March 26, 2023

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

Re: Notice of Exempt Modification New Cingular Wireless PCS LLC ("AT&T") Site CT5271
51 Shunpike Road, Cromwell, CT 06416 (the "Property")
Latitude: 41-36-16.89 N Longitude: -72-40-32.87 W

Dear Ms. Bachman:

AT&T currently maintains (3) antennas at the 39'3"± level on the existing 42'± light pole structure ("Structure") at 51 Shunpike Road, Cromwell, CT. The Structure and the property are owned by HBN-CSC LLC, c/o HB Nitkin Group. AT&T intends to modify its Facility by replacing the (3) antennas with (3) 840-370964K antennas at the 42'3"± level and adding (6) TMABPD7823VG12A TMAs below the proposed antennas. To accommodate the new antennas, the existing 27" shroud will be replaced with a 42" shroud with a top height of 45'3"±. Various equipment changes are also proposed at ground level within the leased area.

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 AT&T facility received a Use Permit from the Town of Cromwell on January 21, 2003. The approval contained no conditions that could feasibly be violated by this modification. AT&Ts modification complies with the above-mentioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent to the Honorable James Demetriades, Mayor, Town of Cromwell, as elected official, Mr. Stuart B. Popper, Director of Planning and Development, Town of Cromwell, and HBN-CSC LLC c/o HB Nitkin Group, the Structure & 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: Honorable James Demetriades, Mayor, Town of Cromwell, elected official
Mr. Stuart B. Popper, Director of Planning and Development, Town of Cromwell
HBN-CSC LLC, c/o HB Nitkin Group, the Structure & property owner

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

Calculated Radio Frequency Emissions Report

CT5271

51 Shunpike Road, Cromwell, CT 06108

March 19, 2024

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of AT&T's antenna arrays mounted at 42' 3" on an existing light pole located at 51 Shunpike Road in Cromwell, CT. The coordinates of the tower are 41° 36' 25.23" N, 72° 40' 37.48" W.

AT&T is proposing the following:

1) Install three (3) multi-band antennas, one (1) per sector to support its commercial LTE and 5G network.

This report considers the planned antenna configuration[1] for AT&T's proposed installation to calculate the resulting % Maximum Permissible Exposure (MPE).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

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

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

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C 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 C 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 (RFDS) dated 02/15/2024 and TEP Northeast's Constructions Drawings, rev 1, dated 02/23/2024.

3. RF Exposure Prediction Methods

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

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

Where:

EIRP = Effective Isotropic Radiated Power

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

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor (GRF) of 1.6

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

4. Antenna Inventory

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

Operator	Sector / Azimuth	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
AT&T	Alpha / 130°	700	80	13	1596	840-370964K	65	0	4	42.25
		850	80	13	1596		65			
		1900	160	17	8019		65			
	Beta / 240°	700	80	13	1596	840-370964K	65	0	4	42.25
		850	80	13	1596		65			
		1900	160	17	8019		65			
	Gamma / 350°	700	80	13	1596	840-370964K	65	0	4	42.25
		850	80	13	1596		65			
		1900	160	17	8019		65			

Table 1: Proposed Antenna Inventory[2][3][4]

[2] Antenna heights are in reference to TEP Northeast's Constructions Drawings, rev 1, dated 02/21/2024.

[3] Transmit power assumes 0 dB of cable loss.

[4] In the case where antenna pattern data was unavailable from the manufacturer, typical antenna pattern was used based on the frequency, bandwidth and gain of the antenna.

5. Calculation Results

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

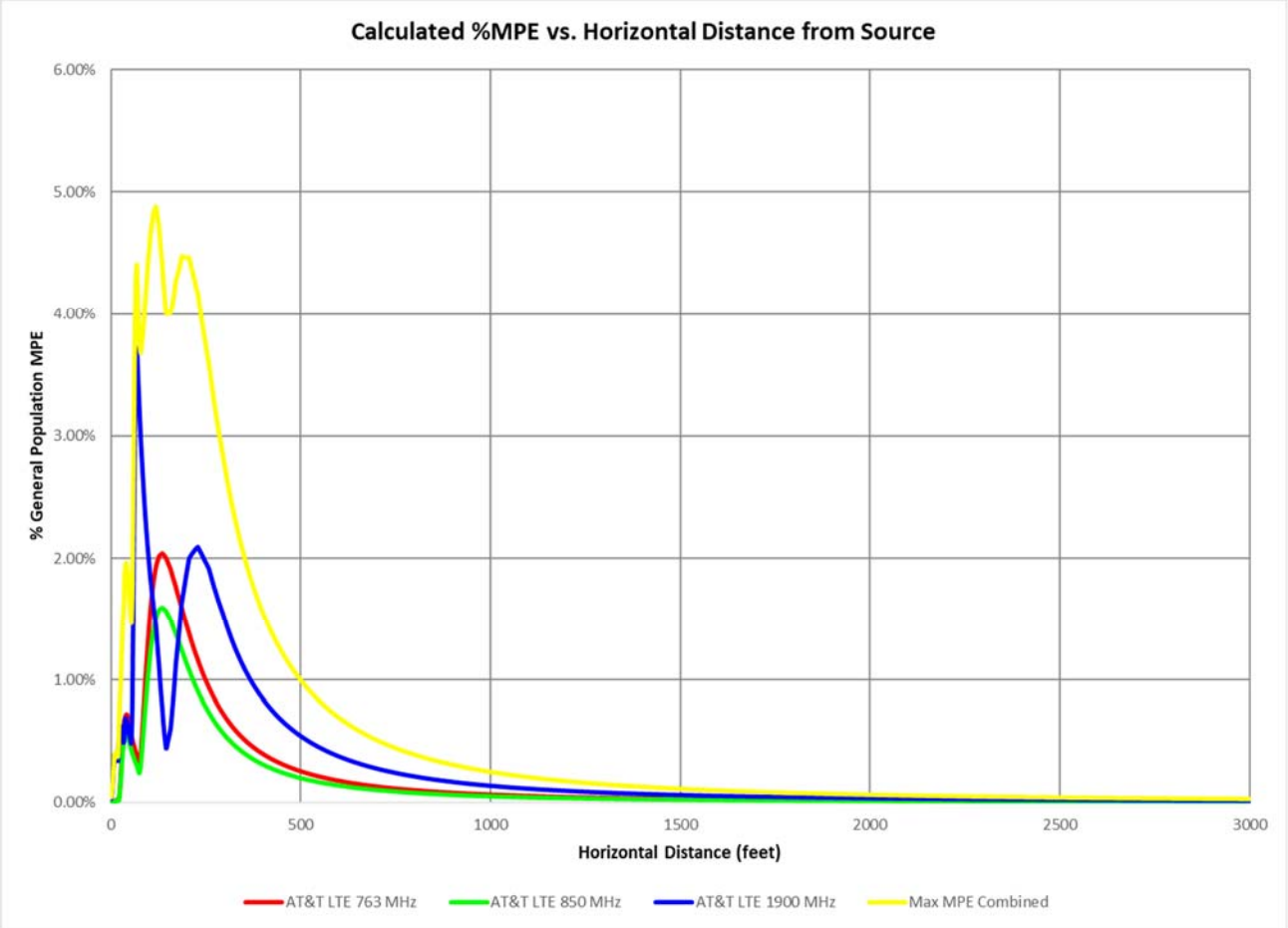


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (4.88% of the General Population limit) is calculated to occur at a horizontal distance of 118 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 118 feet from the site (reference Figure 1).

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

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
AT&T LTE 1900 MHz	1	160.0	42.3	118	0.014502	1.000	1.45%
AT&T LTE 763 MHz	1	80.0	42.3	118	0.009796	0.509	1.93%
AT&T LTE 850 MHz	1	80.0	42.3	118	0.008532	0.567	1.51%
						Total	**4.88%**

Table 2: Maximum Percent of General Population Exposure Values[5,6,7]

[5] Frequencies listed are representative of the operating band and are not the specific operating frequency.

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

[7] In the case where antenna pattern data was unavailable from the manufacturer, typical antenna pattern was used based on the frequency, bandwidth and gain of the antenna.

6. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **4.88 %** of the FCC limit (General Population/Uncontrolled). This maximum cumulative percent of MPE value is calculated to occur 118 feet away from the site.

7. Statement of Certification

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

March 15, 2024

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

March 19, 2024

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

Attachment A: References

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

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

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

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

(A) Limits for Occupational/Controlled Exposure[8]

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

(B) Limits for General Population/Uncontrolled Exposure[9]

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

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

Table 3: FCC Limits for Maximum Permissible Exposure

[8] 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.

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

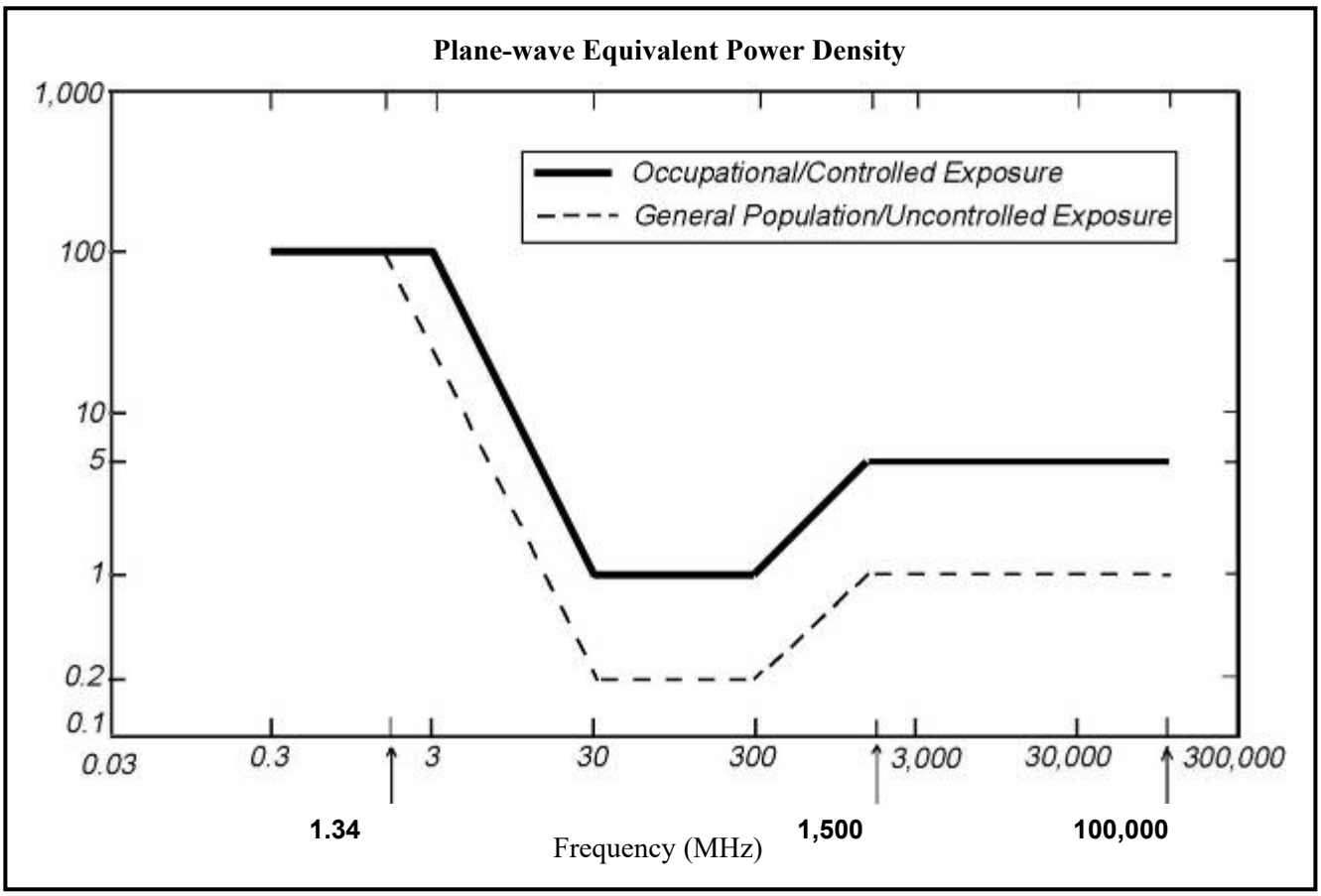
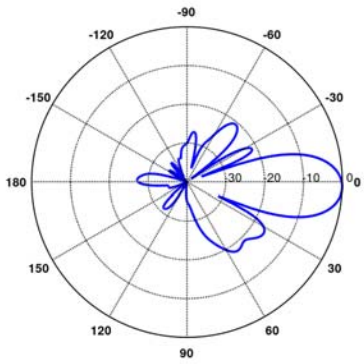


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

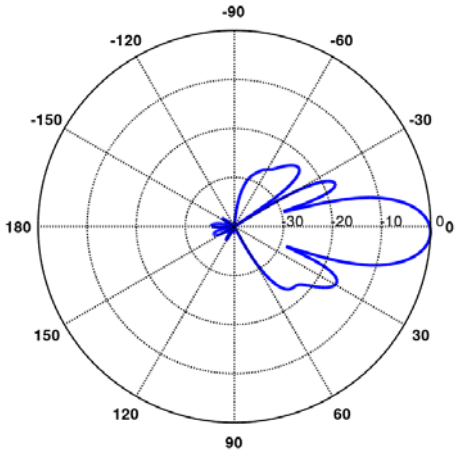
700 MHz

Manufacturer:	Kathrein
Model #:	840-370964K
Frequency Band:	698-824 MHz
Gain:	12.3 dBi
Vertical Beamwidth:	19°
Horizontal Beamwidth:	55°
Polarization:	+/- 45°
Dimensions (L x W x D):	47.7” x 14.9” x 6.5”



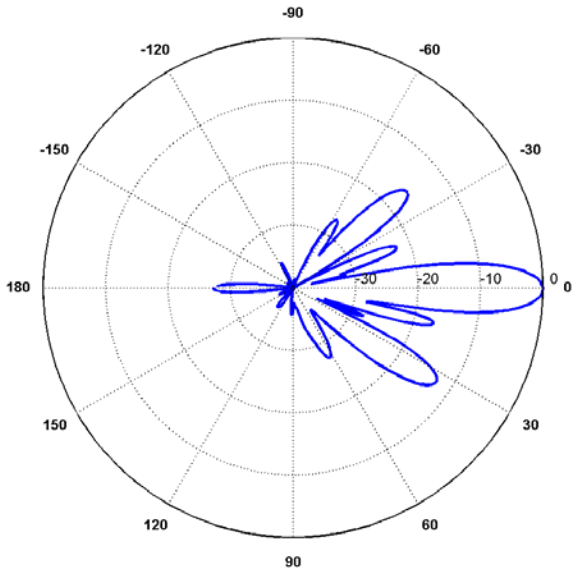
850 MHz

Manufacturer:	Kathrein
Model #:	840-370964K
Frequency Band:	824-894 MHz
Gain:	12.9 dBi
Vertical Beamwidth:	17.7°
Horizontal Beamwidth:	53°
Polarization:	+/- 45°
Dimensions (L x W x D):	47.7” x 14.9” x 6.5”



1900 MHz

Manufacturer:	Kathrein
Model #:	840-370964K
Frequency Band:	1850-1990 MHz
Gain:	17 dBi
Vertical Beamwidth:	8.0°
Horizontal Beamwidth:	63°
Polarization:	+/- 45°
Dimensions (L x W x D):	47.7” x 14.9” x 6.5”



PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING LIGHT POLE:
- NEW AT&T ANTENNAS: 840-370964K (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T TMAS: TMABPD7823VG12A (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- NEW (6) LINES OF 7/8" COAX.
- NEW 42"Ø FRP SHROUD.
- PROPOSED MOUNT: SITE PRO 1 PART#UTSM (TOTAL OF 2)

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- NEW AT&T RRUS: 4449-B5/B12 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T RRUS: 4415-B25 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T SURGE ARRESTOR: TSXDC-4310FM (TYP. OF 8 PER SECTOR, TOTAL OF 24)
- NEW AT&T DIPLEXERS: DBC0115F1V91-2 (TYP. OF 2 PER SECTOR, TOTAL OF 6)
- ADD 6651+XCEDE CABLE
- ADD (1) RECTIFIER

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNAS: FX-652L10H2 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS11-B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS12-B2 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T TRIPLEXERS: TPX-070821 (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING (2) DC6
- EXISTING (6) DC2
- EXISTING 27"Ø FRP SHROUD.

ITEMS TO REMAIN:
- (6) COAX CABLES

SITE ADDRESS:	51 SHUNPIKE ROAD CROMWELL, CT 06108
LATITUDE:	41.604691° N, 41° 36' 16.89" N
LONGITUDE:	72.675798° W, 72° 40' 32.87" W
TYPE OF SITE:	LIGHT POLE / OUTDOOR EQUIPMENT
STRUCTURE HEIGHT:	45'-3"±
RAD CENTER:	42'-3"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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A-2	ANTENNA LAYOUTS & ELEVATION	1
A-3	DETAILS	1
A-4	DETAILS	1
SN-1	STRUCTURAL NOTES	1
S-1	MOUNT MODIFICATION DESIGN	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

AT&T

SITE NUMBER: CTL05271

SITE NAME: CROMWELL CENTRAL

FA CODE: 10070982

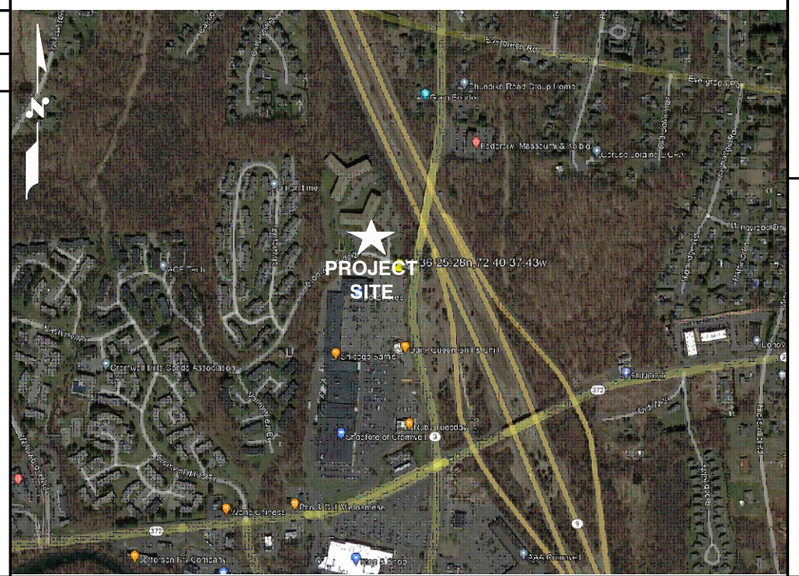
PACE ID: MRCTB062286,MRCTB062374, MRCTB062396

PROJECT: 5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER ||BWE TOWER TOP RRH SWAP UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

FROM ROCKY HILL, CT: MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. 3.8 MILES. MERGE ONTO CT-9 S VIA EXIT 22S ON THE LEFT TOWARD MIDDLETOWN / OLD SAYBROOK. 1.9 MILES. TAKE THE WEST STREET / CT-372 EXIT- EXIT 19- TOWARD CROMWELL. 0.2 MILES. TURN RIGHT ONTO WEST ST / CT-372. <0.1 MILES. TURN RIGHT ONTO SHUNPIKE RD / CT-3. <0.1 MILES. END AT 51 SHUNPIKE RD. CROMWELL, CT 06416.



GENERAL NOTES

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

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

72 HOURS

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

UNDERGROUND SERVICE ALERT

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

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05271
SITE NAME: CROMWELL CENTRAL

51 SHUNPIKE ROAD
CROMWELL, CT 06108
MIDDLESEX COUNTY

AT&T
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/23/24	ISSUED FOR CONSTRUCTION	TF	GB	DPH
0	04/11/23	ISSUED FOR REVIEW	GB	MG	DPH
A	01/16/22	ISSUED FOR REVIEW	HY	HC	DPH

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

AT&T

TITLE SHEET
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	T-1	1

GROUNDING NOTES

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

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

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

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

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

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

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

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

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ABBREVIATIONS

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

TEP NORTHEAST
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05271
SITE NAME: CROMWELL CENTRAL

51 SHUNPIKE ROAD
CROMWELL, CT 06108
MIDDLESEX COUNTY

AT&T
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/23/24	ISSUED FOR CONSTRUCTION	TF	GB	DPH
0	04/11/23	ISSUED FOR REVIEW	GC	HC	DPH
A	01/16/22	ISSUED FOR REVIEW	HY	HC	DPH

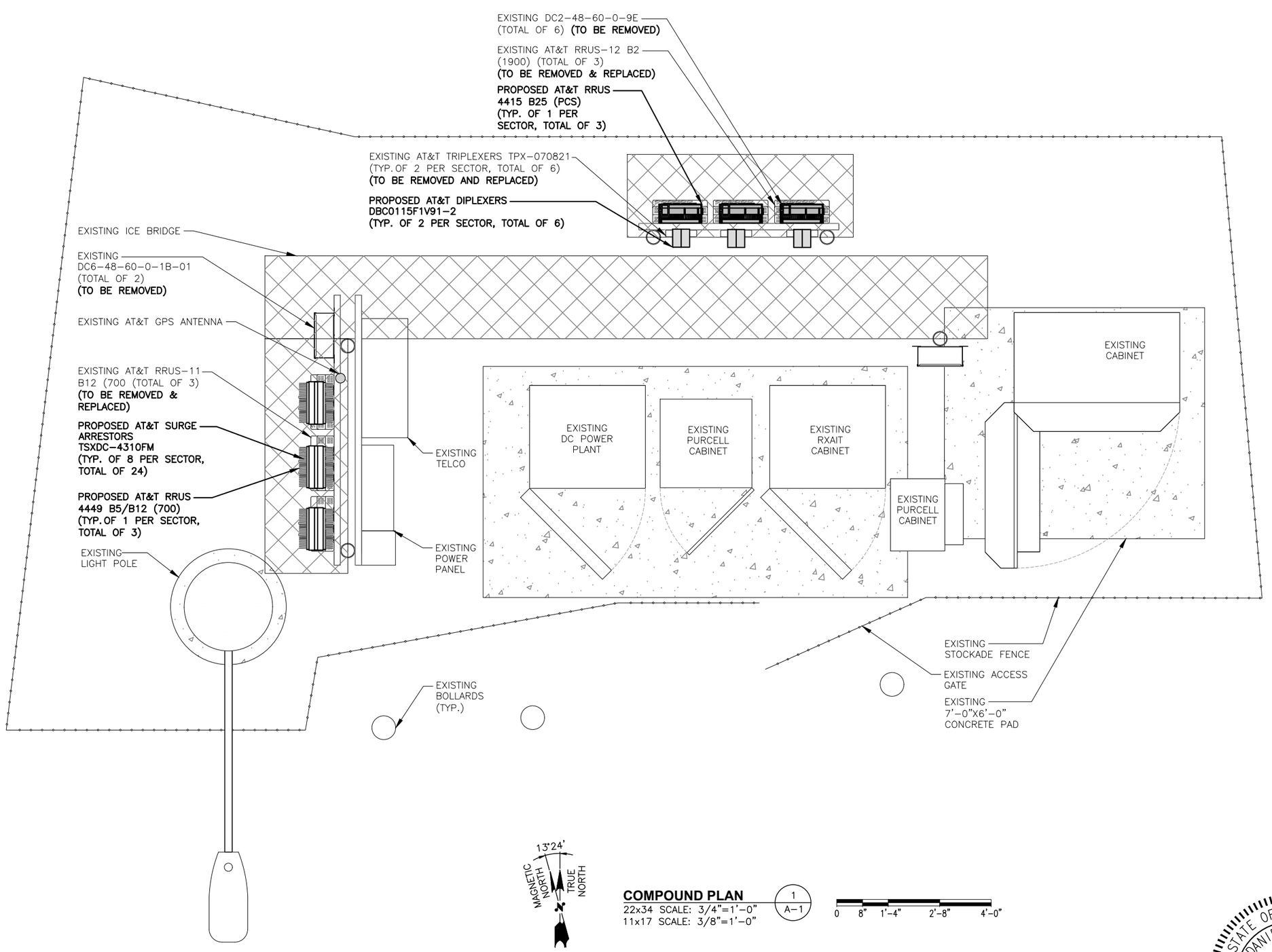
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: HY

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

AT&T

GENERAL NOTES
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	GN-1	1



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 8" 1'-4" 2'-8" 4'-0"

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: TEP OPCO, LLC.
DATED: MAY 3, 2023 (REV.1)
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

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

NOTE:
PAINT ALL VISIBLE PROPOSED EQUIPMENT TO MATCH EXISTING SURROUNDINGS

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05271
SITE NAME: CROMWELL CENTRAL

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CROMWELL, CT 06108
MIDDLESEX COUNTY

AT&T
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ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	04/11/23	ISSUED FOR REVIEW	GM	HC	DPH
A	01/16/22	ISSUED FOR REVIEW	HY	HC	DPH

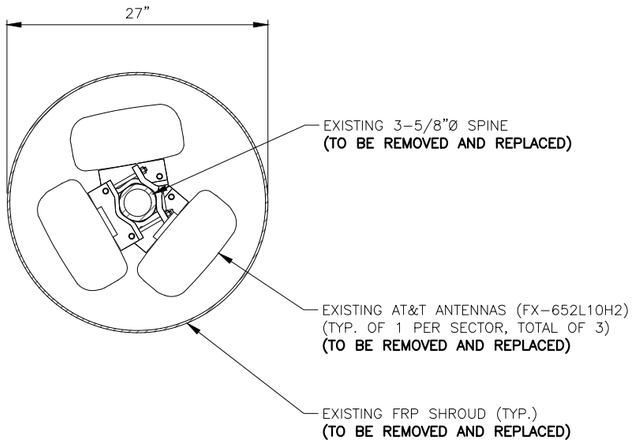
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: HY

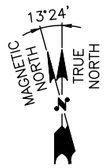
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24128
LICENSED PROFESSIONAL ENGINEER

AT&T

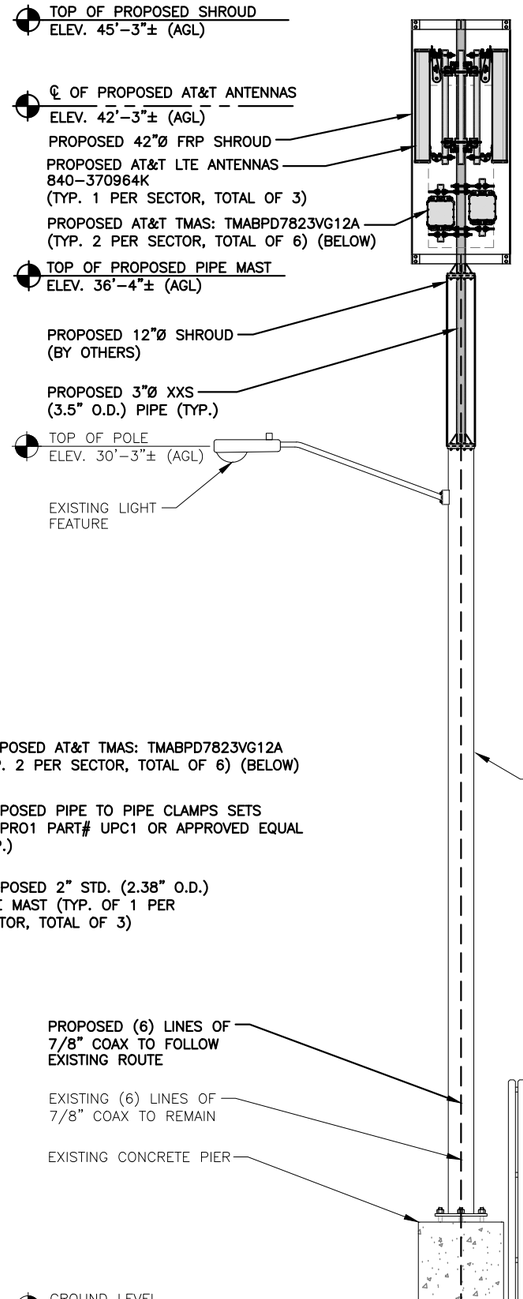
COMPOUND PLAN
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	A-1	1





EXISTING ANTENNA LAYOUT (1 / A-2)
SCALE: N.T.S



ELEVATION
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/16"=1'-0"
0 1'-4" 2'-8" 5'-4" 8'-0"

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

NOTE:
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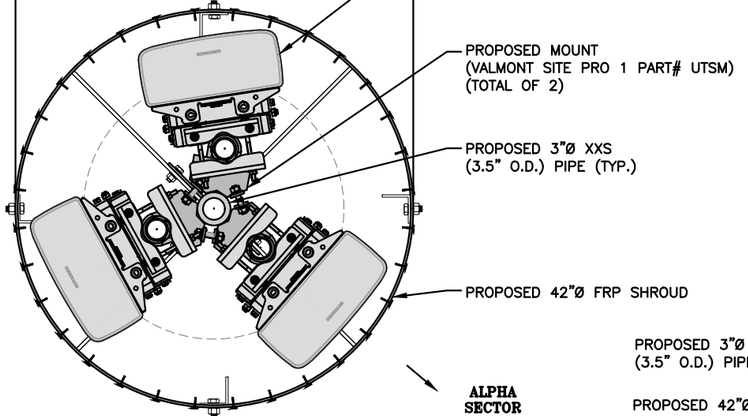
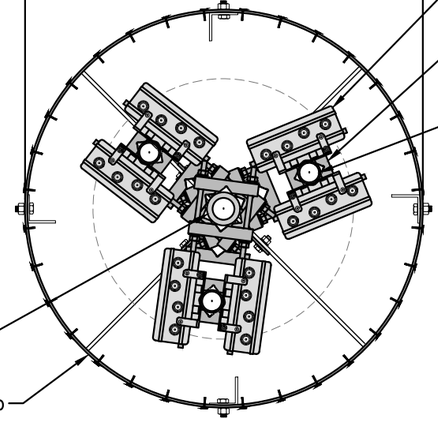
NOTE:
PAINT ALL VISIBLE PROPOSED EQUIPMENT TO MATCH EXISTING SURROUNDINGS

NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY



PROPOSED ANTENNA LAYOUT (2 / A-2)
SCALE: N.T.S



PROPOSED TMA'S LAYOUT (3 / A-2)
SCALE: N.T.S

TEP NORTHEAST
45 BEECHWOOD DRIVE
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: HY

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

AT&T

ANTENNA LAYOUTS & ELEVATION
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	A-2	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	ANTENNA TIP HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	PROPOSED	LTE 700 BC/ 850/PCS	840-370964K	47.7X14.9X6.5	42'-3"±	41'-10"±	130°	(P)(2) TMABPD7823VG12A (P)(2)(G) DBC0115F1V91-2	(G)(P(1) 4449 B5/B12 (850/700) (G)(P)(1) 4415 B25 (PCS)	17.9X13.2X10.4 16.5X13.4X5.9	(E)(2) 7/8" COAX (P)(2) 7/8" COAX	1
A2	–	–	–	–	–	–	–	–	–	–	–	
A3	–	–	–	–	–	–	–	–	–	–	–	
A4	–	–	–	–	–	–	–	–	–	–	–	
B1	PROPOSED	LTE 700 BC/ 850/PCS	840-370964K	47.7X14.9X6.5	42'-3"±	41'-10"±	240°	(P)(2) TMABPD7823VG12A (P)(2)(G) DBC0115F1V91-2	(G)(P(1) 4449 B5/B12 (850/700) (G)(P)(1) 4415 B25 (PCS)	17.9X13.2X10.4 16.5X13.4X5.9	(E)(2) 7/8" COAX (P)(2) 7/8" COAX	1
B2	–	–	–	–	–	–	–	–	–	–	–	
B3	–	–	–	–	–	–	–	–	–	–	–	
B4	–	–	–	–	–	–	–	–	–	–	–	
C1	PROPOSED	LTE 700 BC/ 850/PCS	840-370964K	47.7X14.9X6.5	42'-3"±	41'-10"±	350°	(P)(2) TMABPD7823VG12A (P)(2)(G) DBC0115F1V91-2	(G)(P(1) 4449 B5/B12 (850/700) (G)(P)(1) 4415 B25 (PCS)	17.9X13.2X10.4 16.5X13.4X5.9	(E)(2) 7/8" COAX (P)(2) 7/8" COAX	1
C2	–	–	–	–	–	–	–	–	–	–	–	
C3	–	–	–	–	–	–	–	–	–	–	–	
C4	–	–	–	–	–	–	–	–	–	–	–	

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

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TEP OPCO, LLC.
DATED: MAY 3, 2023 (REV.1)
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NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

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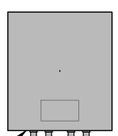
FINAL ANTENNA SCHEDULE
SCALE: N.T.S
1 / A-3

NOTE:
PAINT ALL VISIBLE PROPOSED EQUIPMENT TO MATCH EXISTING SURROUNDINGS

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
3(P)(G)	4449 (850/700)	17.9"x13.2"x10.4"
3(P)(G)	4415 B25 (PCS)	16.5"x13.4"x5.9"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

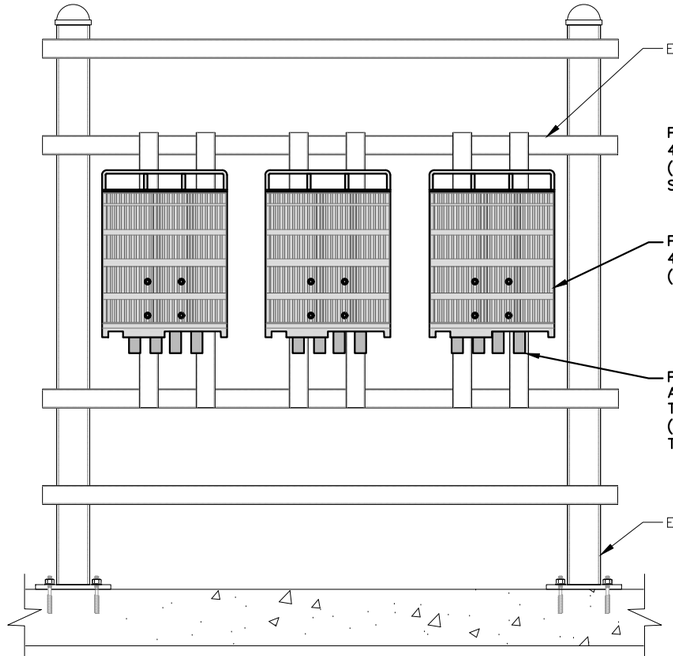
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



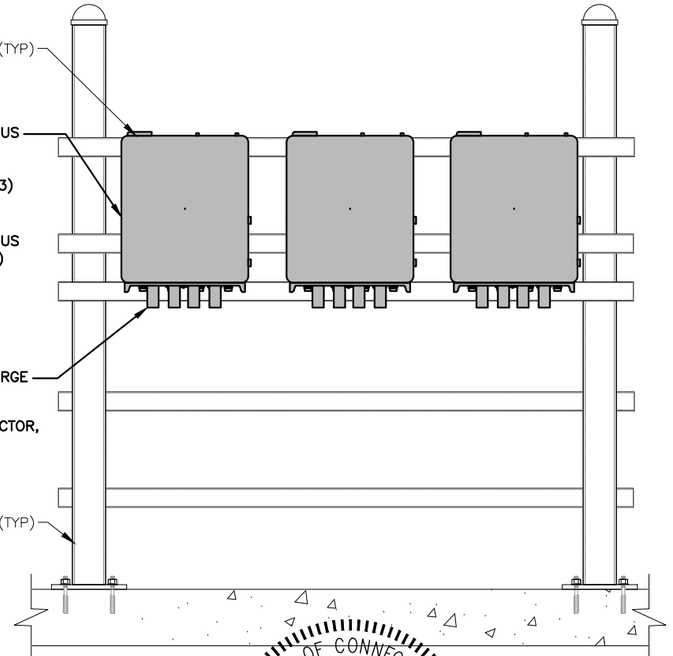
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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



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



PROPOSED RRUS MOUNTING DETAIL
SCALE: N.T.S
4 / A-3

TEP NORTHEAST
45 BEECHWOOD DRIVE
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SITE NUMBER: CTL05271
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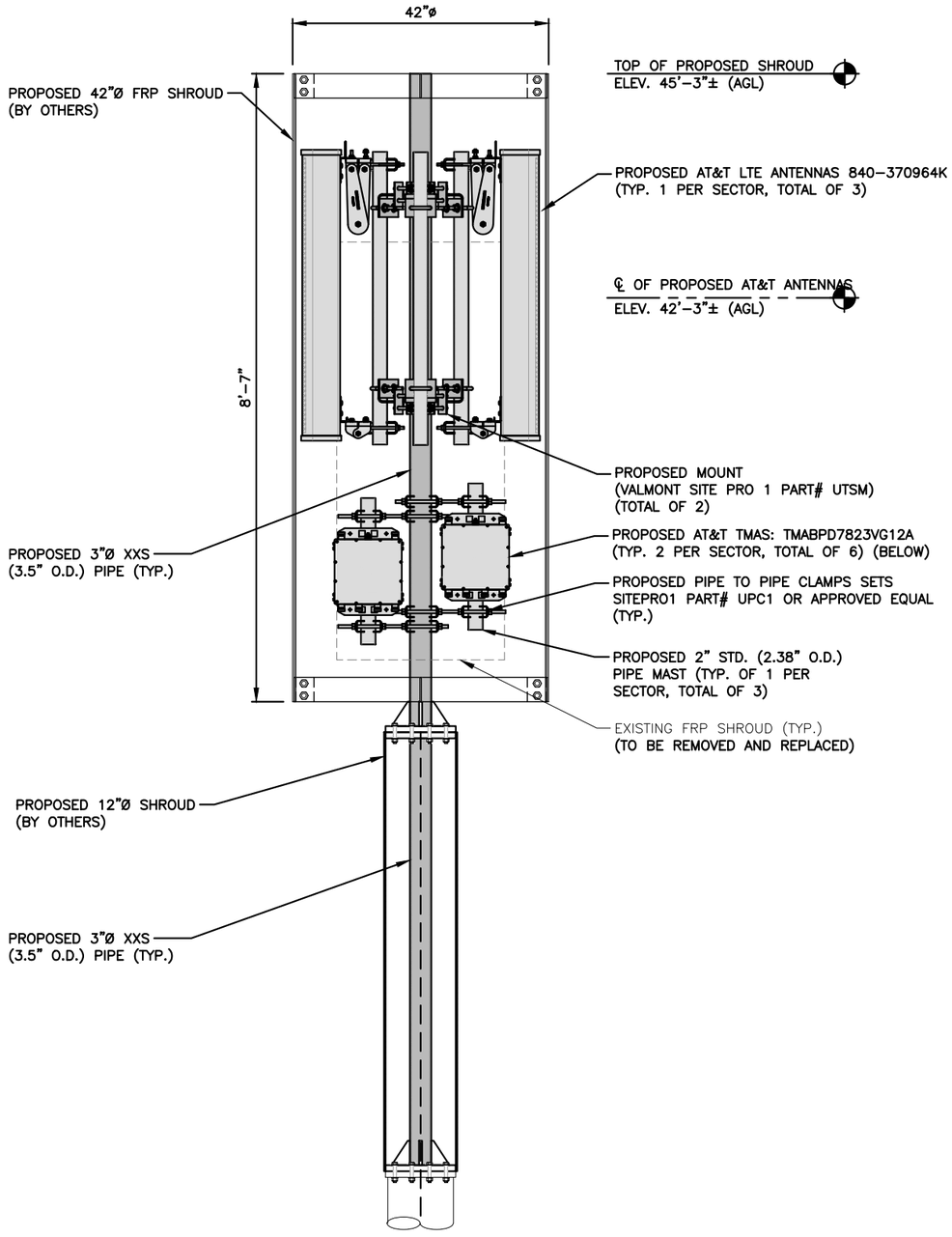
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: HY

STATE OF CONNECTICUT — DANIEL P. KARAMM — No. 24178 — LICENSED PROFESSIONAL ENGINEER

AT&T

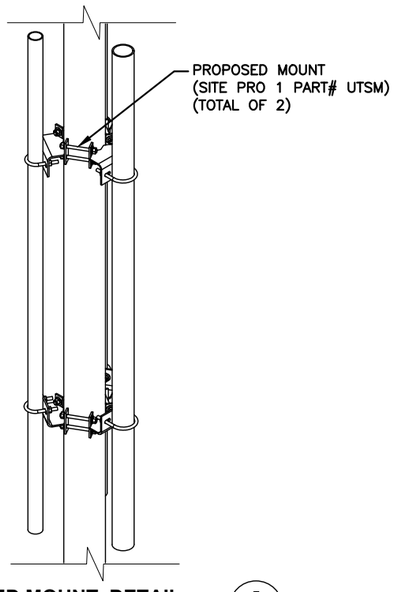
DETAILS
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	A-3	1



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

0 0'-4" 0'-8" 1'-4" 2'-0"



PROPOSED MOUNT DETAIL (3 / A-3)
22x34 SCALE: N.T.S

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS
BY: TEP OPCO, LLC.
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NOTE:
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: HY

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

AT&T

DETAILS
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	A-4	1

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTION CHECKLIST

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

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05271
SITE NAME: CROMWELL CENTRAL

51 SHUNPIKE ROAD
CROMWELL, CT 06108
MIDDLESEX COUNTY

AT&T
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/23/24	ISSUED FOR CONSTRUCTION	TF	DB	DPH
0	04/11/23	ISSUED FOR REVIEW	GM	HC	DPH
A	01/16/22	ISSUED FOR REVIEW	HY	HC	DPH

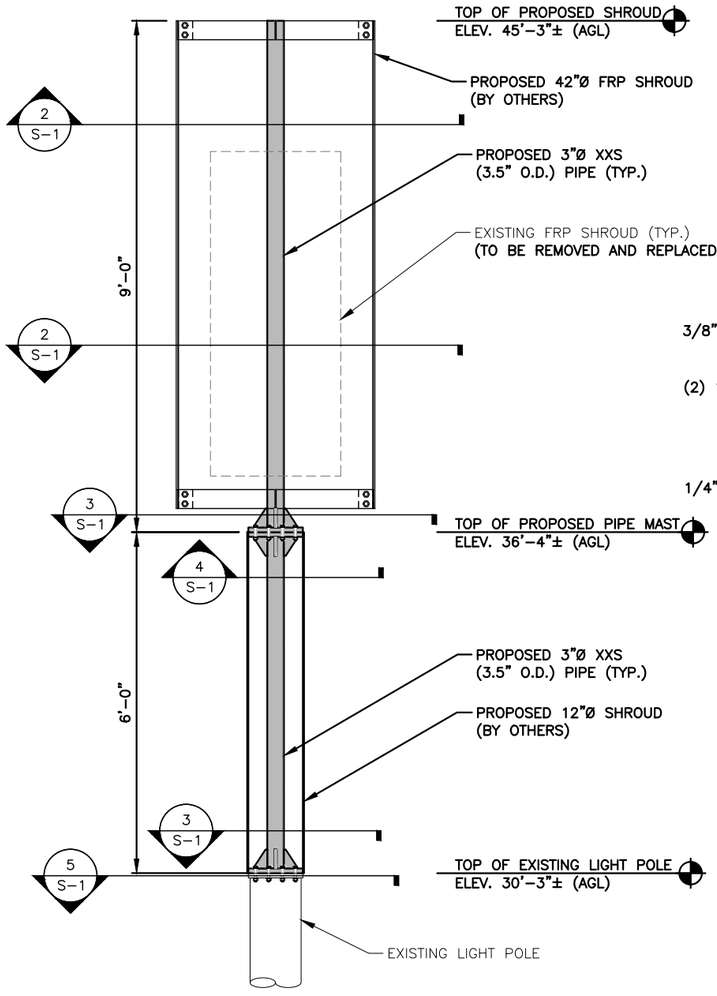
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: HY

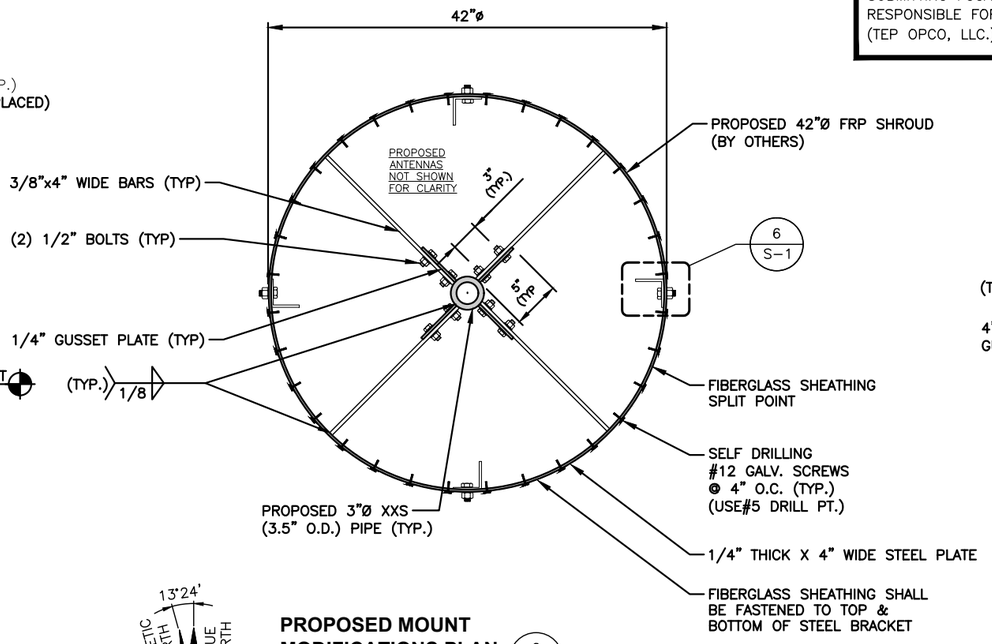
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

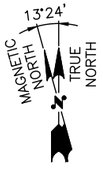
AT&T

STRUCTURAL NOTES
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	SN-1	1







PROPOSED MOUNT MODIFICATIONS PLAN (2 S-1)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"
0 0'-4" 0'-8" 1'-4" 2'-0"

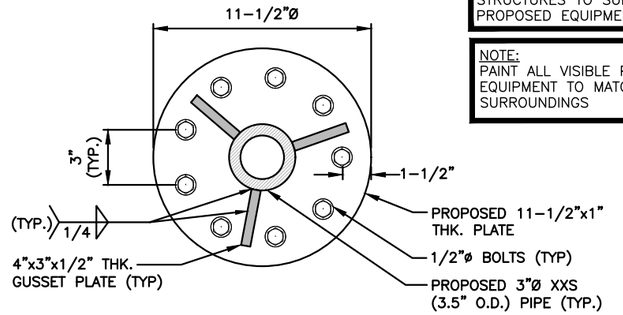
NOTE TO GENERAL CONTRACTOR: (PRIOR TO CONSTRUCTION COMPLETION)

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

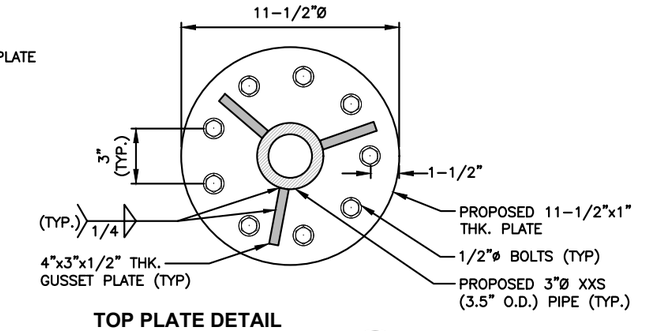
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TEP OPCO, LLC.
DATED: MAY 3, 2023 (REV.1)
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

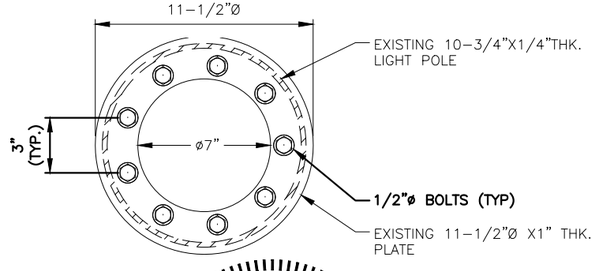
NOTE:
PAINT ALL VISIBLE PROPOSED EQUIPMENT TO MATCH EXISTING SURROUNDINGS



BASE PLATE DETAIL
@ 36'-4"± (AGL); 30'-3"± (AGL) (3 S-1)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"
0 0'-2" 0'-4" 0'-8" 1'-0"

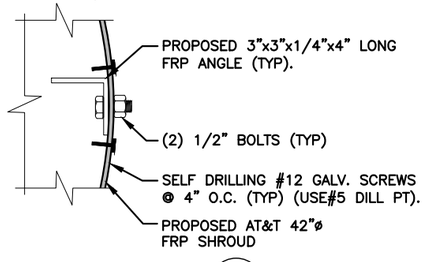


TOP PLATE DETAIL
@36'-4"± (AGL) (4 S-1)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"
0 0'-2" 0'-4" 0'-8" 1'-0"

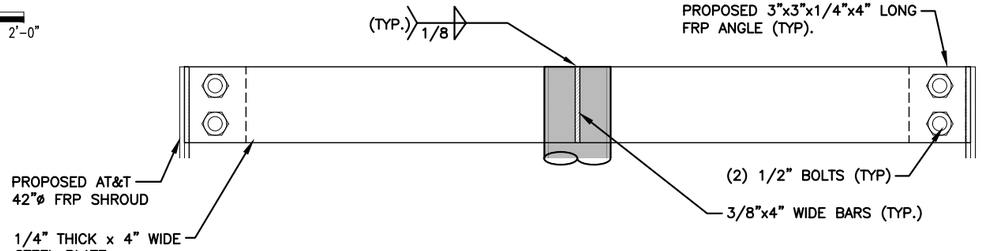


TOP PLATE DETAIL
@30'-3"± (AGL) (5 S-1)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"
0 0'-2" 0'-4" 0'-8" 1'-0"

PROPOSED MOUNT MODIFICATIONS DETAIL (1 S-1)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"
0 0'-4" 0'-8" 1'-4" 2'-0"



CONNECTION DETAIL (6 S-1)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"
0 0'-2" 0'-4" 0'-8" 1'-0"



CONNECTION DETAIL (7 S-1)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"
0 0'-4" 0'-8" 1'-4" 2'-0"

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CTL05271
SITE NAME: CROMWELL CENTRAL

51 SHUNPIKE ROAD
CROMWELL, CT 06108
MIDDLESEX COUNTY

AT&T
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/23/24	ISSUED FOR CONSTRUCTION	TE	BB	DPH
0	04/11/23	ISSUED FOR REVIEW	HY	HC	DPH
A	01/16/22	ISSUED FOR REVIEW	HY	HC	DPH

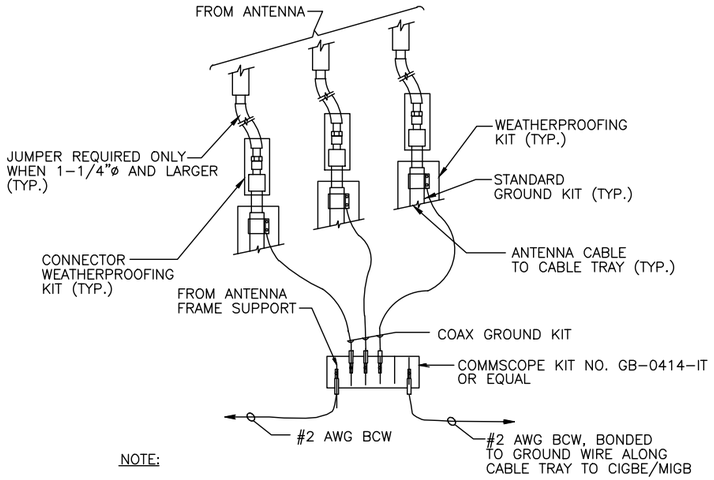
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: HY

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

AT&T

MOUNT MODIFICATION DESIGN
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	S-1	1



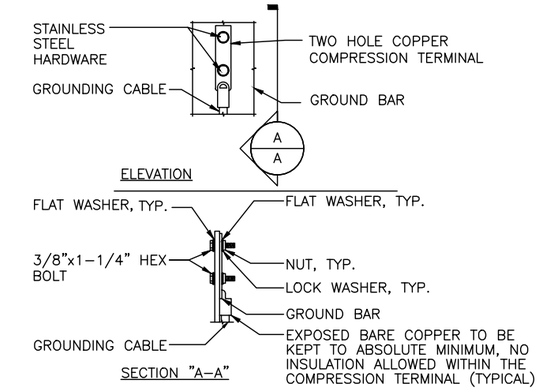
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

1 / G-1



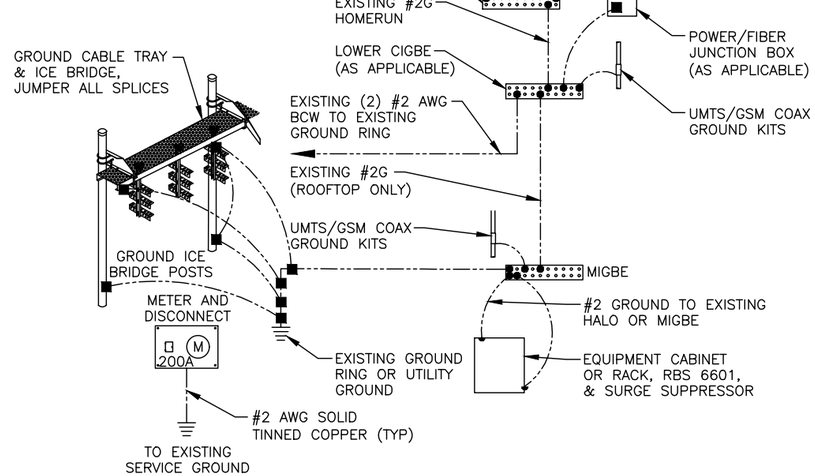
NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1

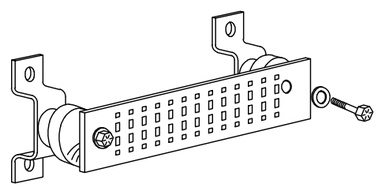
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

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

SAI
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SITE NUMBER: CTL05271
SITE NAME: CROMWELL CENTRAL

51 SHUNPIKE ROAD
CROMWELL, CT 06108
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AT&T
500 ENTERPRISE DRIVE, SUITE 3A
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NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/23/24	ISSUED FOR CONSTRUCTION	TS	BB	DPH
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A	01/16/22	ISSUED FOR REVIEW	HY	HC	DPH

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

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

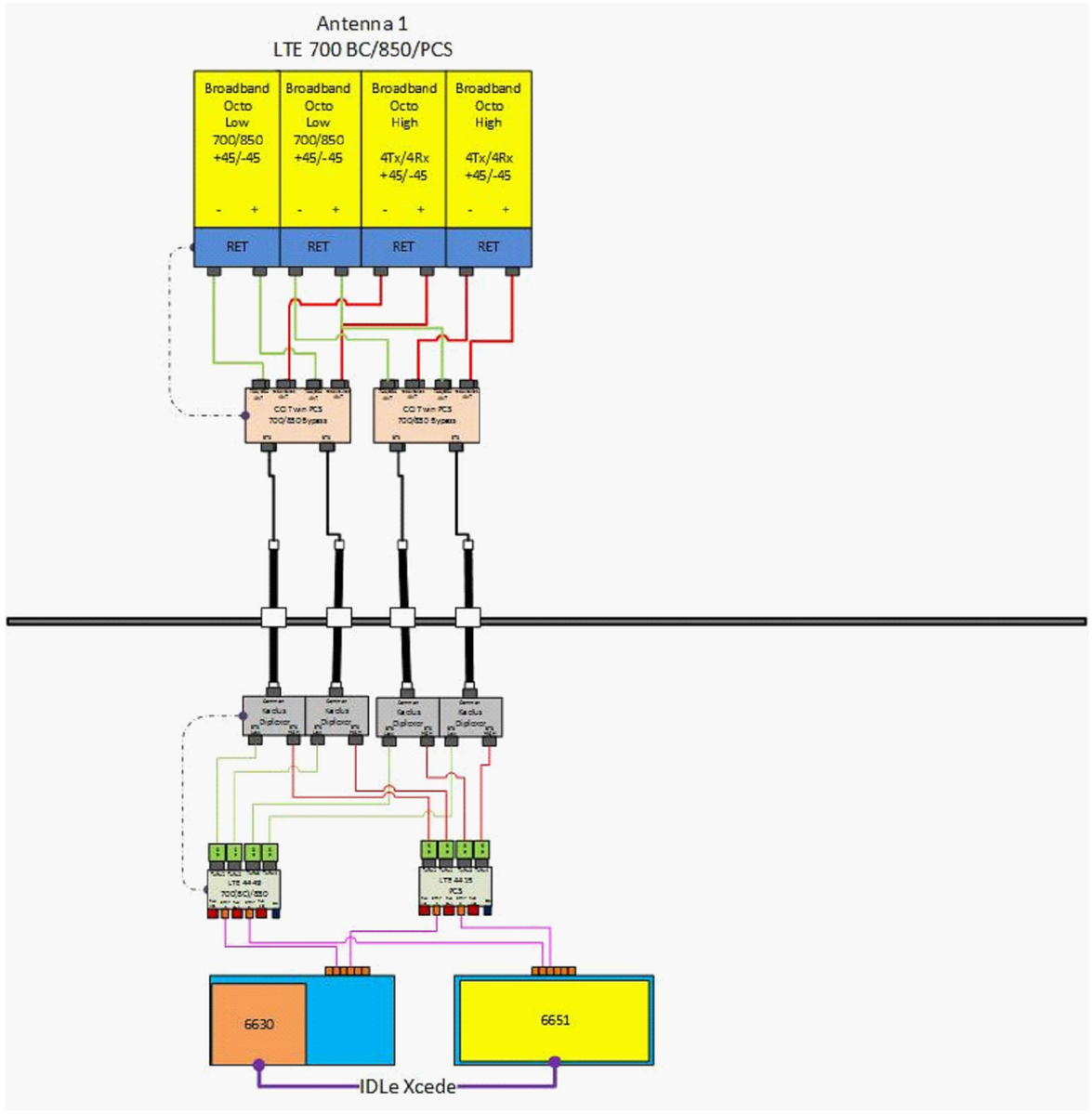
AT&T

GROUNDING DETAILS
5G NR RADIO_5G NR IDR-1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	G-1	1

NOTE:

REV: 3
DATED: 02/12/2024
RFDS ID: 5119915



RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

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

NOTE:

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

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A	01/16/22	ISSUED FOR REVIEW	HY	HC	DPH

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

AT&T

RF PLUMBING DIAGRAM
5G NR RADIO_5G NR IDR–1_LTE MULTI CARRIER
||BWE TOWER TOP RRH SWAP UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CTL05271	RF–1	1

(REVISED)
TOWER STRUCTURAL ANALYSIS REPORT

For

AT&T SITE NUMBER: CT5271

TEP PROJECT NUMBER: 317910.812068

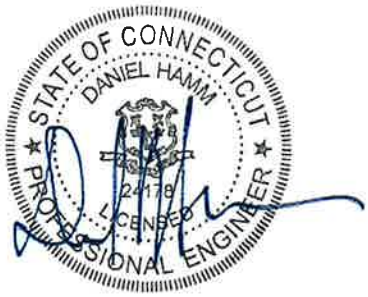
AT&T Site Name: CROMWELL CENTER

51 Shunpike Road
Cromwell, CT 06416

Antennas Mounted Within Shroud on Light Pole; Equipment on Ground

Prepared for:

Dated: May 3, 2023 (Rev.1)
April 4, 2023



Prepared by:

(TEP OPCO, LLC)
45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553
www.tepgroup.net

SCOPE OF WORK:

TEP Northeast (TEP NE) has been authorized by AT&T to conduct a structural evaluation of the 45'-3" Light pole supporting the proposed AT&T's antennas located at elevation 42'-3" 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.

This office conducted an on-site visual survey of the above site on December 29, 2022. Attendees included Peter Berube (TEP NE – Field Technician).

The following documents were used for our reference:

- Geotechnical Report prepared by Dr. Clarence Welti, P.E., P.C. dated November 21, 2001.
- Construction Drawings prepared by EEI Engineering Endeavors dated January 10, 2003.
- Construction Drawings prepared by EEI Engineering Endeavors dated March 9, 2011.
- Previous Structural Analysis prepared by Destek Engineering dated February 9, 2016.
- Light Pole Mapping Report prepared by TEP NE dated January 10, 2023.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the modified light pole **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The tower structure is rated at **76.6 %** - (Flange Plate at EL. 30.3' Controlling).

Install new shroud spine per the latest TEP NE construction drawings.

FOUNDATION SUMMARY:

Based on our evaluation, we have determined that the existing foundation **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The foundation is rated at **52.4 %** - (Overturning Controlling).

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
AT&T	**(3) 840-370964K Antennas**	42.25'	**FRP Enclosure**
AT&T	**(6) TMABPD7823VG12A TMA's**	42.25'	**FRP Enclosure**
AT&T	**(3) 4449 B5/B12 RRH's**	-	Ground
AT&T	**(3) 4415 B25 RRH's**	-	Ground
AT&T	**(6) DBC0115F1V91-2 Diplexers**	-	Ground

Proposed AT&T Appurtenances shown in Bold.

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	**(6) 7/8" Coax Cables**	42.25'	Inside light pole
AT&T	(6) 7/8" Coax Cables	42.25'	Inside light pole

Proposed AT&T Coax Cables shown in Bold.

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Section L1	29.4 %	36.3 – 45.3	PASS	
Section L2	58.9 %	30.3 – 36.3	PASS	
Section L3	43.8 %	3.3- 30.3	PASS	
Flange Plate & Bolts	**76.6 %**	30.3	PASS	**Controlling**

FOUNDATION RESULTS SUMMARY:

	Stress Ratio	Pass/Fail	Comments
Sliding	4.0 %	PASS	
Bearing	31.1 %	PASS	
Overturning	**52.4 %**	PASS	**Controlling**
Shear	0.6 %	PASS	

DESIGN CRITERIA:

1. EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

   County: Middlesex
   Ultimate Wind Speed: 120 mph
   Risk Category: II
   Exposure Category: C
   Topographic Category: 1
   Nominal Ice Thickness: 1 inch

2. Approximate height above grade to proposed antennas: 42.25'

***Calculations and referenced documents are attached.**

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 light pole 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.

SUPPORT RECOMMENDATIONS:

TEP NE recommends that the proposed antennas and TMAs be mounted within the proposed FRP shroud on the proposed light pole support pipe.

Reference TEP NE's Latest Construction Drawings for all component and connection requirements.

FIELD PHOTOS:

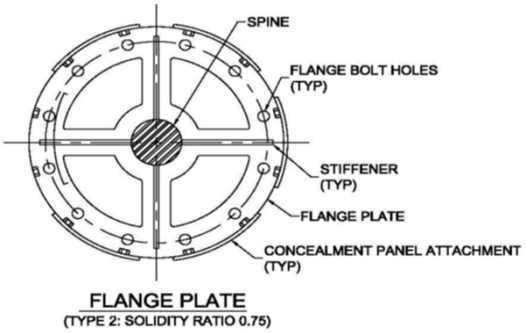
CALCULATIONS

CCI Flagpole Tool

Site Data	
BU#:	CT5271
Site Name:	CROMWELL CENTER
Order #:	0

Code		
Code:	TIA-222-H	
Ice Thickness:	1	in
Windspeed (V):	120	mph
Ice Wind Speed (V):	50	mph
Exposure Category:	C	
Topographic Feature:	N/A	
Risk Category:	II	

Tower Information		
Total Tower Height:	42	ft
Base Tower Height:	27	ft
Total Canister Length:	15	ft
Number of Canister Assembly Sections:	2	



FLANGE PLATE
(TYPE 2: SOLIDITY RATIO 0.75)

Canister Section Number[1]:	Canister Assembly Length (ft):	Canister Assembly Diameter (in):	Ventilated Canister:	Manufacturer[2]:	Number of Sides Canister Section	Plate Type:	Mating Flange Plate Thickness (in)[3]:	Mating Flange Plate Diameter (in):	Solidity Ratio	Plate Weight (Kip):	Canister Weight (Kip)	Vent Length (ft):
1	9	42	No		Round	2	1.00	11.5	0.75	0.044	0.198	0-0
2	6	12	No		Round	2	1.00	11.5	0.75	0.044	0.038	0-0

[1] Sections are numbered from the top of the tower down

[2] Select manufacturer if available for vented canister. Leave blank to autocalculate Cf values.

[3] Mating Flange Plate Thickness at the bottom of canister section

Flag on Tower:	**No**

Truck Ball on Tower:	**No**

Geometry : Base Tower + Spine CT5271 .eri *(last saved 05/03 3:17 pm)*

Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material	Delete
42	9		0	3.5	3.5	0.6	n/a	A53-B-35	[x]
33	6		0	3.5	3.5	0.6	n/a	A53-B-35	[x]
27	27		0	10.75	10.75	0.25	n/a	A53-B-35	[x]

Discrete Loads : C_FA_F for Canister Assembly

Canister Loading	Apply C_FA_F at Elevation(z) (ft)	C_FA_F No Ice (ft^2)	C_FA_F 1/2" Ice (ft^2)	C_FA_F 1" Ice (ft^2)	C_FA_F 2" Ice (ft^2)	C_FA_F 4" Ice (ft^2)	Canister Assembly Weight No Ice (Kip)	Canister Assembly Weight 1/2" Ice (Kip)
Canister Load 1	42	7.088	17.738	18.150	18.975	20.625	0.099	0.216
Canister Load 2	33	8.438	21.313	22.000	23.375	26.125	0.162	0.302
Canister Load 3	27	1.350	3.575	3.850	4.400	5.500	0.063	0.086

Deflection Check Required:	**Yes**	Import Deflection Results

3% Spine Deflection Check		
Allowable (3%) Horizontal Spine Deflection (inches)	Actual Deflection[1] (inches)	Sufficient/ Insufficient
5.400	1.853	Sufficient

[1] Relative deflection under service level wind speed

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Canister Load1	45.3	(2) TMABPD7823VG12A TMA (within Shroud)	38.8
840-370964K Antenna (within Shroud)	42.25	Canister Load2	36.3
840-370964K Antenna (within Shroud)	42.25	Light Fixture	30.3
840-370964K Antenna (within Shroud)	42.25	Canister Load3	30.3
(2) TMABPD7823VG12A TMA (within Shroud)	38.8		
(2) TMABPD7823VG12A TMA (within Shroud)	38.8		

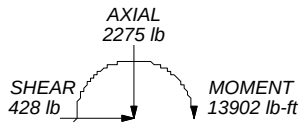
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi			

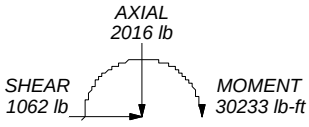
TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 58.9%

ALL REACTIONS ARE FACTORED



TORQUE 156 lb-ft
50 mph WIND - 1.0000 in ICE



TORQUE 726 lb-ft
REACTIONS - 120 mph WIND

TEP Northeast
45 Beechwood Drive
North Andover, MA 01845
Phone: (978) 557-.5553
FAX:

Job: ***CT5271***			
Project: ***CROMWELL CENTER***			
Client: AT&T	Drawn by: KSBM	App'd:	
Code: TIA-222-H	Date: 05/03/23	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 80.30 ft.
Basic wind speed of 120 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Pole Size*	*Pole Grade*	*Socket Length* *ft*
L1	45.30-36.30	9.00	P3.5x0.6	A53-B-35 (35 ksi)	
L2	36.30-30.30	6.00	P3.5x0.6	A53-B-35 (35 ksi)	
L3	30.30-3.30	27.00	P10.75x0.25	A53-B-35 (35 ksi)	

Tower Elevation *ft*	*Gusset Area (per face)* ft^2	*Gusset Thickness* *in*	*Gusset Grade*	*Adjust. Factor* A_f	*Adjust. Factor* A_r	*Weight Mult.*	*Double Angle Stitch Bolt Spacing Diagonals* *in*	*Double Angle Stitch Bolt Spacing Horizontals* *in*	*Double Angle Stitch Bolt Spacing Redundants* *in*
L1 45.30-36.30				1	0	1			
L2 36.30-30.30				1	0	1			
L3 30.30-3.30				1	1	1			

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_A ft^2/ft	Weight plf
7/8" Coax Lines	C	No	No	Inside Pole	42.30 - 3.30	6	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54
7/8" Coax Lines	C	No	No	Inside Pole	42.30 - 3.30	6	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	45.30-36.30	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	38.88
L2	36.30-30.30	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	38.88
L3	30.30-3.30	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	174.96

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	45.30-36.30	A	1.021	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	38.88
L2	36.30-30.30	A	1.001	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	38.88
L3	30.30-3.30	A	0.935	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	174.96

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	45.30-36.30	0.0000	0.0000	0.0000	0.0000
L2	36.30-30.30	0.0000	0.0000	0.0000	0.0000
L3	30.30-3.30	0.0000	0.0000	0.0000	0.0000

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
840-370964K Antenna (within Shroud)	A	From Face	1.00 0.00 0.00	0.0000	42.25	No Ice 1/2" Ice 1" Ice	0.87 1.11 1.38	0.87 1.11 1.38	64.00 0.00 0.00
840-370964K Antenna (within Shroud)	B	From Face	1.00 0.00 0.00	0.0000	42.25	No Ice 1/2" Ice 1" Ice	0.87 1.11 1.38	0.87 1.11 1.38	64.00 0.00 0.00
840-370964K Antenna (within Shroud)	C	From Face	1.00 0.00 0.00	0.0000	42.25	No Ice 1/2" Ice 1" Ice	0.87 1.11 1.38	0.87 1.11 1.38	64.00 0.00 0.00
(2) TMABPD7823VG12A TMA (within Shroud)	A	None		0.0000	38.80	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	8.00 0.00 0.00
(2) TMABPD7823VG12A TMA (within Shroud)	B	None		0.0000	38.80	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	8.00 0.00 0.00
(2) TMABPD7823VG12A TMA (within Shroud)	C	None		0.0000	38.80	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	8.00 0.00 0.00
Light Fixture	C	From Face	8.00 0.00 0.00	0.0000	30.30	No Ice 1/2" Ice 1" Ice	1.08 1.21 1.35	2.92 3.15 3.38	150.00 175.99 205.42
Canister Load1	C	None		0.0000	45.30	No Ice 1/2" Ice 1" Ice	7.09 17.74 18.15	7.09 17.74 18.15	0.10 0.22 0.34
Canister Load2	C	None		0.0000	36.30	No Ice 1/2" Ice 1" Ice	8.44 21.31 22.00	8.44 21.31 22.00	0.16 0.30 0.45
Canister Load3	C	None		0.0000	30.30	No Ice 1/2" Ice 1" Ice	1.35 3.58 3.85	1.35 3.58 3.85	0.06 0.09 0.11

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 90 deg - No Ice
5	0.9 Dead+1.0 Wind 90 deg - No Ice
6	1.2 Dead+1.0 Wind 180 deg - No Ice
7	0.9 Dead+1.0 Wind 180 deg - No Ice

Comb. No.	Description
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	45.3 - 36.3	Pole	Max Tension	9	0.02	0.00	-0.04
			Max. Compression	2	-522.77	0.00	2625.92
			Max. Mx	4	-521.88	-2632.96	-7.49
			Max. My	6	-521.58	0.00	-2634.92
			Max. Vy	4	329.62	-2632.96	-7.49
			Max. Vx	6	330.04	0.00	-2634.92
			Max. Torque	5			0.02
L2	36.3 - 30.3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-704.88	0.00	6112.08
			Max. Mx	4	-703.35	-6129.23	-17.71
			Max. My	6	-702.84	0.00	-6134.01
			Max. Vy	4	585.58	-3217.93	-9.08
			Max. Vx	6	586.01	0.00	-3220.29
			Max. Torque	4			0.17
L3	30.3 - 3.3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2275.24	0.00	-1950.69
			Max. Mx	4	-2014.74	-30195.37	-1507.40
			Max. My	6	-2014.78	0.00	-30220.55
			Max. Vy	4	1063.98	-30195.37	-1507.40
			Max. Vx	6	1010.08	0.00	-30220.55
			Max. Torque	4			-725.84

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	10	2275.25	-428.21	0.04
	Max. H_x	14	1679.72	0.00	-272.22
	Max. H_z	3	1511.75	0.00	1008.38
	Max. M_x	3	27423.60	0.00	1008.38
	Max. M_z	4	30195.38	-1062.22	0.00
	Max. Torsion	1	0.00	0.00	0.70
	Min. Vert	7	1511.75	0.00	-1008.37
	Min. H_x	5	1511.75	-1062.25	-0.00
	Min. H_z	7	1511.75	0.00	-1008.37
	Min. M_x	6	-30220.55	0.00	-1008.31
	Min. M_z	1	0.00	0.00	0.70
	Min. Torsion	4	-725.55	-1062.22	0.00

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead Only	1679.72	0.00	-0.70	1226.93	0.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	2015.67	0.00	-1008.33	-27206.50	0.00	0.00
0.9 Dead+1.0 Wind 0 deg - No Ice	1511.75	0.00	-1008.38	-27423.60	0.00	0.00
1.2 Dead+1.0 Wind 90 deg - No Ice	2015.67	1062.22	-0.00	1507.20	-30195.38	725.55
0.9 Dead+1.0 Wind 90 deg - No Ice	1511.75	1062.25	0.00	1122.46	-30020.20	717.90
1.2 Dead+1.0 Wind 180 deg - No Ice	2015.67	0.00	1008.31	30220.55	0.00	0.00
0.9 Dead+1.0 Wind 180 deg - No Ice	1511.75	0.00	1008.37	29668.29	0.00	0.00
1.2 Dead+1.0 Ice+1.0 Temp	2275.24	0.00	-0.37	1950.69	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	2275.24	0.00	-417.81	-9972.63	0.00	0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	2275.25	428.21	-0.04	1962.40	-12222.51	155.56
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	2275.24	0.00	417.88	13902.20	0.00	0.00
Dead+Wind 0 deg - Service	1679.72	0.00	-272.19	-5781.74	0.00	0.00
Dead+Wind 90 deg - Service	1679.72	284.28	-0.03	1249.90	-7364.37	161.59
Dead+Wind 180 deg - Service	1679.72	0.00	272.22	8284.48	0.00	0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	0.00	-1679.72	0.00	0.00	1679.72	0.70	0.042%
2	0.00	-2015.67	-1008.50	0.00	2015.67	1008.33	0.008%
3	0.00	-1511.75	-1008.50	0.00	1511.75	1008.38	0.007%
4	1062.31	-2015.67	0.00	-1062.22	2015.67	0.00	0.004%
5	1062.31	-1511.75	0.00	-1062.25	1511.75	-0.00	0.004%
6	0.00	-2015.67	1008.50	0.00	2015.67	-1008.31	0.009%
7	0.00	-1511.75	1008.50	0.00	1511.75	-1008.37	0.008%
8	0.00	-2275.25	0.00	0.00	2275.24	0.37	0.016%
9	0.00	-2275.25	-418.12	0.00	2275.24	417.81	0.013%
10	428.42	-2275.25	0.00	-428.21	2275.25	0.04	0.009%
11	0.00	-2275.25	418.12	0.00	2275.24	-417.88	0.011%
12	0.00	-1679.72	-272.38	0.00	1679.72	272.19	0.011%
13	284.41	-1679.72	0.00	-284.28	1679.72	0.03	0.008%
14	0.00	-1679.72	272.38	0.00	1679.72	-272.22	0.009%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001

2	Yes	15	0.00000001	0.00009869
3	Yes	15	0.00000001	0.00000001
4	Yes	16	0.00000001	0.00011715
5	Yes	16	0.00000001	0.00000001
6	Yes	15	0.00000001	0.00011061
7	Yes	15	0.00000001	0.00000001
8	Yes	9	0.00000001	0.00011800
9	Yes	12	0.00000001	0.00010813
10	Yes	13	0.00000001	0.00000001
11	Yes	13	0.00000001	0.00000001
12	Yes	12	0.00000001	0.00012620
13	Yes	13	0.00000001	0.00000001
14	Yes	13	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	45.3 - 36.3	3.135	14	0.7433	0.0146
L2	36.3 - 30.3	1.803	14	0.6274	0.0144
L3	30.3 - 3.3	1.166	14	0.3482	0.0140

Critical Deflections and Radius of Curvature - Service Wind

Elevation	*Appurtenance*	*Gov. Load Comb.*	*Deflection*	*Tilt*	*Twist*	*Radius of Curvature*
ft			*in*	°	°	*ft*
45.30	Canister Load1	14	3.135	0.7433	0.0146	2839
42.25	840-370964K Antenna (within Shroud)	14	2.653	0.7343	0.0145	2839
38.80	(2) TMABPD7823VG12A TMA (within Shroud)	14	2.138	0.6944	0.0145	2245
36.30	Canister Load2	14	1.803	0.6274	0.0144	1883
30.30	Light Fixture	14	1.166	0.3482	0.0140	2302

Maximum Tower Deflections - Design Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	45.3 - 36.3	11.936	6	2.9924	0.0659
L2	36.3 - 30.3	6.606	6	2.4734	0.0651
L3	30.3 - 3.3	4.180	6	1.2233	0.0630

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
45.30	Canister Load1	6	11.936	2.9924	0.0659	640
42.25	840-370964K Antenna (within Shroud)	6	9.994	2.9530	0.0657	640
38.80	(2) TMABPD7823VG12A TMA (within Shroud)	6	7.930	2.7748	0.0654	505
36.30	Canister Load2	6	6.606	2.4734	0.0651	421
30.30	Light Fixture	6	4.180	1.2233	0.0630	573

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	45.3 - 36.3 (1)	P3.5x0.6	9.00	42.00	481.4	5.4664	-521.58	5329.51	0.098
L2	36.3 - 30.3 (2)	P3.5x0.6	6.00	42.00	481.4	5.4664	-702.84	5329.51	0.132
L3	30.3 - 3.3 (3)	P10.75x0.25	27.00	42.00	135.7	8.2467	-2014.74	101133.00	0.020

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	45.3 - 36.3 (1)	P3.5x0.6	2634.92	13434.75	0.196	0.00	13434.75	0.000
L2	36.3 - 30.3 (2)	P3.5x0.6	6134.01	13434.75	0.457	0.00	13434.75	0.000
L3	30.3 - 3.3 (3)	P10.75x0.25	30233.00	72365.25	0.418	0.00	72365.25	0.000

Pole Shear Design Data

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	45.3 - 36.3 (1)	P3.5x0.6	330.04	51657.20	0.006	0.00	13170.67	0.000
L2	36.3 - 30.3 (2)	P3.5x0.6	579.61	51657.20	0.011	0.00	13170.67	0.000
L3	30.3 - 3.3 (3)	P10.75x0.25	1063.98	77931.10	0.014	725.53	71941.58	0.010

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	45.3 - 36.3 (1)	0.098	0.196	0.000	0.006	0.000	0.294 ✔	1.000	4.8.2 ✔
L2	36.3 - 30.3 (2)	0.132	0.457	0.000	0.011	0.000	0.589 ✔	1.000	4.8.2 ✔
L3	30.3 - 3.3 (3)	0.020	0.418	0.000	0.014	0.010	0.438 ✔	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	45.3 - 36.3	Pole	P3.5x0.6	1	-521.58	5329.51	29.4	Pass
L2	36.3 - 30.3	Pole	P3.5x0.6	2	-702.84	5329.51	58.9	Pass
L3	30.3 - 3.3	Pole	P10.75x0.25	3	-2014.74	101133.00	43.8	Pass
							Summary	
						Pole (L2)	58.9	Pass
						RATING =	**58.9**	**Pass**

Monopole Flange Plate Connection

Elevation = 33 ft.

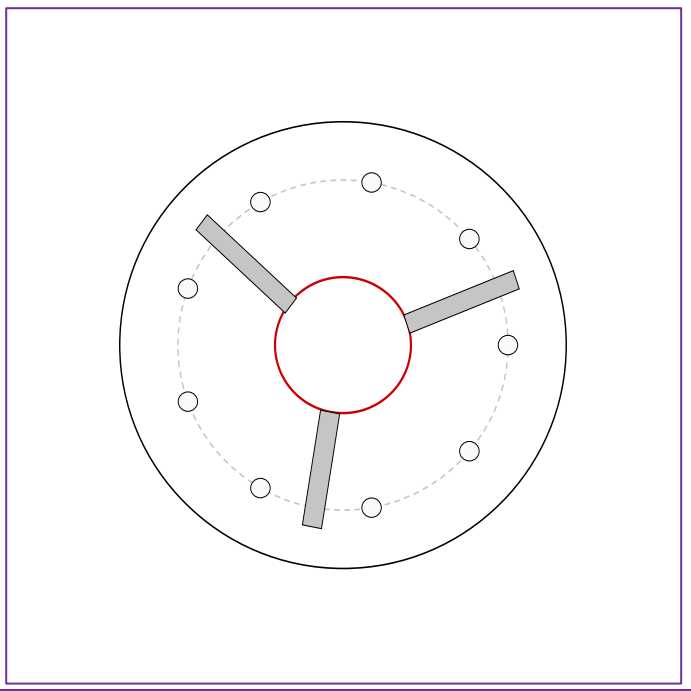
BU #	CT25271
Site Name	CROMWELL CENTER
Rev.	1

TIA-222 Revision	H

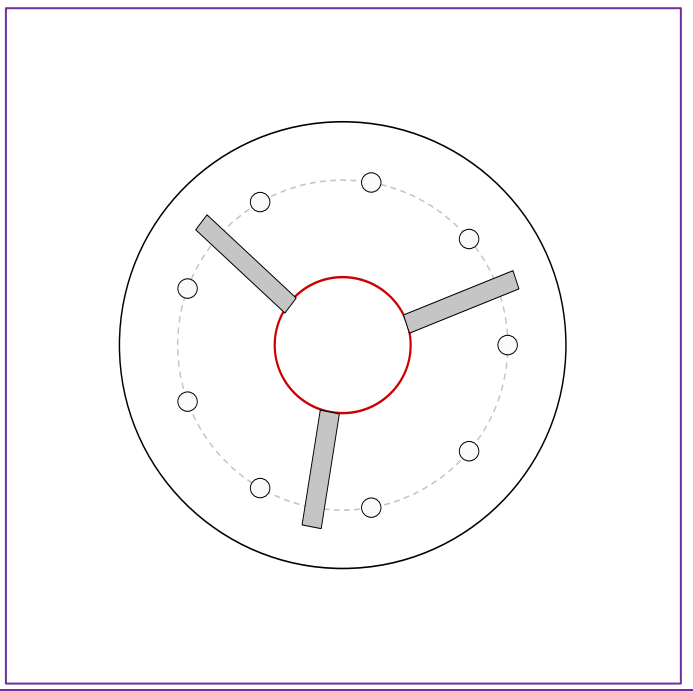
Applied Loads	
Moment (kip-ft)	2.63
Axial Force (kips)	0.52
Shear Force (kips)	0.33

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(9) 1/2" ø bolts (A325 N; Fy=92 ksi, Fu=105 ksi) on 8.5" BC

Top Plate Data

11.5" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

(3) 4"H x 3"W x 0.5"T, Notch: 0.375"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.25" fillet
vert. weld: 0.25" fillet

Top Pole Data

3.5" x 0.6" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

11.5" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

(3) 4"H x 3"W x 0.5"T, Notch: 0.375"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.25" fillet
vert. weld: 0.25" fillet

Bottom Pole Data

3.5" x 0.6" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	1.59	
Allowable (kips)	11.18	
Stress Rating:	**13.6%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	4.26	(Flexural (b/Le>2))
Allowable Stress (ksi):	32.40	
Stress Rating:	**12.5%**	**Pass**
Tension Side Stress Rating:	**13.9%**	**Pass**

Top Stiffener Capacity

Horizontal Weld:	**18.3%**	**Pass**
Vertical Weld:	**17.1%**	**Pass**
Plate Flexure+Shear:	**10.3%**	**Pass**
Plate Tension+Shear:	**11.7%**	**Pass**
Plate Compression:	**26.7%**	**Pass**

Top Pole Capacity

Punching Shear:	**5.7%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	4.26	(Flexural (b/Le>2))
Allowable Stress (ksi):	32.40	
Stress Rating:	**12.5%**	**Pass**
Tension Side Stress Rating:	**13.9%**	**Pass**

Bottom Stiffener Capacity

Horizontal Weld:	**18.3%**	**Pass**
Vertical Weld:	**17.1%**	**Pass**
Plate Flexure+Shear:	**10.3%**	**Pass**
Plate Tension+Shear:	**11.7%**	**Pass**
Plate Compression:	**26.7%**	**Pass**

Bottom Pole Capacity

Punching Shear:	**5.7%**	**Pass**

Monopole Flange Plate Connection

Elevation = 27 ft.

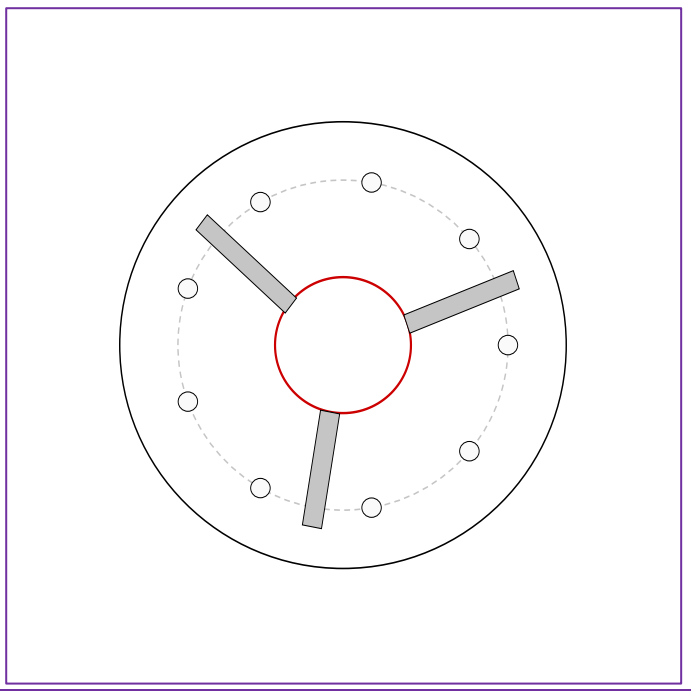
BU #	CT25271
Site Name	CROMWELL CENTER
Rev.	1

TIA-222 Revision	H

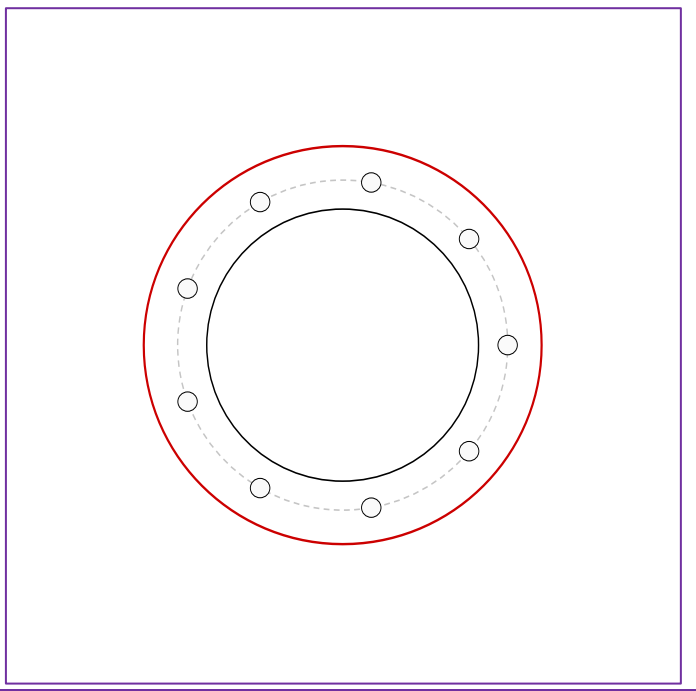
Applied Loads	
Moment (kip-ft)	7.60
Axial Force (kips)	0.88
Shear Force (kips)	0.65

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(9) 1/2" ø bolts (A325 N; Fy=92 ksi, Fu=105 ksi) on 8.5" BC

Top Plate Data

11.5" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

7" ID x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

(3) 4"H x 3"W x 0.5"T, Notch: 0.375"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.25" fillet
vert. weld: 0.25" fillet

Bottom Stiffener Data

N/A

Top Pole Data

3.5" x 0.6" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Pole Data

10.75" x 0.25" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	4.66	
Allowable (kips)	11.18	
Stress Rating:	**39.7%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	12.10	(Flexural (b/Le>2))
Allowable Stress (ksi):	32.40	
Stress Rating:	**35.6%**	**Pass**
Tension Side Stress Rating:	**40.7%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	4.76	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**14.0%**	**Pass**
Tension Side Stress Rating:	**N/A**	

Top Stiffener Capacity

Horizontal Weld:	**52.5%**	**Pass**
Vertical Weld:	**49.0%**	**Pass**
Plate Flexure+Shear:	**37.0%**	**Pass**
Plate Tension+Shear:	**39.3%**	**Pass**
Plate Compression:	**76.6%**	**Pass**

Bottom Stiffener Capacity

Horizontal Weld:	**N/A**
Vertical Weld:	**N/A**
Plate Flexure+Shear:	**N/A**
Plate Tension+Shear:	**N/A**
Plate Compression:	**N/A**

Top Pole Capacity

Punching Shear:	**16.3%**	**Pass**

Bottom Pole Capacity

Punching Shear:	**N/A**

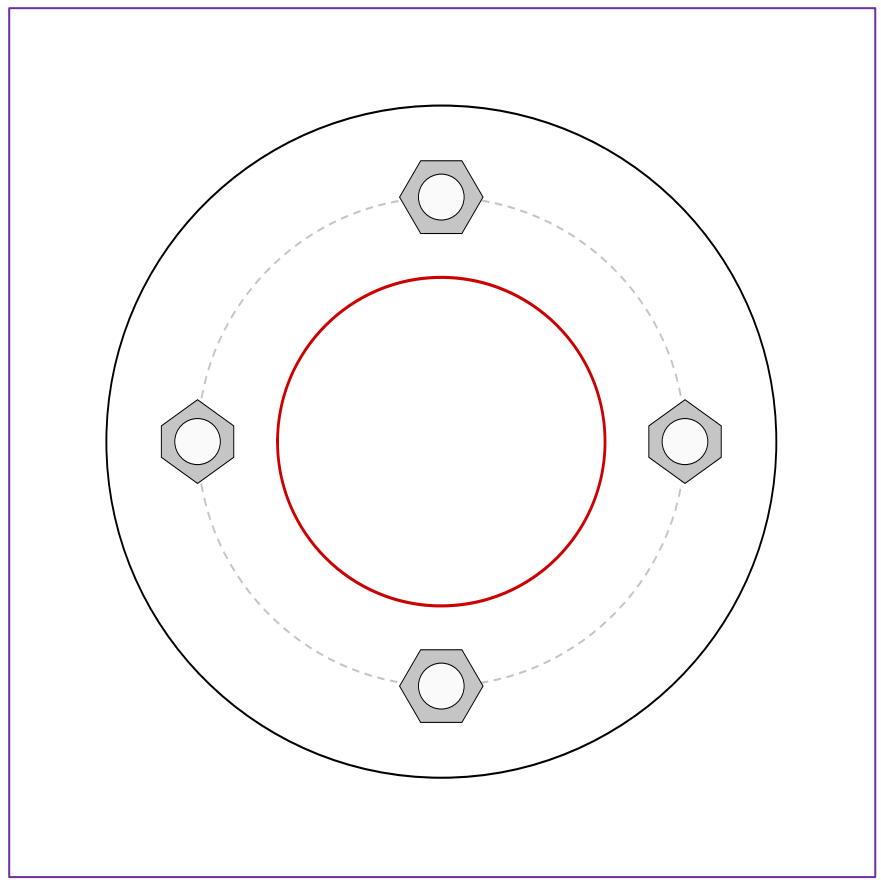
Monopole Base Plate Connection

Site Info	
BU #	CT25271
Site Name	CROMWELL CENTER
Rev.	1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	30.23
Axial Force (kips)	2.01
Shear Force (kips)	1.06

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(4) 1-1/2" ø bolts (F1554-55 N; Fy=55 ksi, Fu=75 ksi) on 16" BC

Base Plate Data

22" OD x 1" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

N/A

Pole Data

10.75" x 0.25" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_t = 22.09	ϕPn_t = 79.31	**Stress Rating**
Vu = 0.27	ϕVn = 49.7	**26.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	20.47	(Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**60.2%**	**Pass**

Pier and Pad Foundation

AT&T Site Number:	CT5271
Site Name:	CROMWELL CENTER
Rev #:	1

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	2.02	kips
Base Shear, Vu_comp:	1.06	kips
Moment, M_u:	30.23	ft-kips
Tower Height, **H**:	45.3	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, **dpier**:	3	ft
Ext. Above Grade, **E**:	3	ft
Pier Rebar Size, **Sc**:	4	
Pier Rebar Quantity, **mc**:	15	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	12	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	4	ft
Pad Width, W_1:	6	ft
Pad Thickness, **T**:	1.75	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	6	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	14	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δ**c**:	145	pcf

Soil Properties		
Total Soil Unit Weight, γ:	135	pcf
Ultimate Gross Bearing, Qult:	8.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	38	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:		
Neglected Depth, **N**:		ft
Foundation Bearing on Rock?		
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

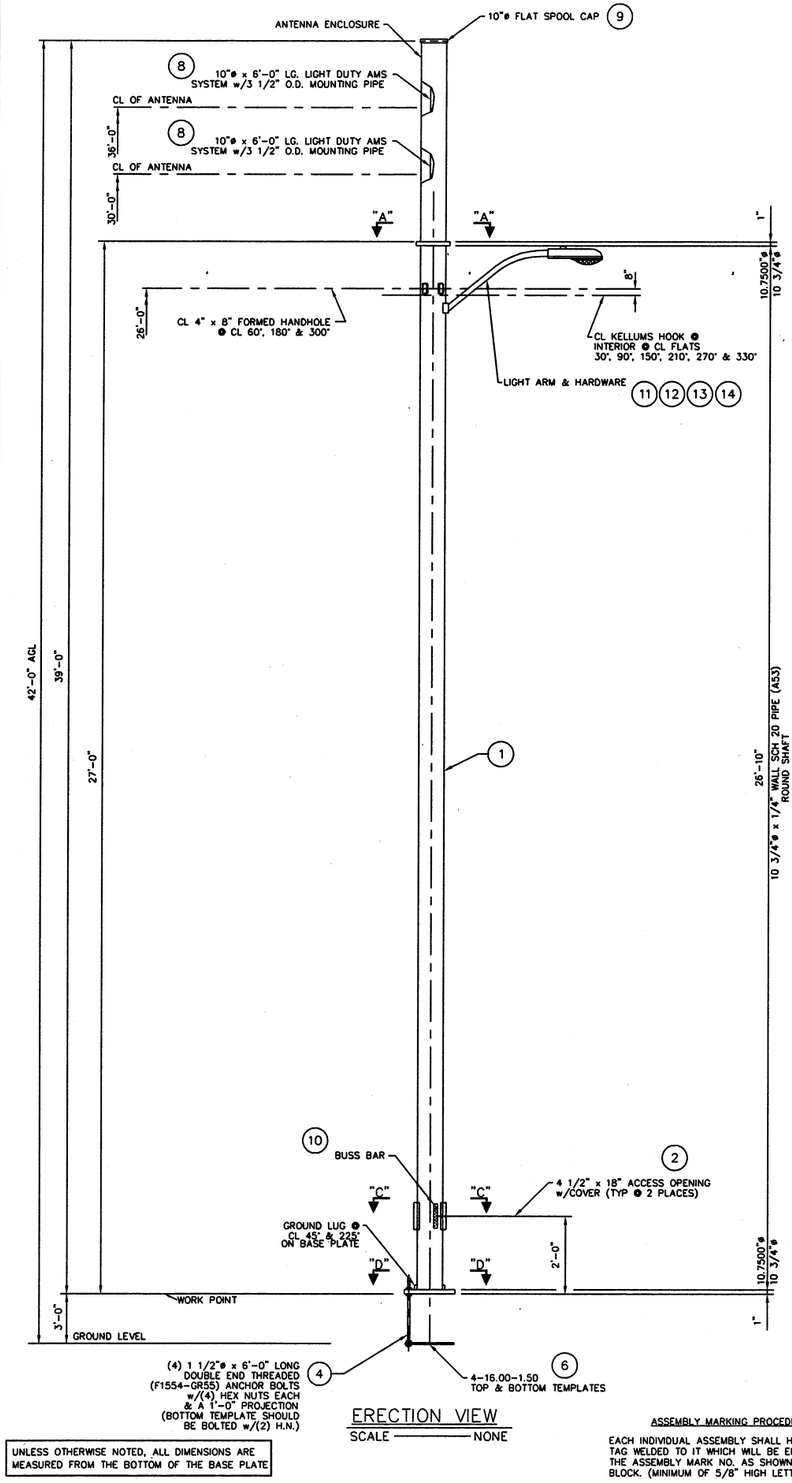
Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	25.18	1.06	**4.0%**	**Pass**
Bearing Pressure (ksf)	6.00	1.96	**31.1%**	**Pass**
*Overturning (kip*ft)*	72.40	37.92	**52.4%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	214.35	35.80	**15.9%**	**Pass**
Pier Compression (kip)	4499.01	8.48	**0.2%**	**Pass**
*Pad Flexure (kip*ft)*	446.85	7.82	**1.7%**	**Pass**
Pad Shear - 1-way (kips)	115.27	0.77	**0.6%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	893.70	21.48	**2.3%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Structural Rating*:	**15.9%**
Soil Rating*:	**52.4%**

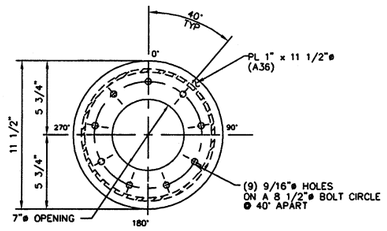
REFERENCE DOCUMENTS

NOTE: CUSTOMER TO SUPPLY ANTENNA MOUNTING BRACKETS FOR INSIDE ANTENNA ENCLOSURE.

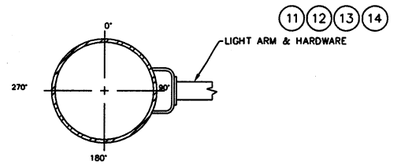


ERECTION VIEW
SCALE ——— NONE

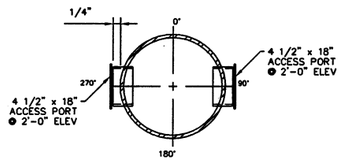
UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE MEASURED FROM THE BOTTOM OF THE BASE PLATE



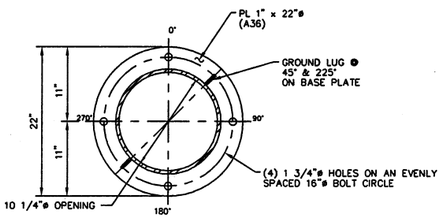
VIEW "A-A"
NOTE: AMS REMOVED FOR CLARITY



SECTION "B-B"



SECTION "C-C"



SECTION "D-D"

ASSEMBLY MARKING PROCEDURE

EACH INDIVIDUAL ASSEMBLY SHALL HAVE A METAL TAG WELDED TO IT WHICH WILL BE ENGRAVED WITH THE ASSEMBLY MARK NO. AS SHOWN IN THE MATERIAL BLOCK. (MINIMUM OF 5/8" HIGH LETTERS)

MATERIAL REQ'D. PER ASSEMBLY

GALV. WT.	QTY.	ITEM	MK. NO.	DESCRIPTION
984.55	1	(1)	WA12377	SHAFT ASSY. (SINGLE SECTION)
4.53	2	(2)	C10869	60" x 20" COVER PL w/(4)#10-24 x 5/8" LG S.S. CAP SCREWS & (4) FLAT WASHERS
		(3)		HARDWARE AS FOLLOWS:
4.16	3	(3/A)	K10726	4" x 8" FORMED HANDHOLE COVER PLATE w/ (2) 1/4"ø x 1" LG. S.S. H.H.C.S. BOLTS
42.97	4	(4)	1.50-AB60DE-4	1 1/2"ø x 6'-0" LG. (F1554-GR55) ANCHOR BOLTS w/ (4) HEX NUTS (A194-GR2H), EACH
	1	(5)		STRUCTURE ASSEMBLY AND ERECTION PROCEDURES
31.19	2	(6)	4-16.00-1.50	SETTING TEMPLATE
0.40	6	(7)	GS13220	3/8"ø KELLUMS HOOK ASSY.
181.24	2	(8)	K11442	10"ø x 6'-0" LG. LIGHT DUTY AMS SYSTEM w/3 1/2" O.D. MOUNTING PIPE
11.48	1	(9)	K11418	10"ø AMS CAP
7.50	1	(10)	K10062	20" BUSS BAR KIT
--	1	(11)	RMA33--RMD105283	LUMINAIRE
--	1	(12)	PBT-1	PHOTOCELL
--	1	(13)	RA-6P-M53W	6' ARM
--	1	(14)	LV100	100W HPS LAMP

TOTAL GALV. STR. & ACCES. WT. 1398.27#
TOTAL ANCHOR BOLT & TEMPLATE WT. 234.25#

GENERAL NOTES

1) MONOPOLE IS DESIGNED IN ACCORDANCE WITH TIA/EIA-222F FOR 85 MPH BASIC WIND SPEED (FASTEST MILE) AND 1/2" RADIAL ICE (NON-CONCURRENTLY).
   DESIGN MEETS 2000 IBC AND CT BUILD CODE 105 MPH BASIC WIND (3-SECOND GUST)
2) ALL WELDS SHALL BE IN ACCORDANCE WITH AWS D.1.1. (LATEST EDITION). LONGITUDINAL SEAM WELDS WITHIN SLIP-JOINT AREA IN FEMALE SECTION SHALL BE 100% PENETRATION.
3) MONOPOLE SHALL BE HOT DIP GALVANIZED PER ASTM A123.
4) CONTRACTOR SHALL THOROUGHLY REVIEW EEI'S ASSEMBLY & ERECTION PROCEDURE PRIOR TO INITIATING THE ERECTION OF THE MONOPOLE
5) THE ORIENTATION OF THE MONOPOLE SHALL BE VERIFIED PRIOR TO ERECTION OF THE POLE.
6) ALL BOLTED CONNECTIONS WITH A325 HIGH-STRENGTH BOLTS SHALL BE ASSEMBLED IN ACCORDANCE WITH SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS. BOLTS SHALL BE BROUGHT TO SNUG-TIGHT CONDITIONS AS RECOMMENDED BY THE FLANGE SPECIFICATIONS IN FLANGE-TYPE JOINTS AND SHOULD BE SHIMMED IF NECESSARY. THE SHIMS WILL BE SUPPLIED BY EEI.
7) ANCHOR BOLTS SHALL BE TIGHTENED AFTER THE STRUCTURE IS PLUMB. BOTH TOP & BOTTOM NUT SHALL BE TIGHTENED TO 600 ft-lbs MOMENT (APPROXIMATELY THE FULL EFFORT OF A MAN ON A FOUR FOOT WRENCH). FOR DETAIL ANCHOR BOLT INSTALLATION REFER TO EEI ASSEMBLY AND ERECTION PROCEDURE.
8) GAP BETWEEN TOP OF THE FOUNDATION AND BOTTOM OF THE BASE PLATE MAY BE FILLED WITH A NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF f'=2000 psi. WATER DRAINAGE MUST BE PROVIDED UNDERNEATH THE BASE PLATE TO ENSURE THAT MOISTURE DOES NOT COLLECT INSIDE THE MONOPOLE
9) POLE TAPER = 0.0000in/ft.

REV.	DESCRIPTION	DATE	DWN.	APP.
0	COMPLETED APPROVAL DWG	1/10/03	RVH	

ENGINEERED ENDEAVORS
The Experienced Point of View
10975 Kinsman Road * Newbury, OH 44065-9787
Ph: (440) 564-5484 * Ph: (888) 270-3855
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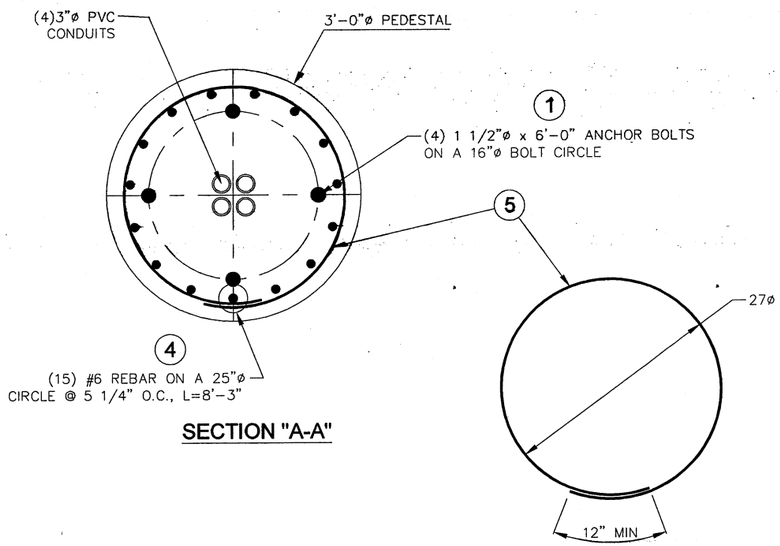
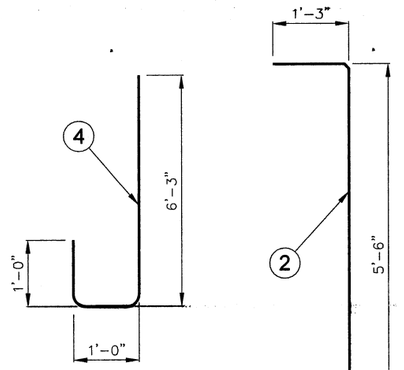
42'-0" LIGHT POLE
URS
CROMWELL CORNER/CT-271
CROMWELL, CT

SCALE	PROJECT NO.	
NONE		11353
SH. 1 OF 1	DRAWING NO.	GS54432



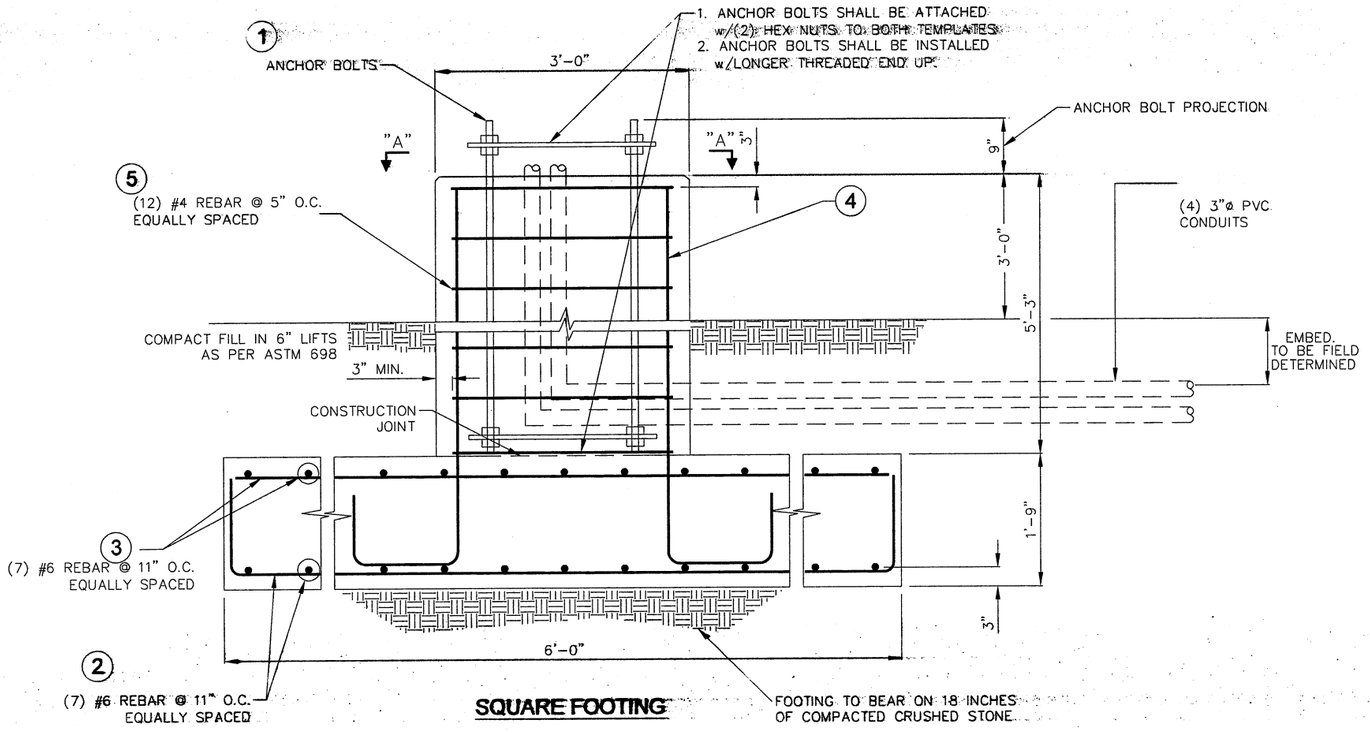
SECTION "A-A"



FOUNDATION LOADING	
MOMENT	25.9 kip-ft
SHEAR	1.0 kips
AXIAL	1.9 kips

MATERIAL LIST		
ITEM	QTY.	DESCRIPTION
1	4	1 1/2"ø x 6'-0" (F1554-GR.55) ANCHOR BOLTS
2	14	#6 REBAR x 8'-0" (ASTM A615-GR.60)
3	14	#6 REBAR x 5'-6" (ASTM A615-GR.60)
4	15	#6 REBAR x 9'-0" (ASTM A615-GR.60)
5	12	#4 REBAR x 9'-0" (ASTM A615-GR.60)

VOL. CONCRETE @ 4000 psi (TYPE II CEMENT)	4.1 yd^3
STEEL (ASTM A615-GR.60)	911.7 lbs



SQUARE FOOTING

GENERAL NOTES:

1. FOUNDATION DESIGN IS BASE ON THE FOLLOWING: EEI JOB# 11353, DRAWING# GS54432 SOIL REPORT BY DR. CLARENCE WELTI, P.E., P.C., REPORT NO. - 11/21/2001
2. FOUNDATION EMBEDMENT IS SHOWN FROM THE GROUND LEVEL AT THE TIME OF SOIL INVESTIGATION AS DEPICTED IN THE SOIL REPORT. SHOULD THE ACTUAL SOIL CONDITIONS DIFFER FROM THOSE IN THE REPORT, THE GEOTECHNICAL ENGINEER AND FOUNDATION DESIGNER SHOULD BE NOTIFIED IN ORDER TO RE-EVALUATE THE FOUNDATION DESIGN.
3. SOIL REPORT SHOULD BE CONSULTED PRIOR TO CONSTRUCTION. STEEL CAISSON OR SLURRY METHOD MAY BE REQUIRED TO PREVENT SOIL FROM CAVING DURING CONSTRUCTION. THE CAISSON SHOULD BE REMOVED AFTER COMPLETION OF CONCRETING OR, IF LEFT IN THE GROUND, ALL VOIDS AROUND THE CAISSON SHALL BE FILLED WITH PRESSURIZED GROUT. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
4. FOUNDATION EXCAVATION SHALL BE INSPECTED PRIOR TO PLACEMENT OF REINFORCEMENT AND ANCHOR BOLTS.
5. SPECIAL INSPECTION OF REINFORCEMENT, ANCHOR BOLT INSTALLATION, AND CONCRETE IS REQUIRED PER 2000 IBC AND CT BUILD CODE. FOUNDATION REINFORCEMENT AND ANCHOR BOLTS SHALL BE INSPECTED PRIOR TO PLACEMENT.
6. REINFORCING STEEL SHALL COMFORM TO ASTM A615-87, Fy=60 ksi. REINFORCEMENT SHALL BE ASSEMBLED USING STEEL WIRE. WELDING IS NOT PERMITTED. MINIMUM SPLICE LENGTH: FOR No. 6 BARS AND SMALLER - 44 x ø bar, FOR No. 7 BARS AND LARGER - 55 x ø bar. HORIZONTAL TIES SHALL BE STAGGERED WITH NO MORE THAN 50% OF SPLICES IN ONE PLACE.
7. CONCRETE MIX DESIGN AND CONSTRUCTION PROCEDURE SHALL BE IN COMPLIANCE WITH ACI 318-99, ACI 336.3R-93, AND ALL APPLICABLE STATE AND LOCAL CODES.
   a. MINIMUM COMPRESSIVE STRENGTH - 4000 psi AT 28 DAYS. USE TYPE II CEMENT UNLESS STATED OTHERWISE.
   b. CONCRETE MIX SHOULD HAVE A SLUMP OF 7" (±1") FOR DRILLED PIER AND 3" (±1") FOR MAT FOUNDATIONS.
   c. FOR DRILLED PIERS, ONLY THE CONCRETE OVER THE ENTIRE LENGTH OF ANCHOR BOLTS SHALL BE VIBRATED. FOR MAT FOUNDATIONS ALL CONCRETE SHALL BE VIBRATED.
8. ANCHOR BOLT ORIENTATION REQUIRED PRIOR TO CONCRETE PLACEMENT. THE CONTRACTOR SHOULD CONSULT THE SITE PLAN AND MONOPOLE DRAWING FOR PROPER ACCESS PORT ORIENTATION.

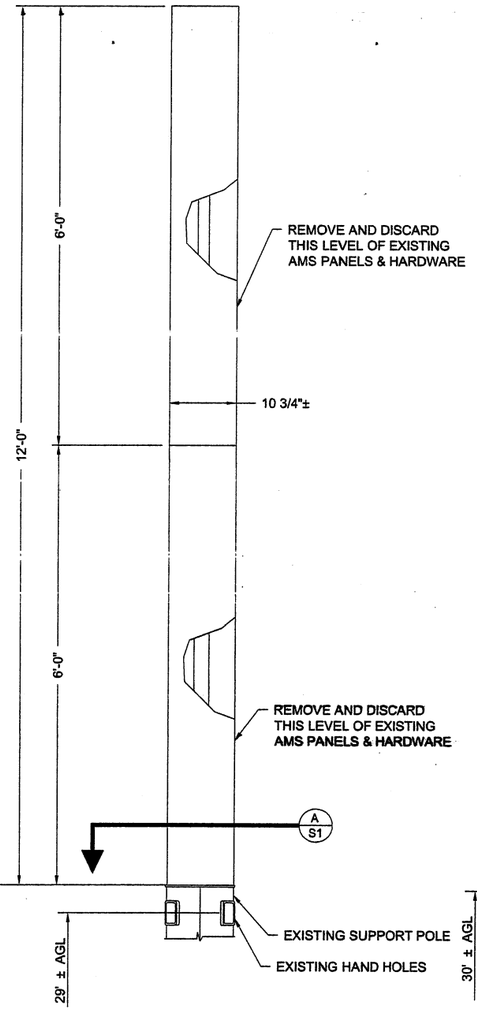
REV	DESCRIPTION	DATE	DWN	CHK
2	ANC. BOLT DIAMETER CORRECTED	1/20/03	B.F.	
1	CONDUITS ADDED	1/15/03	B.F.	
0	COMPLETED DRAWING	1/10/03	B.F.	

ENGINEERED ENDEAVORS INCORPORATED
The Experienced Point of View
7610 Jenther Drive * Mentor, OH 44060-4872
Ph: (440) 918-1101 * Ph: (888) 270-3855
Fx: (440) 918-1108 * www.engend.com

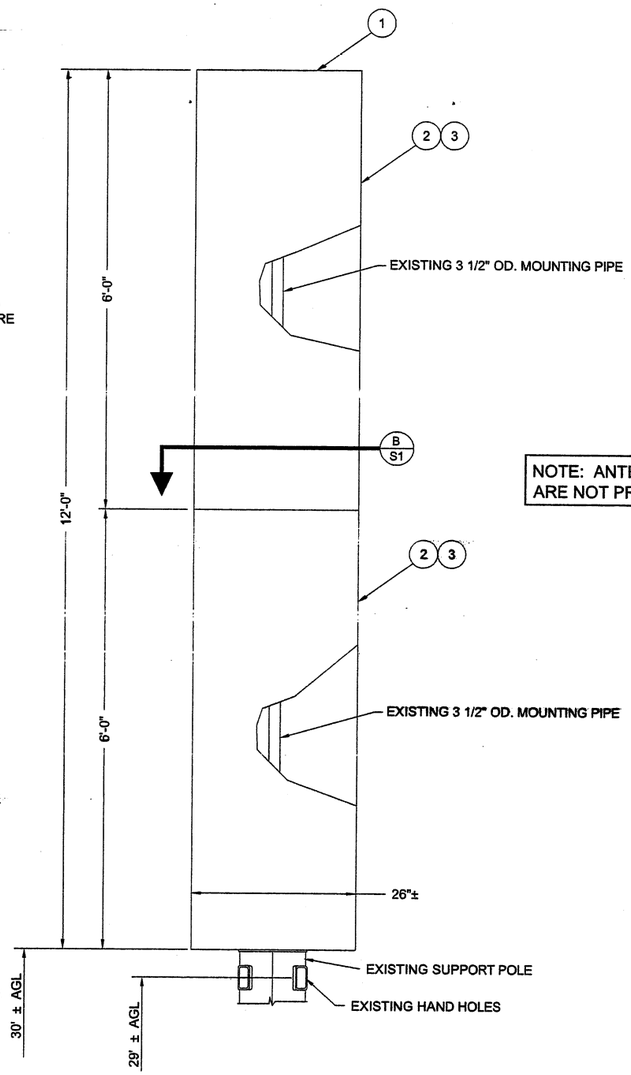
URS CORPORATION
42'-0" LIGHT POLE
CROMWELL CORNER/CT-271
CROMWELL, CT

SCALE: N.T.S.	PROJECT NO.	11353
SHEET 1 of 1	DRAWING NO.	11353-42

REVIEW EEI AMS SYSTEM II INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING ASSEMBLY.

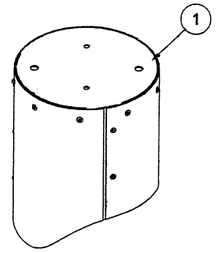


EXISTING DISGUISED POLE
REFER TO EEI
JOB 11353

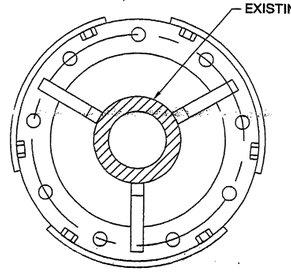


RETRO-FIT POLE

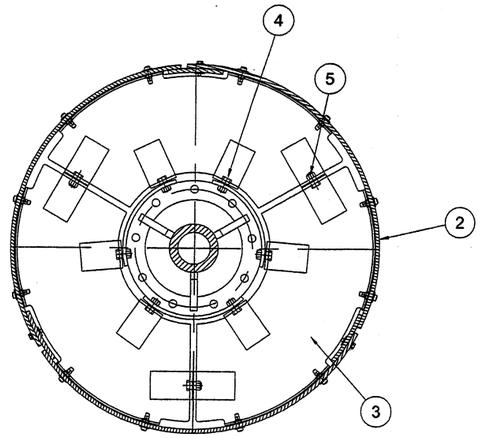
NOTE: ANTENNA MOUNTS ARE NOT PROVIDED BY EEI.



COVER PLATE DETAIL



SECTION "A-A"
w/o PANELS



SECTION "B-B"

ENGINEERED ENDEAVORS
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THE SOLUTION IS
CLEARPATH TECHNOLOGIES
PROVIDED BY EEI

STAMP

STATE OF CONNECTICUT
MICHAEL R. MOREL
No. 21220
LICENSED
PROFESSIONAL ENGINEER

FOR REVIEW

REVISION HISTORY

REV. #	DATE	BY	DESCRIPTION
0	3/9/11	RVH	ISSUED FOR REVIEW

26" DIA x 12' AMS RETRO-FIT
HUDSON DESIGN GROUP
CROMWELL CENTRAL CT5271
CROMWELL, CT

RETRO-FIT ELEVATION VIEWS

DRAWN BY	CREATED	PROJECT NUMBER
RVH	3/9/10	16573
SHEET	DRAWING NUMBER	
S1	GS54432-RETRO-FIT	

DR. CLARENCE WELTI, P.E., P.C.

GEOTECHNICAL ENGINEERING

227 Williams Street • P.O. Box 397
Glastonbury, CT 06033

(860) 633-4623 / FAX (860) 657-2514

November 21, 2001

Mr. Ignacio C. Artaiz A.I.A
URS Corporation
795 Brook Street, Building 5
Rocky Hill, CT 06067-4002

Re: Geotechnical Study for Proposed AT&T Communications Tower
51 Shunpike Road, Cromwell, CT

Dear Mr. Artaiz:

1.0 Herewith are the data from the test borings taken at the above referenced site. Four borings were taken at the proposed tower parcel. One boring was taken at the proposed tower center to a depth of 23 feet below grade. The boring was cored 5 feet into bedrock. The three remaining borings were drilled to a depth of 15 feet. The boring locations are shown on the attached plan. *The borings were drilled by Clarence Welti Associates, Inc. and sampling was conducted by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.*

2.0 The natural soils at the site are of glacial moraine origin and consist generally of sand with some silt, gravel, cobbles and decomposed rock . Bedrock was encountered at 18 feet below grade.

2.1 **The Soils Cross Section** from the borings was generally as follows:

Asphalt to 2.5" + Sand and Gravel Base to about 6"

Possible FILL; fine to medium SAND, trace to little Silt and Gravel to 4 to 10 feet (see probe P-1) note: there are 2 gas mains and a buried electric line within 20 feet of the proposed tower

Moraine; fine to medium SAND, some Silt, Gravel and Cobbles, and decomposed Rock to the top of rock at about 18 feet below grade, medium compact to dense

Bedrock; Sandstone

2.1 The **Ground Water Table** was not evident above the bedrock at the completion of the borings. The soils below about 10 feet appeared to be saturated. The moraine soils have a low permeability

NYNYCT5271

and voids ratio, which allows rapid rises in the water table to occur with storm water recharge. The site is currently a paved parking lot which limits the storm water recharge. The assumed groundwater level for design shall be 8 feet below grade.

3.0 The **Subject Project** includes a new flagpole type tower, 115 feet in height, and two equipment buildings.

4.0 In general the criteria for tower support is that the foundation capacity would exceed the loads, which might collapse the tower. **Movements from strains in the soils should be limited to differential settlement (or lateral movements of less than 1/4").**

5.0 The Tower Foundation Type could be one of the following:

1. A large mat, placed sufficiently deep to prevent overturning by gravity resistance of the pad, combined with soil surcharge above the mat.

2. A large mat acting with it own mass to provide the required resistance to overturning and sliding.

3. A caisson foundation. This may require rock excavation.

51 In **alternate (1)** the mat combined with soil surcharge, would provide the required resistance to over turning and sliding. The foundation could be placed on the natural soils at least 4 feet below grade, or on controlled fill placed after the removal of any existing fill. The controlled fill should laterally outside the foundation for at least the depth of fill beneath the foundation. There should be a minimum 10" layer of 3/8" crushed stone beneath the foundation. The stone will provide a uniform bearing surface and a medium for collecting storm water during construction. The stone should extend at least 2 feet outside the foundation and should be compacted with 4 passes of a compactor weighing at least 750 lbs. The allowable loading on the crushed stone over the natural soils or on the controlled fill can be 2 Tons/sf.

5.2 Regarding **alternate (2)** the same criteria for loading will apply, but the surcharge weight above the concrete mat would be ignored.

5.3 In **summary** the following soil properties and design values would apply to alternates 1 & 2.

Soil Property/Parameter	Value
Soil Unit Weight (Backfill)	125 pcf
Soil Weight Submerged	65 pcf

Soil Unit Weight (Natural)	135 pcf
Soil Unit Weight Submerged	75 pcf
Angle of Internal Friction (ϕ)	38°
Cohesion	0
Pull Out Angle from Vertical	30°
Sliding Coefficient	0.6
Frost Protection Depth (by code)	3.5 feet
Allowable Bearing Capacity (on crushed stone over the natural soils or a controlled fill)	2 Tons/sf

5.4 **Alternate 3** would be a caisson foundation. The caisson shall have a minimum embedment depth of 20 feet. The actual depth is to be determined by the designer to provide the required resistance to uplift and overturning forces as well as maintaining the allowable lateral deflection**. The following is summary of design parameters for the caisson foundation:

Parameter	Value
Allowable Bearing for Caisson on bedrock at 18+ feet	10 Tons/sf
Allowable Side Resistance (friction) at 5 to 18 feet below grade	300 psf
Allowable side resistance in bedrock at 18 + feet	2000 psf
Soil Unit Weight (above water level)	135 pcf
Soil Unit Weight (submerged)	75 pcf
Angle of internal friction	38 °
Lateral Loading (at rest coefficient)	0.45

Lateral Loading (passive coefficient)	5.0
Subgrade modulus in rock	1000 pci
Coefficient of Lateral Subgrade Reaction (k_1) from 5 feet to 18 feet below grade to bottom ***	40 pci *

* These parameters should be used to evaluate lateral deflection at top of caisson.

** Typically this value would be about 1/4"

*** k_1 is coefficient of horizontal subgrade reaction for a one foot wide caisson at one foot depth , The value of $k = k_1 (Z/B)$, where Z = Depth and B = Caisson Diameter

The lateral deflection can be analyzed from Lpile Program or from a empirical formulas in Drilled Pier Foundations; Woodward Gardener Greer; Mcgraw Hill 1972.

6.0 Backfilling at the tower and building foundations should be with 3/8" stone or material which conforms to the following gradation:

Percent Passing	Sieve size
100	3.5"
50 - 100	3/4"
25 - 75	No.4

The fraction, passing the No.4 sieve, shall have less than 10%, passing the No. 200 sieve. All backfill and fill must be placed and compacted to at least 95% of modified optimum density (ASTM 1557-D).

The 3/8"stone could be placed in lifts up to 1 feet thick. It should be compacted with a minimum of 4 passes with a 750 lb compactor.

There should be at least 8" of ½" stone beneath the building floor slab.

6.1 If the backfill to the surface is used as part of the uplift resistance (within 30° from vertical) the material should meet the gradation and compaction requirements from section 6.0 above.

7.0 The **Criteria for the Building Structure** are generally as follows:

1. The structural frame shall be subject to settlement less than a maximum of 3/4" and differentially less than ½ the maximum subsidence.

2. The foundation must address the seismic requirement of the building code.

3. The slab on grade (or supported slab) shall not subside more than ½" in excess of the structural frame.

7.1 Regarding the building foundation these should be placed the natural soils at least 3.5 feet below finished grades, or on controlled fill placed after removal of existing fills. The soil properties and design parameters from section 5.3 above would apply.

8.0 This report has been prepared for specific a application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

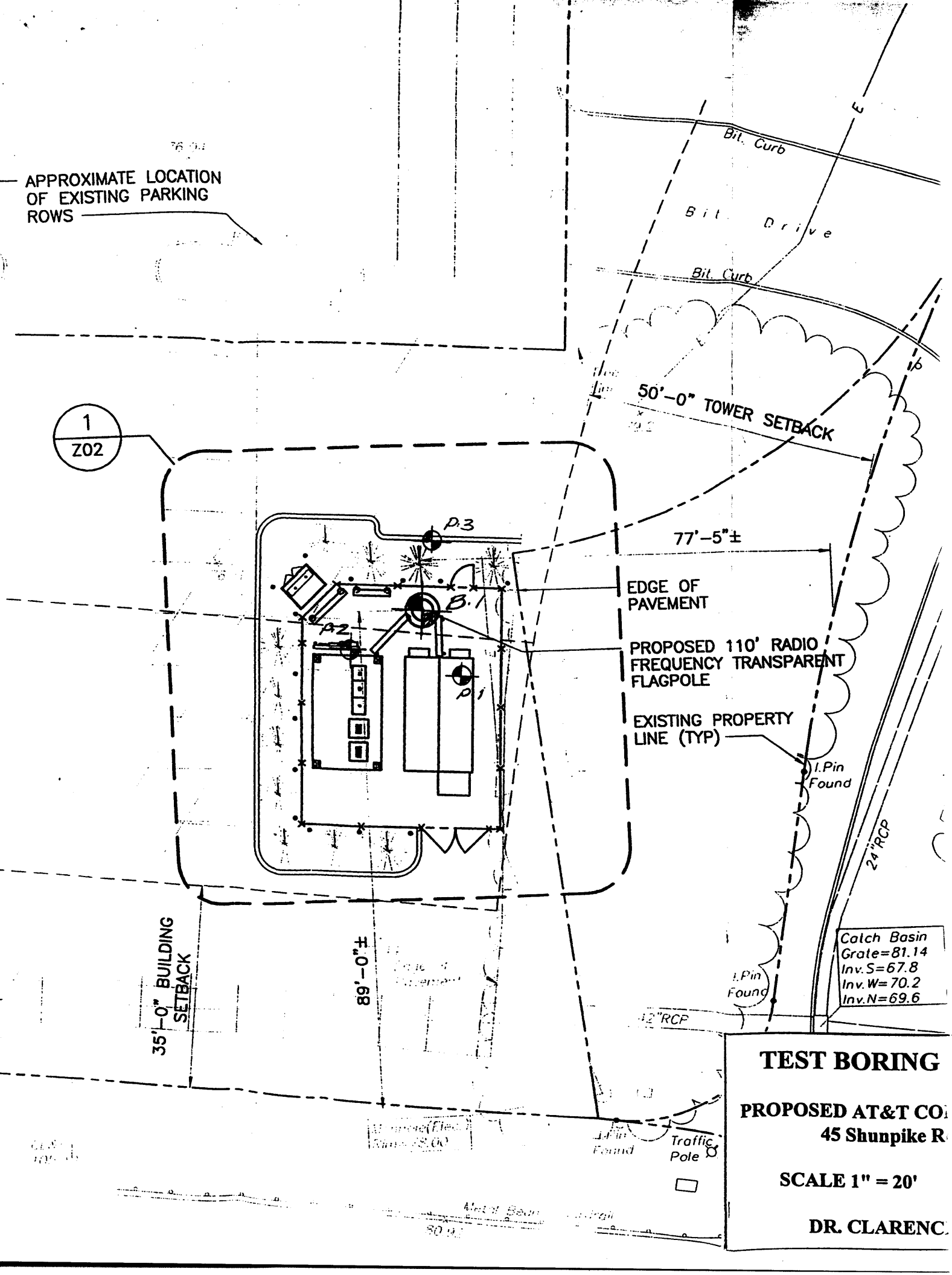
The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

Dr. Clarence Welti, P.E., P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

If you have any questions please call me.

Very truly yours

Clarence Welti Ph.D., P. E.
President, Dr. Clarence Welti P.E.; P.C.


APPROXIMATE LOCATION OF EXISTING PARKING ROWS
Bit. Curb
Bit Drive
Bit. Curb
50'-0" TOWER SETBACK
1
Z02
P3
77'-5"±
EDGE OF PAVEMENT
B1
P2
PROPOSED 110' RADIO FREQUENCY TRANSPARENT FLAGPOLE
P1
EXISTING PROPERTY LINE (TYP)
I.Pin Found
24"RCP
Catch Basin
Grate=81.14
Inv.S=67.8
Inv.W=70.2
Inv.N=69.6
35'-0" BUILDING SETBACK
±0'-68
I.Pin Found
12"RCP
Traffic Pole
I.Pin Found
TEST BORING
PROPOSED AT&T CO
45 Shunpike R
SCALE 1" = 20'
DR. CLARENC

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT URS CORPORATION	PROJECT NAME AT&T TOWER SITE LOCATION 45 SHUNPIKE TPKE. CROMWELL, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	HSA		SS	NX
SIZE I.D.	3.75"		1.5"	2"
HAMMER WT.			140lbs.	
HAMMER FALL			30"	

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.

HOLE NO. B-1

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 10/9/01
FINISH DATE 10/9/01

DEPTH	SAMPLE NO.	BLOWS/6"	DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0	1	7-9-11-17	0.00'-2.00'		ASPHALT 0.2 BR. FINE-CRS. SAND AND GRAVEL - FILL 0.5	
	2	11-16-17-17	2.00'-4.00'		RED/BR. FINE SAND, SOME SILT & DECOMPOSED ROCK, LITTLE FINE-CRS. GRAVEL	
5	3	7-7-14-11	4.00'-6.00'			
	4	11-11-11-18	6.00'-8.00'		6.0 RED/BR. FINE-CRS. SAND, SOME FINE-CRS. GRAVEL & SILT, LITTLE COBBLES & DECOMPOSED ROCK	
	5	8-7-10-17	8.00'-10.00'			
10						
15	6	60	15.00'-15.17'			
					18.0 CORED ROCK - RED SANDSTONE	
20					RUN #1 18.0' - 23.0' RECOVERED 60"	
					23.0 BOTTOM OF BORING @ 23.0'	
25						
30						
35						

LEGEND: COL. A:
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON
PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: BROMLEY
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. B-1

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT URS CORPORATION	PROJECT NAME AT&T TOWER SITE
		LOCATION 45 SHUNPIKE TPKE. CROMWELL, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	SS			
SIZE I.D.	4.0'			
HAMMER WT.				
HAMMER FALL				

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.

HOLE NO. P-1

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 10/9/01
FINISH DATE 10/9/01

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					ASPHALT .2 RED FINE-MED. SAND, TRACE SILT	
5					DRK. BR. FINE-MED. SAND, LITTLE ~~FINE GRAVEL~~, SILT & FINE-CRS. GRAVEL 4.0	
10					RED/BR. FINE-MED. SAND, SOME FINE-CRS. GRAVEL, SILT & DECOMPOSED ROCK 10.0	
15					BOTTOM OF BORING @ 15.0' 15.0	
20						
25						
30						
35						

LEGEND: COL. A:

SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON

PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: BROMLEY
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. P-1

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT URS CORPORATION	PROJECT NAME AT&T TOWER SITE LOCATION 45 SHUNPIKE TPKE. CROMWELL, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	SS			
SIZE I.D.	4.0'			
HAMMER WT.				
HAMMER FALL				

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.

HOLE NO. P-2

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 10/9/01
FINISH DATE 10/9/01

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					ASPHALT 2 BR. FINE-CRS. SAND AND GRAVEL .5 RED/BR. FINE-MED. SAND, SOME FINE-CRS. GRAVEL & SILT, TRACE COBBLES	
5						
10						
15					BOTTOM OF BORING @ 15.0' 15.0	
20						
25						
30						
35						

LEGEND: COL. A:
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON
PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: BROMLEY
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. P-2

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT URS CORPORATION	PROJECT NAME AT&T TOWER SITE LOCATION 45 SHUNPIKE TPKE. CROMWELL, CT.

	AUGER	CASING	SAMPLER	CORE BAR.
TYPE	SS			
SIZE I.D.	4.0'			
HAMMER WT.				
HAMMER FALL				

OFFSET
LINE & STA.
N. COORDINATE
E. COORDINATE

SURFACE ELEV.

HOLE NO. P-3

GROUND WATER OBSERVATIONS
AT none FT. AFTER 0 HOURS
AT FT. AFTER HOURS

START DATE 10/9/01
FINISH DATE 10/9/01

DEPTH	SAMPLE NO.	SAMPLE BLOWS/6"	SAMPLE DEPTH	A	STRATUM DESCRIPTION + REMARKS	ELEV.
0					ASPHALT .2 RED/BR. FINE-MED. SAND, LITTLE FINE GRAVEL & SILT	
5					RED/BR. FINE-MED. SAND, SOME FINE-CRS. GRAVEL & SILT, LITTLE DECOMPOSED ROCK & COBBLES 4.0	
10						
15					BOTTOM OF BORING @ 15.0' 15.0	
20						
25						
30						
35						

LEGEND: COL. A:
SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON
PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%

DRILLER: BROMLEY
INSPECTOR:

SHEET 1 OF 1 | HOLE NO. P-3

TOWN OF CROMWELL

Printed By: Shawna 11/04/2022 2:27:37PM

Parcel ID: **00107910** ***Location:*** 51 SHUNPIKE ROAD ***Map-Lot*** 21-24C ***Last Revaluation -*** ***October 1, 2022***

Patriot
Properties Inc.

Current Owner	***Percent***
HBN-CSC LLC	100
C/O HB NITKIN GROUP	
230 MASON STREET	
GREENWICH CT 06830	

Current Value Information

Mkt Adj Cost

Use Code	Land Value	PA 490 Value	Building Value	Outbuildings	Total Value	Total Assessed
202	925,700	0	0	255,000	1,180,700	826,490
TOTAL	**925,700**	**0**	**0**	**255,000**	**1,180,700**	**826,490**

Previous Value Information

Tax Yr	Land Value	Bldg Value	Outbuildings	Total Value	Total Assessment
2021	500,000	0	200,000	700,000	490,000
2020	500,000	0	200,000	700,000	490,000
2019	500,000	0	200,000	700,000	490,000
2018	500,000	0	200,000	700,000	490,000
2017	500,000	0	200,000	700,000	490,000
2016	0	0	350,000	350,000	245,000

Previous Owner(s)
HBN-CSC LLC
C/O THE HB NITKIN GROUP

Property Factors

Census 5702
Flood:
Topo:
Street: Paved
Dev. Map
Dev. Map

Zoning Data

Desc. **%**

Utilities

BAA

17D

General Notes

CELL TOWER VALUATION
PID 00107910
LOC 51 SHUNPIKE
ARRAYS 3
GROUND LEASE $2,000
ANNUAL $72,000
EXPENSES 10%
NOI $64,800

Sales Information

Grantee	Vol-Page	Type	SaleDate	SalePrice	Sale Verif	GeneralNotes
HBN-CSC LLC	1613-209	W	01/31/2018	0	Intra Corp Sale	MERGE TO ONE PARCEL. NKA AS 51
HBN-CSC LLC	1613-189	W	01/31/2018	0	Intra Corp Sale	
CROMWELL SQUARE PARTNI	430-332		02/01/1990	0	Other	

Activity Information

Date	Results	Visited By
07/27/2022	Change - Value Change Company	DM
12/27/2017	Informal Review No Change	John Valente
09/07/2017	Change - Value Change Company	John Valente
05/19/2017	No Change - Field Review	Dave Stannard
04/13/2016	Permit- Miscellaneous	Assessor Office
03/31/2016	Permit- Miscellaneous	Assessor Office
05/18/2015	Permit- Miscellaneous	Assessor Office
09/07/2012	Permit- Miscellaneous	Assessor Office
05/27/2011	Permit- Miscellaneous	Assessor Office
05/27/2011	Permit- Miscellaneous	Shawna Baron

Building Permit Information

Date	Permit #	Description	Amount	% Comp	Visit Date	CO Date	GeneralNotes
05/10/2022	28568	Bath ALterations	2,500	100			toilet & sink
10/21/2021	28113	Sign	7,000	100		23-Mar-2022	signage
09/07/2012	21078	Other	25,000	100	07-Sep-2012		Rmv & rpl existing antenn
05/03/2011	19821	Other	15,000	100	27-May-2011		Modification of existing

Land Data

Use	Description	Units	Unit Type	Neigh				Special Land Calc	Appraised Value	PA 490 Asmt	Neigh Order	Notes
					%	%	%					

Total Area: **PA 490 Use Asmt:** **Total Appraised:** **Assessed Value:**

ParcelID: 00107910 **Location:** 51 SHUNPIKE ROAD **Printed By:** Shawna 11/04/2022 2:27:37PM

Bldg Seq 1 **Of** 1

Exterior Information

Building Type:
Story Ht:
Living Units: 0
Foundation:
Prim. Ext. Wall:
Sec. Ext. Wall:
Roof Type:
Roof Cover:
Avg. Wall Ht:
Color:

Condo Information

Name:
Style:
Location:
Tot Units:

General Information

Year Blt:
Grade:
Remodeled Yr:
Rem. Kitchen Yr:
Rem. Bath Yr:

Interior Information

Prime Wall:
Sec. Wall:
Floor Type:
Sec. Floor:
Heat Fuel:
Heat Type:
Sec. Ht Type:
% A/C: 0
% Sprinkled: 0
Bsmt. Gar: 0
Kitchens: 0 **Add. Kit:** 0
Fireplaces: 0 **Gas:** 0
Int. Condition: Typical

Depreciation %

Phys Cond	Average	0.00
Func		
Econ		
Spec		
OV		

Total %Dep: **0.00**

Calculation

Basic $/SQ	0.00
Replacement Cost	0
Depreciation	0
Depreciated Value	0
Final Total (Rounded)	**0**

Room Count

Total Rooms:
Bedrooms:

Bath Features

Full Baths: 0
Addl. Full Baths: 0
Half Baths: 0
Addl. Half Baths: 0
Full Bths Below: 0
Half Bths Below: 0
Other Fixtures: 0
Total Baths: 0 0

Extra Features / Yard Items (1st 10 Lines Displayed)

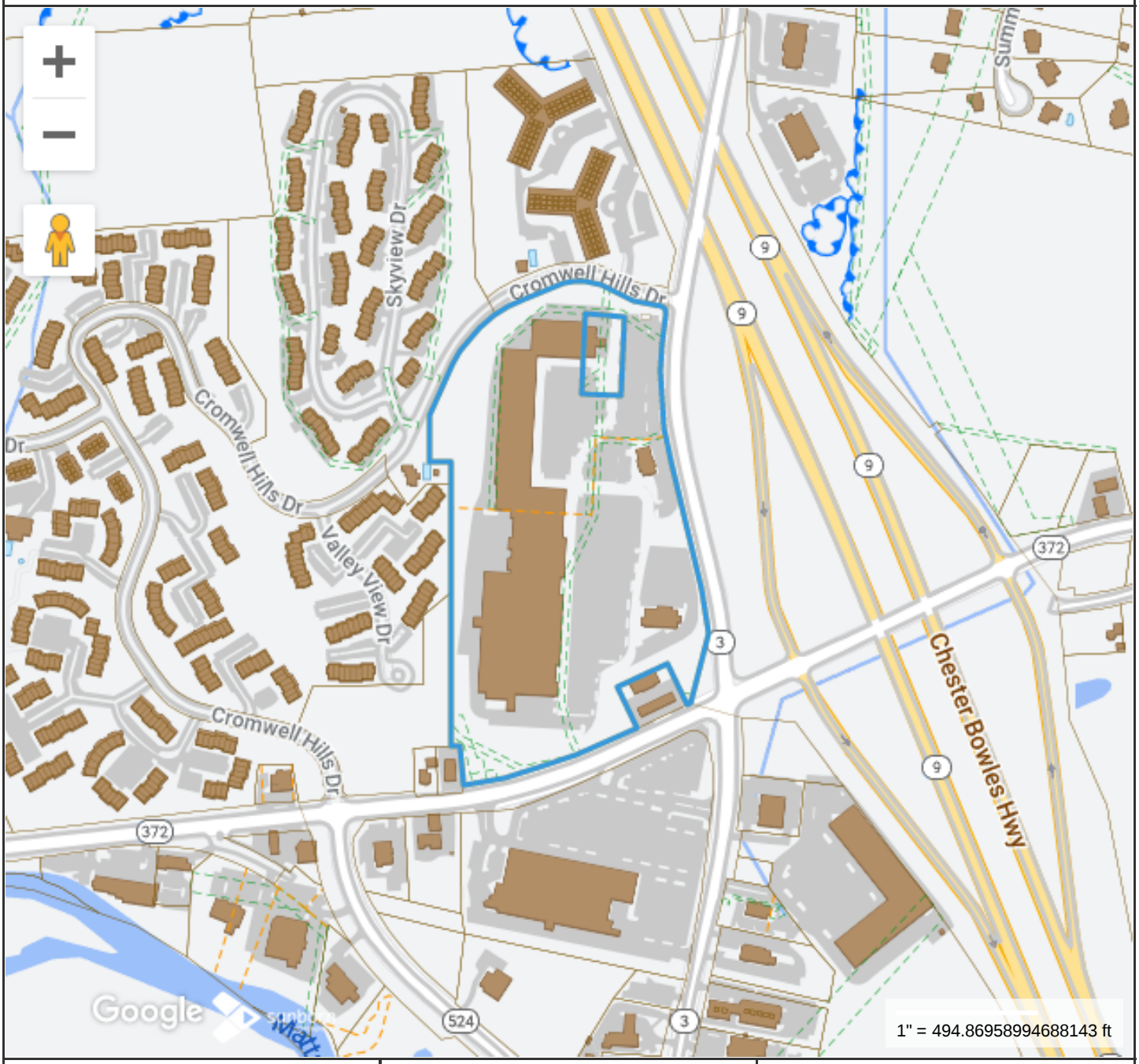
Code	Description	Qty	Size	Cond.	Year	Unit Price	Dep%	UndepValue	Appraised Value	Assessment
CELL	Cell Site Ca	1	30	AV	2016	0.00	5	0	255,000	178,500

Total Sp. Features: **Total Yard Items:** **255,000** **Total Appraised:** **255,000** **Total Assessed Value:** **178,500**

Sub Area Detail

Code	Desc.	Living	Gross Area
Total			

51 Shunpike Rd



Property Information

Property ID	00107900
Location	51 SHUNPIKE R
Owner	
Owner Address	,
Map Block Lot	

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Cromwell, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 12/17/2023
Data updated on a daily basis

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Permit # 02-86

CT-271

TOWN OF CROMWELL PLANNING AND ZONING COMMISSION

USE PERMIT

Date Submitted: **November 21, 2002** Zoning District: **B (Business)**

Street Address: **51 Shunpike Road**

Complies with Zoning Regulations (check one):

____ Article IV, Paragraph 4.2.____.

__X__ Other. Explain: **Section 11.11.d - Lightpost/attached wireless facility**

Name of Business (if applicable): _____

Description of Proposed Activity **Lightpost with "stealth" antenna attachment on top concealing 3 panel antennas with capability for future expansion to 6 antennas and associated unmanned equipment cabinets located at grade within a wooden fenced compound.**

Property Owner's Name: **Shunpike - West Limited Partnership**

Property Owner's Address: **67 Mason Street, Greenwich, Connecticut 06830**

Applicant's or Agent's Name: **AT&T Wireless PCS, LLC**

Applicant's or Agent's Address: **12 Omega Drive, Stamford, Connecticut 06902**

Daytime Telephone Number: **203-602-7011**

Signature: _____ **November 21, 2002**

(circle one: owner applicant agent) date

Cuddy, Feder & Worby, LLP
Attorneys for the Applicant AT&T

FOR STAFF USE ONLY

Town Planner: (✓) approve ( ) deny initials GP date 1/21/03

Comments: By PEZ on 12/17/02. per site plan submitted w/application.

Zoning Enforcement Officer: ( ) ~~approve~~ ( ) deny

Comments: _____

Signature

12/20/02
date

This Permit IS NOT in lieu of a Building Permit!

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SAI GROUP
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SALEM NH 03079-2837

Expected Delivery Date: 03/28/24
Ref#: CT5271
0003

C003

HON. J. DEMETRIADES, MAYOR MR. S.
TOWN OF CROMWELL
41 WEST ST
CROMWELL CT 06416-2180

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PRIORITY MAIL®

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

Expected Delivery Date: 03/28/24
Ref#: CT5271
0003

C065

PETER J CHRISTIAN
HBN-CSC LLC, C/O HB NITKIN GROUP
230 MASON ST
GREENWICH CT 06830-6943

USPS TRACKING #

9405 5036 9930 0673 5090 83

Electronic Rate Approved #038555749

UNITED STATES POSTAL SERVICE®

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PRIORITY MAIL®

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

Expected Delivery Date: 03/28/24

0003

C006

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

USPS TRACKING #

9405 5036 9930 0673 5090 90

Electronic Rate Approved #038555749

Cut on dotted line.

Hollis Redding

Light pole & property owner copy

From: auto-reply@usps.com
Sent: Tuesday, March 26, 2024 5:04 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Thursday, March 28, 2024 arriving by 9:00pm 940550369930067350908 3

Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 2:30 pm on March 26, 2024 in MERIDEN, CT 06450.

Tracking Number: **9405503699300673509083**

Expected Delivery By

Thur
28
Mar

By 9:00pm

Mayor & Director of Planning & Development Copies

Hollis Redding

From: auto-reply@usps.com
Sent: Tuesday, March 26, 2024 5:04 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Thursday, March 28, 2024 arriving by 9:00pm 9405503699300673509076

Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 2:30 pm on March 26, 2024 in MERIDEN, CT 06450.

Tracking Number: **9405503699300673509076**

Expected Delivery By

Thur
28
Mar

By 9:00pm