



August 2, 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 CT2157
48 Newtown Road, Danbury, CT 06810 (the "Property")
Latitude: 41.403300 N Longitude: 73.424400 W

Dear Ms. Bachman:

AT&T currently maintains (12) antennas at the 100' level on the existing 110' monopole tower ("Tower") at 48 Newtown Road, Danbury, CT. The Tower and property are owned by 48 Newtown Road Corporation. AT&T intends to modify its facility by removing (9) antennas and adding (3) AIR6449 B77 at the 97'7" level, adding (2) QD4616-7 & (1) QD6616-7 antennas at the 100' level & (3) AIR6419 B77G antennas at the 101'2" level of the tower. The AIR6649 B77 & AIR6419 B77G antennas are stacked one on top of the other. AT&T also intends on removing (6) RRUs and adding (3) 4449 B5/B12 at the 100' level. The height of AT&Ts existing antennas is 100' and proposed antennas is 97'7", 100' & 101'2" on the Tower. The height of the existing & proposed RRUs is 100' on the Tower.

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

The City of Danbury granted a site plan waiver for the Tower on December 29, 1998 & zoning permit approval on January 6, 1999. AT&T received CT Siting Council approval under EM-BAM/SCLP-034-991124 on December 8, 1999. 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 approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent the Hon. Dean Esposito, Mayor & chief elected official, City of Danbury, Ms. Sharon B. Calitro, AICP, Director of Planning & Zoning, City of Danbury and 48 Newtown Road Corporation, the tower & property owner.

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

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

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

Sincerely,

Hollis M. Redding

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

Enclosures

Cc:

Hon. Dean Esposito, Mayor & chief elected official, City of Danbury
Ms. Sharon B. Calitro, AICP, Director of Planning & Zoning, City of Danbury
48 Newtown Road Corporation, the property & tower owner.



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

Calculated Radio Frequency Exposure



CT2157

48 Newtown Road, Danbury, 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 48 Newtown Road in Danbury, CT. The coordinates of the existing monopole are 41-24-11.88 N, 73-25-27.84 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 04/07/22.

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
Verizon	90	751	4	642	0.1309	0.5007	2.61%
Verizon	90	877.26	2	463	0.0472	0.5848	0.81%
Verizon	90	874	4	742	0.1513	0.5827	2.60%
Verizon	90	1980	4	1514	0.3087	1.0000	3.09%
Verizon	90	2120	4	1447	0.2950	1.0000	2.95%
Verizon	90	3625	4	11	0.0022	1.0000	0.02%
Verizon	90	3730.08	4	6531	1.3315	1.0000	13.31%
MetroPCS	108	2140	3	443.61	0.0460	1.0000	0.46%
Clearwire	78	2496	2	153	0.0212	1.0000	0.21%
Clearwire	78	11 GHz	1	211	0.0146	1.0000	0.15%
Nextel iDEN	78	851	12	100	0.0832	0.5673	1.47%
Sprint	78	2657	3	562	0.1170	1.0000	1.17%
Sprint	78	22500	2	4.42	0.0006	1.0000	0.01%
AT&T	100	739	2	2878	0.0234	0.4927	4.76%
AT&T	100	763	2	2878	0.0234	0.5087	4.61%
AT&T	100	885	1	3382	0.0138	0.5900	2.33%
AT&T	100	1900	3	5118	0.0625	1.0000	6.25%
AT&T	100	2100	2	8614	0.0701	1.0000	7.01%
AT&T	100	2300	1	9445	0.0385	1.0000	3.85%
AT&T	101.2	3500	1	24286	0.0964	1.0000	9.64%
AT&T	97.7	3500	1	24286	0.1039	1.0000	10.39%
						Total	77.69%

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 Verizon, MetroPCS, Clearwire, Nextel, and Sprint 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 **77.69% 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

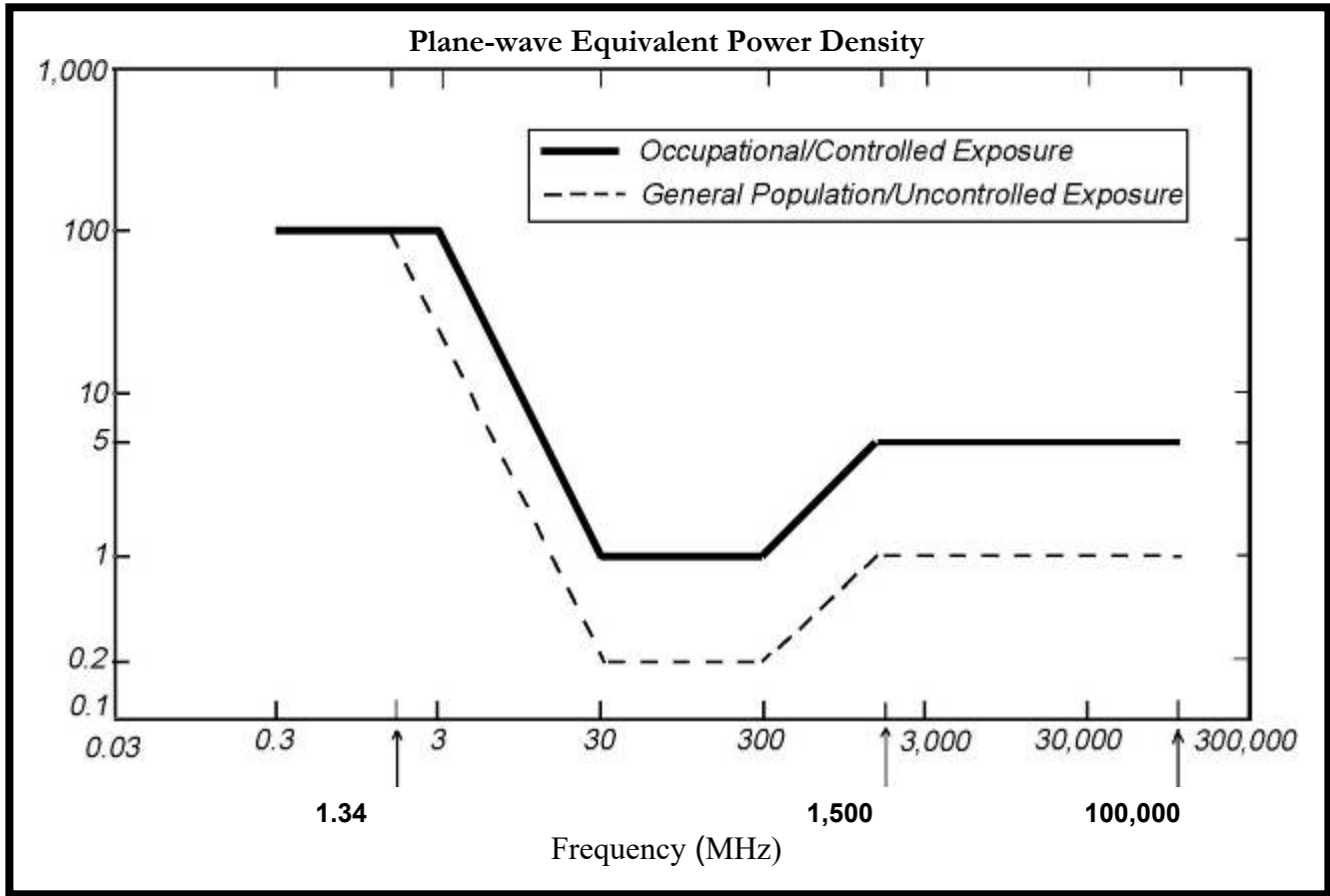
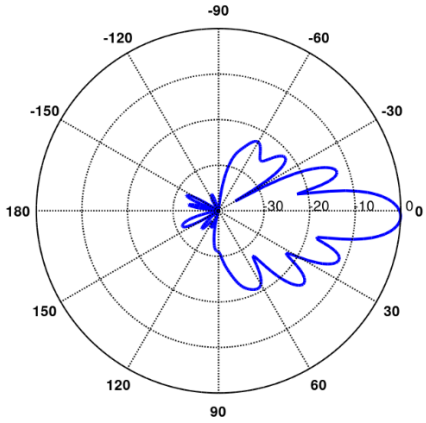
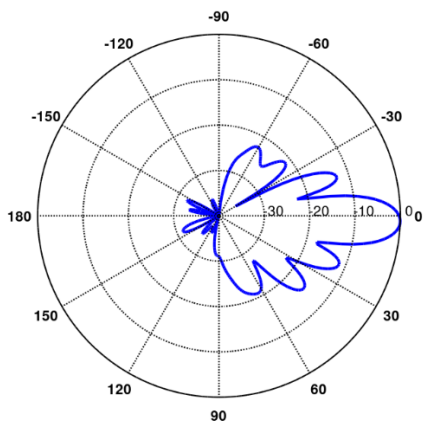
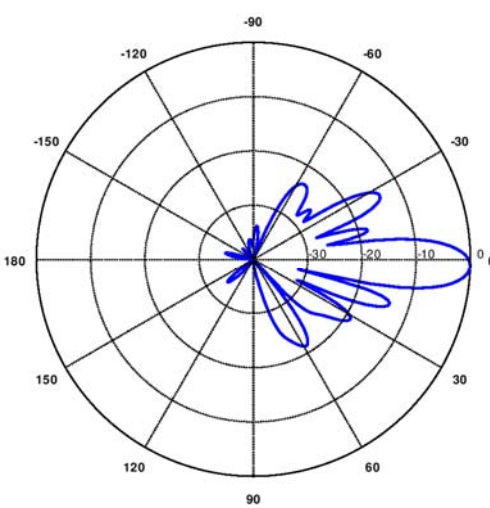
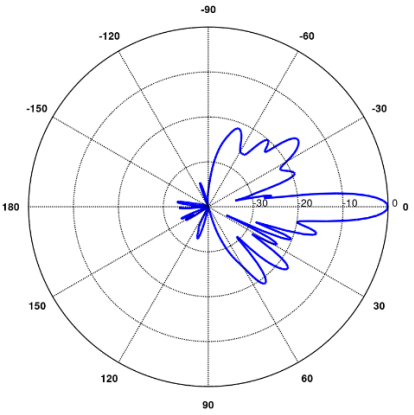
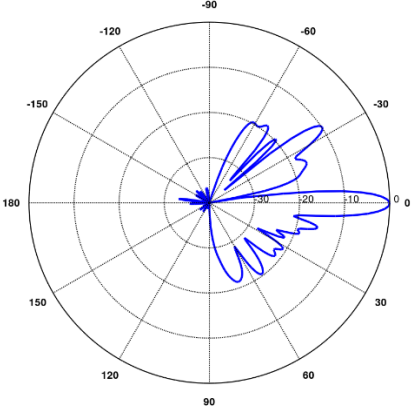
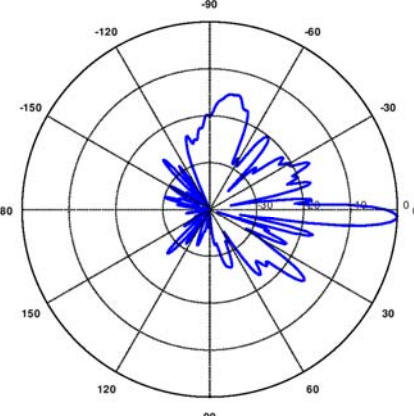


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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: Quintel Model #: QD6616-7 Frequency Band: 758-798 MHz Gain: 14.7 dBi Vertical Beamwidth: 11.3° Horizontal Beamwidth: 65° Polarization: 2x 45° Size L x W x D: 72" x 22" x 9.6"</p>	
<p>885 MHz</p> <p>Manufacturer: Kathrein Model #: 80010965 Frequency Band: 790-862 MHz Gain: 15.5 dBi Vertical Beamwidth: 10.7° Horizontal Beamwidth: 62° Polarization: 45°</p> <p>Size L x W x D: 78.7" x 20" x 6.9"</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: Kathrein Model #: 80010965 Frequency Band: 2300-2400 MHz Gain: 18.1 dBi Vertical Beamwidth: 4.8° Horizontal Beamwidth: 56° Polarization: 45° Size L x W x D: 78.7" x 20" x 6.9"</p>	

PROJECT INFORMATION

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

- NEW AT&T ANTENNAS: AIR6419 B77G (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: AIR6449 B77 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: QD6616-7 (ALPHA SECTOR, TOTAL OF 1).
- NEW AT&T ANTENNAS: QD4616-7 (TYP. OF 1 PER BETA & GAMMA SECTOR, TOTAL OF 2).
- EXISTING AT&T ANTENNAS: 800-10965 (ALPHA SECTOR, TOTAL OF 1) (TO BE RELOCATED TO POS. 4).
- EXISTING AT&T ANTENNAS: 800-10964 (TYP. OF 1 PER BETA & GAMMA SECTOR, TOTAL OF 2) (TO BE RELOCATED TO POS. 4).
- NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 2).
- EXISTING AT&T RRUS: RRUS-32 B30 (WCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 4).
- EXISTING AT&T RRUS: RRUS-E2 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 2).
- NEW AT&T DC & FIBER SURGE ARRESTOR DC9-48-60-24-8C-EV (TOTAL OF 1).
- NEW (1) 6AWG DC TRUNK.
- NEW (1) 24 PAIR FIBER.
- NEW (3) Y-CABLES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- ADD 6648 + XCEDE CABLE.
- ADD 6630 + IDLE.
- ADD (3) RECTIFIERS.
- ADD BATTERY RACK WITH 2 STRINGS OF BATTERY.
- RIP & REPLACE EXISTING BATTERIES.

ITEMS TO BE REMOVED:

- EXISTING AT&T ANTENNAS: HPA-65R-BUU-H6 (ALPHA SECTOR, TOTAL OF 1).
- EXISTING AT&T ANTENNAS: OPA-65R-LCUU-H6 (ALPHA SECTOR, TOTAL OF 1).
- EXISTING AT&T ANTENNAS: SBNHH-1D65A (TYP. OF 1 PER BETA & GAMMA SECTOR, TOTAL OF 2).
- EXISTING AT&T ANTENNAS: OPA-65R-LCUU-H4 (TYP. OF 1 PER BETA & GAMMA SECTOR, TOTAL OF 2).
- EXISTING AT&T ANTENNAS: 7770 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-11 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T DIPLEXER: TPX-070821 (TYP. OF 4 PER SECTOR, TOTAL OF 12).
- EXISTING AT&T DIPLEXER: LGP21901 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T TMA'S: LGP21401 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T DC ONLY SURGE ARRESTOR DC6-48-60-0-8C (TOTAL OF 1).
- EXISTING (6) COAX CABLES.
- EXISTING GSM CABINET.

ITEMS TO REMAIN:

- (3) ANTENNAS, (15) RRU'S, (2) SURGE ARRESTOR, (6) COAX CABLES, (6) DC POWER & (2) FIBER.

SITE ADDRESS: 48 NEWTOWN ROAD
DANBURY, CT 06810

LATITUDE: 41.403300° N, 41° 24' 11.88" N

LONGITUDE: 73.424400° W, 73° 25' 27.84" W

TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT

STRUCTURE HEIGHT: 110'-0"±

RAD CENTER: 100'-0"± (LTE), 101'-2"± (DoD) & 97'-7"± (C-BAND)

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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



SITE NUMBER: CTL02157

SITE NAME: DANBURY EAST

FA CODE: 10035077

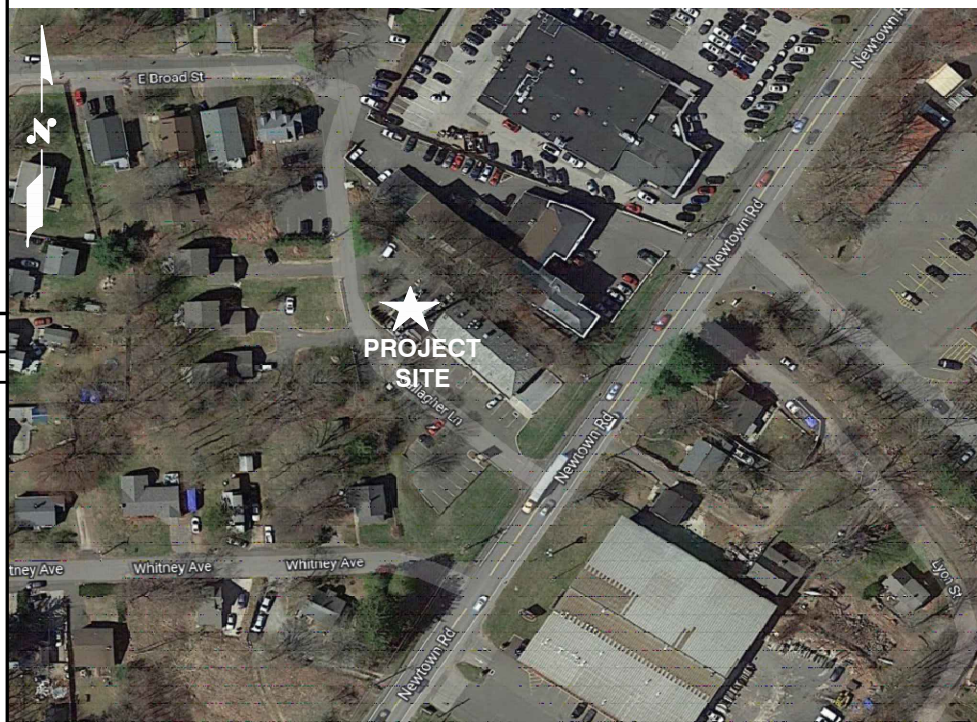
PACE ID: MRCTB054632, MRCTB054816, MRCTB054177, MRCTB055050, MRCTB060995, MRCTB060992, MRCTB038185

PROJECT: 5G NR 1SR CBAND_5G NR 1DR-1_UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

TAKE ROUTE 17 NORTH TO RIDGEWOOD AVE. FOLLOW RIDGEWOOD AVENUE TO THE GARDEN STATE PARKWAY GET ON GOING NORTH. STAY ON THE GARDEN STATE PARKWAY NORTH UNTIL YOU GET TO THE NEW YORK STATE THRUWAY (RT. 87 SOUTH) TOWARDS THE TAPPAN ZEE BRIDGE. TAKE EXIT 8 (CROSS WESTCHESTER PARKWAY /RT. 287). TAKE RT. 287 EAST TO 684 NORTH. GET OFF EXIT FOR 84-EAST DANBURY FOLLOW TO EXIT 8. MAKE RIGHT AT RAMP. FOLLOW ON STONY HILL RD. SITE ON RIGHT. DRIVEWAY AROUND BACK OF BUILDING. DEMARC IS IN GRAY BOX ON THE OUTSIDE OF BUILDING LEFT OF STAIRS (NEXTEL BOX).



GENERAL NOTES

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

72 HOURS

CALL BEFORE YOU DIG

CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02157
SITE NAME: DANBURY EAST

48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D	SCALE	DESIGNED BY	DRAWN BY	AT&T																																																																																												
2	06/09/22	ISSUED FOR CONSTRUCTION	AM	HC	DPA		HC	PM																																																																																													
1	06/02/22	ISSUED FOR CONSTRUCTION	AM	HC	DPA		HC	PM																																																																																													
A	05/04/22	ISSUED FOR REVIEW	AM	HC	DPA		HC	PM																																																																																													
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GROUNDING NOTES

- 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.
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 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.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
- EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- 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.
- 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

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – SAI
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
- 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.
- 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.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- "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.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- 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.
- 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.
- 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.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

- 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.
- 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.
- CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
- 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.
- 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.
- 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.
- 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	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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

12 INDUSTRIAL WAY
SALEM, NH 03079

**SITE NUMBER: CTL02157
 SITE NAME: DANBURY EAST**

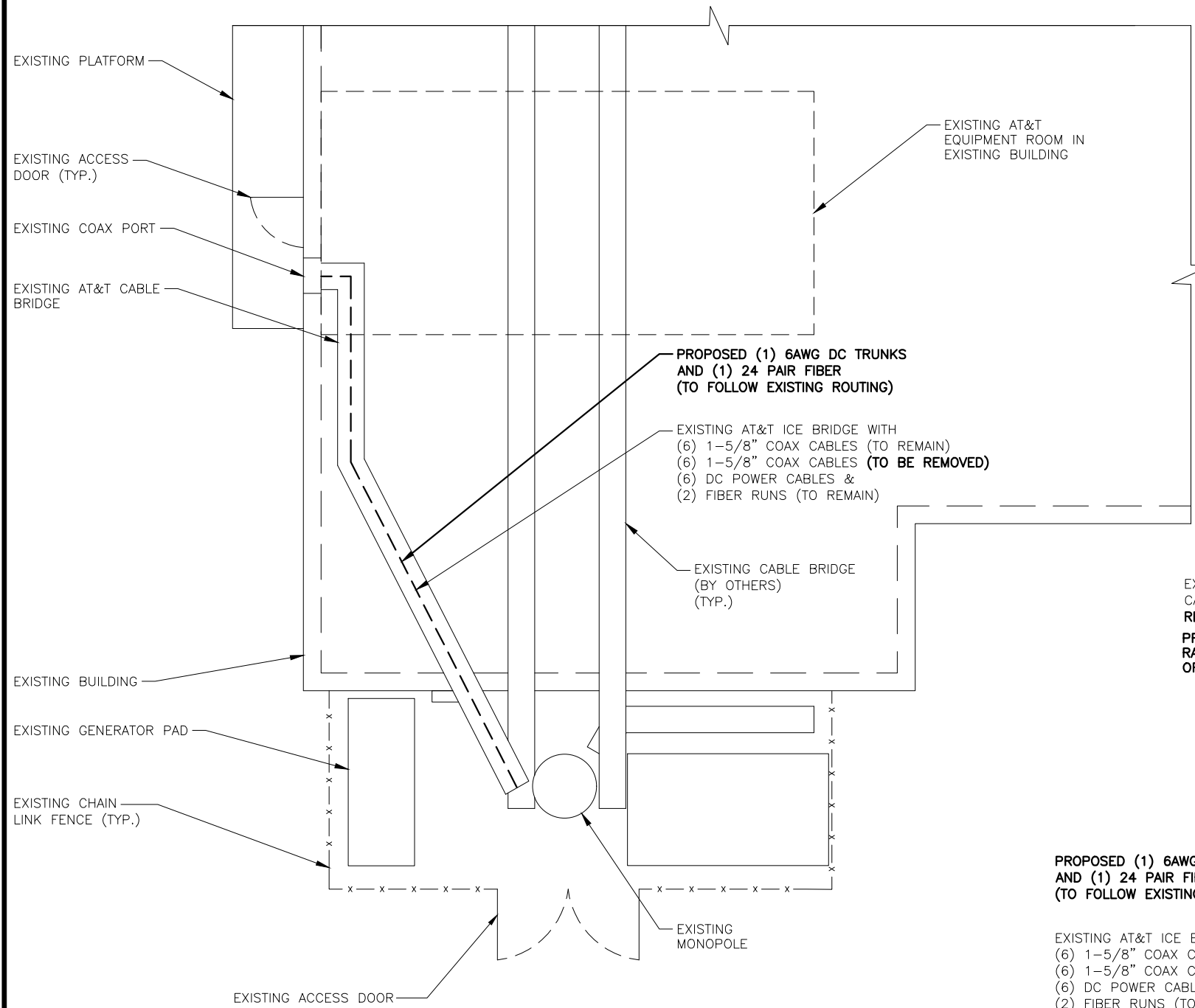
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DANBURY, CT 06810
FAIRFIELD COUNTY

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

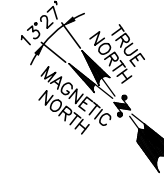
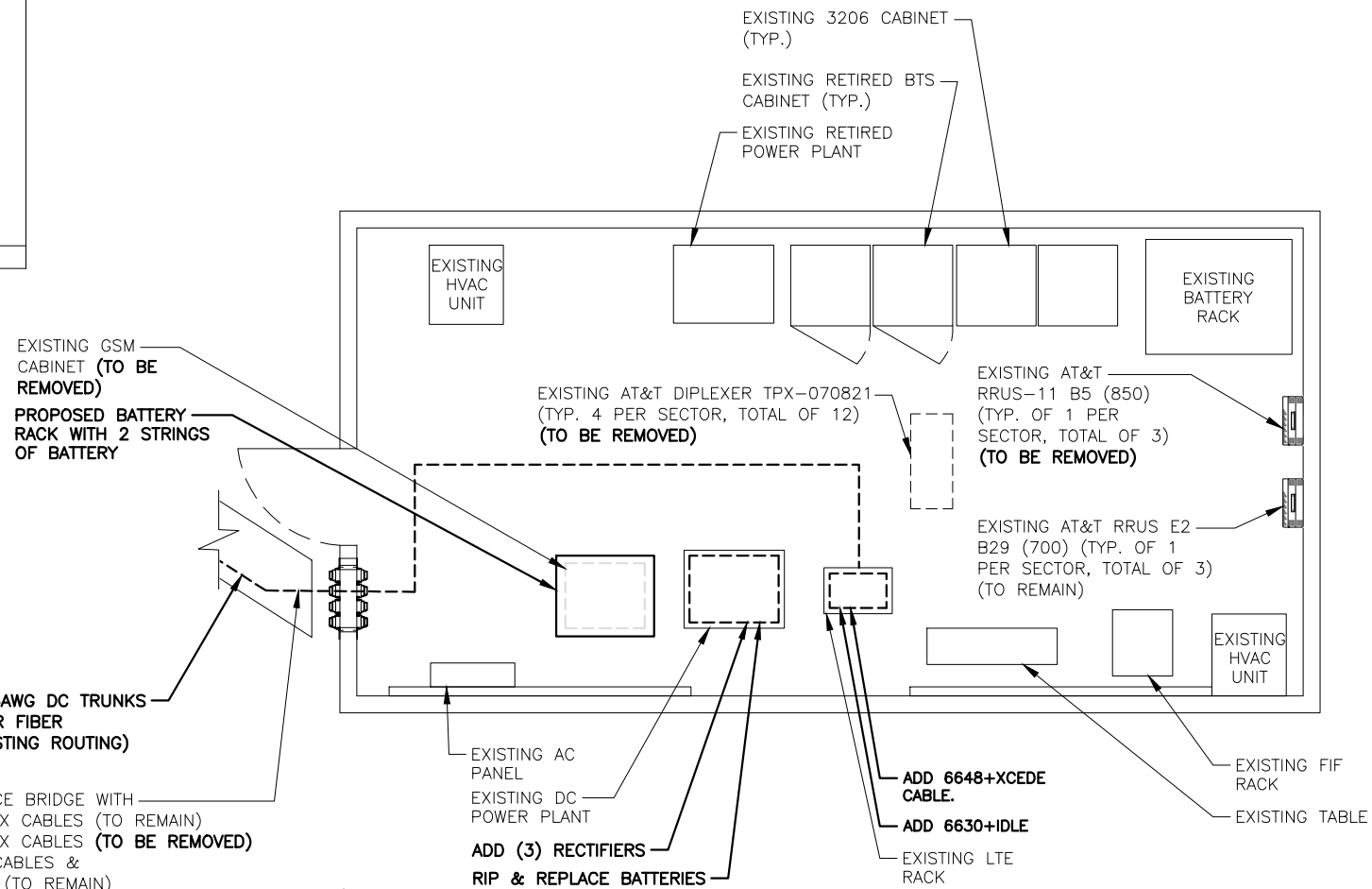
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				SITE NUMBER	DRAWING NUMBER
				CTL02157	GN-1
					REV
					2

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

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: JUNE 08, 2022, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



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



EQUIPMENT PLAN
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"
2
A-1

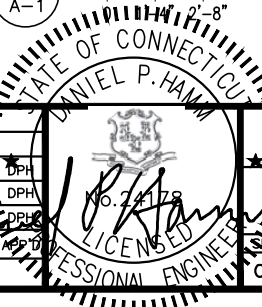
HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
TEL: (978) 557-5553 FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY SALEM, NH 03079

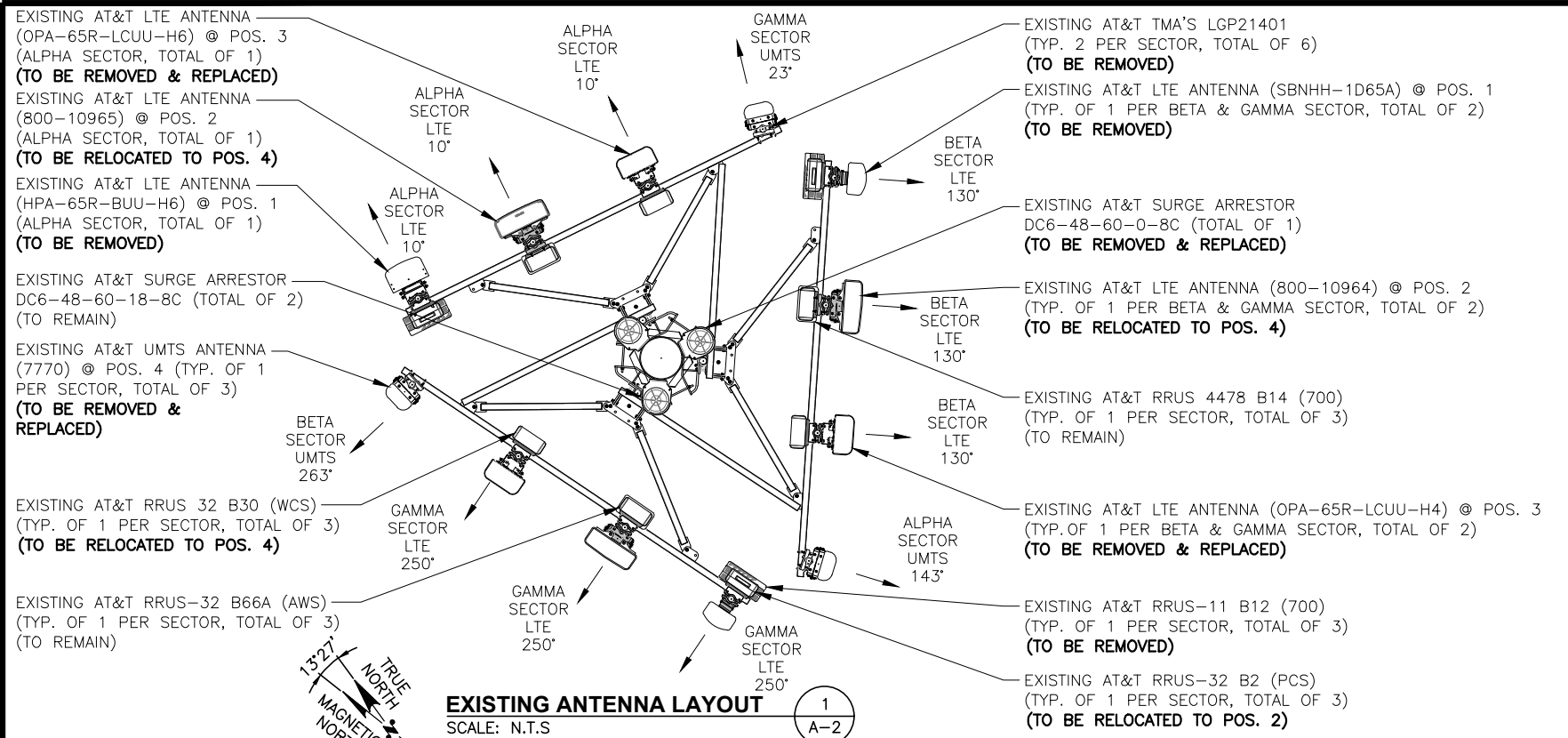
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SITE NAME: DANBURY EAST
48 NEWTOWN ROAD DANBURY, CT 06810 FAIRFIELD COUNTY

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

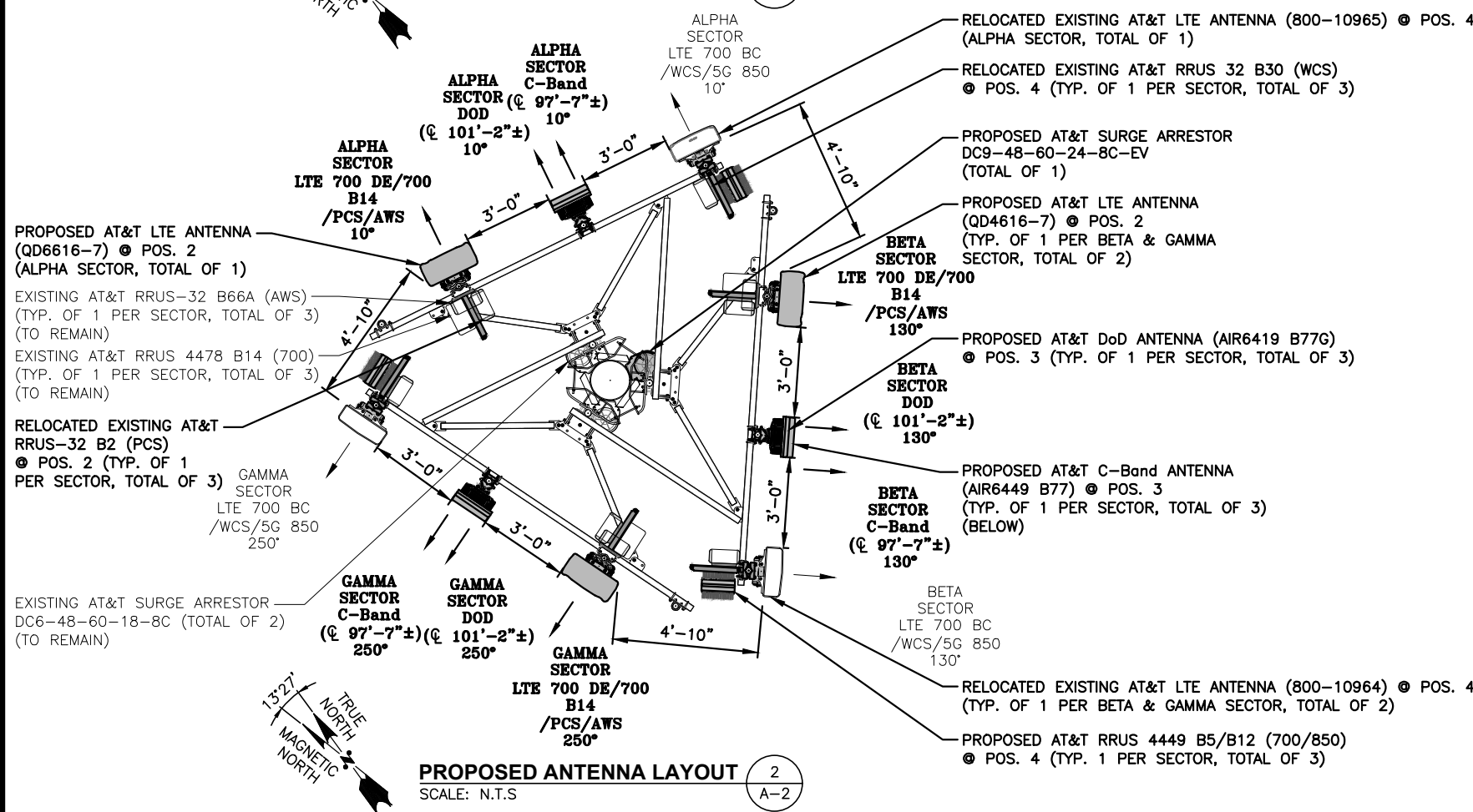
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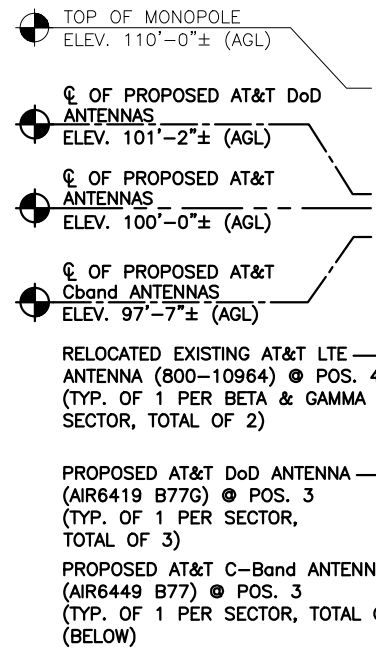
AT&T
COMPOUND & EQUIPMENT PLANS
SC NR TSB_C BAND_5G NR 1DR-1_UPGRADE
SITE NUMBER: CTL02157
DRAWING NUMBER: A-1
REV: 2



EXISTING ANTENNA LAYOUT
SCALE: N.T.S.



PROPOSED ANTENNA LAYOUT
SCALE: N.T.S.



ELEVATION
22x34 SCALE: 1/8" = 1'-0"
11x17 SCALE: 1/4" = 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: MAY 13, 2022.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: JUNE 08, 2022, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

HUDSON Design Group LLC
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NORTH ANDOVER, MA 01845
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FAX: (978) 336-5586

SAI
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SITE NAME: DANBURY EAST
48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

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

		AT&T	
		ANTENNA LAYOUTS & ELEVATION	
		3G NR TSR CBAND_5G NR 1DR-1_UPGRADE	
NO.	DATE	REVISIONS	BY
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A	05/04/22	ISSUED FOR REVIEW	AM HC DPH
SCALE:	AS SHOWN	DESIGNED BY:	HC
		DRAWN BY:	PM
SITE NUMBER	DRAWING NUMBER	REV	
CTL02157	A-2	2	

ANTENNA SCHEDULE

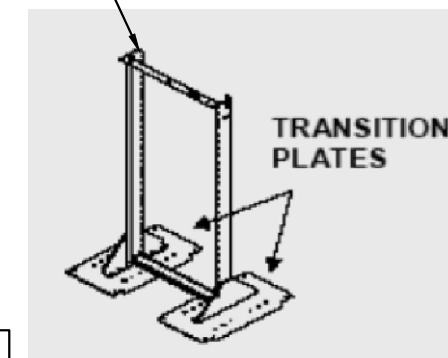
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA Q HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	-	-	-	-	-	-	-	-	-	-	(2)1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8C
A2	PROPOSED	LTE 700 DE/700 B14/PCS/AWS	QD6616-7	72X22X9.6	100'-0"±	103'-0"	10°	-	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B2 (PCS) (E)(1) RRUS-32 B66A (AWS) (E)(1) RRUS-E2 B29 (700)	-	(E)(2) DC POWER & (E)(1) FIBER	
A3	PROPOSED	DOD C-BAND	AIR6419 B77G AIR6449 B77 (STACKED)	31.1X16.1X7.3 30.6X15.9X10.6	101'-2"± 97'-7"±	103'-3" 99'-9"	10°	-	-	-	-	
A4	EXISTING	LTE 700 BC/WCS/5G 850	800-10965	78.7X20X6.9	100'-0"±	103'-3"	10°	-	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9x13.2x10.4	(P)(1) Y-CABLE	
B1	-	-	-	-	-	-	-	-	-	-	(2)1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8C
B2	PROPOSED	LTE 700 DE/700 B14/PCS/AWS	QD4616-7	51.5X22X9.6	100'-0"±	102'-0"	130°	-	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B2 (PCS) (E)(1) RRUS-32 B66A (AWS) (E)(1) RRUS-E2 B29 (700)	-	(E)(2) DC POWER & (E)(1) FIBER	
B3	PROPOSED	DOD C-BAND	AIR6419 B77G AIR6449 B77 (STACKED)	31.1X16.1X7.3 30.6X15.9X10.6	101'-2"± 97'-7"±	102'-6" 98'-10"	130°	-	-	-	-	
B4	EXISTING	LTE 700 BC/WCS/5G 850	800-10964	55.2X11.8X6	100'-0"±	102'-6"	130°	-	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9x13.2x10.4	(P)(1) Y-CABLE	
C1	-	-	-	-	-	-	-	-	-	-	(2)1-5/8 COAX	(P) (1) RAYCAP DC9-48-60-24-8C-EV
C2	PROPOSED	LTE 700 DE/700 B14/PCS/AWS	QD4616-7	51.5X22X9.6	100'-0"±	102'-0"	250°	-	(E)(1) 4478 B14 (700) (E)(1) RRUS-32 B2 (PCS) (E)(1) RRUS-32 B66A (AWS) (E)(1) RRUS-E2 B29 (700)	-	(E)(2) DC POWER, (P)(1) DC POWER & (P)(1) FIBER	
C3	PROPOSED	DOD C-BAND	AIR6419 B77G AIR6449 B77 (STACKED)	31.1X16.1X7.3 30.6X15.9X10.6	101'-2"± 97'-7"±	102'-6" 98'-10"	250°	-	-	-	-	
C4	EXISTING	LTE 700 BC/WCS/5G 850	800-10964	55.2X11.8X6	100'-0"±	102'-6"	250°	-	(P)(1) 4449 B5/B12 (850/700) (E)(1) RRUS-32 B30 (WCS)	17.9x13.2x10.4	(P)(1) Y-CABLE	

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: MAY 13, 2022.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: JUNE 08, 2022, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

PROPOSED BATTERY RACK
VERTIV #562353 WITH 2 STR BATT



QUANTITY	MODEL	SIZE (L x W x D)
P(3)	4449 (850/700)	17.9"x13.2"x10.4"
E(3)	4478 B14 (700)	18.1"x13.4"x8.3"
E(3)	RRUS-32 B2 (PCS)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B30 (WCS)	27.2"x12.1"x7.0"
E(3)	RRUS-32 B66A (AWS)	27.2"x12.1"x7.0"
E(3)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

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

NOTE:
MOUNT PROPOSED EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS

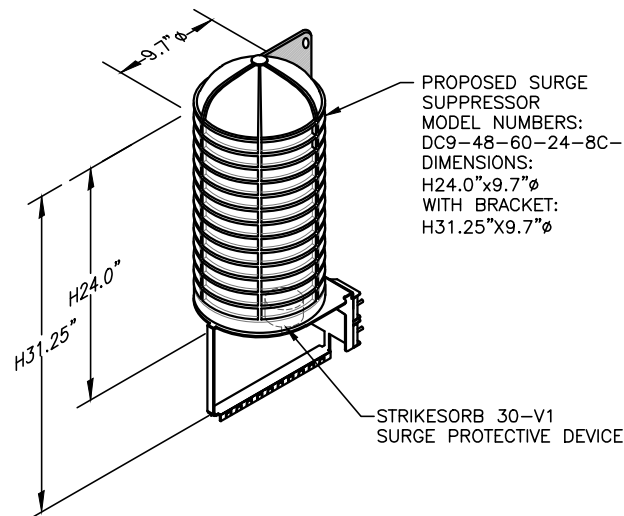
PROPOSED VERTIV BATTERY RACK 7
SCALE: N.T.S. A-4

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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

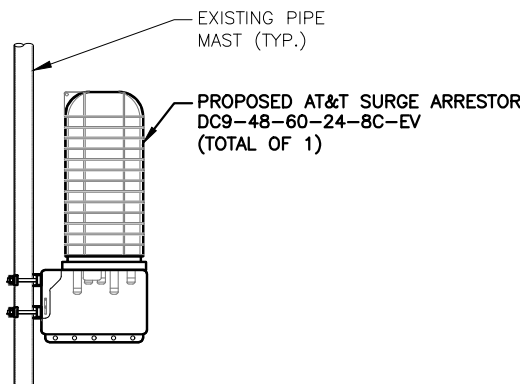
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRU DETAIL 2
SCALE: N.T.S. A-3

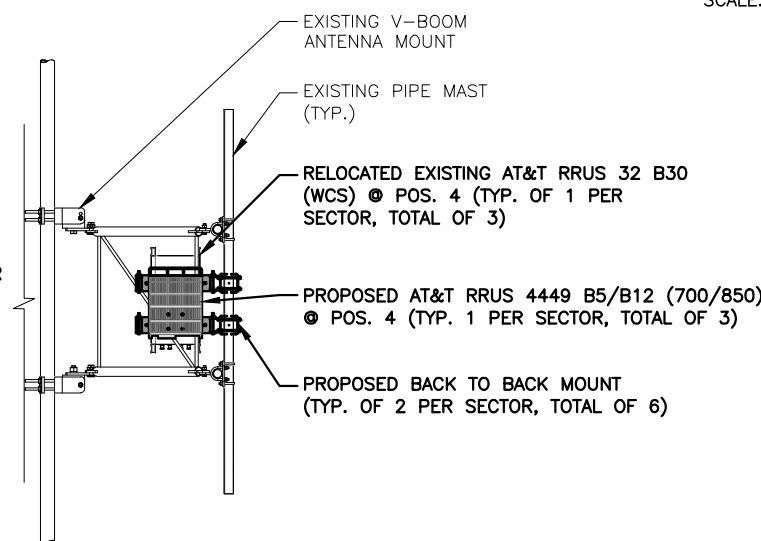
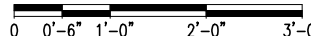


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

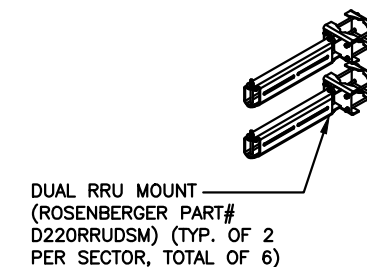
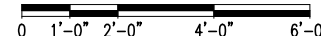
DC SURGE SUPPRESSOR DETAIL 3
SCALE: N.T.S. A-3



DC SURGE MOUNTING DETAIL 4
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"



RRU'S MOUNTING DETAIL 5
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"



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

HG 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: CTL02157
SITE NAME: DANBURY EAST

48 NEWTOWN ROAD DANBURY, CT 06810 FAIRFIELD COUNTY

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

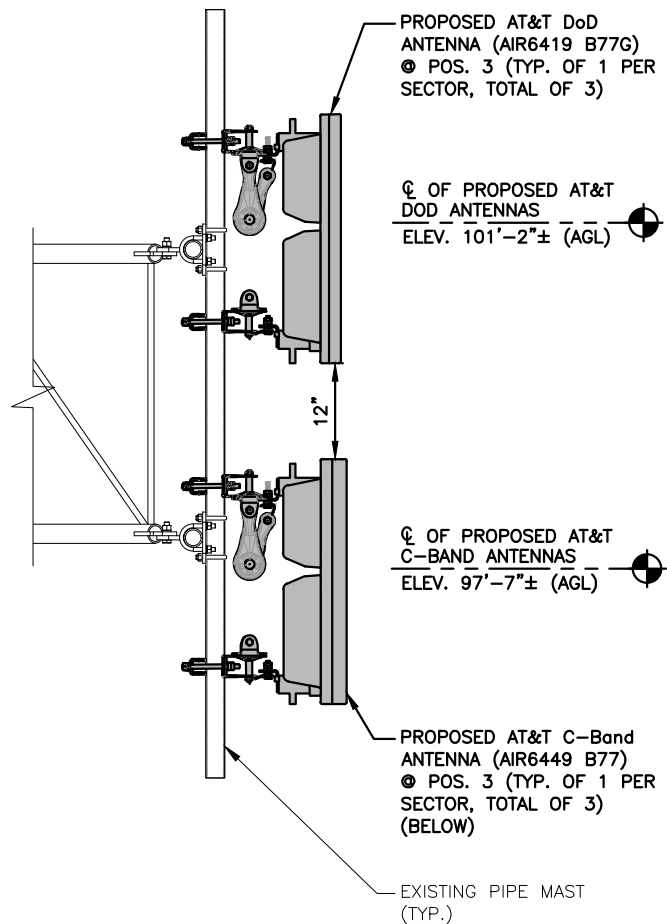
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1		06/02/22	ISSUED FOR CONSTRUCTION	AM	HC	DPH		DETAILS
A		05/04/22	ISSUED FOR REVIEW	AM	HC	DPH		5G NR TSR CBAND_5G NR 1DR-1_UPGRADE
NO.	DATE	REVISIONS		BY	CHK	APP'D	SITE NUMBER: CTL02157 DRAWING NUMBER: A-3 REV: 2	

SCALE: AS SHOWN DESIGNED BY: HC DRAWN BY: PM

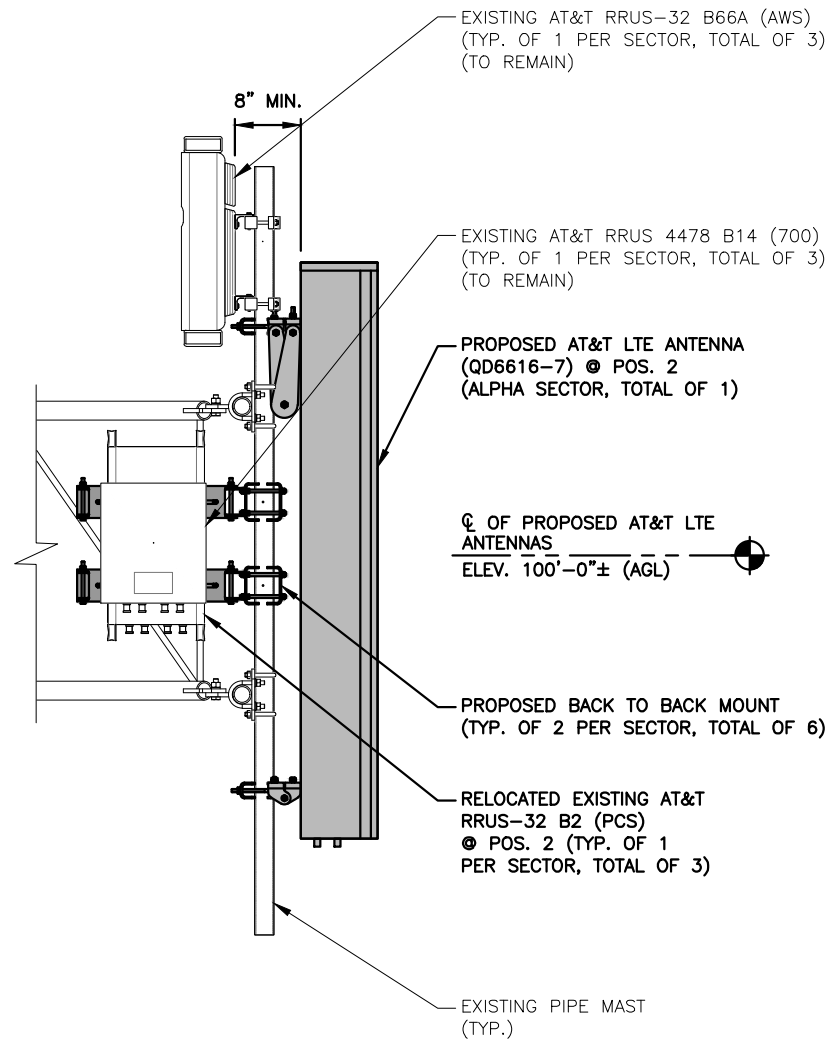
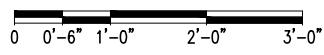
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED
BY: HUDSON DESIGN GROUP, LLC.
DATED: MAY 13, 2022.

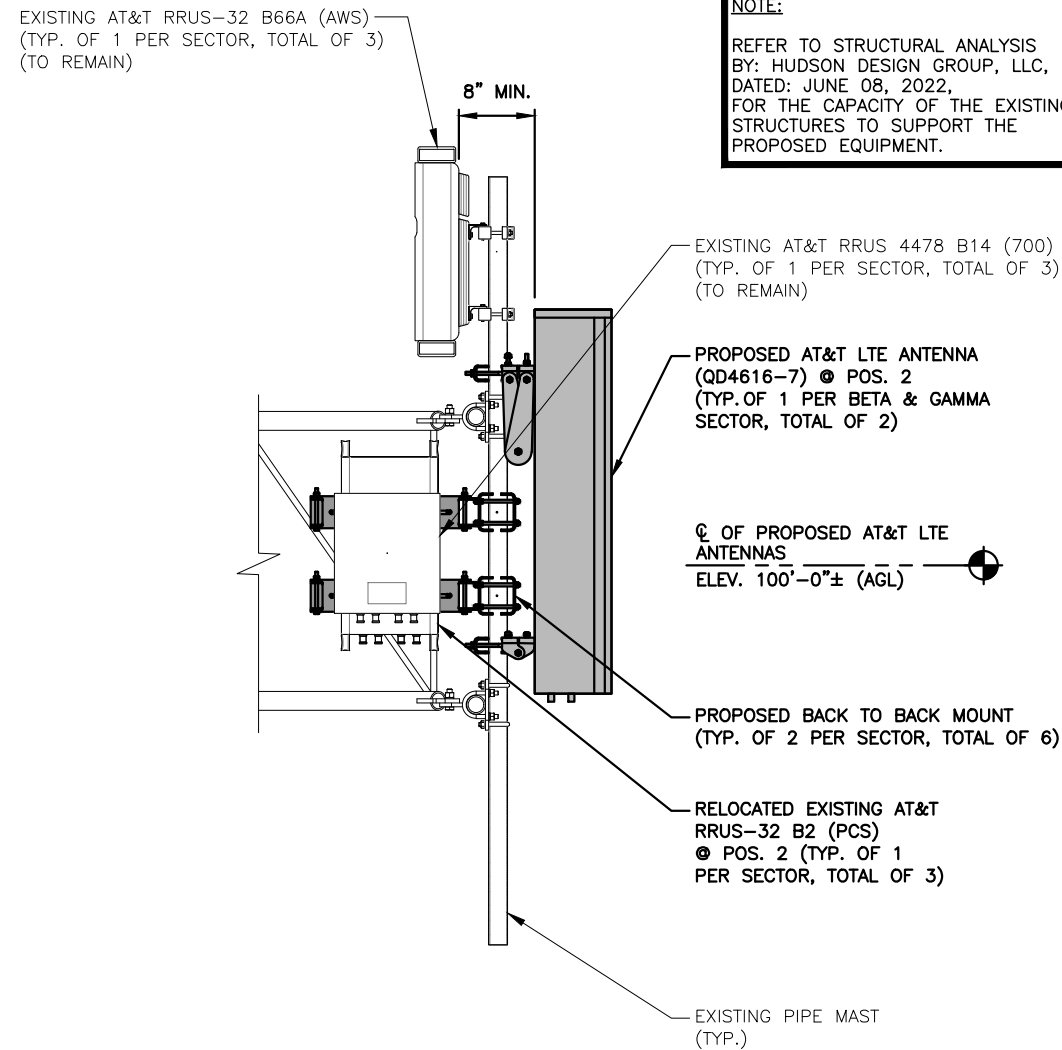
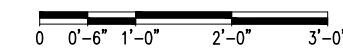
NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: JUNE 08, 2022, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



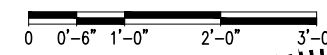
PROPOSED DoD + C-BAND ANTENNA MOUNTING DETAIL 1
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
A-4



PROPOSED LTE ANTENNA MOUNTING DETAIL (ALPHA SECTOR) 2
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
A-4



PROPOSED LTE ANTENNA MOUNTING DETAIL (BETA & GAMMA SECTOR) 3
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
A-4



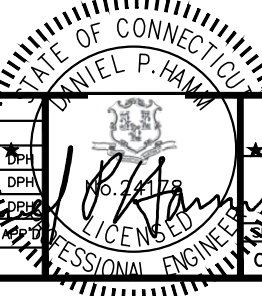
HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
TEL: (978) 557-5553 FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY SALEM, NH 03079

SITE NUMBER: CTL02157
SITE NAME: DANBURY EAST
48 NEWTOWN ROAD DANBURY, CT 06810 FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP
2	06/09/22	ISSUED FOR CONSTRUCTION	AM	HC	DPH
1	06/02/22	ISSUED FOR CONSTRUCTION	AM	HC	DPH
A	05/04/22	ISSUED FOR REVIEW	AM	HC	DPH



AT&T		
DETAILS		
SC-NR-TSR-CBAND_5G-NR-1DR-1_UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CTL02157	A-4	2

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 D.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
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FAX: (978) 336-5586

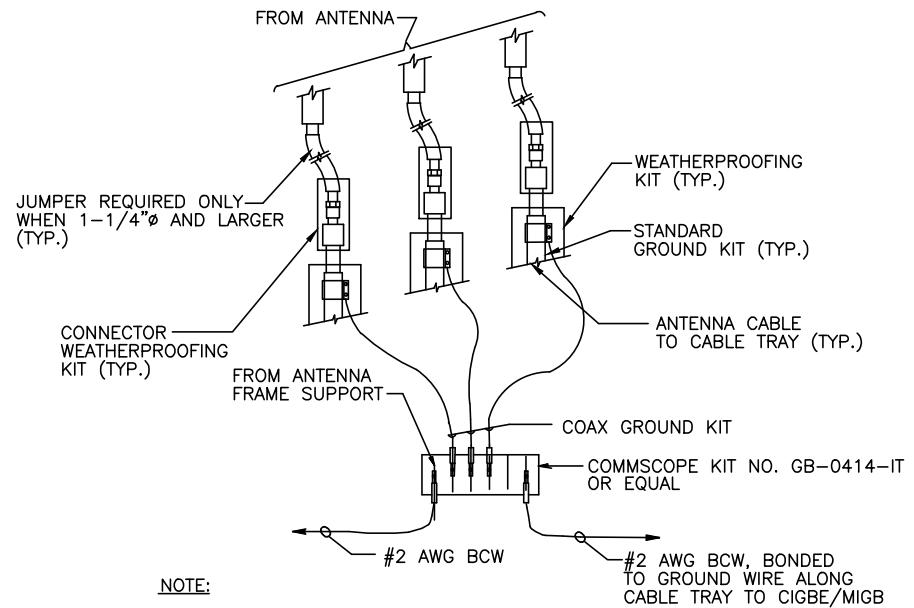
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL02157
SITE NAME: DANBURY EAST

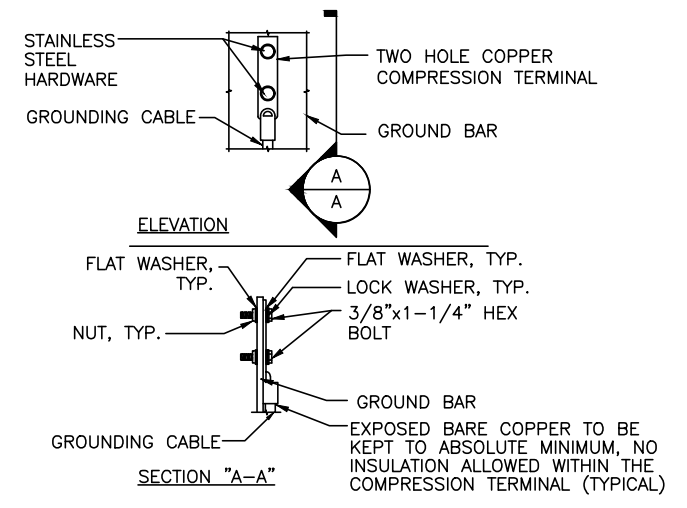
48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

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

2 06/09/22 ISSUED FOR CONSTRUCTION		AM	HC	DPA		AT&T STRUCTURAL NOTES SC NR TSR CBAND_5G NR 1DR-1_UPGRADE
1 06/02/22 ISSUED FOR CONSTRUCTION		AM	HC	DPA		
A 05/04/22 ISSUED FOR REVIEW		AM	HC	DPA		
NO.	DATE	REVISIONS		BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC		DRAWN BY: PM		SITE NUMBER: CTL02157 DRAWING NUMBER: SN-1 REV: 2

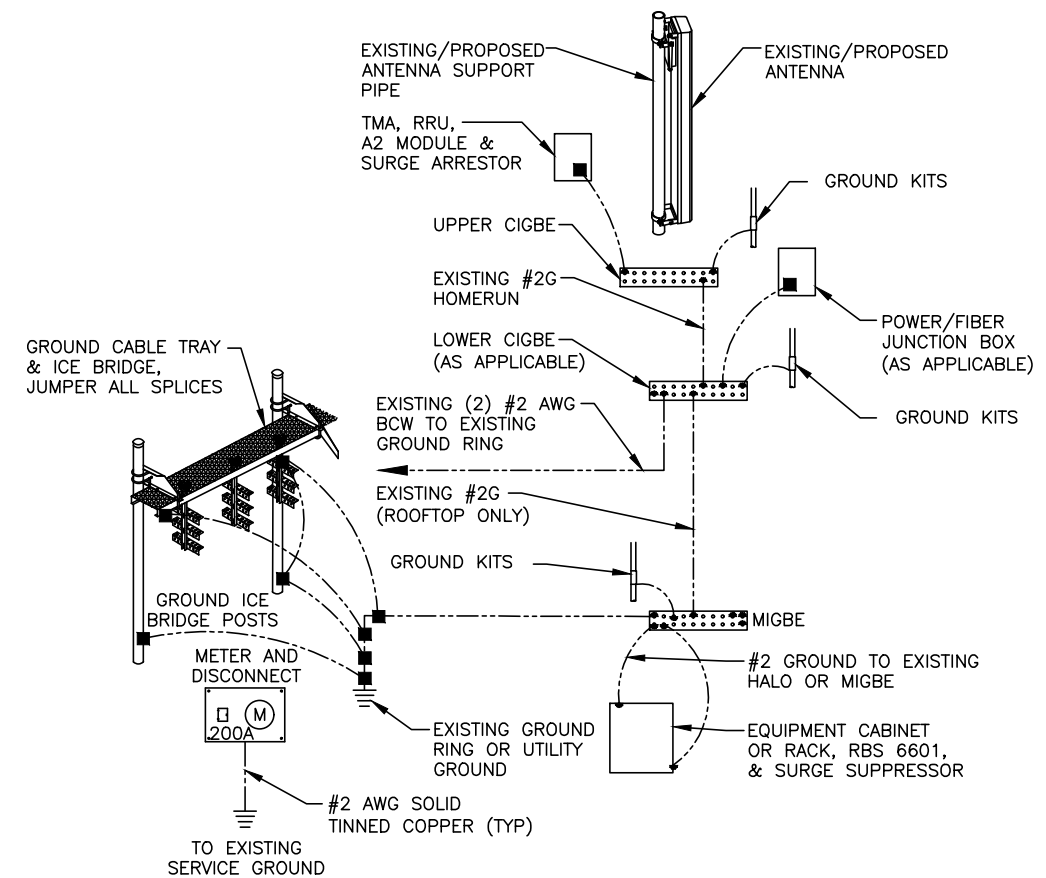


GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1)
SCALE: N.T.S. (G-1)



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)

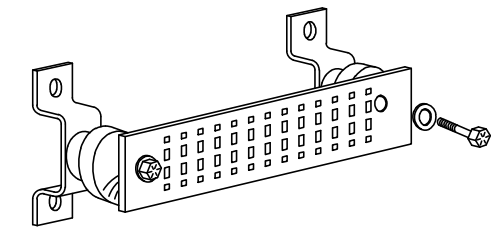
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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.

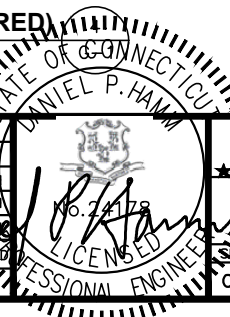
SECTION "A" - SURGE ABSORBERS

- 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)



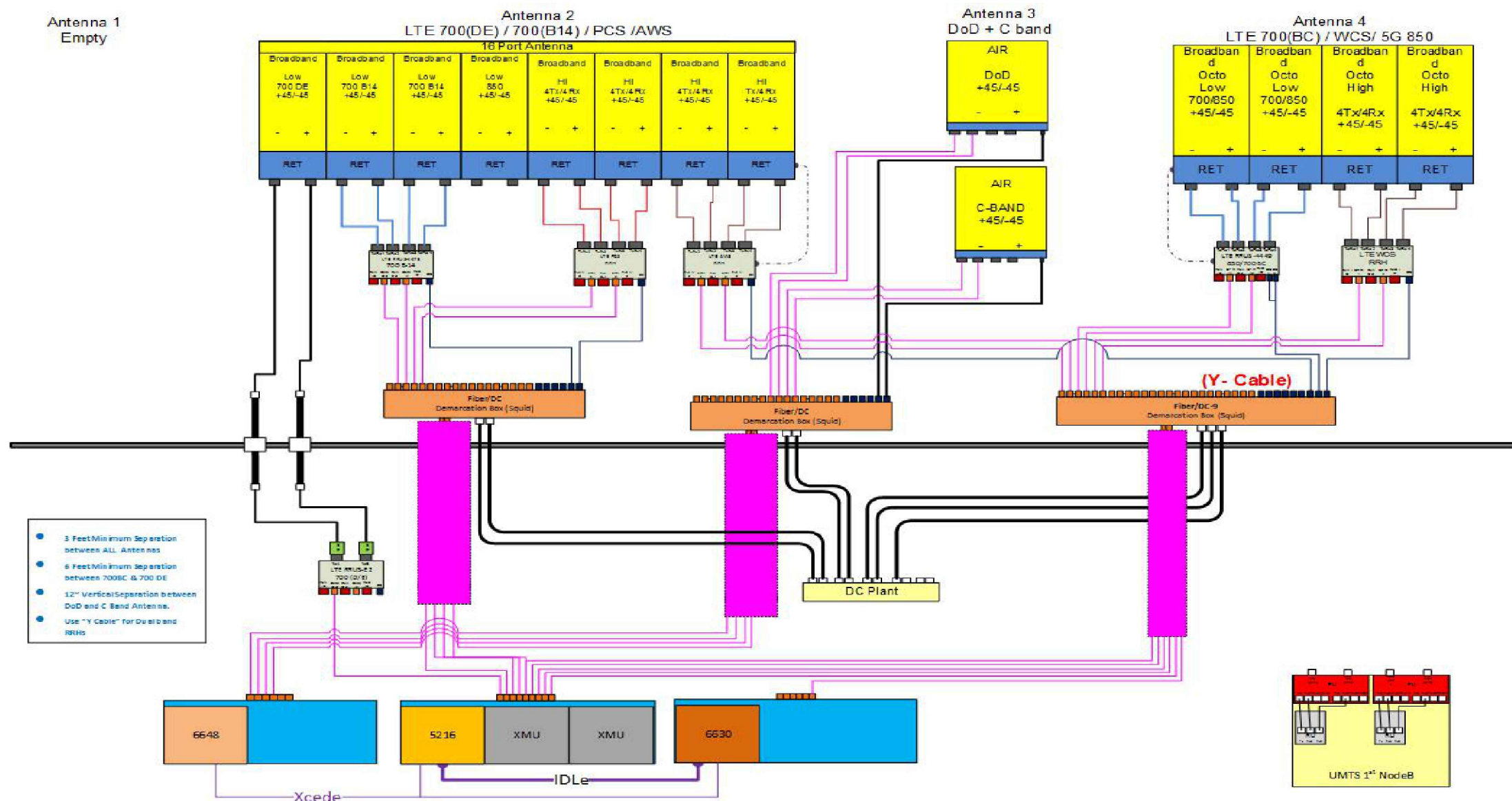
GROUND BAR - DETAIL (AS REQUIRED)
SCALE: N.T.S.

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	06/09/22	ISSUED FOR CONSTRUCTION	HC	HC	DPH
1	06/02/22	ISSUED FOR CONSTRUCTION	HC	HC	DPH
A	05/04/22	ISSUED FOR REVIEW	HC	HC	DPH



AT&T		
GROUNDING DETAILS		
5G-NR-TSR-CBAND_5G-NR-1DR-1_UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CTL02157	G-1	2

NOTE:
 REV: 3
 DATED: 04/07/2022
 RFDS ID: 4767163



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

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

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

2	06/09/22	ISSUED FOR CONSTRUCTION	AM	HC	DPH
1	06/02/22	ISSUED FOR CONSTRUCTION	JJ	HC	DPH
A	05/04/22	ISSUED FOR REVIEW	PM	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: PM		

STRUCTURAL ANALYSIS REPORT

For

SITE NUMBER: CTL02157
SITE NAME: DANBURY EAST
FA CODE: 10035077

48 NEWTOWN ROAD
DANBURY, CT 06810

Antennas Mounted to the Monopole



Prepared for:



Dated: June 9, 2022

Prepared by:



45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com



SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 110' monopole supporting the existing and proposed AT&T's antennas located at elevation 100' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

Record drawings of the existing monopole were not available for our use. The previous structural analysis report prepared by Centek Engineering, dated December 18, 2014, was available and obtained for our use.

The previous structural analysis report and modifications prepared by this office, dated July 22, 2016, was used for analysis.

Tower mapping report prepared by ProVertic LLC, dated September 19, 2017, was provided to this office.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole and foundation **are in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The monopole structure is rated at **60.3%** - (Pole Section L4 from El.47' to El.72' Controlling).



APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
AT&T	(1) 800 10965 Antenna	100'	Sector Frame
AT&T	(2) 800 10964 Antennas	100'	Sector Frame
AT&T	(3) B14 4478	100'	Sector Frame
AT&T	(3) RRUS-32 B2	100'	Sector Frame
AT&T	(3) RRUS-32 B66	100'	Sector Frame
AT&T	(3) RRUS-32 B30	100'	Sector Frame
AT&T	(2) DC6-48-60-18-8C	100'	Sector Frame
AT&T	(1) QD6616-7 Antenna	100'	Sector Frame
AT&T	(2) QD4616-7 Antennas	100'	Sector Frame
AT&T	(3) AIR6419 B77G Antennas	101.2'	Sector Frame
AT&T	(3) AIR6449 B77D Antennas	97.6'	Sector Frame
AT&T	(3) 4449 B5/B12	100'	Sector Frame
AT&T	(1) DC9-48-60-24-8C-EV	100'	Sector Frame
VERIZON	(1) BXA-80063-6BF Antenna	90'	Platform w/handrails
VERIZON	(2) BXA-80080-6CF Antennas	90'	Platform w/handrails
VERIZON	(6) JAHH-65B-R3B Antennas	90'	Platform w/handrails
VERIZON	(3) XXDWMM Antennas	90'	Platform w/handrails
VERIZON	(3) B5/B13 RRH-BR04C	90'	Platform w/handrails
VERIZON	(3) B2/B66A RRH-BR049	90'	Platform w/handrails
VERIZON	(3) CBRS RRH-RT4401	90'	Platform w/handrails
VERIZON	(3) CBC78T-DS-43-2X	90'	Platform w/handrails
VERIZON	(2) OVP Box	90'	Platform w/handrails

**Proposed AT&T Appurtenances shown in Bold.*

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(6) 1 5/8" Cables	100'	Outside Monopole
AT&T	(6) DC Power Cables	100'	Inside Monopole
AT&T	(2) Fiber Cables	100'	Inside Monopole
AT&T	(1) DC Power Cable	100'	Inside Monopole
AT&T	(1) Fiber Cable	100'	Inside Monopole

**Proposed AT&T Coax Cables shown in Bold.*



ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	8.3 %	97.5 – 111	PASS	
Pole Section-L2	8.3 %	97 – 97.5	PASS	
Pole Section-L3	53.0 %	72 – 97	PASS	
Pole Section-L4	60.3 %	47 – 72	PASS	Controlling
Pole Section-L5	57.4 %	21 – 47	PASS	
Pole Section-L6	57.2 %	1 – 21	PASS	



HUDSON
Design Group LLC

DESIGN CRITERIA:

1. EIA/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures
2. Connecticut State Building Code

City/Town: Danbury
County: Fairfield
Basic Wind Speed: 120 mph
Risk Category: II
Exposure Category: B
Topographic Category: 1
Ice Thickness: 1.0 inch

3. Approximate height above grade to proposed antennas: 100'

ASSUMPTIONS:

1. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
2. The monopole and foundation are properly constructed and maintained. 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. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.
4. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas, RRHs and surge arrestor be mounted on the existing sector frames supported by the monopole.

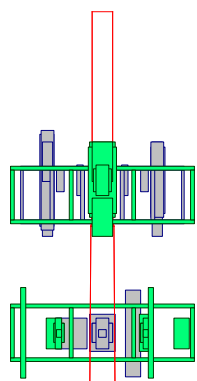


HUDSON
Design Group LLC

TNX INPUT/OUTPUT

Section	1	2	3	4	5	6
Length (ft)	13.50	0.50	25.00	25.00	30.00	20.00
Number of Sides	1	1	18	18	18	18
Thickness (in)	0.3750	0.3750	0.2500	0.3000	0.3650	0.3890
Socket Length (ft)				4.00		
Top Dia (in)	16.0000	16.0000	17.4900	22.7350	26.5408	33.3920
Bot Dia (in)	16.0000	17.4900	22.7350	27.9800	33.3920	37.0000
Grade	A36	A36	A36	A36	A572-65	A572-65
Weight (lb)	896.3	34.8	1421.2	2151.5	3710.9	3100.2

111.0 ft
97.5 ft
72.0 ft
47.0 ft
21.0 ft
1.0 ft



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
AIR6419 B77G w/mount pipe	101.2	AIR6449 B77D w/mount pipe	97.6
AIR6419 B77G w/mount pipe	101.2	AIR6449 B77D w/mount pipe	97.6
AIR6419 B77G w/mount pipe	101.2	AIR6449 B77D w/mount pipe	97.6
800 10965 w/ Mount Pipe	100	PIROD 13' Platform w/handrail (Verizon)	90
800 10964 w/ Mount Pipe	100	BXA-80063-6BF-EDIN w/mount pipe	90
800 10964 w/ Mount Pipe	100	BXA-80080-6CF-EDIN w/mount pipe	90
B14 4478	100	BXA-80080-6CF-EDIN w/mount pipe	90
B14 4478	100	JAHH-65B-R3B w/ Mount Pipe	90
B14 4478	100	JAHH-65B-R3B w/ Mount Pipe	90
RRUS-32 B2	100	JAHH-65B-R3B w/ Mount Pipe	90
RRUS-32 B2	100	JAHH-65B-R3B w/ Mount Pipe	90
RRUS-32 B2	100	JAHH-65B-R3B w/ Mount Pipe	90
RRUS-32 B66	100	JAHH-65B-R3B w/ Mount Pipe	90
RRUS-32 B66	100	RxxDC-3315-PF-48	90
RRUS-32 B30	100	RxxDC-3315-PF-48	90
RRUS-32 B30	100	XXDWMM (Verizon)	90
RRUS-32 B30	100	XXDWMM	90
DC6-48-60-18-8C	100	XXDWMM	90
DC6-48-60-18-8C	100	B5/B13 RRH-BR04C	90
QD6616-7 w/mount pipe (ATI - proposed)	100	B5/B13 RRH-BR04C	90
QD4616-7 w/mount pipe	100	B5/B13 RRH-BR04C	90
QD4616-7 w/mount pipe	100	B2/B66A RRH-BR049	90
4449 B5/B12	100	B2/B66A RRH-BR049	90
4449 B5/B12	100	CBRS RRH-RT4401	90
4449 B5/B12	100	CBRS RRH-RT4401	90
DC9-48-60-24-8C-EV	100	CBRS RRH-RT4401	90
Sabre 12' V-Boom (ATI - existing)	99	CBC78T-DS-43-2X	90
Sabre 12' V-Boom	99	CBC78T-DS-43-2X	90
Sabre 12' V-Boom	99	CBC78T-DS-43-2X	90

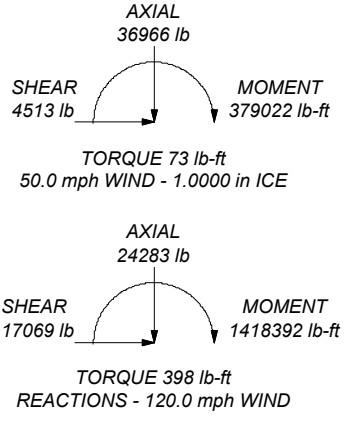
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 120.0 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50.0 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.0 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 60.3%

ALL REACTIONS ARE FACTORED



Hudson Design Group LLC		Job: CT2157	
45 Beechwood Drive		Project: 110 ft Monopole	
North Andover, MA 01845		Client: AT&T	Drawn by: kw
Phone: (P) 978.557.5553		Code: TIA-222-H	Date: 06/09/22
FAX: (F) 978.336.5586		Path: C:\CT2157\CT2157.dwg	Scale: NTS
			Dwg No. E-1

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2157	Page	1 of 11
	Project	110 ft Monopole	Date	09:47:46 06/09/22
	Client	AT&T	Designed by	kw

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 Fairfield County, Connecticut.

Tower base elevation above sea level: 1.00 ft.

Basic wind speed of 120.0 mph.

Risk Category II.

Exposure Category B.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56.0 pcf.

A wind speed of 50.0 mph is used in combination with ice.

Temperature drop of 50.0 °F.

Deflections calculated using a wind speed of 60.0 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.

Tapered Pole Section Geometry

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	111.00-97.50	13.50	0.00	Round	16.0000	16.0000	0.3750		A36 (36 ksi)
L2	97.50-97.00	0.50	0.00	Round	16.0000	17.4900	0.3750		A36 (36 ksi)
L3	97.00-72.00	25.00	0.00	18	17.4900	22.7350	0.2500	1.0000	A572-65 (65 ksi)
L4	72.00-47.00	25.00	4.00	18	22.7350	27.9800	0.3000	1.2000	A572-65 (65 ksi)
L5	47.00-21.00	30.00	0.00	18	26.5408	33.3920	0.3650	1.4600	A572-65 (65 ksi)
L6	21.00-1.00	20.00		18	33.3920	37.0000	0.3890	1.5560	A572-65 (65 ksi)

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
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tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2157	Page	2 of 11
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	Client	AT&T	Designed by	kw

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
1 5/8 (AT&T)	B	Yes	Surface Ar (CaAa)	100.00 - 16.00	6	6	0.000 0.000	1.9800		1.04

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
DC Power Cable	B	No	Yes	Inside Pole	100.00 - 16.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.58 0.58 0.58
FB-L98B-002	B	No	Yes	Inside Pole	100.00 - 16.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.25 0.25 0.25

DC Power Cable (AT&T)	B	No	Yes	Inside Pole	100.00 - 16.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.58 0.58 0.58
FB-L98B-002	B	No	Yes	Inside Pole	100.00 - 16.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.25 0.25 0.25

1 5/8 (Verizon)	C	No	Yes	Inside Pole	90.00 - 16.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.04 1.04 1.04
1 5/8 Fiber Cable	C	No	Yes	Inside Pole	90.00 - 16.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.04 1.04 1.04

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
Sabre 12' V-Boom (AT&T - existing)	A	From Face	2.00	0.0000	99.00	No Ice	15.40	14.00	558.00
			0.00			1/2" Ice	21.30	20.81	741.00
			0.00			1" Ice	27.20	27.62	924.00
Sabre 12' V-Boom	B	From Face	2.00	0.0000	99.00	No Ice	15.40	14.00	558.00
			0.00			1/2" Ice	21.30	20.81	741.00
			0.00			1" Ice	27.20	27.62	924.00
Sabre 12' V-Boom	C	From Face	2.00	0.0000	99.00	No Ice	15.40	14.00	558.00
			0.00			1/2" Ice	21.30	20.81	741.00
			0.00			1" Ice	27.20	27.62	924.00
800 10965 w/ Mount Pipe	A	From Face	3.50	0.0000	100.00	No Ice	13.92	7.50	134.55
			0.00			1/2" Ice	14.50	8.71	229.58
			0.00			1" Ice	15.07	9.65	333.52
800 10964 w/ Mount Pipe	B	From Face	3.50	0.0000	100.00	No Ice	10.25	5.53	112.90
			0.00			1/2" Ice	10.77	6.41	187.51

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2157	Page	3 of 11
	Project	110 ft Monopole	Date	09:47:46 06/09/22
	Client	AT&T	Designed by	kw

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						°
800 10964 w/ Mount Pipe	C	From Face	0.00	3.50	0.0000	100.00	1" Ice	11.27	7.16	269.56
			0.00	0.00			No Ice	10.25	5.53	112.90
			0.00	0.00			1/2" Ice	10.77	6.41	187.51
			0.00	0.00			1" Ice	11.27	7.16	269.56
B14 4478	A	From Face	2.50	0.00	0.0000	100.00	No Ice	1.65	0.93	60.00
			0.00	0.00			1/2" Ice	1.81	1.05	74.37
			0.00	0.00			1" Ice	1.98	1.19	91.23
			0.00	0.00			No Ice	1.65	0.93	60.00
B14 4478	B	From Face	2.50	0.00	0.0000	100.00	1/2" Ice	1.81	1.05	74.37
			0.00	0.00			1" Ice	1.98	1.19	91.23
			0.00	0.00			No Ice	1.65	0.93	60.00
			0.00	0.00			1/2" Ice	1.81	1.05	74.37
B14 4478	C	From Face	2.50	0.00	0.0000	100.00	1" Ice	1.98	1.19	91.23
			0.00	0.00			No Ice	1.65	0.93	60.00
			0.00	0.00			1/2" Ice	1.81	1.05	74.37
			0.00	0.00			1" Ice	1.98	1.19	91.23
RRUS-32 B2	A	From Face	2.50	0.00	0.0000	100.00	No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
RRUS-32 B2	B	From Face	2.50	0.00	0.0000	100.00	1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
RRUS-32 B2	C	From Face	2.50	0.00	0.0000	100.00	1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
RRUS-32 B66	A	From Face	2.50	0.00	0.0000	100.00	No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
RRUS-32 B66	B	From Face	2.50	0.00	0.0000	100.00	1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
RRUS-32 B66	C	From Face	2.50	0.00	0.0000	100.00	1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
RRUS-32 B30	A	From Face	2.50	0.00	0.0000	100.00	No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
RRUS-32 B30	B	From Face	2.50	0.00	0.0000	100.00	1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
RRUS-32 B30	C	From Face	2.50	0.00	0.0000	100.00	1" Ice	3.19	2.05	105.42
			0.00	0.00			No Ice	2.74	1.67	60.00
			0.00	0.00			1/2" Ice	2.96	1.86	81.11
			0.00	0.00			1" Ice	3.19	2.05	105.42
DC6-48-60-18-8C	A	From Face	1.00	0.00	0.0000	100.00	No Ice	0.79	0.79	20.00
			0.00	0.00			1/2" Ice	1.27	1.27	35.12
			0.00	0.00			1" Ice	1.45	1.45	52.57
			0.00	0.00			No Ice	0.79	0.79	20.00
DC6-48-60-18-8C	B	From Face	1.00	0.00	0.0000	100.00	1/2" Ice	1.27	1.27	35.12
			0.00	0.00			1" Ice	1.45	1.45	52.57
			0.00	0.00			No Ice	0.79	0.79	20.00
			0.00	0.00			1/2" Ice	1.27	1.27	35.12

QD6616-7 w/mount pipe (AT&T - proposed)	A	From Face	3.50	0.00	0.0000	100.00	No Ice	13.82	8.46	139.55
			0.00	0.00			1/2" Ice	14.43	9.66	242.01
			0.00	0.00			1" Ice	15.00	10.55	353.26
QD4616-7 w/mount pipe	B	From Face	3.50	0.00	0.0000	100.00	No Ice	10.08	6.22	116.55
			0.00	0.00			1/2" Ice	10.78	7.28	197.35
			0.00	0.00			1" Ice	11.37	8.05	285.62
QD4616-7 w/mount pipe	C	From Face	3.50	0.00	0.0000	100.00	No Ice	10.08	6.22	116.55
			0.00	0.00			1/2" Ice	10.78	7.28	197.35
			0.00	0.00			1" Ice	11.37	8.05	285.62
AIR6419 B77G w/mount pipe	A	From Face	3.50	0.0000		101.20	No Ice	4.48	2.88	109.60

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2157	Page	4 of 11
	Project	110 ft Monopole	Date	09:47:46 06/09/22
	Client	AT&T	Designed by	kw

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
			Horz ft	Lateral ft					
			0.00						
			0.00			1/2" Ice	4.83	3.34	149.47
			0.00			1" Ice	5.19	3.81	194.34
AIR6419 B77G w/mount pipe	B	From Face	3.50	0.0000	101.20	No Ice	4.48	2.88	109.60
			0.00			1/2" Ice	4.83	3.34	149.47
			0.00			1" Ice	5.19	3.81	194.34
AIR6419 B77G w/mount pipe	C	From Face	3.50	0.0000	101.20	No Ice	4.48	2.88	109.60
			0.00			1/2" Ice	4.83	3.34	149.47
			0.00			1" Ice	5.19	3.81	194.34
AIR6449 B77D w/mount pipe	A	From Face	3.50	0.0000	97.60	No Ice	4.35	3.01	117.60
			0.00			1/2" Ice	4.70	3.47	157.89
			0.00			1" Ice	5.06	3.94	203.17
AIR6449 B77D w/mount pipe	B	From Face	3.50	0.0000	97.60	No Ice	4.35	3.01	117.60
			0.00			1/2" Ice	4.70	3.47	157.89
			0.00			1" Ice	5.06	3.94	203.17
AIR6449 B77D w/mount pipe	C	From Face	3.50	0.0000	97.60	No Ice	4.35	3.01	117.60
			0.00			1/2" Ice	4.70	3.47	157.89
			0.00			1" Ice	5.06	3.94	203.17
4449 B5/B12	A	From Face	2.50	0.0000	100.00	No Ice	1.97	1.55	73.00
			0.00			1/2" Ice	2.15	1.71	92.52
			0.00			1" Ice	2.33	1.88	114.92
4449 B5/B12	B	From Face	2.50	0.0000	100.00	No Ice	1.97	1.55	73.00
			0.00			1/2" Ice	2.15	1.71	92.52
			0.00			1" Ice	2.33	1.88	114.92
4449 B5/B12	C	From Face	2.50	0.0000	100.00	No Ice	1.97	1.55	73.00
			0.00			1/2" Ice	2.15	1.71	92.52
			0.00			1" Ice	2.33	1.88	114.92
DC9-48-60-24-8C-EV	C	From Face	1.00	0.0000	100.00	No Ice	0.81	0.81	33.00
			0.00			1/2" Ice	1.30	1.30	48.38
			0.00			1" Ice	1.48	1.48	66.11

PIROD 13' Platform w/handrail (Verizon)	A	None		0.0000	90.00	No Ice	31.30	31.30	1822.00
						1/2" Ice	40.20	40.20	2452.00
						1" Ice	49.10	49.10	3082.00
BXA-80063-6BF-EDIN w/mount pipe	A	From Leg	4.00	0.0000	90.00	No Ice	7.33	5.46	41.10
			2.00			1/2" Ice	7.79	6.38	98.38
			0.00			1" Ice	8.25	7.18	163.05
BXA-80080-6CF-EDIN w/mount pipe	B	From Leg	4.00	0.0000	90.00	No Ice	6.26	6.46	47.20
			2.00			1/2" Ice	6.93	7.73	104.60
			0.00			1" Ice	7.57	8.85	169.77
BXA-80080-6CF-EDIN w/mount pipe	C	From Leg	4.00	0.0000	90.00	No Ice	6.26	6.46	47.20
			2.00			1/2" Ice	6.93	7.73	104.60
			0.00			1" Ice	7.57	8.85	169.77
JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.0000	90.00	No Ice	9.90	7.65	88.85
			6.00			1/2" Ice	10.56	8.83	165.42
			0.00			1" Ice	11.19	9.73	250.16
JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00	0.0000	90.00	No Ice	9.90	7.65	88.85
			-6.00			1/2" Ice	10.56	8.83	165.42
			0.00			1" Ice	11.19	9.73	250.16
JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.0000	90.00	No Ice	9.90	7.65	88.85
			6.00			1/2" Ice	10.56	8.83	165.42
			0.00			1" Ice	11.19	9.73	250.16
JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00	0.0000	90.00	No Ice	9.90	7.65	88.85
			-6.00			1/2" Ice	10.56	8.83	165.42
			0.00			1" Ice	11.19	9.73	250.16
JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.0000	90.00	No Ice	9.90	7.65	88.85
			6.00			1/2" Ice	10.56	8.83	165.42
			0.00			1" Ice	11.19	9.73	250.16

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586</p>	Job	CT2157	Page	5 of 11	
	Project	110 ft Monopole		Date	09:47:46 06/09/22
	Client	AT&T		Designed by	kw

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00	0.0000	90.00	No Ice	9.90	7.65	88.85
			-6.00			1/2" Ice	10.56	8.83	165.42
			0.00			1" Ice	11.19	9.73	250.16
RxxDC-3315-PF-48	A	From Leg	2.50	0.0000	90.00	No Ice	4.59	2.52	32.00
			0.00			1/2" Ice	4.86	2.73	67.82
			0.00			1" Ice	5.14	2.95	107.61
RxxDC-3315-PF-48	B	From Leg	2.50	0.0000	90.00	No Ice	4.59	2.52	32.00
			0.00			1/2" Ice	4.86	2.73	67.82
			0.00			1" Ice	5.14	2.95	107.61

XXDWMM (Verizon)	A	From Leg	4.00	0.0000	90.00	No Ice	4.80	2.40	20.00
			-2.00			1/2" Ice	5.07	2.60	59.31
			0.00			1" Ice	5.35	2.81	102.70
XXDWMM	B	From Leg	4.00	0.0000	90.00	No Ice	4.80	2.40	20.00
			-2.00			1/2" Ice	5.07	2.60	59.31
			0.00			1" Ice	5.35	2.81	102.70
XXDWMM	C	From Leg	4.00	0.0000	90.00	No Ice	4.80	2.40	20.00
			-2.00			1/2" Ice	5.07	2.60	59.31
			0.00			1" Ice	5.35	2.81	102.70
B5/B13 RRH-BR04C	A	From Leg	2.50	0.0000	90.00	No Ice	1.88	1.01	82.00
			0.00			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
B5/B13 RRH-BR04C	B	From Leg	2.50	0.0000	90.00	No Ice	1.88	1.01	82.00
			0.00			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
B5/B13 RRH-BR04C	C	From Leg	2.50	0.0000	90.00	No Ice	1.88	1.01	82.00
			0.00			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
B2/B66A RRH-BR049	A	From Leg	2.50	0.0000	90.00	No Ice	1.88	1.25	97.50
			0.00			1/2" Ice	2.05	1.39	115.84
			0.00			1" Ice	2.22	1.54	136.97
B2/B66A RRH-BR049	B	From Leg	2.50	0.0000	90.00	No Ice	1.88	1.25	97.50
			0.00			1/2" Ice	2.05	1.39	115.84
			0.00			1" Ice	2.22	1.54	136.97
B2/B66A RRH-BR049	C	From Leg	2.50	0.0000	90.00	No Ice	1.88	1.25	97.50
			0.00			1/2" Ice	2.05	1.39	115.84
			0.00			1" Ice	2.22	1.54	136.97
CBRS RRH-RT4401	A	From Leg	2.50	0.0000	90.00	No Ice	2.16	1.42	44.00
			0.00			1/2" Ice	2.36	1.59	61.40
			0.00			1" Ice	2.57	1.77	81.69
CBRS RRH-RT4401	B	From Leg	2.50	0.0000	90.00	No Ice	2.16	1.42	44.00
			0.00			1/2" Ice	2.36	1.59	61.40
			0.00			1" Ice	2.57	1.77	81.69
CBRS RRH-RT4401	C	From Leg	2.50	0.0000	90.00	No Ice	2.16	1.42	44.00
			0.00			1/2" Ice	2.36	1.59	61.40
			0.00			1" Ice	2.57	1.77	81.69
CBC78T-DS-43-2X	A	From Leg	2.50	0.0000	90.00	No Ice	0.37	0.51	22.00
			0.00			1/2" Ice	0.45	0.60	28.34
			0.00			1" Ice	0.53	0.70	36.37
CBC78T-DS-43-2X	B	From Leg	2.50	0.0000	90.00	No Ice	0.37	0.51	22.00
			0.00			1/2" Ice	0.45	0.60	28.34
			0.00			1" Ice	0.53	0.70	36.37
CBC78T-DS-43-2X	C	From Leg	2.50	0.0000	90.00	No Ice	0.37	0.51	22.00
			0.00			1/2" Ice	0.45	0.60	28.34
			0.00			1" Ice	0.53	0.70	36.37

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Hudson Design Group LLC</p> <p style="text-align: center;">45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586</p>	Job	CT2157	Page	6 of 11
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Load Combinations

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

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Hudson Design Group LLC</p> <p style="text-align: center;">45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586</p>	Job	CT2157	Page	7 of 11
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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	38	36966.40	2256.77	3908.12
	Max. H _x	20	24283.13	16946.74	90.77
	Max. H _z	2	24283.13	90.77	17003.96
	Max. M _x	2	1411594.41	90.77	17003.96
	Max. M _z	8	1406749.89	-16946.74	-90.77
	Max. Torsion	7	398.01	-14630.92	8423.37
	Min. Vert	19	18212.35	14630.92	-8423.37
	Min. H _x	9	18212.35	-16946.74	-90.77
	Min. H _z	15	18212.35	-90.77	-17003.96
	Min. M _x	14	-1411348.29	-90.77	-17003.96
	Min. M _z	20	-1406963.77	16946.74	90.77
	Min. Torsion	19	-398.03	14630.92	-8423.37

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	20235.94	0.00	0.00	-94.77	82.14	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	24283.13	-90.77	-17003.96	-1411594.41	9164.13	-240.73
0.9 Dead+1.0 Wind 0 deg - No Ice	18212.35	-90.77	-17003.96	-1394880.31	9021.71	-242.00
1.2 Dead+1.0 Wind 30 deg - No Ice	24283.13	8394.76	-14680.47	-1217987.63	-695487.91	-367.77
0.9 Dead+1.0 Wind 30 deg - No Ice	18212.35	8394.76	-14680.47	-1203564.20	-687296.64	-369.58
1.2 Dead+1.0 Wind 60 deg - No Ice	24283.13	14630.92	-8423.37	-698027.41	-1213759.94	-396.15
0.9 Dead+1.0 Wind 60 deg - No Ice	18212.35	14630.92	-8423.37	-689752.67	-1199437.52	-398.01
1.2 Dead+1.0 Wind 90 deg - No Ice	24283.13	16946.74	90.77	8939.61	-1406749.89	-318.33
0.9 Dead+1.0 Wind 90 deg - No Ice	18212.35	16946.74	90.77	8857.23	-1390140.55	-319.75
1.2 Dead+1.0 Wind 120 deg - No Ice	24283.13	14721.69	8580.59	713450.87	-1222770.83	-155.35
0.9 Dead+1.0 Wind 120 deg - No Ice	18212.35	14721.69	8580.59	705043.99	-1208337.29	-155.94
1.2 Dead+1.0 Wind 150 deg - No Ice	24283.13	8552.44	14772.04	1226836.33	-711196.50	49.09
0.9 Dead+1.0 Wind 150 deg - No Ice	18212.35	8552.44	14772.04	1212365.44	-702808.66	49.50
1.2 Dead+1.0 Wind 180 deg - No Ice	24283.13	90.77	17003.96	1411348.29	-8954.96	240.43
0.9 Dead+1.0 Wind 180 deg - No Ice	18212.35	90.77	17003.96	1394696.75	-8868.53	241.72
1.2 Dead+1.0 Wind 210 deg - No Ice	24283.13	-8394.76	14680.47	1217744.98	695695.67	367.50
0.9 Dead+1.0 Wind 210 deg - No Ice	18212.35	-8394.76	14680.47	1203386.37	687448.76	369.32
1.2 Dead+1.0 Wind 240 deg - No Ice	24283.13	-14630.92	8423.37	697787.81	1213970.05	396.17
0.9 Dead+1.0 Wind 240 deg - No Ice	18212.35	-14630.92	8423.37	689577.08	1199591.37	398.03
1.2 Dead+1.0 Wind 270 deg - No Ice	24283.13	-16946.74	-90.77	-9179.64	1406963.77	318.62

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2157	Page	8 of 11
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	Client	AT&T	Designed by	kw

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
No Ice						
0.9 Dead+1.0 Wind 270 deg - No Ice	18212.35	-16946.74	-90.77	-9033.16	1390300.34	320.03
1.2 Dead+1.0 Wind 300 deg - No Ice	24283.13	-14721.69	-8580.59	-713694.37	1222986.12	155.62
0.9 Dead+1.0 Wind 300 deg - No Ice	18212.35	-14721.69	-8580.59	-705222.44	1208494.94	156.21
1.2 Dead+1.0 Wind 330 deg - No Ice	24283.13	-8552.44	-14772.04	-1227082.88	711409.43	-49.12
0.9 Dead+1.0 Wind 330 deg - No Ice	18212.35	-8552.44	-14772.04	-1212546.13	702964.58	-49.52
1.2 Dead+1.0 Ice+1.0 Temp	36966.40	-0.00	-0.00	-471.75	223.05	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	36966.40	-13.74	-4504.78	-378084.08	1662.30	-57.80
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	36966.40	2232.98	-3894.38	-326796.53	-186627.07	-73.29
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	36966.40	3881.37	-2240.49	-188086.48	-324842.54	-69.13
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	36966.40	4489.75	13.74	878.64	-375949.06	-46.44
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	36966.40	3895.11	2264.28	189465.41	-326252.91	-11.31
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	36966.40	2256.77	3908.12	327142.40	-189070.50	26.83
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	36966.40	13.74	4504.78	377019.60	-1159.47	57.79
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	36966.40	-2232.98	3894.38	325732.22	187130.01	73.27
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	36966.40	-3881.37	2240.49	187022.17	325345.70	69.12
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	36966.40	-4489.75	-13.74	-1943.14	376452.32	46.45
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	36966.40	-3895.11	-2264.28	-190530.09	326756.05	11.34
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	36966.40	-2256.77	-3908.12	-328207.06	189573.43	-26.83
Dead+Wind 0 deg - Service	20235.94	-20.30	-3809.23	-314369.51	2101.36	-54.68
Dead+Wind 30 deg - Service	20235.94	1880.63	-3288.74	-271259.63	-154787.71	-83.46
Dead+Wind 60 deg - Service	20235.94	3277.65	-1887.03	-155493.77	-270179.00	-89.88
Dead+Wind 90 deg - Service	20235.94	3796.43	20.30	1910.38	-313149.71	-72.21
Dead+Wind 120 deg - Service	20235.94	3297.96	1922.20	158774.20	-272189.66	-35.20
Dead+Wind 150 deg - Service	20235.94	1915.90	3309.22	273084.97	-158283.45	11.24
Dead+Wind 180 deg - Service	20235.94	20.30	3809.23	314164.93	-1923.74	54.67
Dead+Wind 210 deg - Service	20235.94	-1880.63	3288.74	271056.46	154966.00	83.45
Dead+Wind 240 deg - Service	20235.94	-3277.66	1887.03	155288.73	270355.38	89.88
Dead+Wind 270 deg - Service	20235.94	-3796.43	-20.30	-2114.72	313327.52	72.22
Dead+Wind 300 deg - Service	20235.94	-3297.96	-1922.20	-158979.42	272368.82	35.22
Dead+Wind 330 deg - Service	20235.94	-1915.90	-3309.22	-273290.86	158461.96	-11.23

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-20235.94	0.00	0.00	20235.94	0.00	0.000%
2	-90.77	-24283.13	-17003.96	90.77	24283.13	17003.96	0.000%
3	-90.77	-18212.35	-17003.96	90.77	18212.35	17003.96	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
4	8394.76	-24283.13	-14680.47	-8394.76	24283.13	14680.47	0.000%
5	8394.76	-18212.35	-14680.47	-8394.76	18212.35	14680.47	0.000%
6	14630.92	-24283.13	-8423.37	-14630.92	24283.13	8423.37	0.000%
7	14630.92	-18212.35	-8423.37	-14630.92	18212.35	8423.37	0.000%
8	16946.74	-24283.13	90.77	-16946.74	24283.13	-90.77	0.000%
9	16946.74	-18212.35	90.77	-16946.74	18212.35	-90.77	0.000%
10	14721.69	-24283.13	8580.59	-14721.69	24283.13	-8580.59	0.000%
11	14721.69	-18212.35	8580.59	-14721.69	18212.35	-8580.59	0.000%
12	8552.44	-24283.13	14772.04	-8552.44	24283.13	-14772.04	0.000%
13	8552.44	-18212.35	14772.04	-8552.44	18212.35	-14772.04	0.000%
14	90.77	-24283.13	17003.96	-90.77	24283.13	-17003.96	0.000%
15	90.77	-18212.35	17003.96	-90.77	18212.35	-17003.96	0.000%
16	-8394.76	-24283.13	14680.47	8394.76	24283.13	-14680.47	0.000%
17	-8394.76	-18212.35	14680.47	8394.76	18212.35	-14680.47	0.000%
18	-14630.92	-24283.13	8423.37	14630.92	24283.13	-8423.37	0.000%
19	-14630.92	-18212.35	8423.37	14630.92	18212.35	-8423.37	0.000%
20	-16946.74	-24283.13	-90.77	16946.74	24283.13	90.77	0.000%
21	-16946.74	-18212.35	-90.77	16946.74	18212.35	90.77	0.000%
22	-14721.69	-24283.13	-8580.59	14721.69	24283.13	8580.59	0.000%
23	-14721.69	-18212.35	-8580.59	14721.69	18212.35	8580.59	0.000%
24	-8552.44	-24283.13	-14772.04	8552.44	24283.13	14772.04	0.000%
25	-8552.44	-18212.35	-14772.04	8552.44	18212.35	14772.04	0.000%
26	0.00	-36966.40	0.00	0.00	36966.40	0.00	0.000%
27	-13.74	-36966.40	-4504.71	13.74	36966.40	4504.78	0.000%
28	2232.95	-36966.40	-3894.33	-2232.98	36966.40	3894.38	0.000%
29	3881.32	-36966.40	-2240.46	-3881.37	36966.40	2240.49	0.000%
30	4489.69	-36966.40	13.74	-4489.75	36966.40	-13.74	0.000%
31	3895.05	-36966.40	2264.25	-3895.11	36966.40	-2264.28	0.000%
32	2256.74	-36966.40	3908.06	-2256.77	36966.40	-3908.12	0.000%
33	13.74	-36966.40	4504.71	-13.74	36966.40	-4504.78	0.000%
34	-2232.95	-36966.40	3894.33	2232.98	36966.40	-3894.38	0.000%
35	-3881.32	-36966.40	2240.46	3881.37	36966.40	-2240.49	0.000%
36	-4489.69	-36966.40	-13.74	4489.75	36966.40	13.74	0.000%
37	-3895.05	-36966.40	-2264.25	3895.11	36966.40	2264.28	0.000%
38	-2256.74	-36966.40	-3908.06	2256.77	36966.40	3908.12	0.000%
39	-20.30	-20235.94	-3809.23	20.30	20235.94	3809.23	0.000%
40	1880.63	-20235.94	-3288.74	-1880.63	20235.94	3288.74	0.000%
41	3277.65	-20235.94	-1887.03	-3277.65	20235.94	1887.03	0.000%
42	3796.43	-20235.94	20.30	-3796.43	20235.94	-20.30	0.000%
43	3297.96	-20235.94	1922.20	-3297.96	20235.94	-1922.20	0.000%
44	1915.90	-20235.94	3309.22	-1915.90	20235.94	-3309.22	0.000%
45	20.30	-20235.94	3809.23	-20.30	20235.94	-3809.23	0.000%
46	-1880.63	-20235.94	3288.74	1880.63	20235.94	-3288.74	0.000%
47	-3277.65	-20235.94	1887.03	3277.66	20235.94	-1887.03	0.000%
48	-3796.43	-20235.94	-20.30	3796.43	20235.94	20.30	0.000%
49	-3297.96	-20235.94	-1922.20	3297.96	20235.94	1922.20	0.000%
50	-1915.90	-20235.94	-3309.22	1915.90	20235.94	3309.22	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	111 - 97.5	16.5152	50	1.2546	0.0023
L2	97.5 - 97	12.9702	50	1.2507	0.0020
L3	97 - 72	12.8392	50	1.2498	0.0020
L4	72 - 47	6.8470	50	0.9737	0.0007
L5	51 - 21	3.2948	50	0.6346	0.0003

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2157	Page	10 of 11
	Project	110 ft Monopole	Date	09:47:46 06/09/22
	Client	AT&T	Designed by	kw

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L6	21 - 1	0.5000	50	0.2404	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
101.20	AIR6419 B77G w/mount pipe	50	13.9401	1.2547	0.0022	93817
100.00	800 10965 w/ Mount Pipe	50	13.6254	1.2538	0.0022	61672
99.00	Sabre 12' V-Boom	50	13.3632	1.2527	0.0021	42012
97.60	AIR6449 B77D w/mount pipe	50	12.9963	1.2508	0.0021	25205
90.00	PiROD 13' Platform w/handrail	50	11.0329	1.2129	0.0016	7492

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	111 - 97.5 (1)	TP16x16x0.375	13.50	0.00	0.0	18.4078	-5353.06	596412.00	0.009
L2	97.5 - 97 (2)	TP17.49x16x0.375	0.50	0.00	0.0	18.4078	-5353.80	596412.00	0.009
L3	97 - 72 (3)	TP22.735x17.49x0.25	25.00	0.00	0.0	17.8418	-11251.70	1043750.00	0.011
L4	72 - 47 (4)	TP27.98x22.735x0.3	25.00	0.00	0.0	25.5578	-14155.70	1495130.00	0.009
L5	47 - 21 (5)	TP33.392x26.5408x0.365	30.00	0.00	0.0	38.2621	-20139.30	2238330.00	0.009
L6	21 - 1 (6)	TP37x33.392x0.389	20.00	0.00	0.0	45.2031	-24275.20	2644380.00	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} lb-ft	φM _{ux} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} lb-ft	φM _{uy} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	111 - 97.5 (1)	TP16x16x0.375	17926.50	247240.00	0.073	0.00	247240.00	0.000
L2	97.5 - 97 (2)	TP17.49x16x0.375	17926.00	247240.00	0.073	0.00	247240.00	0.000
L3	97 - 72 (3)	TP22.735x17.49x0.25	316020.83	610917.50	0.517	0.00	610917.50	0.000
L4	72 - 47 (4)	TP27.98x22.735x0.3	618420.83	1044583.33	0.592	0.00	1044583.33	0.000
L5	47 - 21 (5)	TP33.392x26.5408x0.365	1085583.33	1924491.67	0.564	0.00	1924491.67	0.000
L6	21 - 1 (6)	TP37x33.392x0.389	1418391.67	2521400.00	0.563	0.00	2521400.00	0.000

Pole Shear Design Data

tnxTower Hudson Design Group LLC 45 Beechwood Drive North Andover, MA 01845 Phone: (P) 978.557.5553 FAX: (F) 978.336.5586	Job	CT2157	Page	11 of 11
	Project	110 ft Monopole	Date	09:47:46 06/09/22
	Client	AT&T	Designed by	kw

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	111 - 97.5 (1)	TP16x16x0.375	7170.85	178924.00	0.040	0.04	245791.67	0.000
L2	97.5 - 97 (2)	TP17.49x16x0.375	7192.79	195986.00	0.037	0.04	245791.67	0.000
L3	97 - 72 (3)	TP22.735x17.49x0.25	13940.70	313124.00	0.045	49.35	616580.83	0.000
L4	72 - 47 (4)	TP27.98x22.735x0.3	14885.50	448540.00	0.033	49.24	1054333.33	0.000
L5	47 - 21 (5)	TP33.392x26.5408x0.365	16225.30	671500.00	0.024	49.14	1942208.33	0.000
L6	21 - 1 (6)	TP37x33.392x0.389	17080.40	793314.00	0.022	49.12	2543533.33	0.000

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	111 - 97.5 (1)	0.009	0.073	0.000	0.040	0.000	0.083	1.000	4.8.2 ✓
L2	97.5 - 97 (2)	0.009	0.073	0.000	0.037	0.000	0.083	1.000	4.8.2 ✓
L3	97 - 72 (3)	0.011	0.517	0.000	0.045	0.000	0.530	1.000	4.8.2 ✓
L4	72 - 47 (4)	0.009	0.592	0.000	0.033	0.000	0.603	1.000	4.8.2 ✓
L5	47 - 21 (5)	0.009	0.564	0.000	0.024	0.000	0.574	1.000	4.8.2 ✓
L6	21 - 1 (6)	0.009	0.563	0.000	0.022	0.000	0.572	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	111 - 97.5	Pole	TP16x16x0.375	1	-5353.06	596412.00	8.3	Pass
L2	97.5 - 97	Pole	TP17.49x16x0.375	2	-5353.80	596412.00	8.3	Pass
L3	97 - 72	Pole	TP22.735x17.49x0.25	3	-11251.70	1043750.00	53.0	Pass
L4	72 - 47	Pole	TP27.98x22.735x0.3	4	-14155.70	1495130.00	60.3	Pass
L5	47 - 21	Pole	TP33.392x26.5408x0.365	5	-20139.30	2238330.00	57.4	Pass
L6	21 - 1	Pole	TP37x33.392x0.389	6	-24275.20	2644380.00	57.2	Pass
Summary								
Pole (L4)							60.3	Pass
RATING =							60.3	Pass



HUDSON
Design Group LLC

ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

Site Data

BU#:	
Site Name:	CT2157
App #:	0
Pole Manufacturer:	Other

Anchor Rod Data

Qty:	8	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	45	in

Plate Data

Diam:	51	in
Thick:	1.5	in
Grade:	60	ksi
Single-Rod B-eff:	14.68	in

Stiffener Data (Welding at both sides)

Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	37	in
Thick:	0.389	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Reactions

Mu:	1000	ft-kips
Axial, Pu:	17	kips
Shear, Vu:	12	kips
Eta Factor, η	0.55	TIA G (Fig. 4-4)

If No stiffeners, Criteria: **AISC LRFD** <-Only Applicable to Unstiffened Cases

Anchor Rod Results

Max Rod (Cu+ Vu/η): 138.2 Kips
 Allowable Axial, Φ^*Fu^*Anet : 260.0 Kips
 Anchor Rod Stress Ratio: 53.1% **Pass**

Non-Rigid
AISC LRFD
ϕ^*Tn

Base Plate Results

Base Plate Stress: 39.8 ksi
 Allowable Plate Stress: 54.0 ksi
 Base Plate Stress Ratio: 73.7% **Pass**

Flexural Check

Non-Rigid
AISC LRFD
ϕ^*Fy
Y.L. Length: 25.61

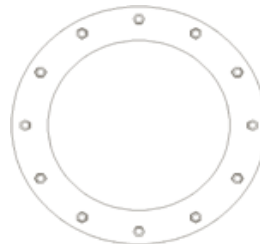
n/a

Stiffener Results

Horizontal Weld : n/a
 Vertical Weld: n/a
 Plate Flex+Shear, $fb/Fb+(fv/Fv)^2$: n/a
 Plate Tension+Shear, $ft/Ft+(fv/Fv)^2$: n/a
 Plate Comp. (AISC Bracket): n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

Site Data

BU#:	0
Site Name:	CT2157
App #:	0
Pole Manufacturer:	Other

Anchor Rod Data

Qty:	6	
Diam:	2.25	in
Rod Material:	Other	
Strength (Fu):	105	ksi
Yield (Fy):	125	ksi
Bolt Circle:	55	in

Plate Data

Diam:	61	in
Thick:	1.75	in
Grade:	60	ksi
Single-Rod B-eff:	19.57	in

Stiffener Data (Welding at both sides)

Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	37	in
Thick:	0.389	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Reactions

Mu:	450	ft-kips
Axial, Pu:	9	kips
Shear, Vu:	9	kips
Eta Factor, η	0.55	TIA G (Fig. 4-4)

If No stiffeners, Criteria: **AISC LRFD** <-Only Applicable to Unstiffened Cases

Anchor Rod Results

Max Rod (Cu+ Vu/η): 69.7 Kips
 Allowable Axial, Φ^*Fu^*Anet : 273.0 Kips
 Anchor Rod Stress Ratio: 25.5% **Pass**

Non-Rigid
AISC LRFD
ϕ^*Tn

Base Plate Results

Base Plate Stress: 19.9 ksi
 Allowable Plate Stress: 54.0 ksi
 Base Plate Stress Ratio: 36.8% **Pass**

Flexural Check

Non-Rigid
AISC LRFD
ϕ^*Fy
Y.L. Length: 40.69

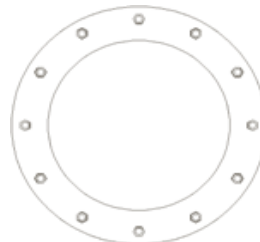
n/a

Stiffener Results

Horizontal Weld : n/a
 Vertical Weld: n/a
 Plate Flex+Shear, $f_b/F_b+(f_v/F_v)^2$: n/a
 Plate Tension+Shear, $f_t/F_t+(f_v/F_v)^2$: n/a
 Plate Comp. (AISC Bracket): n/a

Pole Results

Pole Punching Shear Check: n/a



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

BU: _____
 Site Name: CT2157
 App Number: N/A
 Work Order: _____

Monopole Drilled Pier

Input

Criteria
 TIA Revision: H
 ACI 318 Revision: 2008
 Seismic Category: B

Forces
 Compression: 24.3 kips
 Shear: 17.1 kips
 Moment: 1420 k-ft
 Swelling Force: 0 kips

Foundation Dimensions
 Pier Diameter: 5.5 ft
 Ext. above grade: 1 ft
 Depth below grade: 20 ft

Material Properties
 Number of Rebar: 24
 Rebar Size: 8
 Tie Size: 4
 Rebar tensile strength: 60 ksi
 Concrete Strength: 3000 psi
 Ultimate Concrete Strain: 0.003 in/in
 Clear Cover to Ties: 3 in

Soil Profile: Profile 1

Layer	Thickness (ft)	From (ft)	To (ft)	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (deg)	Ultimate Uplift Skin Friction (ksf)	Ultimate Comp. Skin Friction (ksf)	Ultimate Bearing Capacity (ksf)	SPT 'N' Counts
1	3	0	3	120	0	28				
2	10	3	13	78	0	38				
3	16	13	29	43	0	38				

Analysis Results

Soil Lateral Capacity
 Depth to Zero Shear: 3.37 ft
 Max Moment, Mu: 1480.25 k-ft
 Soil Safety Factor: 3.00
 Safety Factor Req'd: 1.33
RATING: 44.4%

Soil Axial Capacity
 Skin Friction (k): 119.78 kips
 End Bearing (k): 0.00 kips
 Comp. Capacity (k), φCn: 119.78 kips
 Comp. (k), Cu: 24.30 kips
RATING: 20.3%

Concrete/Steel Check
 Mu (from soil analysis): 1480.25 k-ft
 φMn: 2360.22 k-ft
RATING: 62.7%

rho provided: 0.55
 rho required: 0.33 OK

Rebar Spacing: 6.59
 Spacing required: 16.00 OK

Dev. Length required: 16.38
 Dev. Length provided: 43.82 OK

Overall Foundation Rating: 62.7%

May 13, 2022



SAI Communications
12 Industrial Way
Salem NH, 03079

RE: Site Number: CT2157
 FA Number: 10035077
 PACE Number: MRCTB038185
 PT Number: 2051A0MFS7
 Site Name: DANBURY EAST
 Site Address: 48 Newtown Road
 Danbury, CT 06810

To Whom It May Concern:

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

- (2) 800-10964 Antennas (59.0"x20.0"x6.9" – Wt. = 95 lbs. /each)
- (1) 800-10965 Antennas (78.7"x20.0"x6.9" – Wt. = 109 lbs. /each)
- (3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B2 (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B66A RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (2) DC6-48-60-18 Surge Arrestor (24.0"x9.7"Ø – Wt. = 33 lbs.)(Tower Mounted)
- **(1) QD6616-7 Antennas (72.0"x22.0"x9.6" – Wt. = 130 lbs. /each)**
- **(2) QD4616-7 Antennas (51.5"x22.0"x9.6" – Wt. = 109 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"x15.9"x10.6" – Wt. = 82 lbs. /each)**
- **(3) AIR6419 Antennas (31.1"x16.1"x7.3" – Wt. = 66 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(1) DC9-48-60-24-8C-EV Surge Arrestor (24.0"x9.7"Ø – Wt. = 33 lbs.) (Tower Mounted)**

**Proposed equipment shown in bold.*

Mount fabrication drawings prepared by Sabre Industries Towers and Poles P/N C10857001C, dated December 22, 2015 were used to perform this analysis. HDG conducted a ground audit of the existing antenna mounts on March 15, 2022.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R16.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.12 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 0.217 and a spectral response acceleration parameter at a period of 1 second, S_1 , of 0.067.
- 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 1.
- 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 mounts are secured to the existing monopole with ring mounts and threaded rods. HDG considers the threaded rods to be the governing connection member.

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

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	21	LC37	40%	PASS

Reference Documents:

- Assembly drawings prepared by Sabre Industries Towers and Poles P/N C10857001C, dated December 22, 2015.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
Hudson Design Group LLC

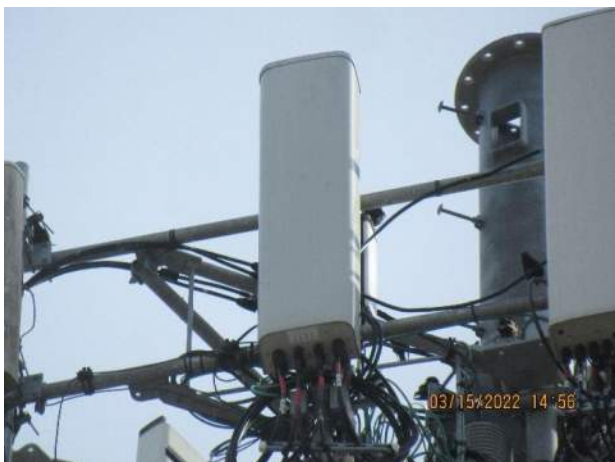


Michael Cabral
Vice President



Daniel P. Hamm, PE
Principal

FIELD PHOTOS:







HUDSON
Design Group LLC

**Wind & Ice
Calculations**

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

Site Code/Name	CT2157 - DANBURY EAST		
State	Connecticut		
County	Fairfield		<i>Reference</i>
Structure Class	II		<i>Table 2-1</i>
Exposure Category	B		<i>Section 2.6.5.1.2</i>
Topographic Category	1 - Kzt = 1		<i>Section 2.6.6.2.1</i>
Mean Elevation of base of structure	z _s 376.01	ft	<i>ASCE7-16 Hazards</i>
Height Above Ground	z 100	ft	
Wind Parameters			
Basic wind speed	V 120	mph	<i>Appendix N of Connecticut Building Code</i>
Wind direction probability factor	K _d 0.95		<i>Section 16.6</i>
Gust effect factor	G _h 1		<i>Section 16.6</i>
Velocity Pressure (K _a = 0.9)	30.73	psf	<i>Section 2.6.11.6</i>
Wind & Ice Parameters			
Base windspeed in conjunction with ice, V _i	50	mph	<i>ASCE7-16 Hazards Tool</i>
Base Ice thickness	t _i 1.00	in	<i>ASCE7-16 Hazards Tool</i>
Ice Velocity Pressure (K _a = 0.9)	q _{ice} 5.33	psf	<i>Section 2.6.11.6</i>
Design Ice Thickness	t _{iz} 1.12	in	<i>Section 2.6.10</i>
Seismic Parameters			
Site Soil Class	D - Default		<i>Table 2-10</i>
Seismic Design Category	B		<i>ASCE7-16 Hazards Tool</i>
Spectral Response at Short Periods	S _s 0.217		<i>Appendix N of Connecticut Building Code</i>
Spectral Response at 1sec	S ₁ 0.067		<i>Appendix N of Connecticut Building Code</i>
Long Period Transition Period	T _L 6		<i>ASCE7-16 Hazards Tool</i>
Seismic Importance Factor	I _s 1		<i>Table 2-3</i>
Response modification coefficient	R 2		<i>Section 16.7</i>
Short-Period Site Coefficient	F _a 1.6		<i>Table 2-11</i>
Design Spectral Response at Short Periods	S _{DS} 0.231		<i>Section 2.7.5</i>
Seismic Response Coefficient	C _s 0.116		<i>Section 2.7.7.1</i>

ALPHA SECTOR

Appurtenance properties						Wind		Ice	Seismic
Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0° [lbs]	90° [lbs]	IceWeight [lbs]	E _H [lbs]
Quintel	QD6616-7	72.0	22.0	9.6	130.0	417.2	208.9	208.9	15.0
Ericsson	AIR6449+AIR6419 STACKED	61.7	16.1	10.6	148.0	266.9	188.1	145.7	17.1
Kathrein	800-10965	78.7	20.0	6.9	109.0	424.5	179.2	202.2	12.6
Ericsson	4478 B14	18.1	13.4	8.3	60.0	38.5	62.1	36.9	6.9
Ericsson	RRUS-32 B2	27.2	12.1	7.0	60.0	51.3	84.3	48.6	6.9
Ericsson	RRUS-32 B66A	27.2	12.1	7.0	60.0	84.3	51.3	48.6	6.9
Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	43.1	60.5	37.5	8.4
Ericsson	RRUS-32 B30	27.2	12.1	7.0	60.0	51.3	84.3	48.6	6.9

BETA SECTOR

Appurtenance properties						Wind		Ice	Seismic
Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0° [lbs]	90° [lbs]	IceWeight [lbs]	E _H [lbs]
Quintel	QD4616-7	51.5	22.0	9.6	109.0	177.5	252.6	150.3	10.5
Ericsson	AIR6449+AIR6419 STACKED	61.7	16.1	10.6	148.0	207.8	247.2	145.7	17.1
Kathrein	800-10964	59.0	20.0	6.9	95.0	171.4	261.9	152.3	11.0
Ericsson	4478 B14	18.1	13.4	8.3	60.0	56.2	44.4	36.9	6.9
Ericsson	RRUS-32 B2	27.2	12.1	7.0	60.0	76.0	59.5	48.6	6.9
Ericsson	RRUS-32 B66A	27.2	12.1	7.0	60.0	59.5	76.0	48.6	6.9
Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	56.1	47.4	37.5	8.4
Ericsson	RRUS-32 B30	27.2	12.1	7.0	60.0	76.0	59.5	48.6	6.9

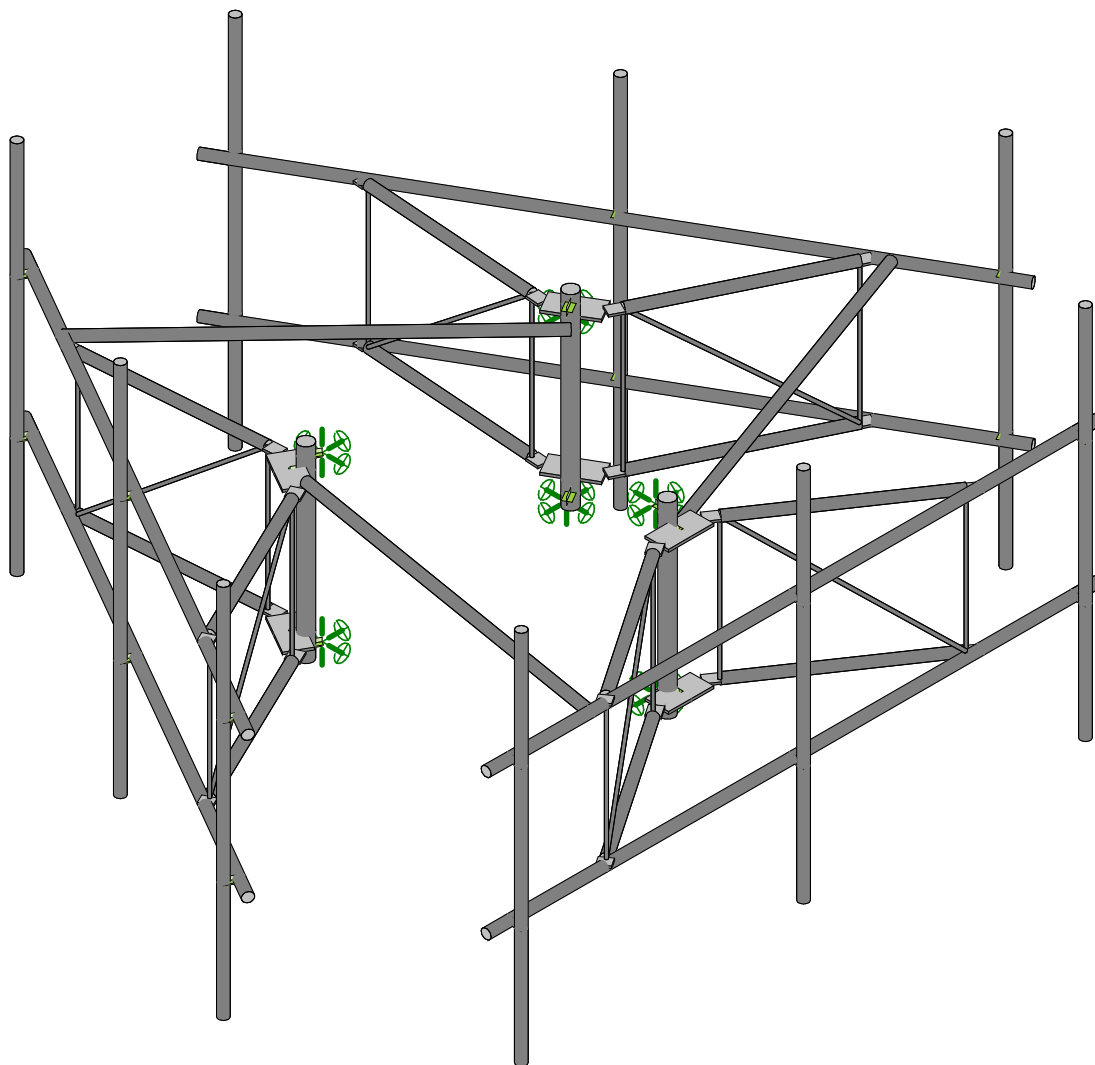
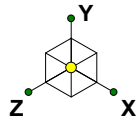
GAMMA SECTOR

Appurtenance properties						Wind		Ice	Seismic
Manufacturer	Model	L [in]	W [in]	D [in]	Weight [lbs]	0° [lbs]	90° [lbs]	IceWeight [lbs]	E _H [lbs]
Quintel	QD4616-7	51.5	22.0	9.6	109.0	177.5	252.6	150.3	10.5
Ericsson	AIR6449+AIR6419 STACKED	61.7	16.1	10.6	148.0	207.8	247.2	145.7	17.1
Kathrein	800-10964	59.0	20.0	6.9	95.0	171.4	261.9	152.3	11.0
Ericsson	4478 B14	18.1	13.4	8.3	60.0	56.2	44.4	36.9	6.9
Ericsson	RRUS-32 B2	27.2	12.1	7.0	60.0	76.0	59.5	48.6	6.9
Ericsson	RRUS-32 B66A	27.2	12.1	7.0	60.0	59.5	76.0	48.6	6.9
Ericsson	4449 B5/B12	17.9	13.2	9.4	73.0	56.1	47.4	37.5	8.4
Ericsson	RRUS-32 B30	27.2	12.1	7.0	60.0	76.0	59.5	48.6	6.9



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Mount Calculations
(Existing **Conditions**)



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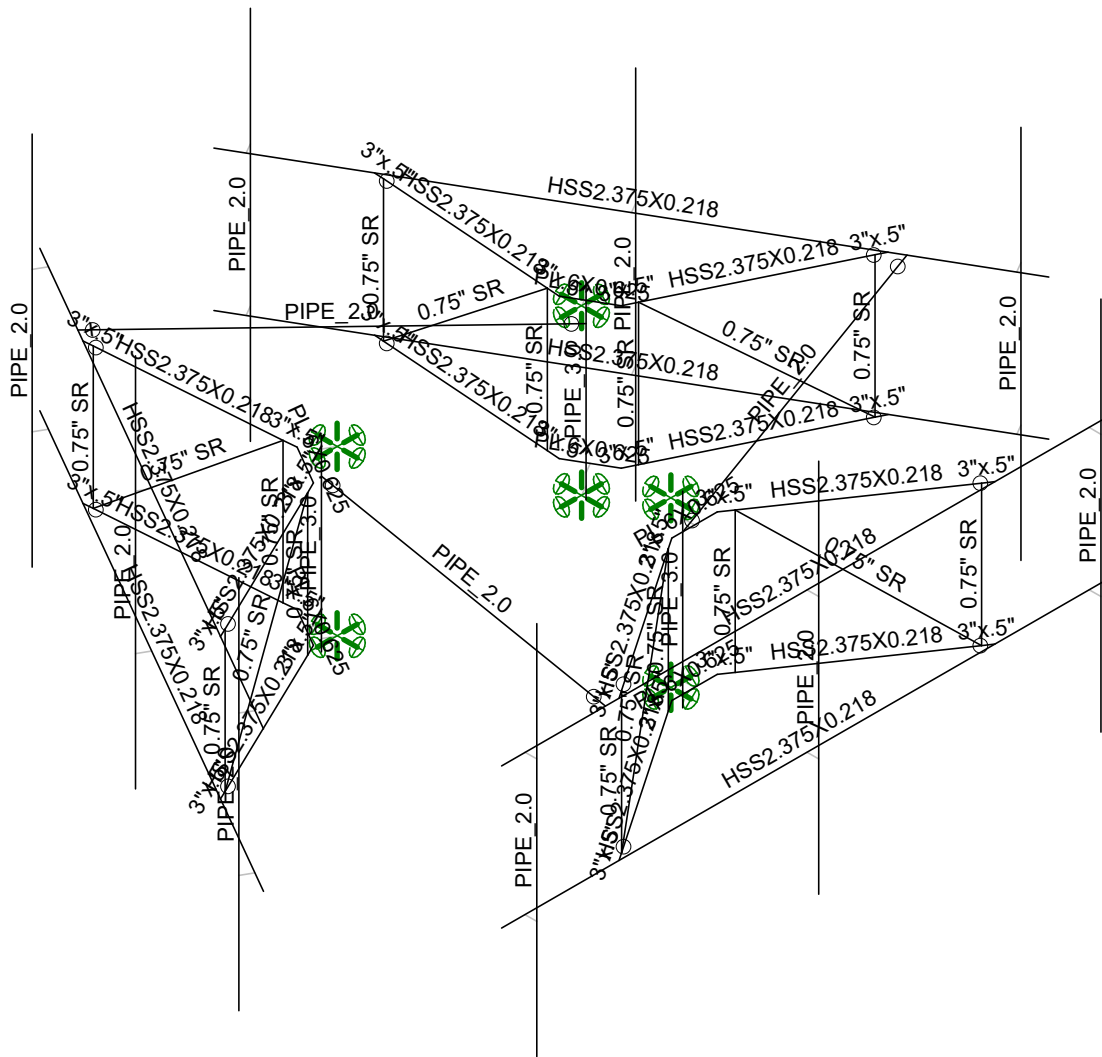
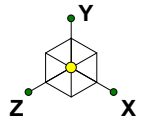
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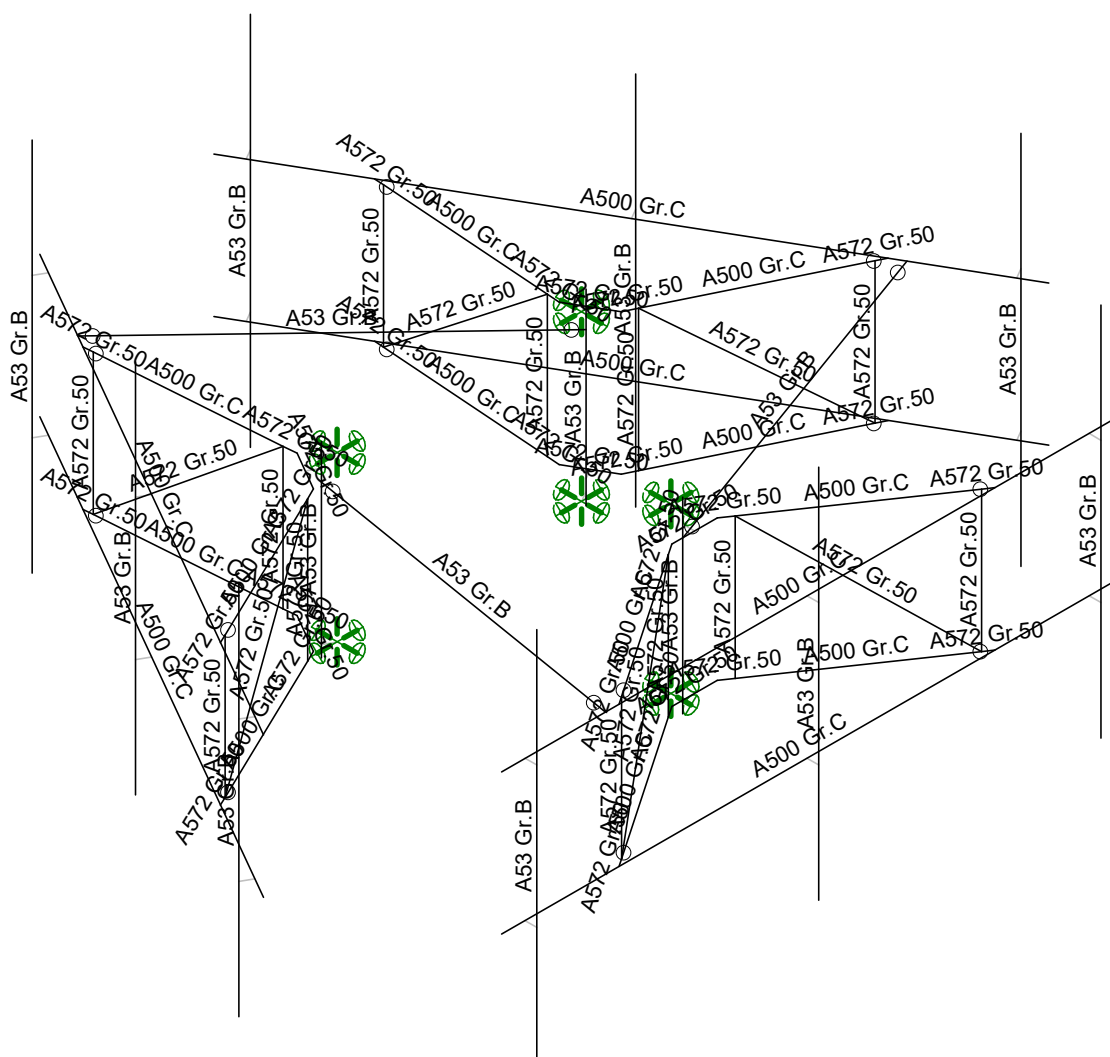
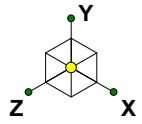
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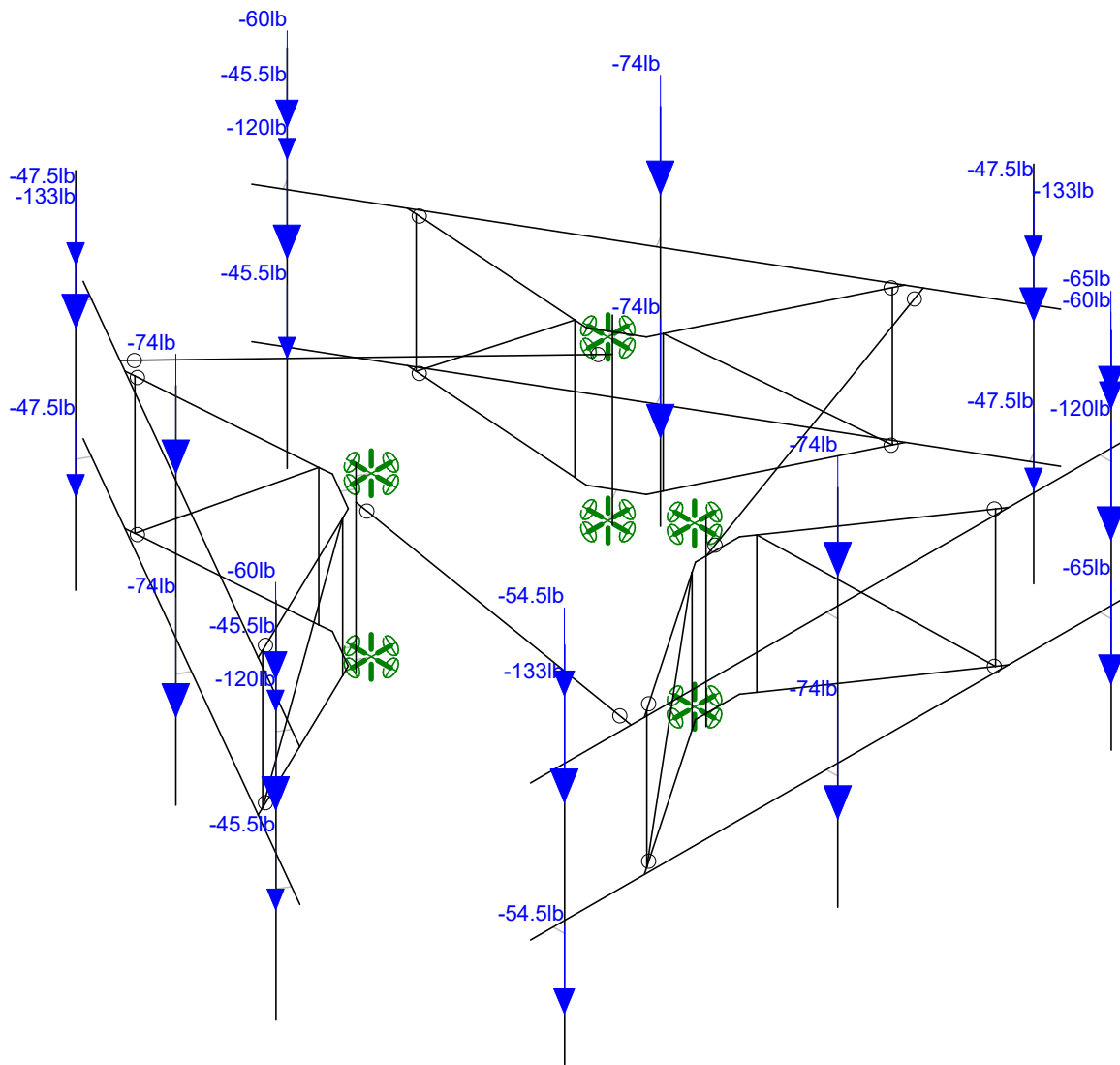
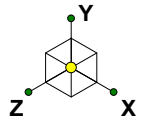
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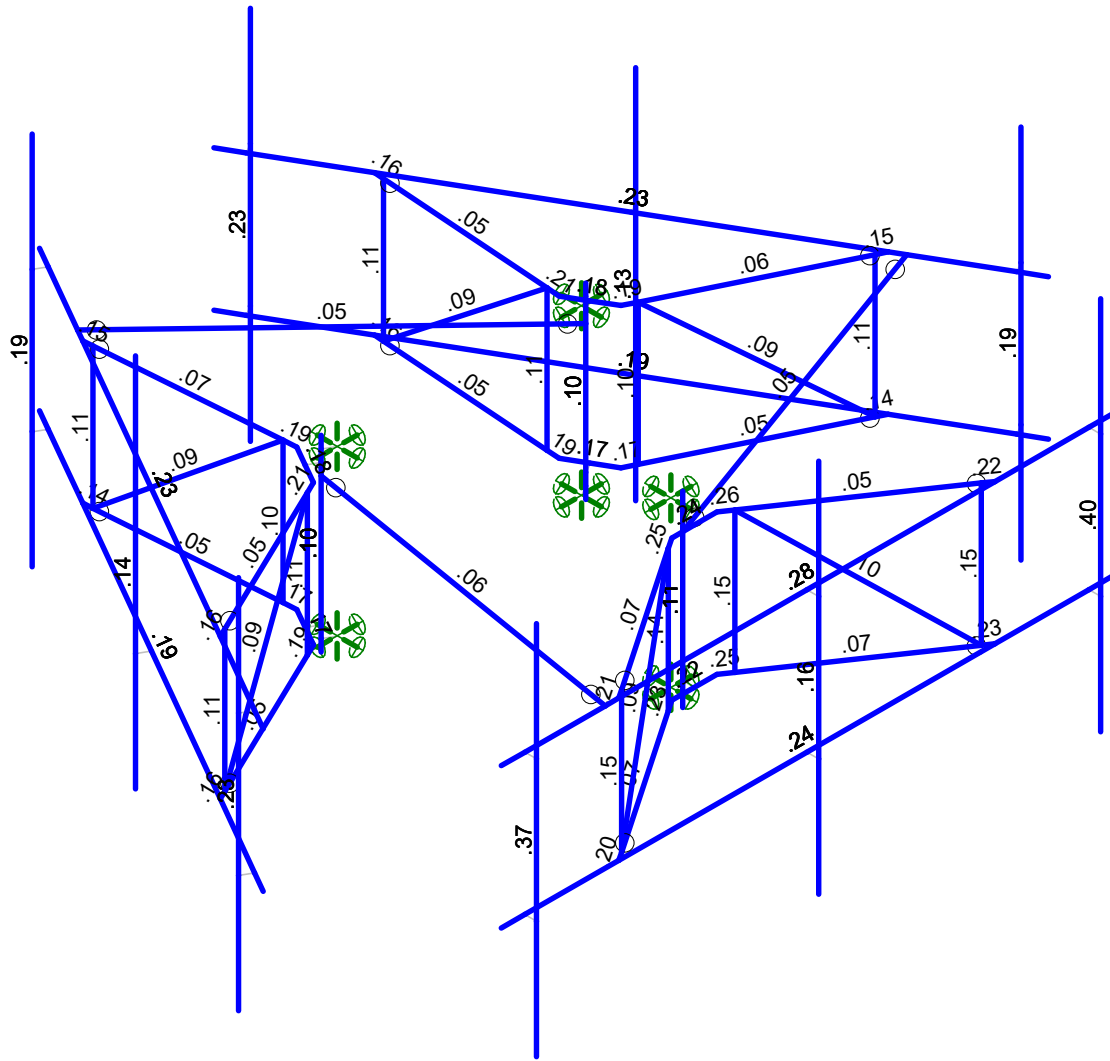
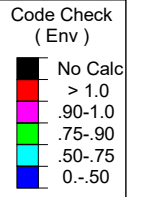
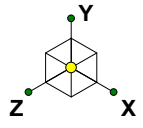


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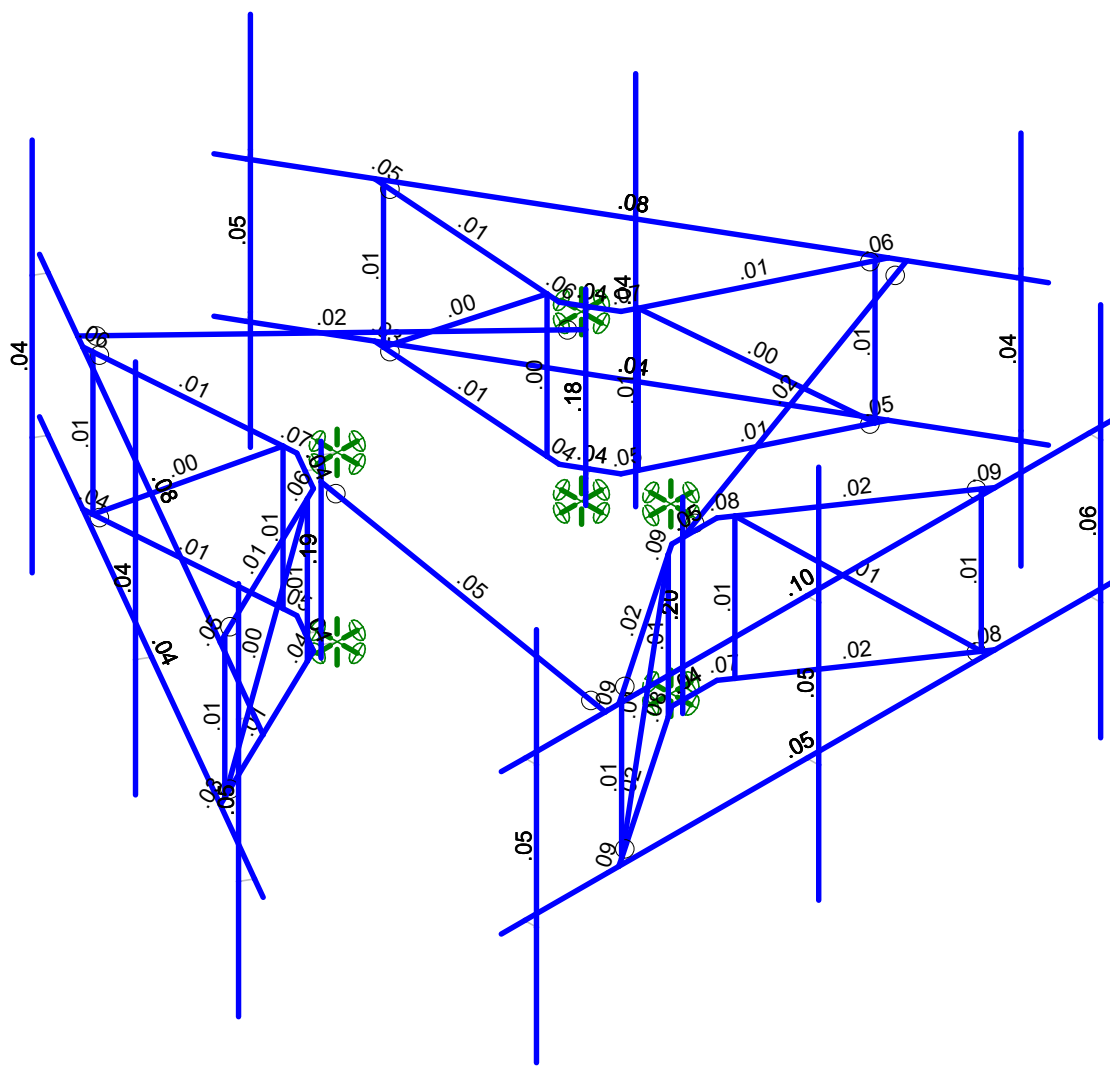
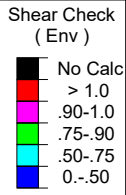
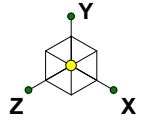
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Member Code Checks Displayed (Enveloped)
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Member Shear Checks Displayed (Enveloped)
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(Global) Model Settings

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

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

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR SET ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8



(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...Density[k/ft...	Yield[ksi]	Rv	Fu[ksi]	Rt	
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	.3	.65	.527	46	1.4	62	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipes	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Stabilizer	PIPE 2.0	HBrace	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Bracing	0.75" SR	VBrace	BAR	A572 Gr.50	Typical	.442	.016	.016	.031
4	Standoff Arm	HSS2.375X0...	Beam	Pipe	A500 Gr.C	Typical	1.39	.824	.824	1.65
5	Frame Rail	HSS2.375X0...	Beam	Pipe	A500 Gr.C	Typical	1.39	.824	.824	1.65
6	Plate	3"x.5"	Beam	RECT	A572 Gr.50	Typical	1.5	.031	1.125	.112
7	Connection Plate	PL 6X0.625	Beam	RECT	A572 Gr.50	Typical	3.75	.122	11.25	.456
8	PIPE 3.0	PIPE 3.0	None	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N32						
2	N33						
3	N44						
4	N45						
5	N46						



Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
6	N47						
7	N48	Reaction	Reaction	Reaction	Reaction		Reaction
8	N49	Reaction	Reaction	Reaction	Reaction		Reaction
9	N50						
10	N51						
11	N83						
12	N84						
13	N95						
14	N96						
15	N97						
16	N98						
17	N99	Reaction	Reaction	Reaction	Reaction		Reaction
18	N100	Reaction	Reaction	Reaction	Reaction		Reaction
19	N101						
20	N133						
21	N134						
22	N145						
23	N146						
24	N147						
25	N148						
26	N149	Reaction	Reaction	Reaction	Reaction		Reaction
27	N150	Reaction	Reaction	Reaction	Reaction		Reaction
28	N151						

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N3	N6			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
2	M2	N4	N5			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
3	M3	N6	N5			Bracing	VBrace	BAR	A572 Gr.50	Typical
4	M4	N3	N4			Bracing	VBrace	BAR	A572 Gr.50	Typical
5	M5	N4	N6			Bracing	VBrace	BAR	A572 Gr.50	Typical
6	M6	N12	N10			Frame Rail	Beam	Pipe	A500 Gr.C	Typical
7	M7	N11	N9			Frame Rail	Beam	Pipe	A500 Gr.C	Typical
8	M8	N5	N13		90	Plate	Beam	RECT	A572 Gr.50	Typical
9	M9	N6	N14		90	Plate	Beam	RECT	A572 Gr.50	Typical
10	M10	N2	N4		90	Plate	Beam	RECT	A572 Gr.50	Typical
11	M11	N1	N3		90	Plate	Beam	RECT	A572 Gr.50	Typical
12	M12	N15	N18			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
13	M13	N16	N17			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
14	M14	N18	N17			Bracing	VBrace	BAR	A572 Gr.50	Typical
15	M15	N15	N16			Bracing	VBrace	BAR	A572 Gr.50	Typical
16	M16	N16	N18			Bracing	VBrace	BAR	A572 Gr.50	Typical
17	M17	N17	N19		90	Plate	Beam	RECT	A572 Gr.50	Typical
18	M18	N18	N20		90	Plate	Beam	RECT	A572 Gr.50	Typical
19	M19	N8	N16		90	Plate	Beam	RECT	A572 Gr.50	Typical
20	M20	N7	N15		90	Plate	Beam	RECT	A572 Gr.50	Typical
21	M21	N25	N24			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
22	M22	N29	N28			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
23	M23	N8	N2		90	Connection Pl...	Beam	RECT	A572 Gr.50	Typical
24	M24	N7	N1		90	Connection Pl...	Beam	RECT	A572 Gr.50	Typical
25	M25	N30	N32			RIGID	None	None	RIGID	Typical
26	M26	N31	N33			RIGID	None	None	RIGID	Typical
27	M27	N37	N36			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
28	M28	N26	N40			RIGID	None	None	RIGID	Typical
29	M29	N34	N42			RIGID	None	None	RIGID	Typical



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 Designer : SI
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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
30	M30	N22	N38			RIGID	None	None	RIGID	Typical
31	M31	N23	N39			RIGID	None	None	RIGID	Typical
32	M32	N35	N43			RIGID	None	None	RIGID	Typical
33	M33	N27	N41			RIGID	None	None	RIGID	Typical
34	M34	N44	N45			PIPE 3.0	None	None	A53 Gr.B	Typical
35	M35	N46	N48			RIGID	None	None	RIGID	Typical
36	M36	N47	N49			RIGID	None	None	RIGID	Typical
37	M37	N54	N57			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
38	M38	N55	N56			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
39	M39	N57	N56			Bracing	VBrace	BAR	A572 Gr.50	Typical
40	M40	N54	N55			Bracing	VBrace	BAR	A572 Gr.50	Typical
41	M41	N55	N57			Bracing	VBrace	BAR	A572 Gr.50	Typical
42	M42	N63	N61			Frame Rail	Beam	Pipe	A500 Gr.C	Typical
43	M43	N62	N60			Frame Rail	Beam	Pipe	A500 Gr.C	Typical
44	M44	N56	N64		90	Plate	Beam	RECT	A572 Gr.50	Typical
45	M45	N57	N65		90	Plate	Beam	RECT	A572 Gr.50	Typical
46	M46	N53	N55		90	Plate	Beam	RECT	A572 Gr.50	Typical
47	M47	N52	N54		90	Plate	Beam	RECT	A572 Gr.50	Typical
48	M48	N66	N69			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
49	M49	N67	N68			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
50	M50	N69	N68			Bracing	VBrace	BAR	A572 Gr.50	Typical
51	M51	N66	N67			Bracing	VBrace	BAR	A572 Gr.50	Typical
52	M52	N67	N69			Bracing	VBrace	BAR	A572 Gr.50	Typical
53	M53	N68	N70		90	Plate	Beam	RECT	A572 Gr.50	Typical
54	M54	N69	N71		90	Plate	Beam	RECT	A572 Gr.50	Typical
55	M55	N59	N67		90	Plate	Beam	RECT	A572 Gr.50	Typical
56	M56	N58	N66		90	Plate	Beam	RECT	A572 Gr.50	Typical
57	M57	N76	N75			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
58	M58	N80	N79			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
59	M59	N59	N53		90	Connection Pl...	Beam	RECT	A572 Gr.50	Typical
60	M60	N58	N52		90	Connection Pl...	Beam	RECT	A572 Gr.50	Typical
61	M61	N81	N83			RIGID	None	None	RIGID	Typical
62	M62	N82	N84			RIGID	None	None	RIGID	Typical
63	M63	N88	N87			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
64	M64	N77	N91			RIGID	None	None	RIGID	Typical
65	M65	N85	N93			RIGID	None	None	RIGID	Typical
66	M66	N73	N89			RIGID	None	None	RIGID	Typical
67	M67	N74	N90			RIGID	None	None	RIGID	Typical
68	M68	N86	N94			RIGID	None	None	RIGID	Typical
69	M69	N78	N92			RIGID	None	None	RIGID	Typical
70	M70	N95	N96			PIPE 3.0	None	None	A53 Gr.B	Typical
71	M71	N97	N99			RIGID	None	None	RIGID	Typical
72	M72	N98	N100			RIGID	None	None	RIGID	Typical
73	M73	N104	N107			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
74	M74	N105	N106			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
75	M75	N107	N106			Bracing	VBrace	BAR	A572 Gr.50	Typical
76	M76	N104	N105			Bracing	VBrace	BAR	A572 Gr.50	Typical
77	M77	N105	N107			Bracing	VBrace	BAR	A572 Gr.50	Typical
78	M78	N113	N111			Frame Rail	Beam	Pipe	A500 Gr.C	Typical
79	M79	N112	N110			Frame Rail	Beam	Pipe	A500 Gr.C	Typical
80	M80	N106	N114		90	Plate	Beam	RECT	A572 Gr.50	Typical
81	M81	N107	N115		90	Plate	Beam	RECT	A572 Gr.50	Typical
82	M82	N103	N105		90	Plate	Beam	RECT	A572 Gr.50	Typical
83	M83	N102	N104		90	Plate	Beam	RECT	A572 Gr.50	Typical
84	M84	N116	N119			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
85	M85	N117	N118			Standoff Arm	Beam	Pipe	A500 Gr.C	Typical
86	M86	N119	N118			Bracing	VBrace	BAR	A572 Gr.50	Typical



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 Model Name : DANBURY EAST

May 12, 2022
 1:53 PM
 Checked By: SC

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
87	M87	N116	N117			Bracing	VBrace	BAR	A572 Gr.50	Typical
88	M88	N117	N119			Bracing	VBrace	BAR	A572 Gr.50	Typical
89	M89	N118	N120		90	Plate	Beam	RECT	A572 Gr.50	Typical
90	M90	N119	N121		90	Plate	Beam	RECT	A572 Gr.50	Typical
91	M91	N109	N117		90	Plate	Beam	RECT	A572 Gr.50	Typical
92	M92	N108	N116		90	Plate	Beam	RECT	A572 Gr.50	Typical
93	M93	N126	N125			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
94	M94	N130	N129			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
95	M95	N109	N103		90	Connection Pl...	Beam	RECT	A572 Gr.50	Typical
96	M96	N108	N102		90	Connection Pl...	Beam	RECT	A572 Gr.50	Typical
97	M97	N131	N133			RIGID	None	None	RIGID	Typical
98	M98	N132	N134			RIGID	None	None	RIGID	Typical
99	M99	N138	N137			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
100	M100	N127	N141			RIGID	None	None	RIGID	Typical
101	M101	N135	N143			RIGID	None	None	RIGID	Typical
102	M102	N123	N139			RIGID	None	None	RIGID	Typical
103	M103	N124	N140			RIGID	None	None	RIGID	Typical
104	M104	N136	N144			RIGID	None	None	RIGID	Typical
105	M105	N128	N142			RIGID	None	None	RIGID	Typical
106	M106	N145	N146			PIPE 3.0	None	None	A53 Gr.B	Typical
107	M107	N147	N149			RIGID	None	None	RIGID	Typical
108	M108	N148	N150			RIGID	None	None	RIGID	Typical
109	M109	N21	N151			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
110	M110	N122	N101			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
111	M111	N72	N50			Mount Pipes	Column	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat..	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6						Yes				None
7	M7						Yes				None
8	M8		BenPIN				Yes				None
9	M9		BenPIN				Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes	** NA **			None
15	M15						Yes	** NA **			None
16	M16						Yes	** NA **			None
17	M17		BenPIN				Yes				None
18	M18		BenPIN				Yes				None
19	M19						Yes				None
20	M20						Yes				None
21	M21						Yes	** NA **			None
22	M22						Yes	** NA **			None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes	** NA **			None
26	M26						Yes	** NA **			None
27	M27						Yes	** NA **			None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
28	M28						Yes	** NA **			None
29	M29						Yes	** NA **			None
30	M30						Yes	** NA **			None
31	M31						Yes	** NA **			None
32	M32						Yes	** NA **			None
33	M33						Yes	** NA **			None
34	M34						Yes	** NA **			None
35	M35						Yes	** NA **			None
36	M36						Yes	** NA **			None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes	** NA **			None
40	M40						Yes	** NA **			None
41	M41						Yes	** NA **			None
42	M42						Yes				None
43	M43						Yes				None
44	M44		BenPIN				Yes				None
45	M45		BenPIN				Yes				None
46	M46						Yes				None
47	M47						Yes				None
48	M48						Yes				None
49	M49						Yes				None
50	M50						Yes	** NA **			None
51	M51						Yes	** NA **			None
52	M52						Yes	** NA **			None
53	M53		BenPIN				Yes				None
54	M54		BenPIN				Yes				None
55	M55						Yes				None
56	M56						Yes				None
57	M57						Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes				None
60	M60						Yes				None
61	M61						Yes	** NA **			None
62	M62						Yes	** NA **			None
63	M63						Yes	** NA **			None
64	M64						Yes	** NA **			None
65	M65						Yes	** NA **			None
66	M66						Yes	** NA **			None
67	M67						Yes	** NA **			None
68	M68						Yes	** NA **			None
69	M69						Yes	** NA **			None
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	** NA **			None
73	M73						Yes				None
74	M74						Yes				None
75	M75						Yes	** NA **			None
76	M76						Yes	** NA **			None
77	M77						Yes	** NA **			None
78	M78						Yes				None
79	M79						Yes				None
80	M80		BenPIN				Yes				None
81	M81		BenPIN				Yes				None
82	M82						Yes				None
83	M83						Yes				None
84	M84						Yes				None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
85	M85						Yes				None
86	M86						Yes	** NA **			None
87	M87						Yes	** NA **			None
88	M88						Yes	** NA **			None
89	M89		BenPIN				Yes				None
90	M90		BenPIN				Yes				None
91	M91						Yes				None
92	M92						Yes				None
93	M93						Yes	** NA **			None
94	M94						Yes	** NA **			None
95	M95						Yes				None
96	M96						Yes				None
97	M97						Yes	** NA **			None
98	M98						Yes	** NA **			None
99	M99						Yes	** NA **			None
100	M100						Yes	** NA **			None
101	M101						Yes	** NA **			None
102	M102						Yes	** NA **			None
103	M103						Yes	** NA **			None
104	M104						Yes	** NA **			None
105	M105						Yes	** NA **			None
106	M106						Yes	** NA **			None
107	M107						Yes	** NA **			None
108	M108						Yes	** NA **			None
109	M109	BenPIN	BenPIN				Yes	** NA **			None
110	M110	BenPIN	BenPIN				Yes	** NA **			None
111	M111	BenPIN	BenPIN				Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Standoff Arm	45.25			Lbyy						Lateral
2	M2	Standoff Arm	45.25			Lbyy						Lateral
3	M3	Bracing	36						.7	.7		Lateral
4	M4	Bracing	36						.7	.7		Lateral
5	M5	Bracing	57.824						.7	.7		Lateral
6	M6	Frame Rail	156	96		Lbyy						Lateral
7	M7	Frame Rail	156	96		Lbyy						Lateral
8	M8	Plate	2.5			Lbyy						Lateral
9	M9	Plate	2.5			Lbyy						Lateral
10	M10	Plate	3.312			Lbyy						Lateral
11	M11	Plate	3.312			Lbyy						Lateral
12	M12	Standoff Arm	45.25			Lbyy						Lateral
13	M13	Standoff Arm	45.25			Lbyy						Lateral
14	M14	Bracing	36						.7	.7		Lateral
15	M15	Bracing	36						.7	.7		Lateral
16	M16	Bracing	57.824						.7	.7		Lateral
17	M17	Plate	2.5			Lbyy						Lateral
18	M18	Plate	2.5			Lbyy						Lateral
19	M19	Plate	3.313			Lbyy						Lateral
20	M20	Plate	3.313			Lbyy						Lateral
21	M21	Mount Pipes	96									Lateral
22	M22	Mount Pipes	96									Lateral
23	M23	Connection ...	11.562									Lateral
24	M24	Connection ...	11.562									Lateral
25	M27	Mount Pipes	96									Lateral



Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kw	Kzz	Cb	Function
26	M34	PIPE 3.0	48									Lateral
27	M37	Standoff Arm	45.25			Lbyy						Lateral
28	M38	Standoff Arm	45.25			Lbyy						Lateral
29	M39	Bracing	36						.7	.7		Lateral
30	M40	Bracing	36						.7	.7		Lateral
31	M41	Bracing	57.824						.7	.7		Lateral
32	M42	Frame Rail	156	96		Lbyy						Lateral
33	M43	Frame Rail	156	96		Lbyy						Lateral
34	M44	Plate	2.5			Lbyy						Lateral
35	M45	Plate	2.5			Lbyy						Lateral
36	M46	Plate	3.312			Lbyy						Lateral
37	M47	Plate	3.312			Lbyy						Lateral
38	M48	Standoff Arm	45.25			Lbyy						Lateral
39	M49	Standoff Arm	45.25			Lbyy						Lateral
40	M50	Bracing	36						.7	.7		Lateral
41	M51	Bracing	36						.7	.7		Lateral
42	M52	Bracing	57.824						.7	.7		Lateral
43	M53	Plate	2.5			Lbyy						Lateral
44	M54	Plate	2.5			Lbyy						Lateral
45	M55	Plate	3.312			Lbyy						Lateral
46	M56	Plate	3.312			Lbyy						Lateral
47	M57	Mount Pipes	96									Lateral
48	M58	Mount Pipes	96									Lateral
49	M59	Connection ...	11.562									Lateral
50	M60	Connection ...	11.562									Lateral
51	M63	Mount Pipes	96									Lateral
52	M70	PIPE 3.0	48									Lateral
53	M73	Standoff Arm	45.25			Lbyy						Lateral
54	M74	Standoff Arm	45.25			Lbyy						Lateral
55	M75	Bracing	36						.7	.7		Lateral
56	M76	Bracing	36						.7	.7		Lateral
57	M77	Bracing	57.824						.7	.7		Lateral
58	M78	Frame Rail	156	96		Lbyy						Lateral
59	M79	Frame Rail	156	96		Lbyy						Lateral
60	M80	Plate	2.5			Lbyy						Lateral
61	M81	Plate	2.5			Lbyy						Lateral
62	M82	Plate	3.312			Lbyy						Lateral
63	M83	Plate	3.312			Lbyy						Lateral
64	M84	Standoff Arm	45.25			Lbyy						Lateral
65	M85	Standoff Arm	45.25			Lbyy						Lateral
66	M86	Bracing	36						.7	.7		Lateral
67	M87	Bracing	36						.7	.7		Lateral
68	M88	Bracing	57.824						.7	.7		Lateral
69	M89	Plate	2.5			Lbyy						Lateral
70	M90	Plate	2.5			Lbyy						Lateral
71	M91	Plate	3.313			Lbyy						Lateral
72	M92	Plate	3.313			Lbyy						Lateral
73	M93	Mount Pipes	96									Lateral
74	M94	Mount Pipes	96									Lateral
75	M95	Connection ...	11.562									Lateral
76	M96	Connection ...	11.562									Lateral
77	M99	Mount Pipes	96									Lateral
78	M106	PIPE 3.0	48									Lateral
79	M109	Mount Pipes	91.995									Lateral
80	M110	Mount Pipes	91.995									Lateral
81	M111	Mount Pipes	91.995									Lateral



Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Self We	DL		-1.1					
2	We	DL					34		
3	Ice We	DL					34	51	
4	W0	WL					34	51	
5	W30	WL					68	102	
6	W60	WL					68	102	
7	W90	WL					34	51	
8	W120	WL					68	102	
9	W150	WL					68	102	
10	W0 + Ice	WL					34	51	
11	W30 + Ice	WL					68	102	
12	W60 + Ice	WL					68	102	
13	W90 + Ice	WL					34	51	
14	W120 + Ice	WL					68	102	
15	W150 + Ice	WL					68	102	
16	500lbs LM 1	LL				1			
17	500lbs LM 2	LL				1			
18	500lbs LM 3	LL				1			
19	500lbs LM 4	LL							
20	250lbs LV 5	LL				1			
21	250lbs LV 6	LL				1			
22	E0	EL	-12				34		
23	E90	EL			.12		34		

Load Combinations

	Description	Sol.	PD	SR	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.
1	Dead	Yes	Y		1	1.4	2	1.4	0	0									
2	Dead + Wi...	Yes	Y		1	1.2	2	1.2	4	1	0								
3	Dead + Wi...	Yes	Y		1	1.2	2	1.2	5	1	0								
4	Dead + Wi...	Yes	Y		1	1.2	2	1.2	6	1	0								
5	Dead + Wi...	Yes	Y		1	1.2	2	1.2	7	1	0								
6	Dead + Wi...	Yes	Y		1	1.2	2	1.2	8	1	0								
7	Dead + Wi...	Yes	Y		1	1.2	2	1.2	9	1	0								
8	Dead + Wi...	Yes	Y		1	1.2	2	1.2	4	-1	0								
9	Dead + Wi...	Yes	Y		1	1.2	2	1.2	5	-1	0								
10	Dead + Wi...	Yes	Y		1	1.2	2	1.2	6	-1	0								
11	Dead + Wi...	Yes	Y		1	1.2	2	1.2	7	-1	0								
12	Dead + Wi...	Yes	Y		1	1.2	2	1.2	8	-1	0								
13	Dead + Wi...	Yes	Y		1	1.2	2	1.2	9	-1	0								
14	Dead + Ic...	Yes	Y		1	1.2	2	1.2	10	1	3	1							
15	Dead + Ic...	Yes	Y		1	1.2	2	1.2	11	1	3	1							
16	Dead + Ic...	Yes	Y		1	1.2	2	1.2	12	1	3	1							
17	Dead + Ic...	Yes	Y		1	1.2	2	1.2	13	1	3	1							
18	Dead + Ic...	Yes	Y		1	1.2	2	1.2	14	1	3	1							
19	Dead + Ic...	Yes	Y		1	1.2	2	1.2	15	1	3	1							
20	Dead + Ic...	Yes	Y		1	1.2	2	1.2	10	-1	3	1							
21	Dead + Ic...	Yes	Y		1	1.2	2	1.2	11	-1	3	1							
22	Dead + Ic...	Yes	Y		1	1.2	2	1.2	12	-1	3	1							
23	Dead + Ic...	Yes	Y		1	1.2	2	1.2	13	-1	3	1							
24	Dead + Ic...	Yes	Y		1	1.2	2	1.2	14	-1	3	1							
25	Dead + Ic...	Yes	Y		1	1.2	2	1.2	15	-1	3	1							
26	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	.063							
27	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	.063							
28	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	.063							



Load Combinations (Continued)

	Description	Sol.	PD	SR	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.
29	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	.063		
30	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	.063		
31	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	.063		
32	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	4	-.063		
33	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	5	-.063		
34	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	6	-.063		
35	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	7	-.063		
36	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	8	-.063		
37	Dead + L...	Yes	Y		1	1.2	2	1.2	16	1.5	9	-.063		
38	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	.063		
39	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	.063		
40	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	.063		
41	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	.063		
42	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	.063		
43	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	.063		
44	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	4	-.063		
45	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	5	-.063		
46	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	6	-.063		
47	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	7	-.063		
48	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	8	-.063		
49	Dead + L...	Yes	Y		1	1.2	2	1.2	17	1.5	9	-.063		
50	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	.063		
51	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	.063		
52	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	.063		
53	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	.063		
54	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	.063		
55	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	.063		
56	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	4	-.063		
57	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	5	-.063		
58	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	6	-.063		
59	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	7	-.063		
60	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	8	-.063		
61	Dead + L...	Yes	Y		1	1.2	2	1.2	18	1.5	9	-.063		
62	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	.063		
63	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	.063		
64	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	.063		
65	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	.063		
66	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	.063		
67	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	.063		
68	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	4	-.063		
69	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	5	-.063		
70	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	6	-.063		
71	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	7	-.063		
72	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	8	-.063		
73	Dead + L...	Yes	Y		1	1.2	2	1.2	19	1.5	9	-.063		
74	Dead + LV...	Yes	Y		1	1.2	2	1.2	20	1.5	0			
75	Dead + LV...	Yes	Y		1	1.2	2	1.2	21	1.5	0			
76	Service 60...	Yes	Y		1	1	2	1	4	.25	0			
77	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	.5	23			
78	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	.866	23	.5		
79	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	.5	23	.866		
80	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22		23	1		
81	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	-.5	23	.866		
82	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	-.866	23	.5		
83	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	-1	23			
84	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	-.866	23	-.5		
85	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	-.5	23	-.866		



Load Combinations (Continued)

	Description	Sol.	PD	SR	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.	BLC Fact.
86	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	23	-1			
87	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	.5	23	-0.866		
88	(1.2 + 0.2...	Yes	Y		1	1.246	2	1.246	22	.866	23	-.5		

Envelope Joint Reactions

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-in]	LC	MY [k-in]	LC	MZ [k-in]	LC	
1	N48	max	717.518	13	1370.181	21	1477.274	37	4.48	7	0	88	6.094	13
2		min	-2799.458	7	589.299	76	-1214.132	55	-4.41	13	0	1	-3.067	7
3	N49	max	2191.44	14	1241.097	25	1173.443	60	.668	13	0	88	3.157	8
4		min	166.83	8	561.868	76	-1436.919	30	-6.86	7	0	1	-1.072	2
5	N99	max	1079.382	25	1276.946	25	2667.777	11	7.026	5	0	88	.6	5
6		min	367.797	7	585.287	76	-1034.384	5	-4.503	11	0	1	-2.12	11
7	N100	max	-53.299	13	1156.455	17	-128.215	11	3.042	12	0	88	.03	6
8		min	-1155.279	19	529.467	76	-1690.858	17	-1.265	6	0	1	-1.03	12
9	N149	max	2152.253	3	1277.369	17	-45.59	9	.515	4	0	88	5.28	3
10		min	-1294.626	9	572.394	76	-1856.729	15	-3.118	10	0	1	-6.718	9
11	N150	max	171.974	3	1156.604	21	1808.235	22	.639	10	0	88	1.183	10
12		min	-1034.392	9	522.163	76	265.497	4	-2.386	4	0	1	-2.22	4
13	Totals:	max	4168.768	2	7428.511	23	4046.561	11						
14		min	-4168.769	8	3360.478	76	-4046.56	5						

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

Member	Shape	Code	Loc[in]	LC	Shear	Loc[in]	Dir	LC	phi*Pnc	phi*Pnt [lb]	phi*Mn y	phi*Mn z	Cb	Eqn	
1	M21	PIPE 2.0	.402	66	37	.059	30	8	14916.096	32130	22.459	22.459	4...	H1-1b	
2	M22	PIPE 2.0	.368	66	50	.049	30	54	14916.096	32130	22.459	22.459	3...	H1-1b	
3	M7	HSS2.375X0...	.278	125.1...	8	.104	29.25	7	7649.232	57546	39.744	39.744	1...	H1-1b	
4	M10	3"x.5"	.265	3.312	33	.078	0	y	9	64929.826	67500	8.46	50.625	1...	H1-1b
5	M19	3"x.5"	.250	3.313	55	.090	0	y	7	64929.826	67500	8.46	50.625	1...	H1-1b
6	M11	3"x.5"	.249	3.312	27	.073	0	y	49	64929.826	67500	8.46	50.625	1...	H1-1b
7	M6	HSS2.375X0...	.240	149.5	33	.046	29.25	6	7649.232	57546	39.744	39.744	1	H1-1b	
8	M23	PL 6X0.625	.236	5.781	31	.053	0	y	7	124977.0...	168750	26.367	253.125	1...	H1-1b
9	M79	HSS2.375X0...	.235	125.1...	3	.082	29.25	3	7649.232	57546	39.744	39.744	1...	H1-1b	
10	M43	HSS2.375X0...	.234	125.1...	11	.081	29.25	11	7649.232	57546	39.744	39.744	1...	H1-1b	
11	M20	3"x.5"	.232	3.313	61	.075	0	y	39	64929.826	67500	8.46	50.625	1...	H1-1b
12	M57	PIPE 2.0	.227	30	14	.052	30	12	14916.096	32130	22.459	22.459	4...	H1-1b	
13	M93	PIPE 2.0	.227	30	18	.052	30	4	14916.096	32130	22.459	22.459	4...	H1-1b	
14	M9	3"x.5"	.225	0	32	.083	0	y	38	66023.816	67500	8.46	50.625	1...	H1-1b
15	M24	PL 6X0.625	.223	5.781	27	.044	5.781	y	38	124977.0...	168750	26.367	253.125	1...	H1-1b
16	M8	3"x.5"	.222	0	27	.086	0	y	44	66023.816	67500	8.46	50.625	1...	H1-1b
17	M17	3"x.5"	.213	0	61	.085	0	y	7	66023.816	67500	8.46	50.625	1...	H1-1b
18	M82	3"x.5"	.206	3.312	15	.056	0	y	5	64929.826	67500	8.46	50.625	1...	H1-1b
19	M46	3"x.5"	.206	3.312	23	.056	0	y	13	64929.826	67500	8.46	50.625	1...	H1-1b
20	M18	3"x.5"	.205	0	56	.086	0	y	39	66023.816	67500	8.46	50.625	1...	H1-1b
21	M58	PIPE 2.0	.190	30	22	.041	30	10	14916.096	32130	22.459	22.459	4...	H1-1b	
22	M94	PIPE 2.0	.190	30	14	.041	30	2	14916.096	32130	22.459	22.459	4...	H1-1b	
23	M42	HSS2.375X0...	.190	125.1...	12	.042	29.25	11	7649.232	57546	39.744	39.744	1...	H1-1b	
24	M78	HSS2.375X0...	.189	125.1...	4	.042	29.25	3	7649.232	57546	39.744	39.744	1...	H1-1b	
25	M91	3"x.5"	.189	3.313	21	.065	0	y	3	64929.826	67500	8.46	50.625	1...	H1-1b
26	M55	3"x.5"	.189	3.312	17	.065	0	y	11	64929.826	67500	8.46	50.625	1...	H1-1b
27	M83	3"x.5"	.186	3.312	14	.040	0	y	9	64929.826	67500	8.46	50.625	1...	H1-1b
28	M47	3"x.5"	.186	3.312	22	.040	0	y	5	64929.826	67500	8.46	50.625	1...	H1-1b
29	M95	PL 6X0.625	.180	5.781	15	.044	0	y	3	124977.0...	168750	26.367	253.125	1...	H1-1b
30	M59	PL 6X0.625	.180	5.781	23	.044	0	y	11	124977.0...	168750	26.367	253.125	1...	H1-1b
31	M92	3"x.5"	.173	3.313	21	.049	0	y	11	64929.826	67500	8.46	50.625	1...	H1-1b



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

Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [...]	phi*Pnt [lb]	phi*Mn y...	phi*Mn z...	Cb	Eqn	
32	M56	3"x.5"	.173	3.312	17	.049	0	y	7	64929.826	67500	8.46	50.625	1...	H1-1b
33	M60	PL 6X0.625	.169	5.781	19	.039	5.781	y	19	124977.0...	168750	26.367	253.125	1...	H1-1b
34	M96	PL 6X0.625	.169	5.781	23	.039	5.781	y	23	124977.0...	168750	26.367	253.125	1...	H1-1b
35	M27	PIPE 2.0	.163	30	7	.050	30		6	14916.096	32130	22.459	22.459	2...	H1-1b
36	M81	3"x.5"	.162	0	14	.031	0	y	9	66023.816	67500	8.46	50.625	1...	H1-1b
37	M45	3"x.5"	.162	0	22	.031	0	y	5	66023.816	67500	8.46	50.625	1...	H1-1b
38	M80	3"x.5"	.157	0	15	.052	0	y	4	66023.816	67500	8.46	50.625	1...	H1-1b
39	M44	3"x.5"	.157	0	23	.052	0	y	12	66023.816	67500	8.46	50.625	1...	H1-1b
40	M3	0.75" SR	.154	0	27	.013	36		12	5525.431	19880.37	2.982	2.982	2...	H1-1b*
41	M89	3"x.5"	.153	0	21	.059	0	y	3	66023.816	67500	8.46	50.625	1...	H1-1b
42	M53	3"x.5"	.153	0	17	.058	0	y	11	66023.816	67500	8.46	50.625	1...	H1-1b
43	M14	0.75" SR	.148	0	61	.014	36		6	5525.431	19880.37	2.982	2.982	2...	H1-1b*
44	M4	0.75" SR	.147	0	30	.006	0		30	5525.431	19880.37	2.982	2.982	2...	H1-1b*
45	M54	3"x.5"	.141	0	15	.045	0	y	7	66023.816	67500	8.46	50.625	1...	H1-1b
46	M90	3"x.5"	.141	0	19	.045	0	y	11	66023.816	67500	8.46	50.625	1...	H1-1b
47	M15	0.75" SR	.137	0	61	.007	36		28	5525.431	19880.37	2.982	2.982	2...	H1-1b*
48	M99	PIPE 2.0	.135	30	3	.042	30		2	14916.096	32130	22.459	22.459	2...	H1-1b
49	M63	PIPE 2.0	.133	30	11	.042	30		10	14916.096	32130	22.459	22.459	3...	H1-1b
50	M39	0.75" SR	.114	0	19	.011	36		4	5525.431	19880.37	2.982	2.982	2...	H1-1b*
51	M75	0.75" SR	.114	0	23	.011	36		8	5525.431	19880.37	2.982	2.982	2...	H1-1b*
52	M76	0.75" SR	.111	0	14	.005	0		12	5525.431	19880.37	2.982	2.982	2...	H1-1b*
53	M40	0.75" SR	.111	0	22	.005	0		8	5525.431	19880.37	2.982	2.982	2...	H1-1b*
54	M86	0.75" SR	.110	0	21	.012	36		2	5525.431	19880.37	2.982	2.982	2...	H1-1b*
55	M50	0.75" SR	.110	0	17	.012	36		10	5525.431	19880.37	2.982	2.982	2...	H1-1b*
56	M34	PIPE 3.0	.107	3	7	.198	3		7	59852.693	65205	68.985	68.985	4...	H1-1b
57	M106	PIPE 3.0	.103	3	3	.190	3		3	59852.693	65205	68.985	68.985	3...	H1-1b
58	M87	0.75" SR	.102	0	21	.005	36		12	5525.431	19880.37	2.982	2.982	2...	H1-1b*
59	M51	0.75" SR	.102	0	17	.005	36		10	5525.431	19880.37	2.982	2.982	2...	H1-1b*
60	M5	0.75" SR	.101	57.824	17	.007	57.824		2	2141.715	19880.37	2.982	2.982	2...	H1-1b
61	M70	PIPE 3.0	.099	3	11	.183	3		11	59852.693	65205	68.985	68.985	3...	H1-1b
62	M41	0.75" SR	.095	57.824	21	.004	57.824		7	2141.715	19880.37	2.982	2.982	2...	H1-1b
63	M77	0.75" SR	.095	57.824	25	.004	57.824		11	2141.715	19880.37	2.982	2.982	2...	H1-1b
64	M16	0.75" SR	.093	57.824	23	.006	0		2	2141.715	19880.37	2.982	2.982	2...	H1-1b
65	M52	0.75" SR	.089	57.824	16	.003	57.824		3	2141.715	19880.37	2.982	2.982	2...	H1-1b
66	M88	0.75" SR	.089	57.824	20	.003	57.824		7	2141.715	19880.37	2.982	2.982	2...	H1-1b
67	M1	HSS2.375X0...	.072	0	27	.016	45.25		49	45615.157	57546	39.744	39.744	2...	H1-1b
68	M13	HSS2.375X0...	.071	0	13	.019	45.25		7	45615.157	57546	39.744	39.744	2...	H1-1b
69	M12	HSS2.375X0...	.068	0	61	.017	45.25		39	45615.157	57546	39.744	39.744	2...	H1-1b
70	M85	HSS2.375X0...	.065	0	9	.015	45.25		3	45615.157	57546	39.744	39.744	2...	H1-1b
71	M49	HSS2.375X0...	.064	0	5	.015	45.25		11	45615.157	57546	39.744	39.744	2...	H1-1b
72	M109	PIPE 2.0	.060	0	6	.048	0		61	15881.073	32130	22.459	22.459	1...	H1-1b*
73	M111	PIPE 2.0	.055	45.998	9	.020	0		16	15881.073	32130	22.459	22.459	1...	H1-1b
74	M110	PIPE 2.0	.054	45.998	13	.020	0		20	15881.073	32130	22.459	22.459	1...	H1-1b
75	M37	HSS2.375X0...	.054	0	19	.009	45.25		17	45615.157	57546	39.744	39.744	1...	H1-1b
76	M73	HSS2.375X0...	.054	0	23	.009	45.25		21	45615.157	57546	39.744	39.744	1...	H1-1b
77	M2	HSS2.375X0...	.052	0	31	.017	45.25		45	45615.157	57546	39.744	39.744	2...	H1-1b
78	M84	HSS2.375X0...	.050	0	21	.011	45.25		11	45615.157	57546	39.744	39.744	1...	H1-1b
79	M48	HSS2.375X0...	.050	0	17	.011	45.25		7	45615.157	57546	39.744	39.744	1...	H1-1b
80	M74	HSS2.375X0...	.048	0	3	.012	45.25		5	45615.157	57546	39.744	39.744	2...	H1-1b
81	M38	HSS2.375X0...	.046	0	11	.012	45.25		13	45615.157	57546	39.744	39.744	2...	H1-1b



HUDSON
Design Group LLC

Connection Check

SITE DETAILS

Site Name/Code
Date
Engineer

DANBURY EAST
5/12/2022
SI

CONNECTION PARAMETERS

Loadcase #
Number of bolts
B
D
Bolt Diameter
Tensile Area
Tensile Area
Grade
Bolt Ultimate Strength
Connection length reduction factor

7
4
4 in
6 in
d 5/8 in
A_b 0.31 in²
A_n 0.23 in²
J429 Grade 2
F_{ub} 74 ksi
R_b 1



Connection Sketch/Photo

FLANGE LOADS

Bending Moment
Bending Moment
Torsional Moment
Shear Force
Shear Force
Axial Force

M_{zz} 3.07 kips-in
M_{yy} 0.00 kips-in
M_{xx} 4.48 kips-in
V_y 0.75 kips
V_z 0.96 kips
P_x 2.80 kips

SOFTWARE REACTIONS TABLE

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-in]	MY [k-in]	MZ [k-in]
7	N48	-2799.458	754.536	-958.914	4.48	0	-3.067
7	N49	346.835	620.721	-517.467	-686	0	2.823
7	N99	367.797	650.002	353.322	2.926	0	-1.18
7	N100	-1054.955	634.746	-1160.041	-626	0	.003
7	N149	257.079	726.685	-532.543	-1.996	0	-571
7	N150	-701.069	645.883	746.503	-767	0	-878

BOLT CHECK

Bolt Tension Capacity

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

$\phi R_{nt} = 12.5 \text{ kips}$

Bolt Shear Capacity

$$\phi R_{nv} = 0.75 * 0.45 * F_{ub} * A_b * R_b$$

$\phi R_{nv} = 8.5 \text{ kips}$

Maximum Bolt Tension

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

$T_{ub} = 0.96 \text{ kips}$

Maximum Bolt Shear

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

$V_{ub} = 0.62 \text{ kips}$

Tension Ratio:

7.6 %

PASS

Shear Ratio:

7.2 %

PASS

$$(T_{ub} / \phi R_{nt})^2 + (V_{ub} / \phi R_{nv})^2 < 1.0$$

OK

Ratio

1.1% PASS

48 NEWTOWN

Location 48 NEWTOWN

Mblu K12/ / 265/ /

Acct#

Owner 48 NEWTOWN ROAD CORPORATION

Assessment \$909,000

Appraisal \$1,298,500

PID 7333

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$904,400	\$394,100	\$1,298,500

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$633,100	\$275,900	\$909,000

Owner of Record

Owner 48 NEWTOWN ROAD CORPORATION

Sale Price \$0

Co-Owner

Book & Page 1706/ 908

Address 50 NEWTOWN RD
DANBURY, CT 06810

Sale Date 11/08/2004

Instrument 29

Ownership History

Ownership History				
Owner	Sale Price	Book & Page	Instrument	Sale Date
48 NEWTOWN ROAD CORPORATION	\$0	1706/ 908	29	11/08/2004
MORRIS JULIA B NOMINEE	\$0	1706/ 906	29	11/08/2004
FORTY EIGHT NEWTOWN ROAD	\$0	1041/0377		03/04/1993

Building Information

Building 1 : Section 1

Year Built: 1988
Living Area: 5,680
Replacement Cost: \$725,793

Building Percent Good: 81

Replacement Cost

Less Depreciation: \$587,900

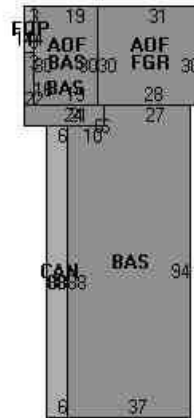
Building Attributes	
Field	Description
STYLE	Restaurant
MODEL	Commercial
Grade	Average
Stories:	2
Occupancy	4
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Glass/Thermo.
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Ceram Clay Til
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Comm/Res MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	201
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	0

Building Photo



(<https://images.vgsi.com/photos2/DanburyCTPhotos/\A00\03\05\58.jpg>)

Building Layout



(https://images.vgsi.com/photos2/DanburyCTPhotos/Sketches/7333_7333)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	4,180	4,180
AOF	Office, (Average)	1,500	1,500
CAN	Canopy	528	0
FGR	Garage	930	0
FOP	Open Porch	42	0
PTO	Patio	925	0
		8,105	5,680

Building 1 : Section 1

Year Built: 1988
Living Area: 0
Replacement Cost: \$725,793
Building Percent Good: 81
Replacement Cost
Less Depreciation: \$587,900

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	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces	
Whirlpool	
Addn'l Kitchen	
Bsm Gar	
Fin Bsm Area	
Fin Bsm Qual	
Nhbd	
MH Park	

Building Photo



(<https://images.vgsi.com/photos2/DanburyCTPhotos/\A00\02\70\15.jpg>)

Building Layout

 [Building Layout](#)

(https://images.vgsi.com/photos2/DanburyCTPhotos//Sketches/7333_1049)

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

Use Code 201
Description Comm/Res MDL-94
Zone CG20
Neighborhood 6000
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 0.6
Frontage 0
Depth 0
Assessed Value \$275,900
Appraised Value \$394,100
lblndfront

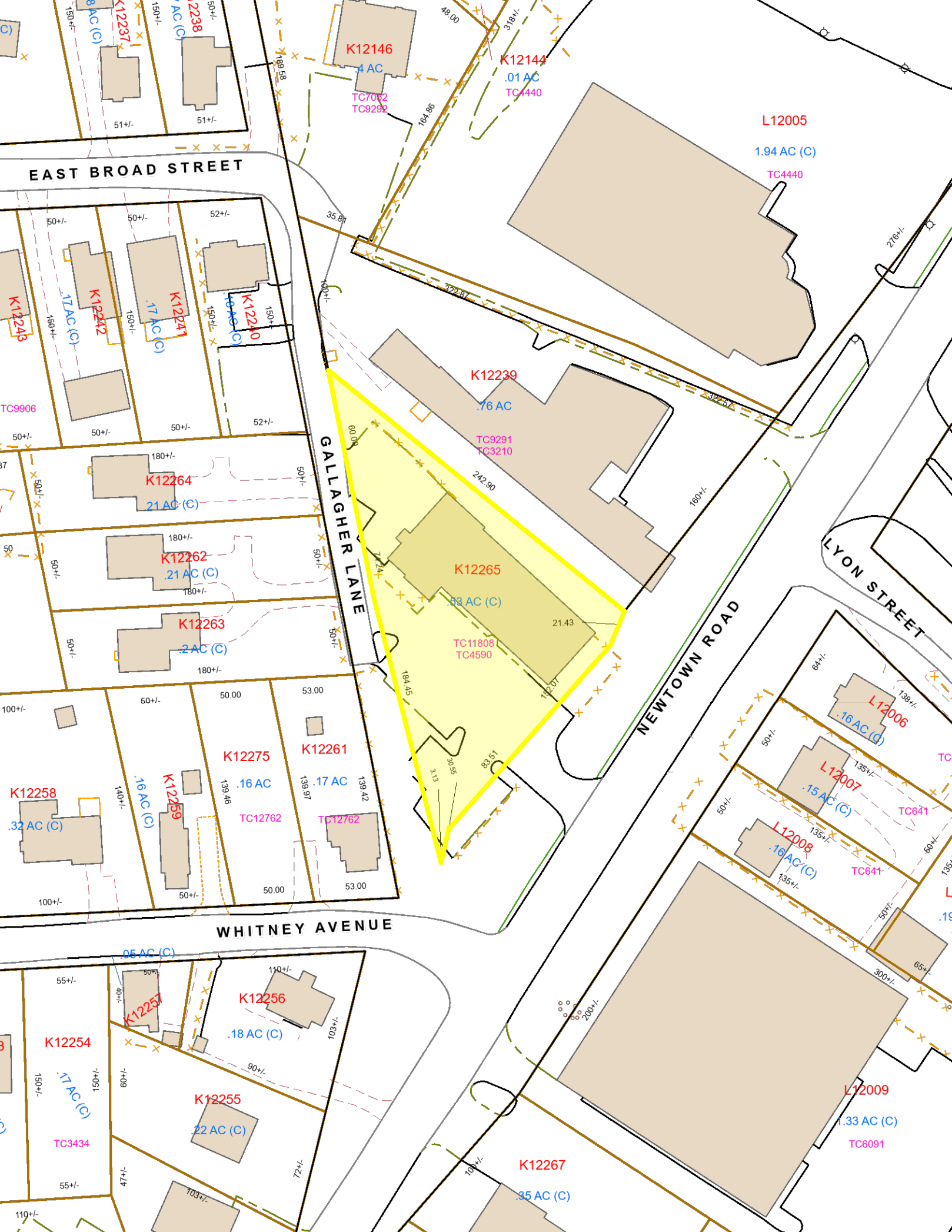
Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
CEL	Cell Tower			1 UNITS	\$300,000	1
PAV1	Paving-Asphalt			10500 S.F.	\$16,500	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$904,400	\$394,100	\$1,298,500
2018	\$900,700	\$394,100	\$1,294,800
2017	\$900,700	\$394,100	\$1,294,800

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$633,100	\$275,900	\$909,000
2018	\$630,500	\$275,900	\$906,400
2017	\$630,500	\$275,900	\$906,400





CITY OF DANBURY

155 DEER HILL AVENUE
DANBURY, CONNECTICUT 06810

PLANNING & ZONING DEPARTMENT
(203) 797-4525
(203) 797-4586 (FAX)

December 29, 1998

Mr. Paul S. McNamara
Donnelly, McNamara & Gustafson, P.C.
150 Danbury Road
PO Box 2006
Ridgefield, CT 06877

RE: Waiver No. 98-49
48 Newtown Road - Telephone Tower and Equipment Storage
Assessor's Lot Numbers K12265, K12266

Dear Mr. McNamara:

Your application for a Waiver to Site Plan Requirements for the construction of a Telephone Tower and Equipment Storage on the above-referenced site is approved as follows:

1. The existing telephone tower on the adjacent site identified as 40 Newtown Road will be removed in lieu of the construction of the tower and equipment storage facility to be located at 48 Newtown Road.
2. There shall be no exterior changes to the building facade other than the addition of the tower in the location as shown on the Site Plan prepared for 48 Newtown Road Corporation by New England Land Surveying, dated August 21, 1989 as revised to September 9, 1994 as submitted in support of this Waiver Application.
3. This approval does not waive any other departmental approvals, requirements or permits that may be necessary to complete this proposed project.

A Zoning Permit may now be required. Please contact the Zoning Department for further information regarding this process. Upon completion of construction, a Zoning Certificate of Compliance will be issued by this Office prior to the issuance of a Certificate of Occupancy by the Building Department, provided work was completed in accordance with the Waiver to Site Plan Requirements approved December 29, 1998.

Respectfully,

Sharon B. Calitro
Sharon B. Calitro
Assistant Planning Director

C: Wayne Skelly, Zoning Enforcement Officer
Mario Ricozzi, P.E., Director of Dept. of Permit Coordination

Post #	7671	From	Paul S. McNamara
City	Danbury	To	Sharon Calitro
State	CT	Address	150 Danbury Road
Zip	06810	City	Danbury
Phone #	797-4525	State	CT
Fax #	797-4586	Zip	06810

010144

Telephone 797-4525

CITY OF DANBURY PLANNING & ZONING DEPARTMENT

ZONING PERMIT

DATE Jan. 6, 1999

50

Property Owner's Name & Address 48 Newtown Road Corporation, 48 Newtown Rd. Danbury

Applicant's Name & Address Same

Property Located At 48 NEWTOWN RD.

Current Use of Property Commercial Proposed Use of Property Same

Zone CG-20 Lot Area or Dimensions 25,998 sq.ft. Assessor's Lot No. K-12265
K-12266

THIS PERMIT IS FOR THE FOLLOWING ACTIVITY:

- New Construction
- Addition
- Sign (Give linear measure of exterior building wall)
- Change of Use
- Exterior Alterations
- Interior Alterations
- Excavation
- [Proposed Sign Area _____]
- [Maximum Sign Allowed _____]
- Other (Specify) 1333

DESCRIPTION OF WORK PROPOSED: Construction of telephone tower

Dimensions of Proposed Structure: Width 5'± X Length 4'± X Height 90'±
 Distance from Front Property Line 125' Adjacent Property Lines 38'-58' Rear Line 50'

NOTE: COMPLY WITH WAIVER AS APPROVED.

FOR OFFICE USE ONLY: Required Permits & Approvals:	Conditions		Effective Date	Permit No. Or Expiration Date
	Yes	No		
<input type="checkbox"/> Plot Plan	---	---	<u>12/29/98</u>	<u>98-49</u>
<input checked="" type="checkbox"/> Site Plan or Waiver	---	---		
<input type="checkbox"/> Special Exception	---	---		
<input type="checkbox"/> Special Permit	---	---		
<input type="checkbox"/> Variance	---	---		
<input type="checkbox"/> Subdivision/Resubdivision	---	---		
<input type="checkbox"/> E.I.C. Approval	---	---		
<input type="checkbox"/> Sewer Permit (Engineering Dept.)	---	---		
<input type="checkbox"/> Water Permit (Engineering Dept.)	---	---		
<input type="checkbox"/> Septic Permit/Approval (Health Dept.)	---	---		
<input type="checkbox"/> Well Permit/Approval (Health Dept.)	---	---		
<input type="checkbox"/> Erosion & Sedimentation Permit (Health)	---	---		
<input type="checkbox"/> Driveway Permit (Public Works Dept.)	---	---		
<input type="checkbox"/> State Traffic Comm. Certification (D.O.T.)	---	---		
<input type="checkbox"/> Flood Plain Zone Permit	---	---		
<input type="checkbox"/> Airport Protection District	---	---		
<input type="checkbox"/> Health Dept.	---	---		
<input type="checkbox"/> Fire Marshal's Approval	---	---		
<input type="checkbox"/> Other	---	---		

This Zoning Permit, if issued, is based upon the plot plan submitted. Falsification, by misrepresentation or omission, or failure to comply with conditions of approval of this permit, shall constitute a violation of the Zoning Regulations of the City of Danbury. CALL 797-4525 WHEN JOB IS COMPLETED TO ARRANGE ZONING COMPLIANCE INSPECTION.

ESTIMATED COST \$75,000.00
 FEE \$200.00 + \$10.00 = \$210.00
 Total includes \$10 State Fee

Signature of Owner or Authorized Agent

POST THIS PERMIT CONSPICUOUSLY
DEPARTMENT OF BUILDINGS, DANBURY, CONNECTICUT

Phone 797-4581

BUILDING PERMIT

Issued 10/13/79 Expires 12/13/00
 Owner 48 Newtown Rd Corp.
 Building 100' monopole tower & equip. room; 47' retaining wall
 Located 48 Newtown Rd Zone C6-20
 Builder BRT General Corp.
 Electrical Contractor take out own License No. ~
 Plumbing & Heating Contractor take out own License No. ~

No 029204

In accordance with application, plans and specifications on file, and subject to ordinances and Building Code of the City of Danbury, otherwise this permit is void. Occupancy of this new building or addition prior to issuance of a Certificate of Occupancy will be considered a violation of the Building Code Regulations.

Leo R. Null (as)
Building Inspector

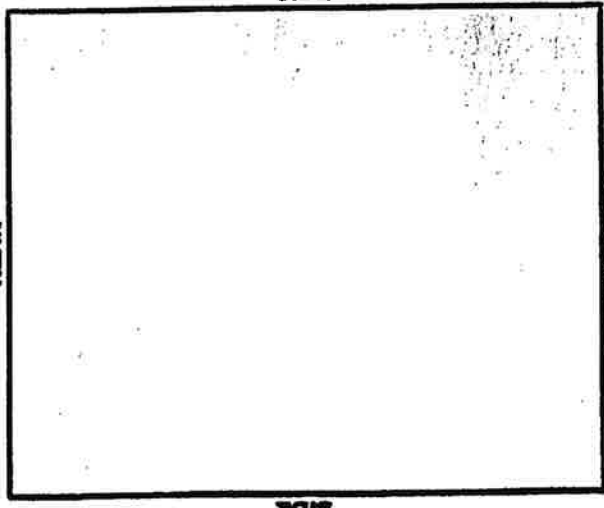
NOTICE:

Changes, regardless of size, from stamped approved plans must be submitted to Building Inspector before they are made.
 Prompt notification by the Plumbing, Electrical, and General contractors of completion of their respective portions of the work will avoid delay in issuance of the Certificate of Occupancy.
 This Application is null and void if the building is not completed in one year from the date of issue, except by extension of application.

INSPECTIONS:

Normally there are nine or more required inspections of a new building, and as many as apply on alterations and additions:

1. ZONING
2. SOIL CONDITIONS—before foundation footings
3. FOOTING—drain inspection
4. ELECTRICAL—wiring roughing
5. PLUMBING—roughing
6. FRAMING—before insulation or lathing
7. INSULATION—inspection
8. GAS OR OIL BURNER—Installation and wiring
9. ELECTRICAL—final when fixtures have been hung
10. PLUMBING—final when fixtures have been set
11. FINAL—fire divisions, exits, etc.





STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

December 13, 1999

Sandy M. Carter, Manager – Regulatory
Bell Atlantic NYNEX Mobile
20 Alexander Drive
P.O. Box 5029
Wallingford, CT 06492

RE: EM-BAM/SCLP-034-991124 - Bell Atlantic Mobile and Springwich Cellular Limited Partnership notice of intent to modify an existing telecommunications tower located at 48 Newtown Road in Danbury, Connecticut.

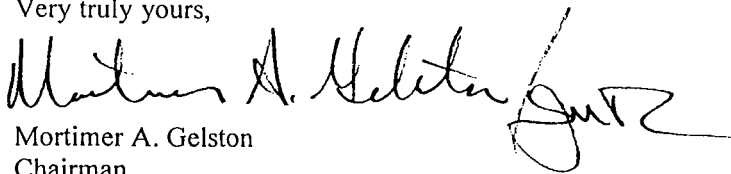
Dear Ms. Carter:

At a public meeting held on December 8, 1999, the Connecticut Siting Council (Council) ruled that the proposed use of this existing tower would not cause a significant change or alteration in the physical and environmental characteristics of the site, and pursuant to Section 16-50j-72 (c) of the Regulations of Connecticut State Agencies would constitute a regulatory exemption.

The proposed modifications are to be implemented as specified here, in your notice dated November 24, 1999, and in additional information dated December 1, 1999. This exemption is conditioned on the requirement that the existing 100-foot guyed lattice tower located at 50 Newtown Road be removed as required by the town zoning permit for the new tower at 48 Newtown Road. The modifications are in compliance with the exception criteria in Section 16-50j-72 (c) of the Regulations of Connecticut State Agencies as changes to an existing non-facility tower that have received all municipal zoning approvals and building permits and that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This tower has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequency now used on this tower. Any additional change to this tower will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,



Mortimer A. Gelston
Chairman

MAG/SLL/sll

cc: Honorable Gene F. Eriquez, Mayor, City of Danbury
Peter W. van Wilgen, Director – Real Estate Operations, SNET Wireless, Inc.

From: auto-reply@usps.com

To: [Hollis Redding](#)

Subject: USPS® Expected Delivery by Thursday, August 4, 2022 arriving by 9:00pm 9405503699300310781810

Date: Tuesday, August 2, 2022 12:17:37 PM

Mayor & Director of Planning / Zoning Copies



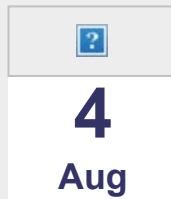
Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 12:02 pm on August 2, 2022 in MERIDEN, CT 06450.

Tracking Number:

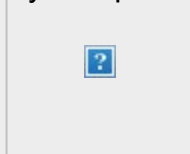
[**9405503699300310781810**](#)

Expected Delivery By



By 9:00pm

By 9:00pm



From: auto-reply@usps.com
To: [Hollis Redding](#)
Subject: USPS® Expected Delivery by Thursday, August 4, 2022 arriving by 9:00pm 9405503699300310781834
Date: Tuesday, August 2, 2022 12:17:39 PM

Property / Tower Copy



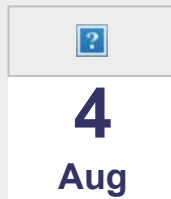
Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 12:02 pm on August 2, 2022 in MERIDEN, CT 06450.

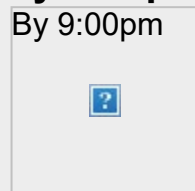
Tracking Number:

[**9405503699300310781834**](#)

Expected Delivery By



By 9:00pm





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08/02/2022

Mailed from 03079

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HOLLIS M REDDING

Expected Delivery Date: 08/04/22

SAI GROUP

Ref#: CT2157

12 INDUSTRIAL WAY

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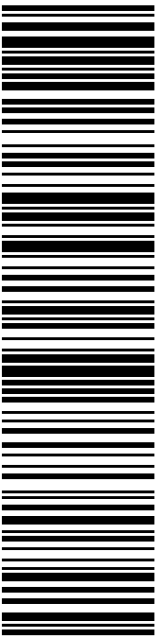
SALEM NH 03079-2837

C005



HON. DEAN ESPOSITO, MAYOR MS.
CITY OF DANBURY
155 DEER HILL AVE
DANBURY CT 06810-7726

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Electronic Rate Approved #038555749



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PRIORITY MAIL®

HOLLIS M REDDING

Expected Delivery Date: 08/04/22

SAI GROUP

Ref#: CT2157

12 INDUSTRIAL WAY

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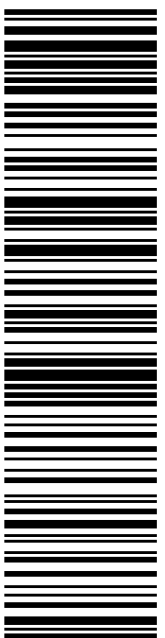
SALEM NH 03079-2837

C019



48 NEWTOWN ROAD CORPORATION
50 NEWTOWN RD
DANBURY CT 06810-6235

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12 INDUSTRIAL WAY

SALEM NH 03079-2837

Expected Delivery Date: 08/04/22

Ref#: ct2157

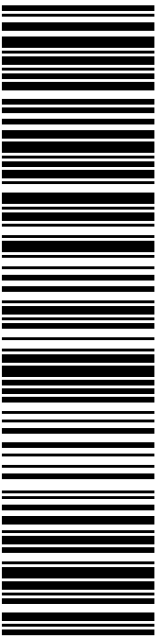
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C006



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

USPS TRACKING #



9405 5036 9930 0310 7818 58

Electronic Rate Approved #038555749



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