1	12.48	5.75	3.10	6.72	1.23	1.39	95	50	84
B5/B12 4449 RRH	21.3	12.8	16.6	1.89	2.45	1.66	1.28	1.20	1.20	14	18	15
B5/B12 4449 RRH (Shielded)	21.3	8.1	16.6	1.20	2.45	2.63	1.28	1.21	1.20	9	18	11
RRUS-32 B30 RRH	30.6	10.4	15.5	2.21	3.29	2.94	1.97	1.22	1.20	17	25	19
RRUS-32 B30 RRH (Shielded)	30.6	6.9	15.5	1.47	3.29	4.44	1.97	1.29	1.20	12	25	15
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	19	14
B14 4478 RRH (Shielded)	21.5	7.5	16.8	1.13	2.51	2.85	1.28	1.22	1.20	9	19	11
4415 B25 RRH	19.9	9.3	16.8	1.28	2.32	2.14	1.18	1.20	1.20	10	17	12
4415 B25 RRH (Shielded)	19.9	6.3	16.8	0.88	2.32	3.14	1.18	1.23	1.20	7	17	9
4426 B66 RRH	18.3	16.6	9.2	2.11	1.17	1.10	1.99	1.20	1.20	16	9	14

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	30	15	27
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	8
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	7
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	28	13	25
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	3
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	2
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	3
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	5	2
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	2
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	2
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3

Date: 9/15/2021
 Project Name: NEW BRITAIN WILDWOOD STREET
 Project No.: CT1160
 Designed By: CL Checked By: MSC



WIND LOADS

Angle = 60 (deg) Ice Thickness = 1.70 in. Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	528	265	331
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	157	84	102
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	143	65	84
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	495	219	288
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	77	71
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	77	65
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	65	107	96
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	107	89
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	79	71
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	79	65
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	32	72	62
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	18	72	58
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	64	28	37

WIND LOADS WITH ICE:

QD6616-7 Antenna	75.4	25.4	13.0	13.30	6.80	2.97	5.80	1.22	1.35	101	57	68
AIR6449 N77D Antenna	33.8	19.3	11.5	4.53	2.70	1.75	2.94	1.20	1.22	34	20	24
AIR6419 N77G Antenna	31.4	19.1	10.1	4.16	2.20	1.64	3.11	1.20	1.23	31	17	20
DMP65R-BU6DA Antenna	74.6	24.1	11.1	12.48	5.75	3.10	6.72	1.23	1.39	95	50	61
B5/B12 4449 RRH	21.3	12.8	16.6	1.89	2.45	1.66	1.28	1.20	1.20	14	18	17
B5/B12 4449 RRH (Shielded)	21.3	8.1	16.6	1.20	2.45	2.63	1.28	1.21	1.20	9	18	16
RRUS-32 B30 RRH	30.6	10.4	15.5	2.21	3.29	2.94	1.97	1.22	1.20	17	25	23
RRUS-32 B30 RRH (Shielded)	30.6	6.9	15.5	1.47	3.29	4.44	1.97	1.29	1.20	12	25	21
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	19	17
B14 4478 RRH (Shielded)	21.5	7.5	16.8	1.13	2.51	2.85	1.28	1.22	1.20	9	19	16
4415 B25 RRH	19.9	9.3	16.8	1.28	2.32	2.14	1.18	1.20	1.20	10	17	15
4415 B25 RRH (Shielded)	19.9	6.3	16.8	0.88	2.32	3.14	1.18	1.23	1.20	7	17	15
4426 B66 RRH	18.3	16.6	9.2	2.11	1.17	1.10	1.99	1.20	1.20	16	9	10

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	30	15	19
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	6
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	5
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	28	13	17
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	4
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	5	4
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	3
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2

Date: 9/15/2021
 Project Name: NEW BRITAIN WILDWOOD STREET
 Project No.: CT1160
 Designed By: CL Checked By: MSC



WIND LOADS

Angle = 90 (deg) Ice Thickness = 1.70 in. Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	528	265	265
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	157	84	84
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	143	65	65
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	495	219	219
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	77	77
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	77	77
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	65	107	107
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	107	107
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	79	79
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	79	79
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	32	72	72
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	18	72	72
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	64	28	28

WIND LOADS WITH ICE:

QD6616-7 Antenna	75.4	25.4	13.0	13.30	6.80	2.97	5.80	1.22	1.35	101	57	57
AIR6449 N77D Antenna	33.8	19.3	11.5	4.53	2.70	1.75	2.94	1.20	1.22	34	20	20
AIR6419 N77G Antenna	31.4	19.1	10.1	4.16	2.20	1.64	3.11	1.20	1.23	31	17	17
DMP65R-BU6DA Antenna	74.6	24.1	11.1	12.48	5.75	3.10	6.72	1.23	1.39	95	50	50
B5/B12 4449 RRH	21.3	12.8	16.6	1.89	2.45	1.66	1.28	1.20	1.20	14	18	18
B5/B12 4449 RRH (Shielded)	21.3	8.1	16.6	1.20	2.45	2.63	1.28	1.21	1.20	9	18	18
RRUS-32 B30 RRH	30.6	10.4	15.5	2.21	3.29	2.94	1.97	1.22	1.20	17	25	25
RRUS-32 B30 RRH (Shielded)	30.6	6.9	15.5	1.47	3.29	4.44	1.97	1.29	1.20	12	25	25
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	19	19
B14 4478 RRH (Shielded)	21.5	7.5	16.8	1.13	2.51	2.85	1.28	1.22	1.20	9	19	19
4415 B25 RRH	19.9	9.3	16.8	1.28	2.32	2.14	1.18	1.20	1.20	10	17	17
4415 B25 RRH (Shielded)	19.9	6.3	16.8	0.88	2.32	3.14	1.18	1.23	1.20	7	17	17
4426 B66 RRH	18.3	16.6	9.2	2.11	1.17	1.10	1.99	1.20	1.20	16	9	9

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	30	15	15
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	5
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	4
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	28	13	13
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	4
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	6
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	5
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	5	5
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2

Date: 9/15/2021
 Project Name: NEW BRITAIN WILDWOOD STREET
 Project No.: CT1160
 Designed By: CL Checked By: MSC



WIND LOADS

Angle = 120 (deg) Ice Thickness = 1.70 in. Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	528	265	331
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	157	84	102
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	143	65	84
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	495	219	288
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	77	71
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	77	65
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	65	107	96
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	107	89
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	79	71
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	79	65
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	32	72	62
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	18	72	58
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	64	28	37

WIND LOADS WITH ICE:

QD6616-7 Antenna	75.4	25.4	13.0	13.30	6.80	2.97	5.80	1.22	1.35	101	57	68
AIR6449 N77D Antenna	33.8	19.3	11.5	4.53	2.70	1.75	2.94	1.20	1.22	34	20	24
AIR6419 N77G Antenna	31.4	19.1	10.1	4.16	2.20	1.64	3.11	1.20	1.23	31	17	20
DMP65R-BU6DA Antenna	74.6	24.1	11.1	12.48	5.75	3.10	6.72	1.23	1.39	95	50	61
B5/B12 4449 RRH	21.3	12.8	16.6	1.89	2.45	1.66	1.28	1.20	1.20	14	18	17
B5/B12 4449 RRH (Shielded)	21.3	8.1	16.6	1.20	2.45	2.63	1.28	1.21	1.20	9	18	16
RRUS-32 B30 RRH	30.6	10.4	15.5	2.21	3.29	2.94	1.97	1.22	1.20	17	25	23
RRUS-32 B30 RRH (Shielded)	30.6	6.9	15.5	1.47	3.29	4.44	1.97	1.29	1.20	12	25	21
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	19	17
B14 4478 RRH (Shielded)	21.5	7.5	16.8	1.13	2.51	2.85	1.28	1.22	1.20	9	19	16
4415 B25 RRH	19.9	9.3	16.8	1.28	2.32	2.14	1.18	1.20	1.20	10	17	15
4415 B25 RRH (Shielded)	19.9	6.3	16.8	0.88	2.32	3.14	1.18	1.23	1.20	7	17	15
4426 B66 RRH	18.3	16.6	9.2	2.11	1.17	1.10	1.99	1.20	1.20	16	9	10

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	30	15	19
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	6
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	5
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	28	13	17
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	4
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	4
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	5	4
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	3
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2

Date: 9/15/2021
 Project Name: NEW BRITAIN WILDWOOD STREET
 Project No.: CT1160
 Designed By: CL Checked By: MSC



WIND LOADS

Angle = 150 (deg) Ice Thickness = 1.70 in. Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	528	265	462
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	157	84	138
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	143	65	123
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	495	219	426
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	55	77	60
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	29	77	41
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	65	107	75
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	37	107	54
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	49	79	56
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	26	79	39
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	32	72	42
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	18	72	31
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	64	28	55

WIND LOADS WITH ICE:

QD6616-7 Antenna	75.4	25.4	13.0	13.30	6.80	2.97	5.80	1.22	1.35	101	57	90
AIR6449 N77D Antenna	33.8	19.3	11.5	4.53	2.70	1.75	2.94	1.20	1.22	34	20	30
AIR6419 N77G Antenna	31.4	19.1	10.1	4.16	2.20	1.64	3.11	1.20	1.23	31	17	28
DMP65R-BU6DA Antenna	74.6	24.1	11.1	12.48	5.75	3.10	6.72	1.23	1.39	95	50	84
B5/B12 4449 RRH	21.3	12.8	16.6	1.89	2.45	1.66	1.28	1.20	1.20	14	18	15
B5/B12 4449 RRH (Shielded)	21.3	8.1	16.6	1.20	2.45	2.63	1.28	1.21	1.20	9	18	11
RRUS-32 B30 RRH	30.6	10.4	15.5	2.21	3.29	2.94	1.97	1.22	1.20	17	25	19
RRUS-32 B30 RRH (Shielded)	30.6	6.9	15.5	1.47	3.29	4.44	1.97	1.29	1.20	12	25	15
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	19	14
B14 4478 RRH (Shielded)	21.5	7.5	16.8	1.13	2.51	2.85	1.28	1.22	1.20	9	19	11
4415 B25 RRH	19.9	9.3	16.8	1.28	2.32	2.14	1.18	1.20	1.20	10	17	12
4415 B25 RRH (Shielded)	19.9	6.3	16.8	0.88	2.32	3.14	1.18	1.23	1.20	7	17	9
4426 B66 RRH	18.3	16.6	9.2	2.11	1.17	1.10	1.99	1.20	1.20	16	9	14

WIND LOADS AT 30 MPH:

QD6616-7 Antenna	72.0	22.0	9.6	11.00	4.80	3.27	7.50	1.23	1.42	30	15	27
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	9	5	8
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	8	4	7
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	28	13	25
B5/B12 4449 RRH	17.9	9.4	13.2	1.17	1.64	1.90	1.36	1.20	1.20	3	4	3
B5/B12 4449 RRH (Shielded)	17.9	4.7	13.2	0.58	1.64	3.81	1.36	1.26	1.20	2	4	2
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	5	3
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	5	2
4415 B25 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	2
4415 B25 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	2
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3

Date: 9/15/2021

Project Name: NEW BRITAIN WILDWOOD STREET

Project No.: CT1160

Designed By: CL Checked By: MSC



HUDSON
Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.70 in.
Density of ice: 56 pcf

QD6616-7 Antenna

Weight of ice based on total radial SF area:

Height (in): 72.0
Width (in): 22.0
Depth (in): 9.6

Total weight of ice on object: 320 lbs

Weight of object: 60.0 lbs

Combined weight of ice and object: 380 lbs

AIR6449 N77D Antenna

Weight of ice based on total radial SF area:

Height (in): 30.4
Width (in): 15.9
Depth (in): 8.1

Total weight of ice on object: 103 lbs

Weight of object: 82.0 lbs

Combined weight of ice and object: 185 lbs

AIR6419 N77G Antenna

Weight of ice based on total radial SF area:

Height (in): 28.0
Width (in): 15.7
Depth (in): 6.7

Total weight of ice on object: 91 lbs

Weight of object: 66.0 lbs

Combined weight of ice and object: 157 lbs

DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:

Height (in): 71.2
Width (in): 20.7
Depth (in): 7.7

Total weight of ice on object: 293 lbs

Weight of object: 80.0 lbs

Combined weight of ice and object: 373 lbs

4426 B66 RRH

Weight of ice based on total radial SF area:

Height (in): 14.9
Width (in): 13.2
Depth (in): 5.8

Total weight of ice on object: 42 lbs

Weight of object: 49.0 lbs

Combined weight of ice and object: 91 lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:

Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0

Total weight of ice on object: 74 lbs

Weight of object: 60.0 lbs

Combined weight of ice and object: 134 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in): 18.1
Width (in): 13.4
Depth (in): 8.3

Total weight of ice on object: 55 lbs

Weight of object: 60.0 lbs

Combined weight of ice and object: 115 lbs

4415 B25 RRH

Weight of ice based on total radial SF area:

Height (in): 16.5
Width (in): 13.4
Depth (in): 5.9

Total weight of ice on object: 47 lbs

Weight of object: 46.0 lbs

Combined weight of ice and object: 93 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in): 17.9
Width (in): 13.2
Depth (in): 9.4

Total weight of ice on object: 55 lbs

Weight of object: 73.0 lbs

Combined weight of ice and object: 128 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in): 24.0
Diameter(in): 9.7

Total weight of ice on object: 47 lbs

Weight of object: 33 lbs

Combined weight of ice and object: 80 lbs

2" Pipe

Per foot weight of ice:

diameter (in): 2.38

Per foot weight of ice on object: 8 plf

HSS 4x4

Weight of ice based on total radial SF area:

Height (in): 4
Width (in): 4

Per foot weight of ice on object: 15 plf

L 3x3 Angles

Weight of ice based on total radial SF area:

Height (in): 3
Width (in): 3

Per foot weight of ice on object: 12 plf

T2L 3x3 Angles

Weight of ice based on total radial SF area:

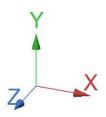
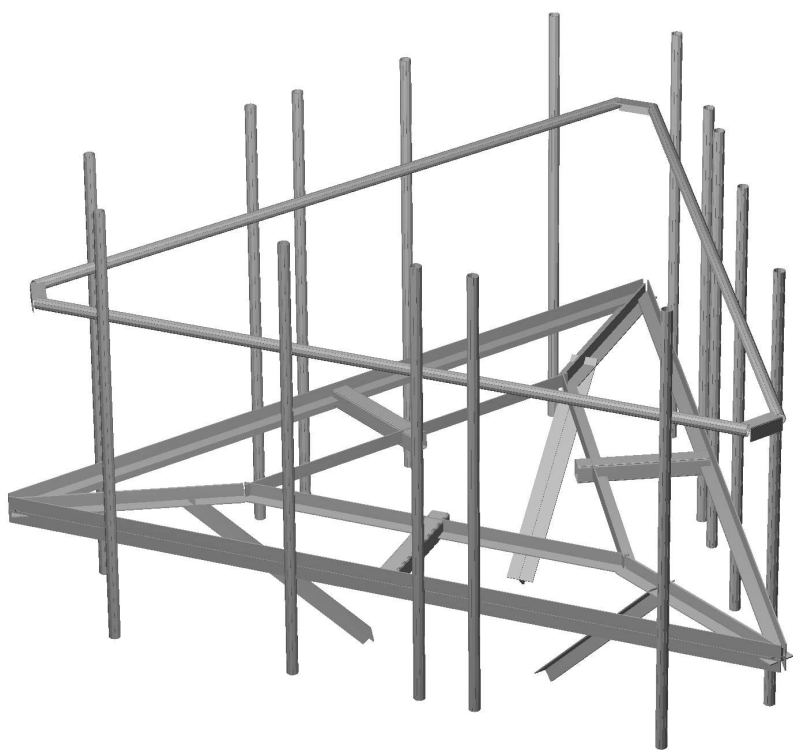
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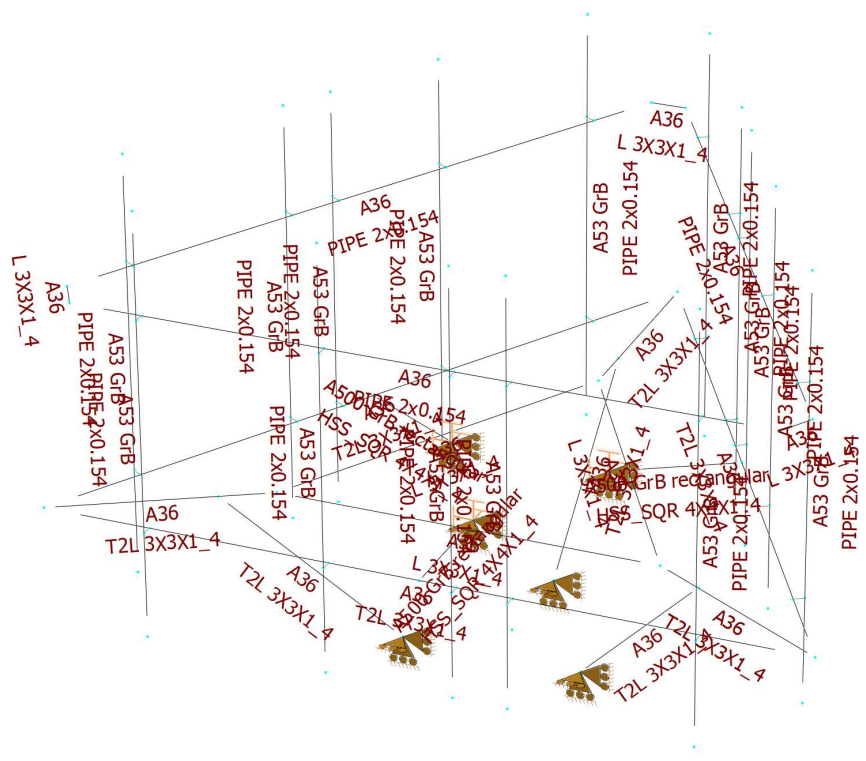
Per foot weight of ice on object: 25 plf







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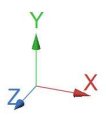
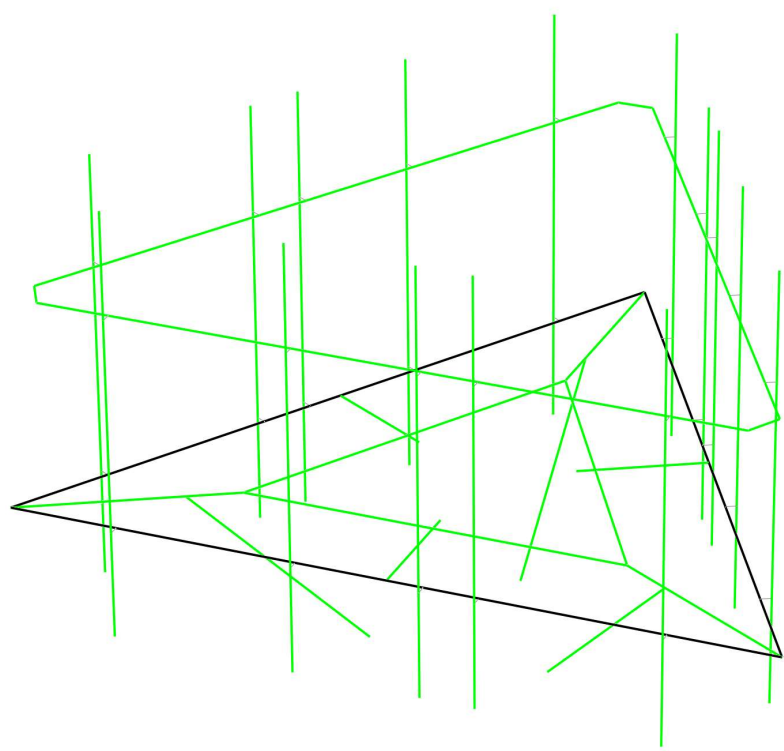
**Mount Calculations
(Existing Conditions)**

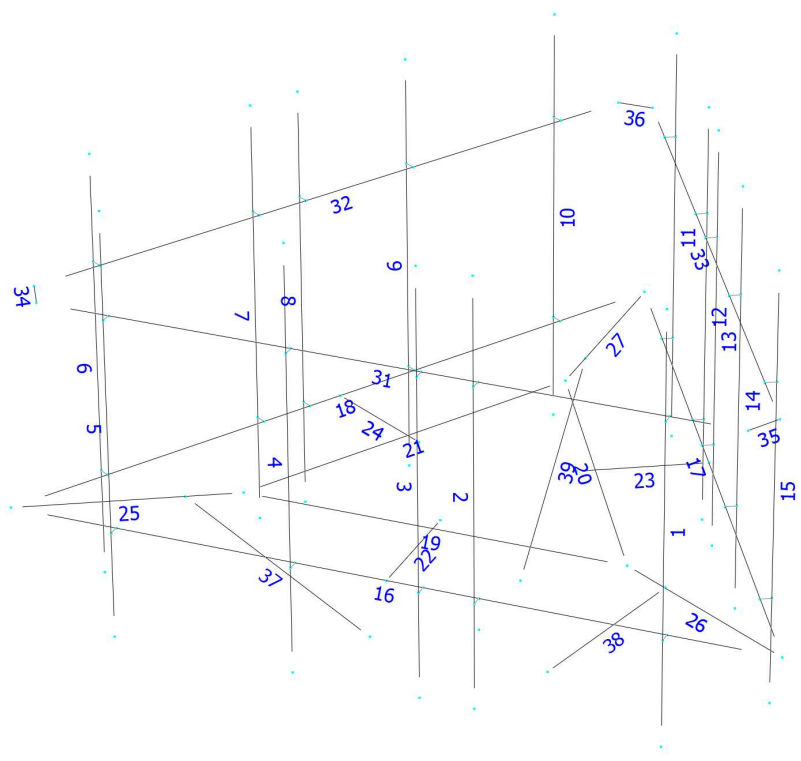




Design status

-  Not designed
-  Error on design
-  Design O.K.
-  With warnings





Current Date: 9/15/2021 1:30 PM

Units system: English

File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1160\C-BAND\CT1160 (C-Band) (Existing).retx

Load data

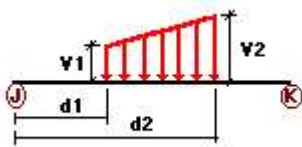
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL
LLa4	500 lb Live Load Antenna 4	No	LL

Distributed force on members

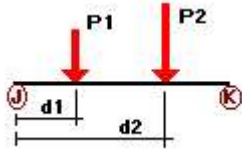


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	16	y	-0.01	-0.01	0.00	No	100.00	Yes
	17	y	-0.01	-0.01	0.00	No	100.00	Yes
	18	y	-0.01	-0.01	0.00	No	100.00	Yes
	19	y	-0.01	-0.01	0.00	No	100.00	Yes
	20	y	-0.01	-0.01	0.00	No	100.00	Yes
	21	y	-0.01	-0.01	0.00	No	100.00	Yes
W0	16	z	-0.014	-0.014	0.00	No	100.00	Yes
	17	z	-0.014	-0.014	0.00	No	100.00	Yes
	18	z	-0.014	-0.014	0.00	No	100.00	Yes
	19	z	-0.007	-0.007	0.00	No	100.00	Yes
	20	z	-0.007	-0.007	0.00	No	100.00	Yes
	21	z	-0.007	-0.007	0.00	No	100.00	Yes
	23	z	-0.009	-0.009	0.00	No	100.00	Yes
	24	z	-0.009	-0.009	0.00	No	100.00	Yes

	25	z	-0.014	-0.014	0.00	No	100.00	Yes
	26	z	-0.014	-0.014	0.00	No	100.00	Yes
	15	z	-0.005	-0.005	0.00	No	100.00	Yes
	14	z	-0.005	-0.005	0.00	No	100.00	Yes
	11	z	-0.005	-0.005	0.00	No	100.00	Yes
	31	z	-0.005	-0.005	0.00	No	100.00	Yes
	32	z	-0.005	-0.005	0.00	No	100.00	Yes
	33	z	-0.005	-0.005	0.00	No	100.00	Yes
	34	z	-0.007	-0.007	0.00	No	100.00	Yes
	35	z	-0.007	-0.007	0.00	No	100.00	Yes
	36	z	-0.007	-0.007	0.00	No	100.00	Yes
	37	z	-0.014	-0.014	0.00	No	100.00	Yes
	38	z	-0.014	-0.014	0.00	No	100.00	Yes
	39	z	-0.014	-0.014	0.00	No	100.00	Yes
	6	z	-0.005	-0.005	0.00	No	100.00	Yes
	7	z	-0.005	-0.005	0.00	No	100.00	Yes
	12	z	-0.005	-0.005	0.00	No	100.00	Yes
	9	z	-0.005	-0.005	0.00	No	100.00	Yes
	10	z	-0.005	-0.005	0.00	No	100.00	Yes
	8	z	-0.005	-0.005	0.00	No	100.00	Yes
	13	z	-0.005	-0.005	0.00	No	100.00	Yes
W30	17	x	-0.014	-0.014	0.00	No	100.00	Yes
	18	x	-0.014	-0.014	0.00	No	100.00	Yes
	20	x	-0.007	-0.007	0.00	No	100.00	Yes
	21	x	-0.007	-0.007	0.00	No	100.00	Yes
	22	x	-0.009	-0.009	0.00	No	100.00	Yes
	23	x	-0.009	-0.009	0.00	No	100.00	Yes
	24	x	-0.009	-0.009	0.00	No	100.00	Yes
	25	x	-0.014	-0.014	0.00	No	100.00	Yes
	26	x	-0.014	-0.014	0.00	No	100.00	Yes
	27	x	-0.014	-0.014	0.00	No	100.00	Yes
	32	x	-0.005	-0.005	0.00	No	100.00	Yes
	33	x	-0.005	-0.005	0.00	No	100.00	Yes
	34	x	-0.007	-0.007	0.00	No	100.00	Yes
	35	x	-0.007	-0.007	0.00	No	100.00	Yes
	37	x	-0.014	-0.014	0.00	No	100.00	Yes
	38	x	-0.014	-0.014	0.00	No	100.00	Yes
	39	x	-0.014	-0.014	0.00	No	100.00	Yes
	6	x	-0.005	-0.005	0.00	No	100.00	Yes
	7	x	-0.005	-0.005	0.00	No	100.00	Yes
	9	x	-0.005	-0.005	0.00	No	100.00	Yes
	10	x	-0.005	-0.005	0.00	No	100.00	Yes
	1	x	-0.005	-0.005	0.00	No	100.00	Yes
	2	x	-0.005	-0.005	0.00	No	100.00	Yes
	4	x	-0.005	-0.005	0.00	No	100.00	Yes
	5	x	-0.005	-0.005	0.00	No	100.00	Yes
	3	x	-0.005	-0.005	0.00	No	100.00	Yes
	8	x	-0.005	-0.005	0.00	No	100.00	Yes
Di	16	y	-0.025	-0.025	0.00	No	100.00	Yes
	17	y	-0.025	-0.025	0.00	No	100.00	Yes
	18	y	-0.025	-0.025	0.00	No	100.00	Yes
	19	y	-0.012	-0.012	0.00	No	100.00	Yes
	20	y	-0.012	-0.012	0.00	No	100.00	Yes
	21	y	-0.012	-0.012	0.00	No	100.00	Yes
	22	y	-0.015	-0.015	0.00	No	100.00	Yes
	23	y	-0.015	-0.015	0.00	No	100.00	Yes
	24	y	-0.015	-0.015	0.00	No	100.00	Yes
	25	y	-0.025	-0.025	0.00	No	100.00	Yes
	26	y	-0.025	-0.025	0.00	No	100.00	Yes
	27	y	-0.025	-0.025	0.00	No	100.00	Yes

15	y	-0.008	-0.008	0.00	No	100.00	Yes
14	y	-0.008	-0.008	0.00	No	100.00	Yes
11	y	-0.008	-0.008	0.00	No	100.00	Yes
31	y	-0.008	-0.008	0.00	No	100.00	Yes
32	y	-0.008	-0.008	0.00	No	100.00	Yes
33	y	-0.008	-0.008	0.00	No	100.00	Yes
34	y	-0.012	-0.012	0.00	No	100.00	Yes
35	y	-0.012	-0.012	0.00	No	100.00	Yes
36	y	-0.012	-0.012	0.00	No	100.00	Yes
37	y	-0.025	-0.025	0.00	No	100.00	Yes
38	y	-0.025	-0.025	0.00	No	100.00	Yes
39	y	-0.025	-0.025	0.00	No	100.00	Yes
6	y	-0.008	-0.008	0.00	No	100.00	Yes
7	y	-0.008	-0.008	0.00	No	100.00	Yes
12	y	-0.008	-0.008	0.00	No	100.00	Yes
9	y	-0.008	-0.008	0.00	No	100.00	Yes
10	y	-0.008	-0.008	0.00	No	100.00	Yes
1	y	-0.008	-0.008	0.00	No	100.00	Yes
2	y	-0.008	-0.008	0.00	No	100.00	Yes
4	y	-0.008	-0.008	0.00	No	100.00	Yes
5	y	-0.008	-0.008	0.00	No	100.00	Yes
3	y	-0.008	-0.008	0.00	No	100.00	Yes
8	y	-0.008	-0.008	0.00	No	100.00	Yes
13	y	-0.008	-0.008	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	22	y	-0.033	0.50	No
	23	y	-0.033	0.50	No
	24	y	-0.033	0.50	No
	15	y	-0.04	1.50	No
		y	-0.04	6.50	No
		y	-0.06	4.00	No
	14	y	-0.073	4.00	No
		y	-0.041	1.00	No
		y	-0.041	3.50	No
		y	-0.033	4.50	No
	7	y	-0.033	6.83	No
		y	-0.03	1.50	No
y		-0.03	6.50	No	
y		-0.06	4.00	No	
12	y	-0.046	4.00	No	
	y	-0.03	1.50	No	
	y	-0.03	6.50	No	
	y	-0.06	4.00	No	
9	y	-0.046	4.00	No	
	y	-0.041	1.00	No	
	y	-0.041	3.50	No	

		y	-0.033	4.50	No
		y	-0.033	6.83	No
	10	y	-0.04	1.50	No
		y	-0.04	6.50	No
		y	-0.06	4.00	No
		y	-0.073	4.00	No
	2	y	-0.03	1.50	No
		y	-0.03	6.50	No
		y	-0.06	4.00	No
		y	-0.046	4.00	No
	4	y	-0.041	1.00	No
		y	-0.041	3.50	No
		y	-0.033	4.50	No
		y	-0.033	6.83	No
	5	y	-0.04	1.50	No
		y	-0.04	6.50	No
		y	-0.06	4.00	No
		y	-0.073	4.00	No
	3	y	-0.049	4.00	No
	8	y	-0.049	4.00	No
	13	y	-0.049	4.00	No
W0	22	z	-0.044	0.50	No
	23	z	-0.044	0.50	No
	24	z	-0.044	0.50	No
	15	z	-0.144	1.50	No
		z	-0.144	6.50	No
		z	-0.096	4.00	No
	14	z	-0.051	1.00	No
		z	-0.051	3.50	No
		z	-0.042	4.50	No
		z	-0.042	6.83	No
	7	z	-0.166	1.50	No
		z	-0.166	6.50	No
		z	-0.071	4.00	No
	12	z	-0.166	1.50	No
		z	-0.166	6.50	No
		z	-0.071	4.00	No
	9	z	-0.051	1.00	No
		z	-0.051	3.50	No
		z	-0.042	4.50	No
		z	-0.042	6.83	No
	10	z	-0.144	1.50	No
		z	-0.144	6.50	No
		z	-0.096	4.00	No
	2	z	-0.264	1.50	No
		z	-0.264	6.50	No
		z	-0.026	4.00	No
		z	-0.018	4.00	No
	4	z	-0.079	1.00	No
		z	-0.079	3.50	No
		z	-0.072	4.50	No
		z	-0.072	6.83	No
	5	z	-0.248	1.50	No
		z	-0.248	6.50	No
		z	-0.037	4.00	No
		z	-0.029	4.00	No
	3	z	-0.064	4.00	No
	8	z	-0.037	4.00	No
	13	z	-0.037	4.00	No
W30	22	x	-0.044	0.50	No

	23	x	-0.044	0.50	No
	24	x	-0.044	0.50	No
	15	x	-0.213	1.50	No
		x	-0.213	6.50	No
		x	-0.054	4.00	No
		x	-0.041	4.00	No
	14	x	-0.069	1.00	No
		x	-0.069	3.50	No
		x	-0.062	4.50	No
		x	-0.062	6.83	No
	7	x	-0.231	1.50	No
		x	-0.231	6.50	No
		x	-0.039	4.00	No
		x	-0.031	4.00	No
	12	x	-0.231	1.50	No
		x	-0.231	6.50	No
		x	-0.039	4.00	No
		x	-0.031	4.00	No
	9	x	-0.069	1.00	No
		x	-0.069	3.50	No
		x	-0.062	4.50	No
		x	-0.062	6.83	No
	10	x	-0.213	1.50	No
		x	-0.213	6.50	No
		x	-0.054	4.00	No
		x	-0.041	4.00	No
	2	x	-0.133	1.50	No
		x	-0.133	6.50	No
		x	-0.079	4.00	No
	4	x	-0.042	1.00	No
		x	-0.042	3.50	No
		x	-0.033	4.50	No
		x	-0.033	6.83	No
	5	x	-0.11	1.50	No
		x	-0.11	6.50	No
		x	-0.108	4.00	No
	3	x	-0.028	4.00	No
	8	x	-0.055	4.00	No
	13	x	-0.055	4.00	No
Di	22	y	-0.047	0.50	No
	23	y	-0.047	0.50	No
	24	y	-0.047	0.50	No
	15	y	-0.147	1.50	No
		y	-0.147	6.50	No
		y	-0.074	4.00	No
		y	-0.055	4.00	No
	14	y	-0.052	1.00	No
		y	-0.052	3.50	No
		y	-0.046	4.50	No
		y	-0.046	6.83	No
	7	y	-0.16	1.50	No
		y	-0.16	6.50	No
		y	-0.055	4.00	No
		y	-0.047	4.00	No
	12	y	-0.16	1.50	No
		y	-0.16	6.50	No
		y	-0.055	4.00	No
		y	-0.047	4.00	No
	9	y	-0.052	1.00	No
		y	-0.052	3.50	No

		y	-0.046	4.50	No
		y	-0.046	6.83	No
10		y	-0.147	1.50	No
		y	-0.147	6.50	No
		y	-0.074	4.00	No
		y	-0.055	4.00	No
2		y	-0.16	1.50	No
		y	-0.16	6.50	No
		y	-0.055	4.00	No
		y	-0.047	4.00	No
4		y	-0.052	1.00	No
		y	-0.052	3.50	No
		y	-0.046	4.50	No
		y	-0.046	6.83	No
5		y	-0.147	1.50	No
		y	-0.147	6.50	No
		y	-0.074	4.00	No
		y	-0.055	4.00	No
3		y	-0.042	4.00	No
8		y	-0.042	4.00	No
13		y	-0.042	4.00	No
22	Wi0	z	-0.011	0.50	No
23		z	-0.011	0.50	No
24		z	-0.011	0.50	No
15		z	-0.031	1.50	No
		z	-0.031	6.50	No
		z	-0.023	4.00	No
14		z	-0.012	1.00	No
		z	-0.012	3.50	No
		z	-0.01	4.50	No
		z	-0.01	6.83	No
7		z	-0.034	1.50	No
		z	-0.034	6.50	No
		z	-0.017	4.00	No
12		z	-0.034	1.50	No
		z	-0.034	6.50	No
		z	-0.017	4.00	No
9		z	-0.012	1.00	No
		z	-0.012	3.50	No
		z	-0.01	4.50	No
		z	-0.01	6.83	No
10		z	-0.031	1.50	No
		z	-0.031	6.50	No
		z	-0.023	4.00	No
2		z	-0.051	1.50	No
		z	-0.051	6.50	No
		z	-0.009	4.00	No
		z	-0.007	4.00	No
4		z	-0.017	1.00	No
		z	-0.017	3.50	No
		z	-0.016	4.50	No
		z	-0.016	6.83	No
5		z	-0.049	1.50	No
		z	-0.049	6.50	No
		z	-0.013	4.00	No
		z	-0.009	4.00	No
3		z	-0.016	4.00	No
8		z	-0.01	4.00	No
13		z	-0.01	4.00	No
22	Wi30	x	-0.011	0.50	No

	23	x	-0.011	0.50	No
	24	x	-0.011	0.50	No
	15	x	-0.042	1.50	No
		x	-0.042	6.50	No
		x	-0.015	4.00	No
		x	-0.011	4.00	No
	14	x	-0.015	1.00	No
		x	-0.015	3.50	No
		x	-0.014	4.50	No
		x	-0.014	6.83	No
	7	x	-0.045	1.50	No
		x	-0.045	6.50	No
		x	-0.011	4.00	No
		x	-0.009	4.00	No
	12	x	-0.045	1.50	No
		x	-0.045	6.50	No
		x	-0.011	4.00	No
		x	-0.009	4.00	No
	9	x	-0.015	1.00	No
		x	-0.015	3.50	No
		x	-0.014	4.50	No
		x	-0.014	6.83	No
	10	x	-0.042	1.50	No
		x	-0.042	6.50	No
		x	-0.015	4.00	No
		x	-0.011	4.00	No
	2	x	-0.029	1.50	No
		x	-0.029	6.50	No
		x	-0.019	4.00	No
	4	x	-0.01	1.00	No
		x	-0.01	3.50	No
		x	-0.009	4.50	No
		x	-0.009	6.83	No
	5	x	-0.025	1.50	No
		x	-0.025	6.50	No
		x	-0.025	4.00	No
	3	x	-0.009	4.00	No
	8	x	-0.014	4.00	No
	13	x	-0.014	4.00	No
WLO	22	z	-0.003	0.50	No
	23	z	-0.003	0.50	No
	24	z	-0.003	0.50	No
	15	z	-0.009	1.50	No
		z	-0.009	6.50	No
		z	-0.006	4.00	No
	14	z	-0.003	1.00	No
		z	-0.003	3.50	No
		z	-0.003	4.50	No
		z	-0.003	6.83	No
	7	z	-0.01	1.50	No
		z	-0.01	6.50	No
		z	-0.004	4.00	No
	12	z	-0.01	1.50	No
		z	-0.01	6.50	No
		z	-0.004	4.00	No
	9	z	-0.003	1.00	No
		z	-0.003	3.50	No
		z	-0.003	4.50	No
		z	-0.003	6.83	No
	10	z	-0.009	1.50	No

		z	-0.009	6.50	No
		z	-0.006	4.00	No
	2	z	-0.015	1.50	No
		z	-0.015	6.50	No
		z	-0.001	4.00	No
		z	-0.001	4.00	No
	4	z	-0.005	1.00	No
		z	-0.005	3.50	No
		z	-0.004	4.50	No
		z	-0.004	6.83	No
	5	z	-0.014	1.50	No
		z	-0.014	6.50	No
		z	-0.002	4.00	No
		z	-0.002	4.00	No
	3	z	-0.004	4.00	No
	8	z	-0.002	4.00	No
	13	z	-0.002	4.00	No
WL30	22	x	-0.003	0.50	No
	23	x	-0.003	0.50	No
	24	x	-0.003	0.50	No
	15	x	-0.013	1.50	No
		x	-0.013	6.50	No
		x	-0.003	4.00	No
		x	-0.002	4.00	No
	14	x	-0.004	1.00	No
		x	-0.004	3.50	No
		x	-0.004	4.50	No
		x	-0.004	6.83	No
	7	x	-0.014	1.50	No
		x	-0.014	6.50	No
		x	-0.002	4.00	No
		x	-0.002	4.00	No
	12	x	-0.014	1.50	No
		x	-0.014	6.50	No
		x	-0.002	4.00	No
		x	-0.002	4.00	No
	9	x	-0.004	1.00	No
		x	-0.004	3.50	No
		x	-0.004	4.50	No
		x	-0.004	6.83	No
	10	x	-0.013	1.50	No
		x	-0.013	6.50	No
		x	-0.003	4.00	No
		x	-0.002	4.00	No
	2	x	-0.008	1.50	No
		x	-0.008	6.50	No
		x	-0.005	4.00	No
	4	x	-0.003	1.00	No
		x	-0.003	3.50	No
		x	-0.002	4.50	No
		x	-0.002	6.83	No
	5	x	-0.007	1.50	No
		x	-0.007	6.50	No
		x	-0.006	4.00	No
	3	x	-0.002	4.00	No
	8	x	-0.003	4.00	No
	13	x	-0.003	4.00	No
LL1	16	y	-0.25	50.00	Yes
LL2	16	y	-0.25	100.00	Yes
LLa1	1	y	-0.50	50.00	Yes

LLa2	2	y	-0.50	50.00	Yes
LLa3	4	y	-0.50	50.00	Yes
LLa4	5	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00



Current Date: 9/15/2021 1:30 PM

Units system: English

File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1160\C-BAND\CT1160 (C-Band) (Existing).retx

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.4DL
- LC14=1.2DL+1.6LL1
- LC15=1.2DL+1.6LL2
- LC16=1.2DL+W0+1.6LLa1
- LC17=1.2DL+W30+1.6LLa1
- LC18=1.2DL-W0+1.6LLa1
- LC19=1.2DL-W30+1.6LLa1
- LC20=1.2DL+W0+1.6LLa2
- LC21=1.2DL+W30+1.6LLa2
- LC22=1.2DL-W0+1.6LLa2
- LC23=1.2DL-W30+1.6LLa2
- LC24=1.2DL+W0+1.6LLa3
- LC25=1.2DL+W30+1.6LLa3
- LC26=1.2DL-W0+1.6LLa3
- LC27=1.2DL-W30+1.6LLa3
- LC28=1.2DL+W0+1.6LLa4
- LC29=1.2DL+W30+1.6LLa4
- LC30=1.2DL-W0+1.6LLa4
- LC31=1.2DL-W30+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	22	LC10 at 0.00%	0.40	OK	Eq. H1-1b
		23	LC12 at 0.00%	0.41	OK	Eq. H1-1b
		24	LC9 at 0.00%	0.41	OK	Eq. H1-1b
	L 3X3X1_4	19	LC4 at 100.00%	0.32	OK	Eq. H2-1
		20	LC1 at 100.00%	0.34	OK	Eq. H2-1
		21	LC1 at 0.00%	0.34	OK	Eq. H2-1
		34	LC1 at 100.00%	0.73	OK	Eq. H3-8
		35	LC4 at 0.00%	0.51	OK	Sec. F1
		36	LC1 at 0.00%	0.45	OK	Sec. F1
	PIPE 2x0.154	15	LC3 at 72.92%	0.42	OK	Eq. H1-1b
		14	LC3 at 72.92%	0.45	OK	Eq. H1-1b
		11	LC1 at 72.92%	0.34	OK	Eq. H1-1b
		31	LC3 at 63.54%	0.61	OK	Eq. H3-6
		32	LC4 at 10.42%	0.72	OK	Eq. H1-1b
		33	LC4 at 89.58%	0.65	OK	Eq. H1-1b

6	LC1 at 25.00%	0.41	OK	Eq. H1-1b
7	LC3 at 72.92%	0.51	OK	Eq. H1-1b
12	LC3 at 72.92%	0.42	OK	Eq. H1-1b
9	LC3 at 72.92%	0.49	OK	Eq. H1-1b
10	LC3 at 72.92%	0.42	OK	Eq. H1-1b
1	LC2 at 25.00%	0.39	OK	Eq. H1-1b
2	LC4 at 72.92%	0.48	OK	Eq. H1-1b
4	LC4 at 72.92%	0.47	OK	Eq. H1-1b
5	LC4 at 72.92%	0.44	OK	Eq. H1-1b
3	LC2 at 72.92%	0.46	OK	Eq. H1-1b
8	LC1 at 72.92%	0.52	OK	Eq. H1-1b
13	LC1 at 72.92%	0.45	OK	Eq. H1-1b

T2L 3X3X1_4

16	LC3 at 50.00%	0.45	With warnings	Eq. H2-1
17	LC1 at 100.00%	0.45	With warnings	Eq. H2-1
18	LC1 at 0.00%	0.46	With warnings	Eq. H2-1
25	LC10 at 100.00%	0.89	OK	Eq. H2-1
26	LC12 at 100.00%	0.90	OK	Eq. H2-1
27	LC9 at 100.00%	0.90	OK	Eq. H2-1
37	LC10 at 0.00%	0.49	OK	Eq. H2-1
38	LC12 at 100.00%	0.49	OK	Eq. H2-1
39	LC9 at 0.00%	0.49	OK	Eq. H2-1



Current Date: 9/15/2021 1:30 PM

Units system: English

File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1160\C-BAND\CT1160 (C-Band) (Existing).retx

Geometry data

GLOSSARY

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

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
2	0.00	0.00	-2.3333	0
3	-3.5359	0.00	-2.00	0
4	-7.00	0.00	0.00	0
5	-1.4793	0.00	-4.8955	0
6	-3.50	0.00	-6.0622	0
7	0.00	0.00	-8.1244	0
8	0.00	0.00	-12.1244	0
9	3.5359	0.00	-2.00	0
10	7.00	0.00	0.00	0
11	1.4793	0.00	-4.8955	0
12	3.50	0.00	-6.0622	0
14	6.1705	6.00	-1.8274	0
19	1.1705	6.00	-10.4876	0
41	1.1705	-2.00	-10.4876	0
44	6.1705	-2.00	-1.8274	0
53	4.5038	6.00	-4.7141	0
54	2.8372	6.00	-7.6009	0
63	2.8372	-2.00	-7.6009	0
64	4.5038	-2.00	-4.7141	0
69	-6.3333	4.00	0.00	0
71	-6.6667	4.00	-0.5774	0

73	6.3333	4.00	0.00	0
75	6.6667	4.00	-0.5774	0
77	0.3333	4.00	-11.547	0
79	-0.3333	4.00	-11.547	0
83	-1.6717	-3.00	-3.0763	0
84	1.6717	-3.00	-3.0763	0
86	0.00	-3.00	-5.9718	0
87	-4.4019	0.00	-1.50	0
88	4.4019	0.00	-1.50	0
89	0.00	0.00	-9.1244	0
91	0.00	0.00	0.00	0
93	5.9973	4.00	-1.7274	0
94	0.9973	4.00	-10.3876	0
95	4.3306	4.00	-4.6141	0
96	2.664	4.00	-7.5009	0
97	6.1705	4.00	-1.8274	0
98	1.1705	4.00	-10.4876	0
99	4.5038	4.00	-4.7141	0
100	2.8372	4.00	-7.6009	0
101	5.9973	0.00	-1.7274	0
102	6.1705	0.00	-1.8274	0
103	4.3306	0.00	-4.6141	0
104	4.5038	0.00	-4.7141	0
105	2.664	0.00	-7.5009	0
106	2.8372	0.00	-7.6009	0
107	0.9973	0.00	-10.3876	0
108	1.1705	0.00	-10.4876	0
133	-6.1705	6.00	-1.8274	0
134	-6.1705	-2.00	-1.8274	0
135	-5.9973	4.00	-1.7274	0
136	-6.1705	4.00	-1.8274	0
137	-5.9973	0.00	-1.7274	0
138	-6.1705	0.00	-1.8274	0
139	-4.5038	6.00	-4.7141	0
140	-4.5038	-2.00	-4.7141	0
141	-4.3306	4.00	-4.6141	0
142	-4.5038	4.00	-4.7141	0
143	-4.3306	0.00	-4.6141	0
144	-4.5038	0.00	-4.7141	0
145	-2.8372	6.00	-7.6009	0
146	-2.8372	-2.00	-7.6009	0
147	-2.664	4.00	-7.5009	0
148	-2.8372	4.00	-7.6009	0
149	-2.664	0.00	-7.5009	0
150	-2.8372	0.00	-7.6009	0
151	-1.1705	6.00	-10.4876	0
152	-1.1705	-2.00	-10.4876	0
153	-0.9973	4.00	-10.3876	0
154	-1.1705	4.00	-10.4876	0
155	-0.9973	0.00	-10.3876	0
156	-1.1705	0.00	-10.4876	0
157	5.00	6.00	0.20	0
158	5.00	-2.00	0.20	0
159	5.00	4.00	0.00	0
160	5.00	4.00	0.20	0
161	5.00	0.00	0.00	0
162	5.00	0.00	0.20	0
163	1.6667	6.00	0.20	0
164	1.6667	-2.00	0.20	0
165	1.6667	4.00	0.00	0

166	1.6667	4.00	0.20	0
167	1.6667	0.00	0.00	0
168	1.6667	0.00	0.20	0
169	-1.6667	6.00	0.20	0
170	-1.6667	-2.00	0.20	0
171	-1.6667	4.00	0.00	0
172	-1.6667	4.00	0.20	0
173	-1.6667	0.00	0.00	0
174	-1.6667	0.00	0.20	0
175	-5.00	6.00	0.20	0
176	-5.00	-2.00	0.20	0
177	-5.00	4.00	0.00	0
178	-5.00	4.00	0.20	0
179	-5.00	0.00	0.00	0
180	-5.00	0.00	0.20	0
181	0.6667	6.00	0.20	0
182	0.6667	-2.00	0.20	0
183	0.6667	4.00	0.00	0
184	0.6667	4.00	0.20	0
185	0.6667	0.00	0.00	0
186	0.6667	0.00	0.20	0
187	0.00	-3.00	-4.04	0
188	-4.0053	6.00	-5.5826	0
189	-4.0053	-2.00	-5.5826	0
190	-3.8321	4.00	-5.4826	0
191	-4.0053	4.00	-5.5826	0
192	-3.8321	0.00	-5.4826	0
193	-4.0053	0.00	-5.5826	0
194	3.3386	6.00	-6.7374	0
195	3.3386	-2.00	-6.7374	0
196	3.1654	4.00	-6.6374	0
197	3.3386	4.00	-6.7374	0
198	3.1654	0.00	-6.6374	0
199	3.3386	0.00	-6.7374	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
2	1	1	1	1	1	1
5	1	1	1	1	1	1
11	1	1	1	1	1	1
83	1	1	1	0	0	0
84	1	1	1	0	0	0
86	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
16	4	10		T2L 3X3X1_4	A36	0.00	0.00	0.00
17	10	8		T2L 3X3X1_4	A36	0.00	0.00	0.00
18	8	4		T2L 3X3X1_4	A36	0.00	0.00	0.00
19	3	9		L 3X3X1_4	A36	0.00	0.00	0.00
20	9	7		L 3X3X1_4	A36	0.00	0.00	0.00
21	7	3		L 3X3X1_4	A36	0.00	0.00	0.00
22	2	91		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
23	11	12		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
24	5	6		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
25	3	4		T2L 3X3X1_4	A36	0.00	0.00	0.00
26	9	10		T2L 3X3X1_4	A36	0.00	0.00	0.00
27	7	8		T2L 3X3X1_4	A36	0.00	0.00	0.00
15	14	44		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
14	53	64		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	19	41		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	69	73		PIPE 2x0.154	A36	0.00	0.00	0.00
32	79	71		PIPE 2x0.154	A36	0.00	0.00	0.00
33	75	77		PIPE 2x0.154	A36	0.00	0.00	0.00
34	69	71		L 3X3X1_4	A36	0.00	0.00	0.00
35	73	75		L 3X3X1_4	A36	0.00	0.00	0.00
36	77	79		L 3X3X1_4	A36	0.00	0.00	0.00
37	87	83		T2L 3X3X1_4	A36	0.00	0.00	0.00
38	84	88		T2L 3X3X1_4	A36	0.00	0.00	0.00
39	89	86		T2L 3X3X1_4	A36	0.00	0.00	0.00
6	133	134		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	139	140		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	54	63		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	145	146		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
10	151	152		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
1	157	158		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
2	163	164		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
4	169	170		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
5	175	176		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
3	181	182		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
8	188	189		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	194	195		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
16	90.00	0	0.00	0.00	0.00
17	90.00	0	0.00	0.00	0.00
18	90.00	0	0.00	0.00	0.00
22	90.00	0	0.00	0.00	0.00
23	90.00	0	0.00	0.00	0.00
24	90.00	0	0.00	0.00	0.00
25	180.00	0	0.00	0.00	0.00
26	180.00	0	0.00	0.00	0.00
27	180.00	0	0.00	0.00	0.00
15	0.00	2	-0.50	0.00	-0.866
14	0.00	2	-0.50	0.00	-0.866
11	0.00	2	-0.50	0.00	-0.866
31	270.00	0	0.00	0.00	0.00
32	270.00	0	0.00	0.00	0.00
33	270.00	0	0.00	0.00	0.00

34	90.00	0	0.00	0.00	0.00
35	180.00	0	0.00	0.00	0.00
36	180.00	0	0.00	0.00	0.00
6	0.00	2	-0.50	0.00	0.866
7	0.00	2	-0.50	0.00	0.866
12	0.00	2	-0.50	0.00	-0.866
9	0.00	2	-0.50	0.00	0.866
10	0.00	2	-0.50	0.00	0.866

35 WILDWOOD ST

Location 35 WILDWOOD ST

Mblu A8B/ 1/ / /

Acct# 91200035

Owner NEW BRITAIN CITY OF - PARK

Assessment \$1,215,340

Appraisal \$1,736,200

PID 1830

Building Count 1

Current Value

Appraisal				
Valuation Year	Improvements	Land	Total	
2017	\$1,020,300	\$715,900	\$1,736,200	
Assessment				
Valuation Year	Improvements	Land	Total	
2017	\$714,210	\$501,130	\$1,215,340	

Owner of Record

Owner NEW BRITAIN CITY OF - PARK
Co-Owner CHESLEY PARK
Address 27 WEST MAIN ST
NEW BRITAIN, CT 06051

Sale Price \$0
Certificate
Book & Page 0/0
Sale Date 01/01/1900

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
NEW BRITAIN CITY OF - PARK	\$0		0/0	01/01/1900

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0
Replacement Cost: \$0
Building Percent Good:
Replacement Cost
Less Depreciation: \$0

Building Attributes

Field	Description
Style	Outbuildings
Model	
Grade	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Central Heat Sys	
Heat Type	
AC Type	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs	
Total Rooms	
Bath Style	
Kitchen Style	
Num Kitchens	
Whirlpool Tub	
Fireplaces_2	
Rec Room Finish	
Rec Room Qual	
Bsmt Garages	
Fireplaces	
Bldg Nbhd	
Fndtn Cndtn	
Basement	

Building Photo



(<https://images.vgsi.com/photos/NewBritainCTPhotos//00\02\14\61.JPG>)

Building Layout

 Building Layout (ParcelSketch.ashx?pid=1830&bid=2529)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use**Land Line Valuation**

Use Code 903A
Description Mun Park MDL-00
Zone T
Neighborhood 107
Alt Land Appr Category No

Size (Acres) 11.85
Depth
Assessed Value \$501,130
Appraised Value \$715,900

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
TEN1	Tennis Crt Asp			4.00 Units	\$145,000	1
PAV1	Paving Asphalt			50000.00 S.F.	\$72,000	1
FN5	Fence-10' Chai			888.00 L.F.	\$20,400	1
TR2	RestRoom stone			2697.00 S.F.	\$354,000	1
TR2	RestRoom stone			1875.00 S.F.	\$246,100	1
FN1	Fence - Chain			4000.00 L.F.	\$42,800	1
CAN4	Canopy rf/slb			800.00 S.F.	\$9,600	1
CB3	PreCastConcCel			240.00 S.F.	\$55,400	1
FN1	Fence - Chain			100.00 L.F.	\$700	1
CB4	PreCastConcCel			360.00 S.F.	\$74,300	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$1,020,300	\$715,900	\$1,736,200
2020	\$1,020,300	\$715,900	\$1,736,200
2019	\$926,900	\$715,900	\$1,642,800

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$714,210	\$501,130	\$1,215,340
2020	\$714,210	\$501,130	\$1,215,340
2019	\$648,830	\$501,130	\$1,149,960

35 WILDWOOD ST**BP-2005-0618**

GIS #:	15775
Map:	
Block:	
Lot:	
Category:	Accessory
Permit #	BP-2005-0618
Project #	JS-2005-1386
Est. Cost:	\$84,000.00
Fee Charged:	\$1,290.00
Balance Due:	\$:00
Const. Class:	
Use Group:	
Lot Size(sq. ft.):	
Zoning:	T
Units Gained:	
Units Lost:	
Dig Safe #:	

**STATE OF CONNECTICUT
CITY OF NEW BRITAIN**



BUILDING PERMIT

PERMISSION IS HEREBY GRANTED TO:

Contractor:**License:**

MCPHEE ELECTRIC

Owner: NEW BRITAIN CITY OF - PARK & RECREATION**Applicant:** MCPHEE ELECTRIC**AT:** 35 WILDWOOD ST**ISSUED ON:** 04-May-2005**AMENDED ON:****EXPIRES ON:**

TO PERFORM THE FOLLOWING WORK:

Remove & replace 65' with 110' light stanchion, antennas, shelter, wireless scoreboard per plans, specs & 1999 CT State Building Code.

POST THIS CARD SO IT IS VISIBLE FROM THE STREET

<u>Electric</u>	<u>Gas</u>	<u>Plumbing</u>	<u>Building</u>
Underground:	Underground:	Underground:	Excavation:
Service:	Meter:		Footings:
Rough:	Rough:	Rough:	Foundation:
Final:	Final:	Final:	Rough Frame:
			Fireplace/Chimney:
<u>D.P.W.</u>	<u>Fire</u>	<u>Health</u>	Insulation:
Meter:	Oil:		Final:
House #	Smoke:		Treasury:
Water:	Alarm:		
Sewer:	Sprinklers:		

THIS PERMIT MAY BE REVOKED BY THE CITY OF NEW BRITAIN UPON VIOLATION OF ANY OF ITS RULES AND REGULATIONS.

Upon issuance of this Permit and the signing of the application the Owner / Applicant shall hereby agree to conform to all the requirements of the Laws of the State of Connecticut and the Ordinance(s) of the City of New Britain and to notify the Chief Building Official in writing of any alteration in the plans or specifications of building for which this permit is asked.

Signed by Frank M. Wiatr M.S. Director, Chief Building Official.

Signature: _____

Fee Type:	Receipt No:	Date Paid:	Check No:	Amount:
building permit	REC-2005-001426	28-Mar-05	2830	\$1,290.00

27 West Main Street, Suite 404, Phone:(860) 826-3383, Fax:(860) 612-4212

Petition No. 703
New Cingular Wireless PCS, LLC
New Britain, Connecticut
Staff Report
March 3, 2005

New Cingular Wireless LLC (Cingular) is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for a proposed light pole facility in the City of New Britain on the basis that the light pole is not within the Council's jurisdiction.

Cingular intends to replace a 60-foot light pole with a 110-foot light pole at a ball field in Chesley Park, a municipal park on Wildwood Avenue in New Britain. The existing light pole is one of 14 in the park.

The proposed light pole would contain stadium lights at the 60-foot level and Cingular's antennas at the 110-foot level. A fenced compound containing an equipment shelter and ball field scoreboard would be located at the base of the light pole.

The City of New Britain approved the project during a public hearing on August 11, 2004. The City of New Britain would own the proposed light pole.

Cingular asserts the proposed light pole is not within the Council's jurisdiction since the light pole is an existing use and does not constitute a telecommunications tower. Furthermore, if the Council rules that the light pole is a telecommunications tower, Cingular asserts it would be a municipal tower since it would be owned by the city, located on city owned property, and would be available to the city for future communication use.



SRR Towers, LLC
353 Park Street, Suite 106, North Reading, Massachusetts 01864
Tel: 973-291-8517 | Fax: 508-530-3564 | collos@blueskytower.com

June 15, 2022

AT&T Site ID: CT1160
Blue Sky Towers / SRR Towers, LLC: CT1341
Site Address: **35 Wildwood Street, New Britain, CT**

RE: Application for Zoning and Permitting in the City of New Britain, County of Hartford CT.

To Whom It May Concern:

As owner of the Existing Cell Tower, I submit this letter as authorization for SAI Group, its employees, or agents, to file for all necessary administrative approvals, zoning approvals and building permits (local, state, and federal) for the purposes of upgrading, installing, operating, and maintaining a telecommunications facility at the site/property referenced above on behalf of AT&T.

All fees or charges associated with any applications or permits, and any conditions placed on the Applicant shall be the responsibility of AT&T, its subsidiaries and/or agents.

DocuSigned by:
Signature: James Burgess
91D991C4BF5941D...

Print Name: James Burgess

Title: VP of Real Estate, SRR Towers, Subsidiary to Octagon Towers as Leaseholder

Date: 6/15/2022



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

Expected Delivery Date: 07/05/22

Ref#: CT1160

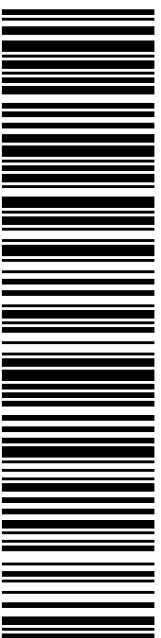
0004

C020



HON. ERIN STEWART, MAYOR STEPHEN
CITY OF NEW BRITAIN CITY HALL
27 W MAIN ST
NEW BRITAIN CT 06051-2283

USPS TRACKING #



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PRIORITY MAIL 1-DAY™

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

Expected Delivery Date: 07/02/22

Ref#: CT1160

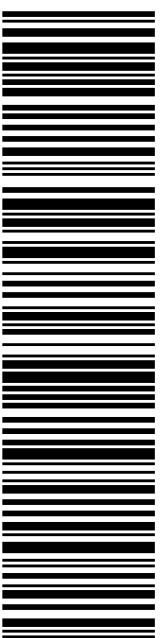
0004

C007



JAMES BURGESS, VP REAL ESTATE
SRR TOWERS
353 PARK ST
STE 106
NORTH READING MA 01864

USPS TRACKING #



9405 5036 9930 0286 1522 87

Electronic Rate Approved #038555749



Cut on dotted line.





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PRIORITY MAIL 2-DAY™

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

Expected Delivery Date: 07/05/22

Ref#: CT1160

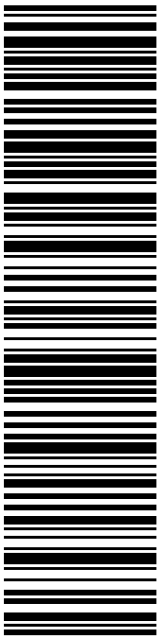
0004

C006



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

USPS TRACKING #



9405 5036 9930 0286 1522 94

Electronic Rate Approved #038555749



Cut on dotted line.



From: auto-reply@usps.com
Sent: Friday, July 1, 2022 12:36 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Saturday, July 2, 2022 arriving by 9:00pm 9405503699300286152270

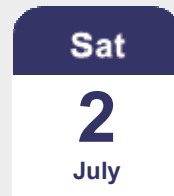


Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 12:20 pm on July 1, 2022 in MERIDEN

Tracking Number: [9405503699300286152270](#)

Expected Delivery By



By 9:00pm



Tracking & Delivery Options

[My Account](#)

From: auto-reply@usps.com
Sent: Friday, July 1, 2022 12:34 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Tuesday, July 5, 2022 arriving by 9:00pm 9405503699300286152287

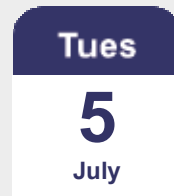


Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 12:20 pm on July 1, 2022 in MERIDEN

Tracking Number: [9405503699300286152287](#)

Expected Delivery By



By 9:00pm



Tracking & Delivery Options

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